



# 12603 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

Cycle: 19, Proposal Category: GO

(Large Program)

(Availability Mode: SUPPORTED)

## INVESTIGATORS

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## VISITS

| <i>Visit</i> | <i>Targets used in Visit</i>                                 | <i>Configurations used in Visit</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|--------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 01           | (1) 2MASX-J15442722+2743237<br>(51) SDSSJ154408.13+274024.33 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:03:42.0        | yes                           |
| 02           | (2) VV2006-J125124.6+055420                                  | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:03:57.0        | yes                           |

| <b>Visit</b> | <b>Targets used in Visit</b>                                  | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|---------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 03           | (3) VV2006-J091431.8+083742<br>ANY                            | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:04:14.0        | yes                           |
| 04           | (4) SDSS-J093706.85+170021.5                                  | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:04:27.0        | yes                           |
| 82           | (4) SDSS-J093706.85+170021.5                                  | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:04:37.0        | yes                           |
| 05           | (5) 2MASS-J10131797+0500342<br>(55) SDSSJ101324.42+050131.71  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:04:50.0        | yes                           |
| 06           | (6) VV2006-J105956.1+121151                                   | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:05:01.0        | yes                           |
| 07           | (7) 2MASS-J10512569+1247462<br>(57) SDSSJ105118.51+124523.50  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 4                  | 25-Jul-2012 21:05:20.0        | yes                           |
| 08           | (8) 2MASS-J14294076+0321257<br>(58) SDSSJ143001.87+032352.12  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:05:33.0        | yes                           |
| 09           | (9) 2MASS-J09512393+3542490                                   | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:05:42.0        | yes                           |
| 10           | (10) VV2006-J105910.9+051935                                  | COS/FUV<br>COS/NUV                  | 4                  | 25-Jul-2012 21:05:51.0        | yes                           |
| 11           | (11) SDSS-J151237.05+012846.                                  | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:06:00.0        | yes                           |
| 12           | (12) SDSS-J113137.16+155645.3                                 | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:06:10.0        | yes                           |
| 13           | (13) VV2000-J150204.1+064514<br>(63) SDSSJ150204.09+064922.80 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:06:18.0        | yes                           |

| <b>Visit</b> | <b>Targets used in Visit</b>                                   | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|----------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 14           | (14) 2MASS-J14312586+2442203                                   | COS/FUV<br>COS/NUV                  | 1                  | 25-Jul-2012 21:06:24.0        | yes                           |
| 15           | (15) 2MASS-J09591486+3203573<br>(65) SDSSJ095851.33+320423.09  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:06:30.0        | yes                           |
| 16           | (16) SDSS-J151507.43+065708.3<br>(66) SDSSJ151507.55+070116.51 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:06:45.0        | yes                           |
| 17           | (17) SDSS-J150928.29+070235.7<br>(67) SDSSJ150921.50+070439.82 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:07:03.0        | yes                           |
| 18           | (18) VV2006-J112224.1+031802<br>ANY                            | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:07:21.0        | yes                           |
| 19           | (19) QSO-B1115+080A<br>(69) SDSSJ111809.91+074653.94           | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:07:39.0        | yes                           |
| 20           | (20) 2MASS-J14042827+3353426<br>(70) SDSSJ140429.24+335712.11  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:07:55.0        | yes                           |
| 21           | (21) VV2006-J130524.3+035731<br>ANY                            | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:08:12.0        | yes                           |
| 22           | (22) VV2006-J111507.6+023757                                   | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:08:24.0        | yes                           |
| 23           | (23) VV2006-J015953.0+134554                                   | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:08:33.0        | yes                           |

Proposal 12603 (STScI Edit Number: 0, Created: Wednesday, July 25, 2012 8:14:16 PM EST) - Overview

| <b>Visit</b> | <b>Targets used in Visit</b>                                   | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|----------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 24           | (24) VV2006-J085259.2+031320<br>(74) SDSSJ085254.99+030908.43  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:08:41.0        | yes                           |
| 25           | (25) 2MASS-J13482237+2456498                                   | COS/FUV<br>COS/NUV                  | 2                  | 25-Jul-2012 21:08:48.0        | yes                           |
| 26           | (26) VV2006-J112005.0+041323                                   | COS/FUV<br>COS/NUV                  | 2                  | 25-Jul-2012 21:08:56.0        | yes                           |
| 27           | (27) VV2006-J140655.7+015713<br>(77) SDSSJ140642.63+015452.25  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:09:07.0        | yes                           |
| 28           | (28) QSO-B0906+3248<br>(78) SDSSJ090855.57+323433.08           | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:09:20.0        | yes                           |
| 29           | (29) SDSS-J135424.90+243006.3<br>(79) SDSSJ135411.14+243322.55 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:09:39.0        | yes                           |
| 30           | (30) VV2006-J080838.8+051440<br>(80) SDSSJ080816.44+051258.03  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:09:52.0        | yes                           |
| 31           | (31) VV2006-J131545.2+152556<br>(81) SDSSJ131525.21+152522.27  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 2                  | 25-Jul-2012 21:10:05.0        | yes                           |
| 32           | (32) 2MASS-J15412146+2817063<br>(82) SDSSJ154122.59+281347.11  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 4                  | 25-Jul-2012 21:10:21.0        | yes                           |
| 33           | (33) 2MASS-J11321056+1335091                                   | COS/FUV<br>COS/NUV                  | 1                  | 25-Jul-2012 21:10:31.0        | yes                           |

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| <b>Visit</b> | <b>Targets used in Visit</b>                                   | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|----------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 35           | (35) 2MASS-J13250381+2717189<br>(85) SDSSJ132522.78+271456.6   | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:10:45.0        | yes                           |
| 36           | (36) SDSS-J115552.80+292238.4<br>(86) SDSSJ115536.63+292104.46 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 4                  | 25-Jul-2012 21:11:02.0        | yes                           |
| 37           | (37) SDSS-J145424.33+304658.3<br>(87) SDSSJ145403.74+305046.50 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:11:24.0        | yes                           |
| 38           | (38) SDSS-J093001.90+284858.4<br>(88) SDSSJ93009.19+285351.35  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:11:42.0        | yes                           |
| 39           | (39) SDSS-J131802.01+262830.3<br>(89) SDSSJ131745.60+262910.80 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:11:59.0        | yes                           |
| 40           | (40) SDSS-J103304.86+211216.1<br>(90) SDSSJ103246.99+211256.32 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:12:16.0        | yes                           |
| 81           | (40) SDSS-J103304.86+211216.1<br>(90) SDSSJ103246.99+211256.32 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 3                  | 25-Jul-2012 21:12:34.0        | yes                           |
| 42           | (42) 2E-1058.1+1102                                            | COS/FUV<br>COS/NUV                  | 2                  | 25-Jul-2012 21:12:49.0        | yes                           |
| 43           | (43) VV2000-J093603.9+320709                                   | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:12:57.0        | yes                           |
| 44           | (44) QSO-B1139+305                                             | COS/FUV<br>COS/NUV                  | 2                  | 25-Jul-2012 21:13:05.0        | yes                           |
| 45           | (45) SDSS-J124129.64+285212.0                                  | COS/FUV<br>COS/NUV                  | 2                  | 25-Jul-2012 21:13:13.0        | yes                           |

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|--------------|---------------------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 46           | (46) 87GB-142519.5+264555                                     | COS/FUV<br>COS/NUV                  | 1                  | 25-Jul-2012 21:13:19.0        | yes                           |
| 47           | (47) 2MASS-J09311671+2628474<br>(97) SDSSJ093116.01+263259.60 | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 4                  | 25-Jul-2012 21:13:33.0        | yes                           |
| 49           | (49) VV96-J100254.6+324039                                    | COS/FUV<br>COS/NUV                  | 3                  | 25-Jul-2012 21:13:47.0        | yes                           |
| 50           | (50) QSO-B1124+271<br>(100)<br>SDSSJ112746.28+26.005734.54    | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:13:55.0        | yes                           |
| 80           | (8) 2MASS-J14294076+0321257<br>(58) SDSSJ143001.87+032352.12  | COS/FUV<br>COS/NUV<br>WFC3/UVIS     | 1                  | 25-Jul-2012 21:14:02.0        | yes                           |

125 Total Orbits Used

## ABSTRACT

The greatest impediment to understanding the formation and evolution of galaxies is our ignorance about the cycling of gas into, through, and out of galaxies. To address these issues we are undertaking an ambitious program (GASS – the GALEX Arecibo SDSS Survey) to investigate the atomic, molecular, and ionized gas in the disks of ~350 local galaxies and to determine the relationship of this gas to the star-formation histories of the galaxies. The missing link is information about gas in the circum-galactic medium (CGM) that is believed to be both the repository of the inflowing gas and the receptacle of the feedback of energy and metals generated inside the galaxy. The CGM consists primarily of gas in the temperature range from ten thousand to a million K and is most effectively studied in absorption using background QSOs. In this proposal we are requesting 126 HST orbits so that high-quality COS G130M spectra will be available for all 55 GASS galaxy-QSO pairs in which a suitably bright background QSO probes a sightline within ~250 kpc (~virial radius) of the galaxy. Our goal is to directly connect the presence and properties of the gas in the CGM to the presence and properties of the HI in the galaxy and to the star formation history of the galaxy. In so doing we will test current theories on the formation and evolution of galaxies and provide a unique legacy data set combining these HST spectra with over 1500 hours worth of data from the largest cm- and mm-wave telescopes in the world. The power of this combination of information would be unmatched.

## OBSERVING DESCRIPTION

Our strategic goal is to build a sample of QSO/galaxy pairs with impact parameter  $< 250$  kpc to study multi-phase gas in galactic halos and its dependence on galaxy properties. Our G130M COS data range over 1150 - 1450 Å, which gives us access to a host of important ionization, density, and metallicity diagnostics. The galaxy redshifts range from  $z \sim 0.02$ -0.05, where these ions will be covered on at least one of the grating settings.

Exposure times: Most of our target QSOs are newly discovered by SDSS, and so have not been observed spectroscopically in the UV before. To ensure sufficient flux in the G130M bands we have cross-referenced our QSO catalog with the GALEX DR4 all-sky survey (AIS) and selected only QSOs with a significant detection in the GALEX FUV band ( $\sim 1500$  Å). Measured GALEX FUV magnitudes for our sample range from 17.15 to 19.0. The redshifts range from  $z = 0.16$  to 1.87. Note that if we assume the FOS composite QSO in the ETC, QSOs in this range of redshift and magnitude are always well below the bright limits of COS for both FUV spectroscopic exposures and NUV imaging target acquisitions with MIRRORB.

We use the COS online ETC to calculate that we will achieve  $S/N = 8$ -12 per resolution element over 1150 - 1450 Å with 1-4 orbit exposures for our target objects. In each case we shift the central wavelength halfway through the full exposure for each grating to fill the  $\sim 15$  Å gap between detector segments. Use of the GALEX fluxes means that we do not need to correct for interstellar extinction, which in any case is  $E(B-V) < \sim 0.1$  for these high-latitude targets. Each visit has had the two central wavelengths packed for maximum efficiency, with the central wavelengths chosen to place the resulting low- $S/N$  gap away from absorption lines of interest. Based on our experience with the ETC for QSOs in this range of redshift and magnitude and with similar objects observed so far in Cycles 17 and 18, we know that these spectra always have their brightest pixel at the position of geocoronal Lyman alpha emission, not from the QSO source. These objects never get close to the bright limits, whatever the magnitude, redshift, or central wavelength setting.

### Notes on Acquisitions:

Our coordinates are all from SDSS, with astrometry good to 100 mas, so we adopt NUV imaging (ACQ/IMAGE) for all targets. Our experience in Cycles 17 and 18 is that IMAGE acquisitions are working well for these targets. We have set the exposure times for each "orbit bin" (1,2,3, or 4) using the faintest target at  $S/N = 40$  in each bin as the limiting case, and then rounding up to provide a margin of safety against QSO fading. We use 77,219, 252 and 257 sec for the 1, 2, 3, and 4 orbit targets, respectively. Adding 1 mag margin, more than 90% our targets are too bright for MIRRORA acquisitions, so we use MIRRORB in every case.

The Phase II ISR says use 1 mag brighter for bright-object check on ACQs. Brightest target here has GALEX NUV = 16.9, and this one is acquired in 45 sec at S/N = 40 for MIRRORB and PSA (ETC COS 198817). It has 5 ct/s in the brightest pixel, and 36 ct/s in the 9x9 selected region. At one magnitude brighter (GALEX FUV = 15.9), this target is still safe to acquire with MIRRORB in the NUV, with 13 ct/s in the brightest pixel, 91 ct/s in the selected region, and 912 ct/s on the entire detector (ETC COS.198818). In fact this target at one magnitude brighter is safe to observe with MIRRORB even for our longest exposure of 257 secs (for the 4 orbit targets). The ETC run 198824 shows that the brightest will be at 13ct/s, 91 ct/s for the selected region and the count rate for the entire detector is 912 ct/s.

For program targets with multi-epoch GALEX data, the true variability of these QSOs is of order  $\sim < 0.2$  mag, much less than this 1 mag assumption. For this reason, and because our brightest target is safe to acquire, all our targets are safe to acquire in NUV imaging with MIRRORB.

As anticipated for these targets selected from SDSS+GALEX, the BOT returns no health-and-safety issues for the targets or their fields.

To estimate the range of S/N ratios we will acquire for our science exposures, and to estimate their count rates for health-and safety checks, we ran a grid of representative ETC calculations for a range of QSO brightness and redshift. All these ETCs use the FOS QSO template spectrum normalized by the specified GALEX FUV flux at the specified redshift. There are two representative redshifts (0.02, 0.05) and four representative FUV magnitudes (17.7, 18.5, 18.9, 19.0). The exposure times are the averages of the times drawn from the Phase II for those. These ETCs are:

FUVmag = 17.7 (1 orbit bin, visits 13,14,15,24,33,46)

z G130M=2310 s

0.02 COS.sp.196834

0.05 COS.sp.196849

FUVmag = 18.5 (3 orbit bin, visits 1,5,8,80,19,25,26,27,28,30,31,42,44,45)

z G130M=4947 s

0.02 COS.sp.196890

0.05 COS.sp.196877

FUVmag = 18.9 (4 orbit bin, visits 2,4,6,9,11,12,16,17,18,20,22,23,29,35,37,38,39,40,43,49)

z G130M=7735 s

0.02 COS.sp.196928

0.05 COS.sp.196945

FUVmag = 18.9 (4 orbit bin, visits 7,10,32,36,47)

z G130M=11156 s

0.02 COS.sp.196977

0.05 COS.sp.196964

Note that in every case, the local and global count rates are far below the limits, and that in every case for G130M the brightest pixels correspond to geocoronal Ly $\alpha$ , which is >1-2 orders of magnitude brighter than the source QSOs. In any case these count rates are well below the local and global limits.

The central wavelengths are set to optimally cover the interesting absorption lines from the galaxies of interest. The representative ETCs show that geocoronal Ly $\alpha$  is always the brightest spot in G130M regardless of the cenwave, but is still well below the limits (0.1 cts at Ly $\alpha$  vs. 0.67 cts limit), and the targets tend to be at least an order of magnitude fainter. Since the FOS template spectrum is relatively flat (see the representative cases) the global count rate is almost invariant with cenwave and never gets close to the limits.

WFC3 Parallels: WFC3 UVIS parallels are designed to deeply image the fields in or around the GASS host galaxies whose halos are being probed by the COS observations. Thus, as justified in our Phase I proposal, for the 25 Visits where visibilities permit, we require a specific constraint in HST roll angle to ensure the WFC3 aperture covers the galaxy or galaxy halo of interest. While only a portion of targets have the galaxy itself falling in the WFC3 field (where the rest probe only the galaxy halos for faint structure), we set maximum exposure times by requiring that the brightest surface brightness in any of our GASS galaxies produce few enough counts to avoid saturating the detector. According to ETC runs WFC3UVIS.im.185677 and WFC3UVIS.im.185675, we find that our maximum SB of 15mag/sq arcsec in SDSS r will not come close to saturation

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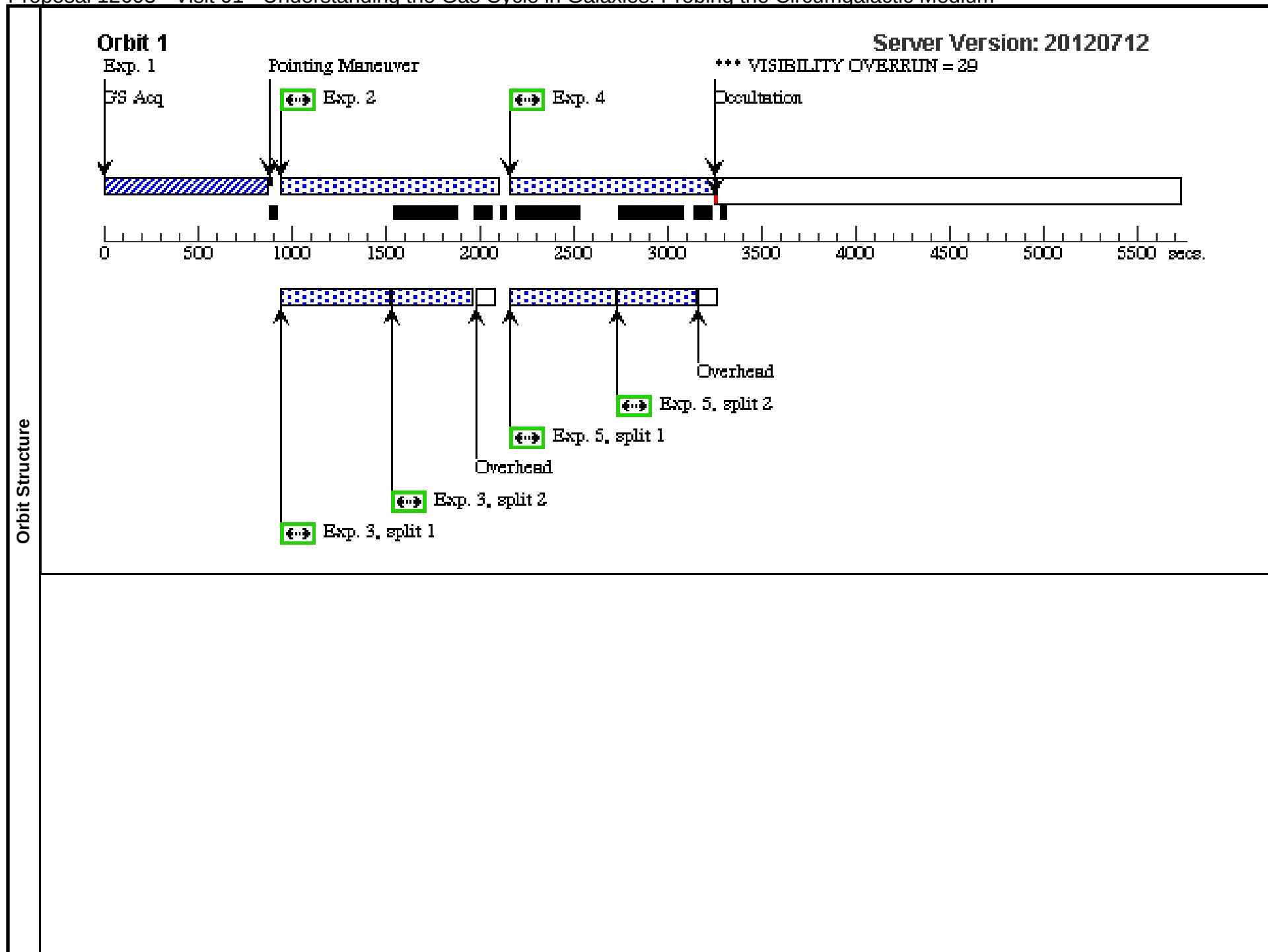
as long as we keep exposure times below  $\sim 650$ s. All WFC3 parallel exposures are therefore set, primarily, to avoid interfering with the COS exposures, and then, secondarily, by setting the number of CR-SPLITS appropriately to keep any individual exposure at  $< 650$ s. For each 1-4 orbit COS sequence, we further divide our WFC3 exposure time as evenly as possible between exposures through the F200LP and F350LP filters. The choice of these filters was made for the dual purposes of a) ensuring maximum total sensitivity to low surface brightness features and b) ensuring maximum UV throughput (through the F200LP-F350LP difference image) to measure star formation rates in any diffuse structures identified.

# Proposal 12603 - Visit 01 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                          |                                                                                     |                          |                                               |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 01, scheduling                                                                                                                                   |                          |                                                                                     |                          |                                               | Thu Jul 26 01:14:18 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                               |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                               |                              |
|                         | Special Requirements: ORIENT 88.0D TO 112.0 D                                                                                                                          |                          |                                                                                     |                          |                                               |                              |
| Comments: 2-orbit Visit |                                                                                                                                                                        |                          |                                                                                     |                          |                                               |                              |
| Diagnostics             | (Visit 01) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                               |                              |
|                         | (Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                               |                              |
|                         | (Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                               |                              |
|                         | (Visit 01) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                               |                              |
|                         | (Visit 01) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                               |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        | Miscellaneous                |
|                         | (1)                                                                                                                                                                    | 2MASX-J15442722+2743237  | RA: 15 44 27.2610 (236.1135875d)<br>Dec: +27 43 24.18 (27.72338d)<br>Equinox: J2000 | Redshift: 0.1634         | V=17.3<br>FUV mag= 17.9655 & NUV mag= 18.1477 | Reference Frame: ICRS        |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                               |                              |
|                         | (51)                                                                                                                                                                   | SDSSJ154408.13+274024.33 | RA: 15 44 8.1300 (236.0338750d)<br>Dec: +27 40 24.33 (27.67342d)<br>Equinox: J2000  | Redshift: 0.03163        | V=17.3200                                     | Reference Frame: ICRS        |

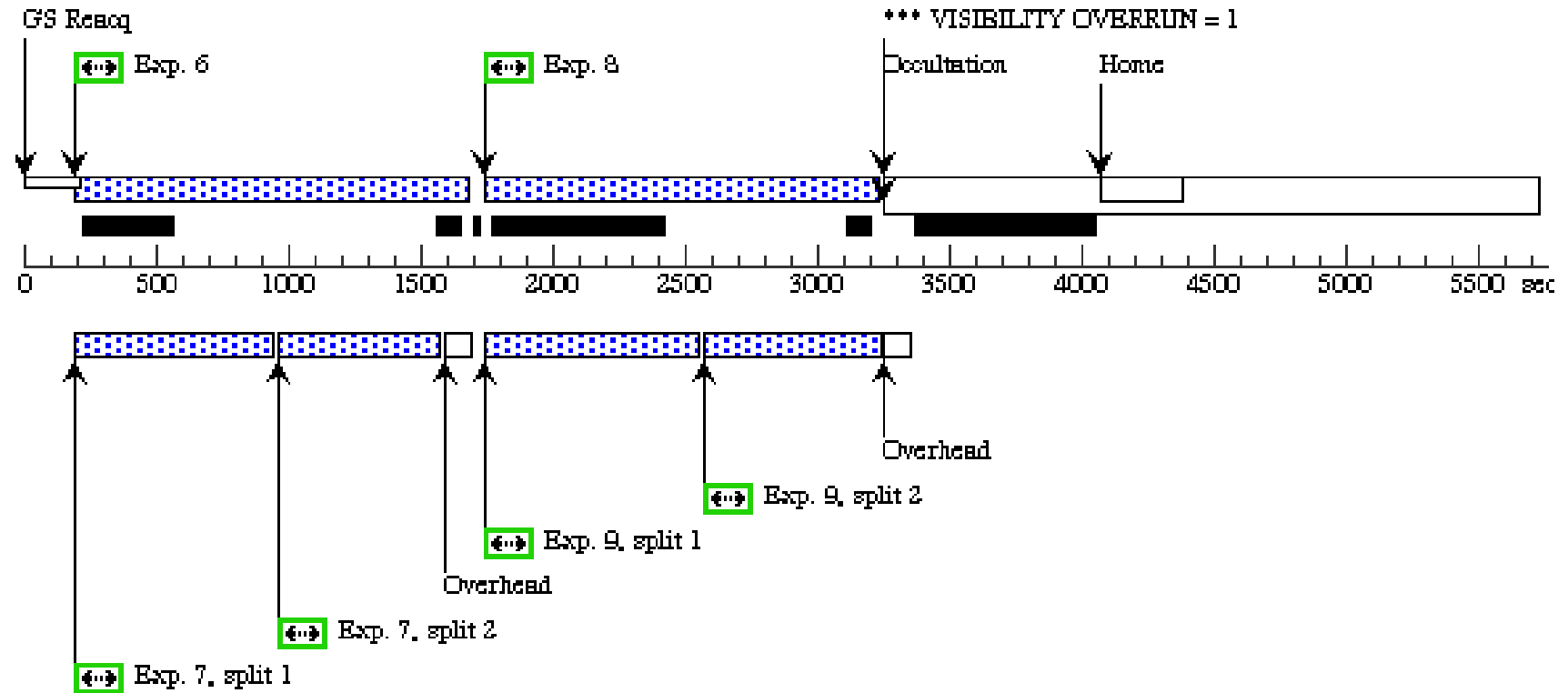
# Proposal 12603 - Visit 01 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|--------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (1) 2MASX-J154427<br>22+2743237   | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 219 Secs                                               |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                  | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (1) 2MASX-J154427<br>22+2743237   | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=87<br>0;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 2-3 in Visit 01 | 980 Secs                                               |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                  | [1]   |
|           | 3 |                        | (51) SDSSJ154408.1<br>3+274024.33 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 01 | 794 Secs                                               |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>434.0 Secs (Split 1)]<br>[==>434.0 Secs (Split 2)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (1) 2MASX-J154427<br>22+2743237   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=87<br>1;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 01 | 981 Secs                                               |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                  | [1]   |
|           | 5 |                        | (51) SDSSJ154408.1<br>3+274024.33 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 4-5 in Visit 01 | 820 Secs                                               |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>418.0 Secs (Split 1)]<br>[==>418.0 Secs (Split 2)] | [1]   |
|           | 6 | (COS.sp.184<br>757)    | (1) 2MASX-J154427<br>22+2743237   | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>60;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 01 | 1370 Secs                                              |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                  | [2]   |
|           | 7 |                        | (51) SDSSJ154408.1<br>3+274024.33 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 01 | 1200 Secs                                              |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>616.0 Secs (Split 1)]<br>[==>616.0 Secs (Split 2)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (1) 2MASX-J154427<br>22+2743237   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>63;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 01 | 1373 Secs                                              |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                  | [2]   |
|           | 9 |                        | (51) SDSSJ154408.1<br>3+274024.33 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 01 | 1250 Secs                                              |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>672.0 Secs (Split 1)]<br>[==>672.0 Secs (Split 2)] | [2]   |



## Orbit 2

Server Version: 20120712

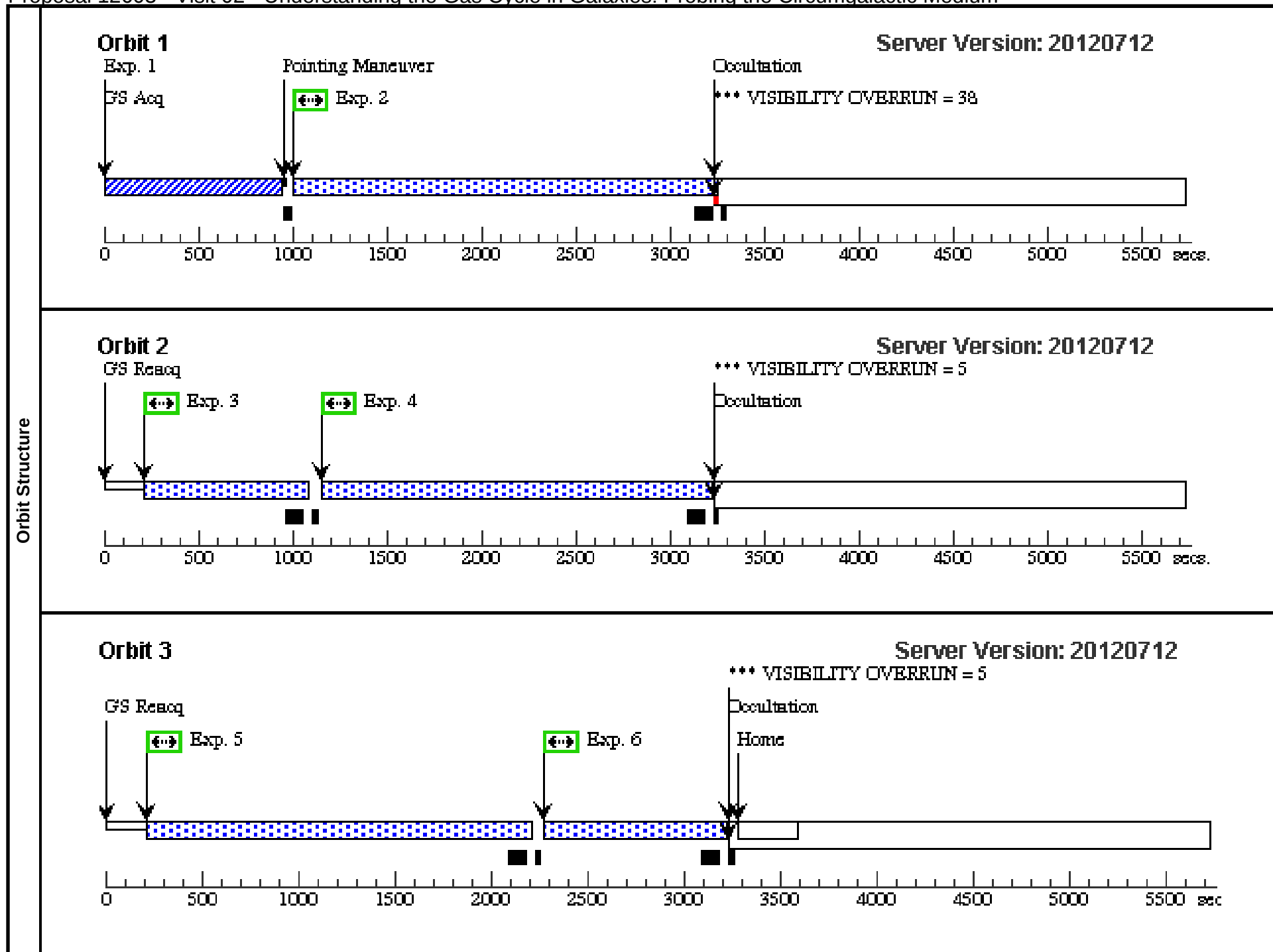


# Proposal 12603 - Visit 02 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 02, scheduling                                                                                                                                   |                         |                                                                                    |                          |                                                 | Thu Jul 26 01:14:21 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                          |                                                 |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                    |                          |                                                 |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                          |                                                 |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                    |                          |                                                 |                              |
| Diagnostics   | (Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 02) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 02) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 02) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                          | Miscellaneous                |
|               | (2)                                                                                                                                                                    | VV2006-J125124.6+055420 | RA: 12 51 24.6545 (192.8527271d)<br>Dec: +05 54 20.21 (5.90561d)<br>Equinox: J2000 | Redshift: 1.37740        | V=17.432<br>FUV mag= 18.7413 & NUV mag= 18.1134 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                          |                                                 |                              |

# Proposal 12603 - Visit 02 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                          | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|---------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (2) VV2006-J125124<br>.6+055420 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs<br>[==>]       | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (2) VV2006-J125124<br>.6+055420 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>58;<br>FLASH=YES |               |        | 2068 Secs<br>[==>]      | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (2) VV2006-J125124<br>.6+055420 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>8;<br>FLASH=YES  |               |        | 818 Secs<br>[==>]       | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (2) VV2006-J125124<br>.6+055420 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs<br>[==>]      | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (2) VV2006-J125124<br>.6+055420 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs<br>[==>]      | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (2) VV2006-J125124<br>.6+055420 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>8;<br>FLASH=YES  |               |        | 828 Secs<br>[==>]       | [3]   |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |



# Proposal 12603 - Visit 03 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|--------------------------|------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 03, completed                                                                                                                                    |                         |                                                                                    |                          |                                                | Thu Jul 26 01:14:24 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                          |                                                |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                         |                                                                                    |                          |                                                |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                          |                                                |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                    |                          |                                                |                              |
| Diagnostics   | (Visit 03) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                |                              |
|               | (Visit 03) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                |                              |
|               | (Visit 03) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                          |                                                |                              |
|               | (Visit 03) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                          |                                                |                              |
|               | (Visit 03) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                          |                                                |                              |
|               | (Visit 03) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                         | Miscellaneous                |
|               | (3)                                                                                                                                                                    | VV2006-J091431.8+083742 | RA: 09 14 31.7765 (138.6324021d)<br>Dec: +08 37 42.69 (8.62852d)<br>Equinox: J2000 | Redshift: 0.6486         | V=17.35<br>FUV mag= 18.7232 & NUV mag= 17.9857 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                          |                                                |                              |

# Proposal 12603 - Visit 03 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

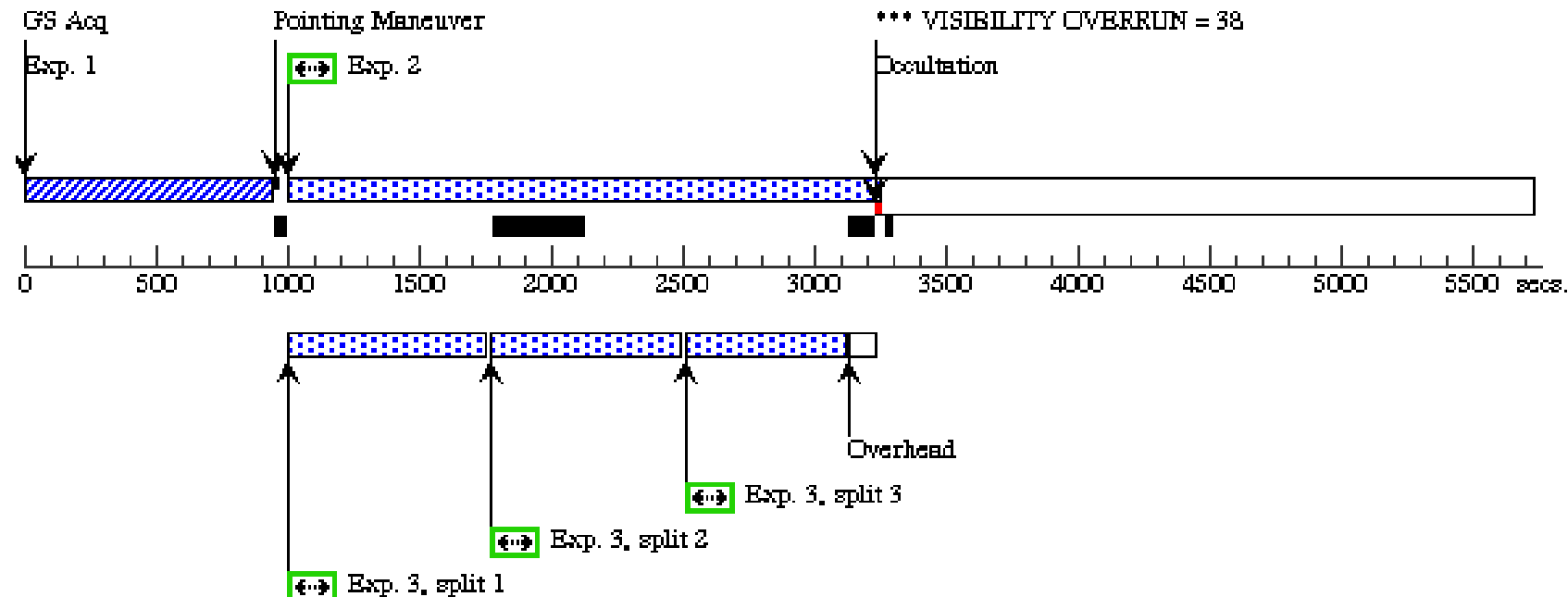
| Exposures | # | Label<br>(ETC Run)     | Target                          | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                                             | Orbit |
|-----------|---|------------------------|---------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|-------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (3) VV2006-J091431<br>.8+083742 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 252 Secs                                                                            |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (3) VV2006-J091431<br>.8+083742 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>58;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 2-3 in Visit 03 | 2068 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 3 |                        | ANY                             | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 03 | 1818 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>609.0 Secs (Split 1)]<br>[==>609.0 Secs (Split 2)]<br>[==>609.0 Secs (Split 3)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (3) VV2006-J091431<br>.8+083742 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>8;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 03 | 817 Secs                                                                            |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 5 |                        | ANY                             | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |               | Prime + Parallel Gro<br>up 4-5 in Visit 03 | 600 Secs                                                                            |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>758.0 Secs ]                                                                    | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (3) VV2006-J091431<br>.8+083742 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 03 | 1950 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 7 |                        | ANY                             | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 03 | 1770 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>598.0 Secs (Split 1)]<br>[==>598.0 Secs (Split 2)]<br>[==>598.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (3) VV2006-J091431<br>.8+083742 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 03 | 1950 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [3]   |
|           | 9 |                        | ANY                             | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 03 | 1602 Secs                                                                           |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            | [==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            |                                                                                     |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |                                            |                                                                                     |       |

# Proposal 12603 - Visit 03 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                  |                        |                 |                                                                                 |                                              |                           |     |
|--|----|--------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|----------------------------------------------|---------------------------|-----|
|  | 10 | (COS.sp.184 (3) VV2006-J091431<br>757) .8+083742 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>7;<br>FLASH=YES | Prime + Parallel Gro<br>up 10-11 in Visit 03 | 827 Secs                  |     |
|  |    |                                                  |                        |                 |                                                                                 |                                              | [==>]                     | [3] |
|  |    |                                                  |                        |                 |                                                                                 |                                              |                           |     |
|  | 11 | ANY                                              | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Gro<br>up 10-11 in Visit 03 | 780 Secs                  |     |
|  |    |                                                  |                        |                 |                                                                                 |                                              | [==>402.0 Secs (Split 1)] |     |
|  |    |                                                  |                        |                 |                                                                                 |                                              | [==>402.0 Secs (Split 2)] | [3] |

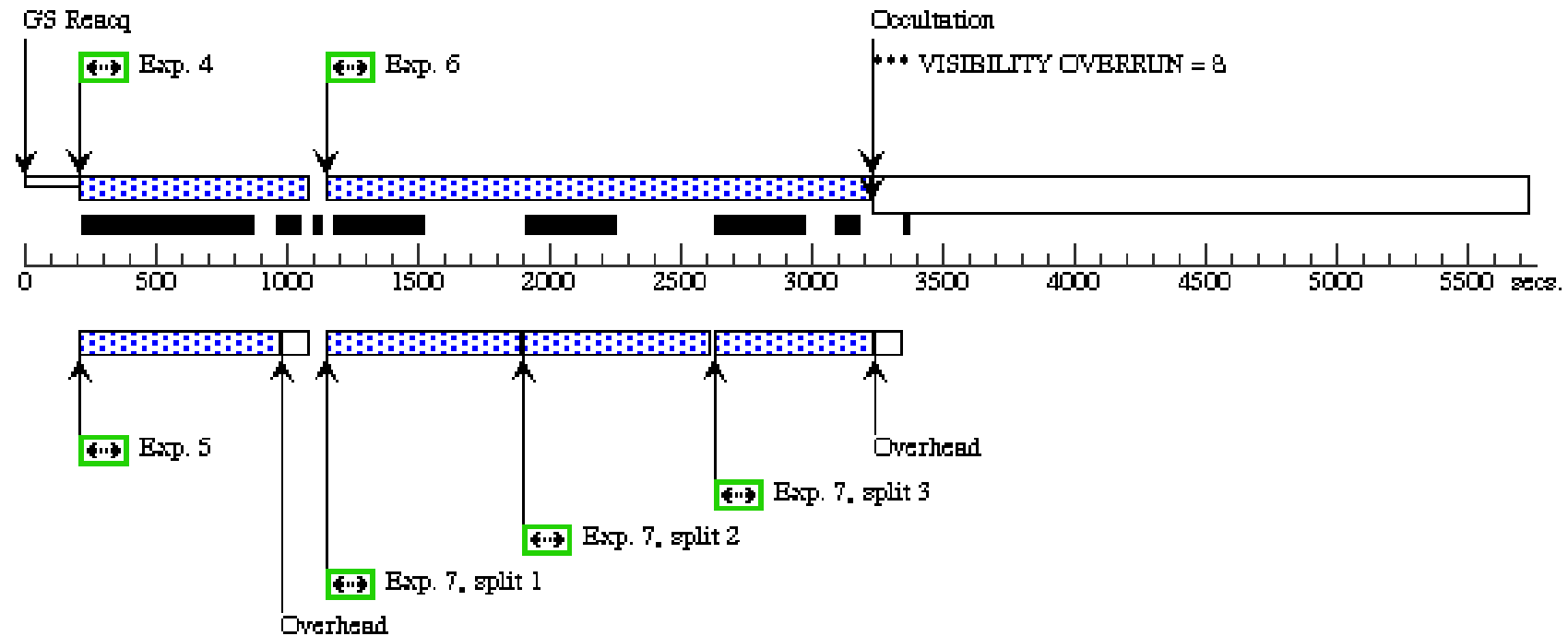
# Orbit 1

Server Version: 20120712



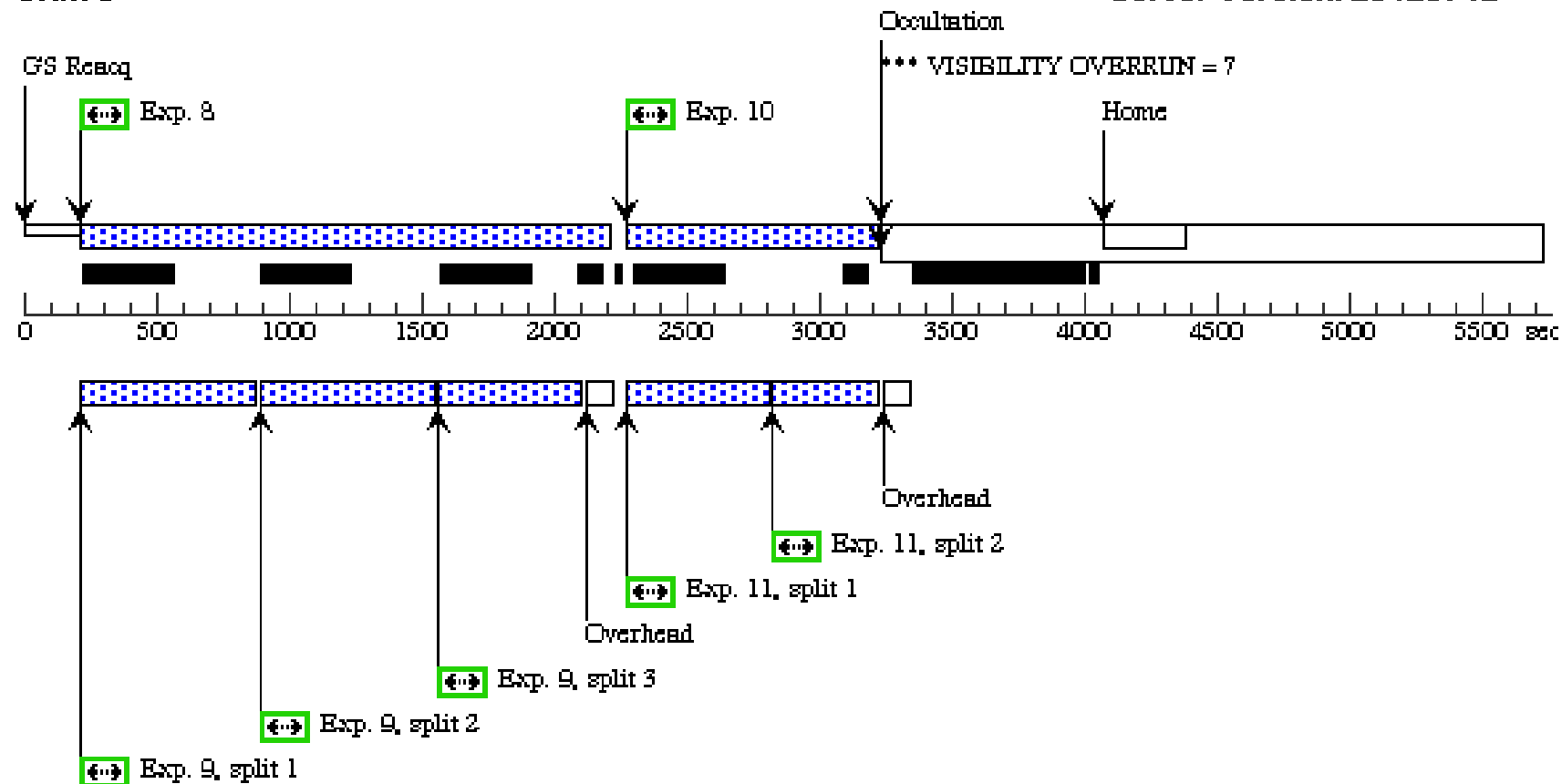
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712

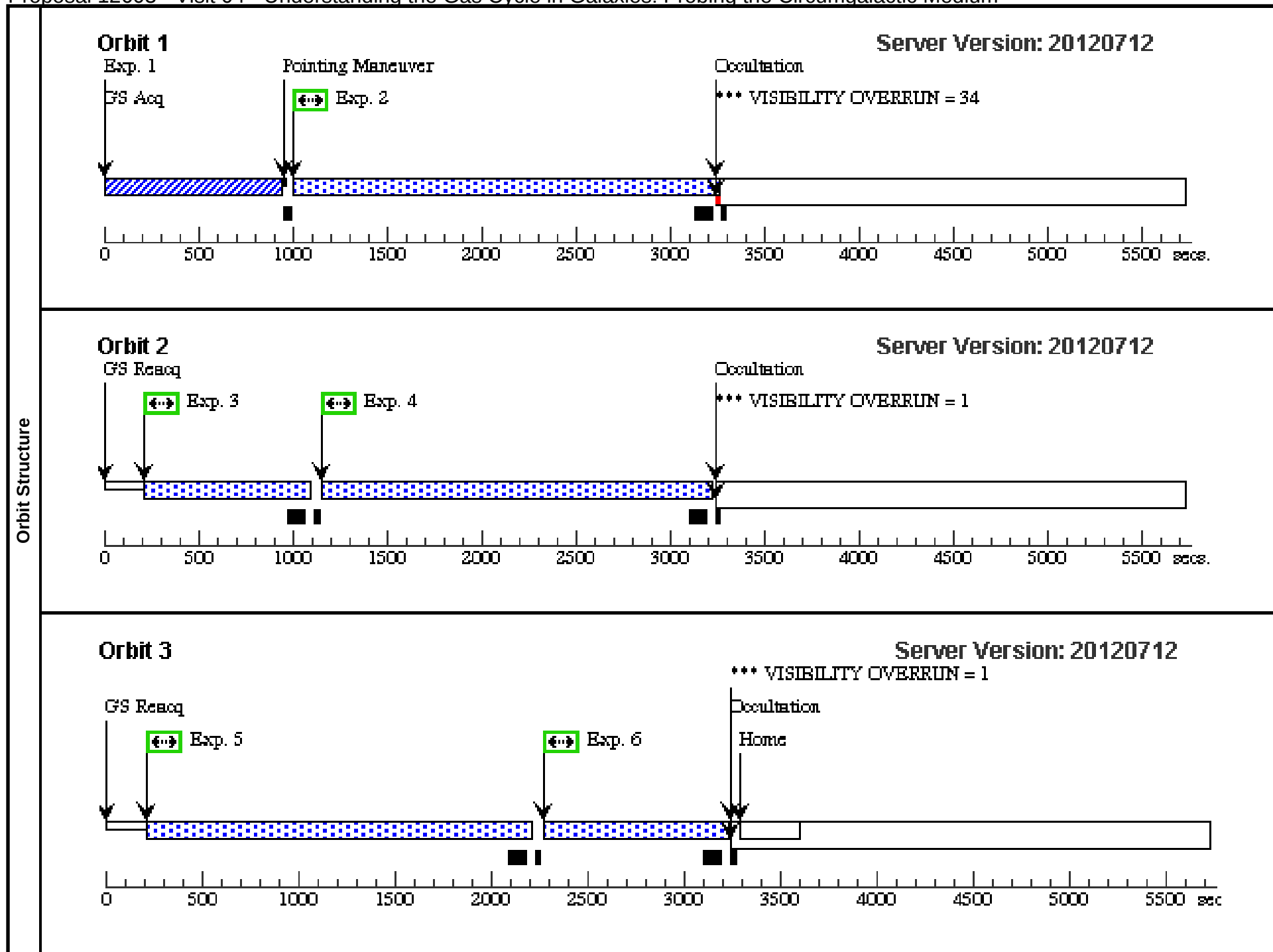


# Proposal 12603 - Visit 04 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                          |                                                                                    |                          |                                              |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|----------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 04, failed                                                                                                                                       |                          |                                                                                    |                          |                                              | Thu Jul 26 01:14:28 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                          |                                              |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                          |                                                                                    |                          |                                              |                              |
|               | Special Requirements: (none)                                                                                                                                           |                          |                                                                                    |                          |                                              |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                          |                                                                                    |                          |                                              |                              |
| Diagnostics   | (Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
|               | (Visit 04) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                          |                                              |                              |
|               | (Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
|               | (Visit 04) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                          |                                              |                              |
|               | (Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
|               | (Visit 04) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                          |                                              |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                       | Miscellaneous                |
|               | (4)                                                                                                                                                                    | SDSS-J093706.85+170021.5 | RA: 09 37 6.8500 (144.2785417d)<br>Dec: +17 00 21.60 (17.00600d)<br>Equinox: J2000 | Redshift: 0.506          | V=17.9<br>FUV mag= 18.7117 & NUV mag= 18.403 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                          |                                              |                              |
|               |                                                                                                                                                                        |                          |                                                                                    |                          |                                              |                              |

# Proposal 12603 - Visit 04 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (4) SDSS-J093706.8<br>5+170021.5 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>65;<br>FLASH=YES |               |        | 2075 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>5;<br>FLASH=YES  |               |        | 825 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
| Exposures | 4 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=72<br>5;<br>FLASH=YES  |               |        | 835 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        |                         |       |

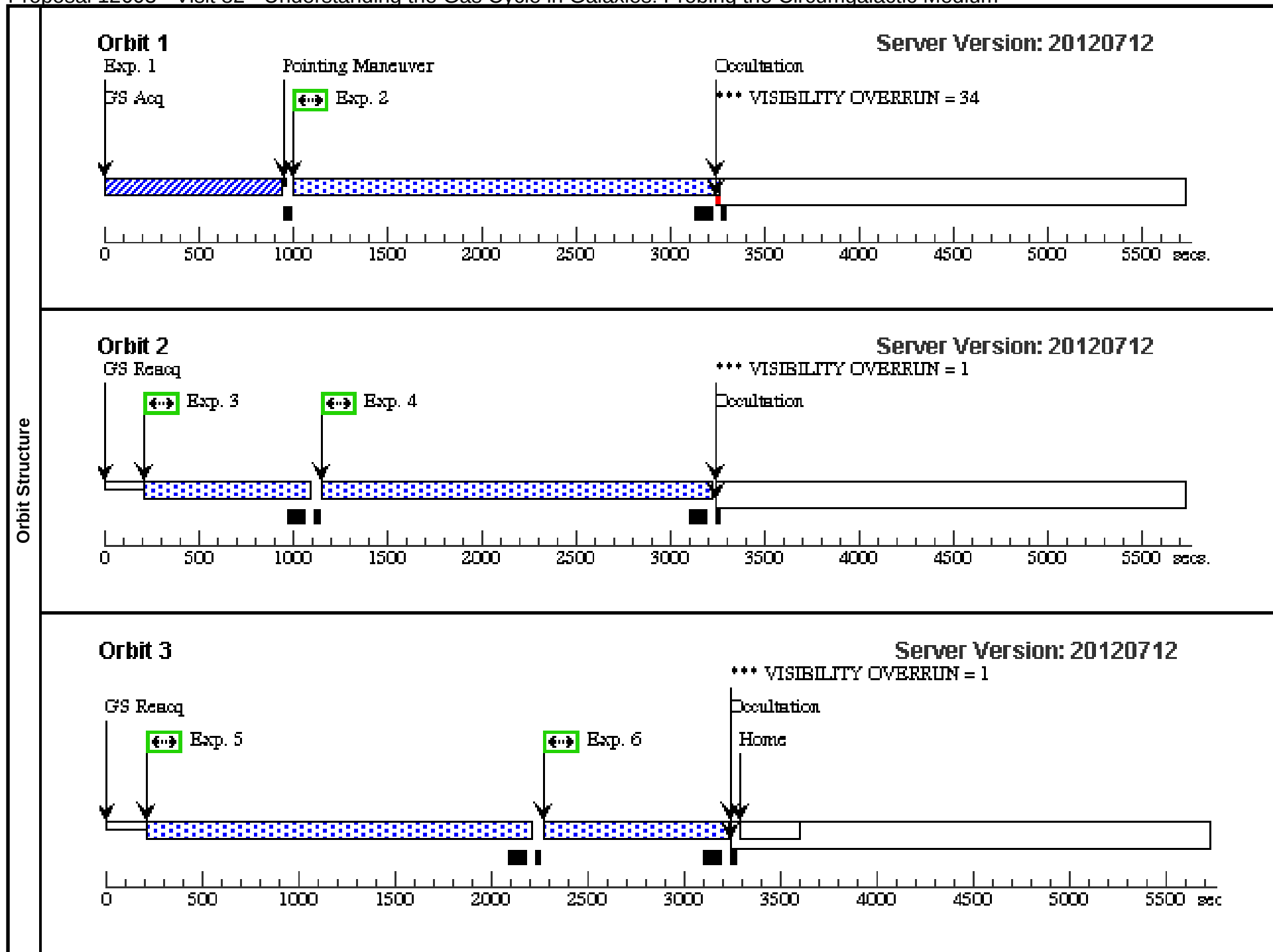


# Proposal 12603 - Visit 82 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                                                |                                                                                                                                                                        |                          |                                                                                    |                          |                                              |                              |
|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|----------------------------------------------|------------------------------|
| Visit                                          | Proposal 12603, Visit 82                                                                                                                                               |                          |                                                                                    |                          |                                              | Thu Jul 26 01:14:32 GMT 2012 |
|                                                | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                          |                                              |                              |
|                                                | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                          |                                                                                    |                          |                                              |                              |
|                                                | Special Requirements: (none)                                                                                                                                           |                          |                                                                                    |                          |                                              |                              |
| Comments: 3-orbit Visit, HOPR copy of visit 04 |                                                                                                                                                                        |                          |                                                                                    |                          |                                              |                              |
| Diagnostics                                    | (Visit 82) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                          |                                              |                              |
|                                                | (Visit 82) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
|                                                | (Visit 82) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                          |                                              |                              |
|                                                | (Visit 82) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
|                                                | (Visit 82) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                          |                                              |                              |
|                                                | (Visit 82) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                              |                              |
| Fixed Targets                                  | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                       | Miscellaneous                |
|                                                | (4)                                                                                                                                                                    | SDSS-J093706.85+170021.5 | RA: 09 37 6.8500 (144.2785417d)<br>Dec: +17 00 21.60 (17.00600d)<br>Equinox: J2000 | Redshift: 0.506          | V=17.9<br>FUV mag= 18.7117 & NUV mag= 18.403 | Reference Frame: ICRS        |
|                                                | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                          |                                              |                              |

# Proposal 12603 - Visit 82 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (4) SDSS-J093706.8<br>5+170021.5 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>65;<br>FLASH=YES |               |        | 2075 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>5;<br>FLASH=YES  |               |        | 825 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
| Exposures | 4 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (4) SDSS-J093706.8<br>5+170021.5 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=72<br>5;<br>FLASH=YES  |               |        | 835 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        |                         |       |

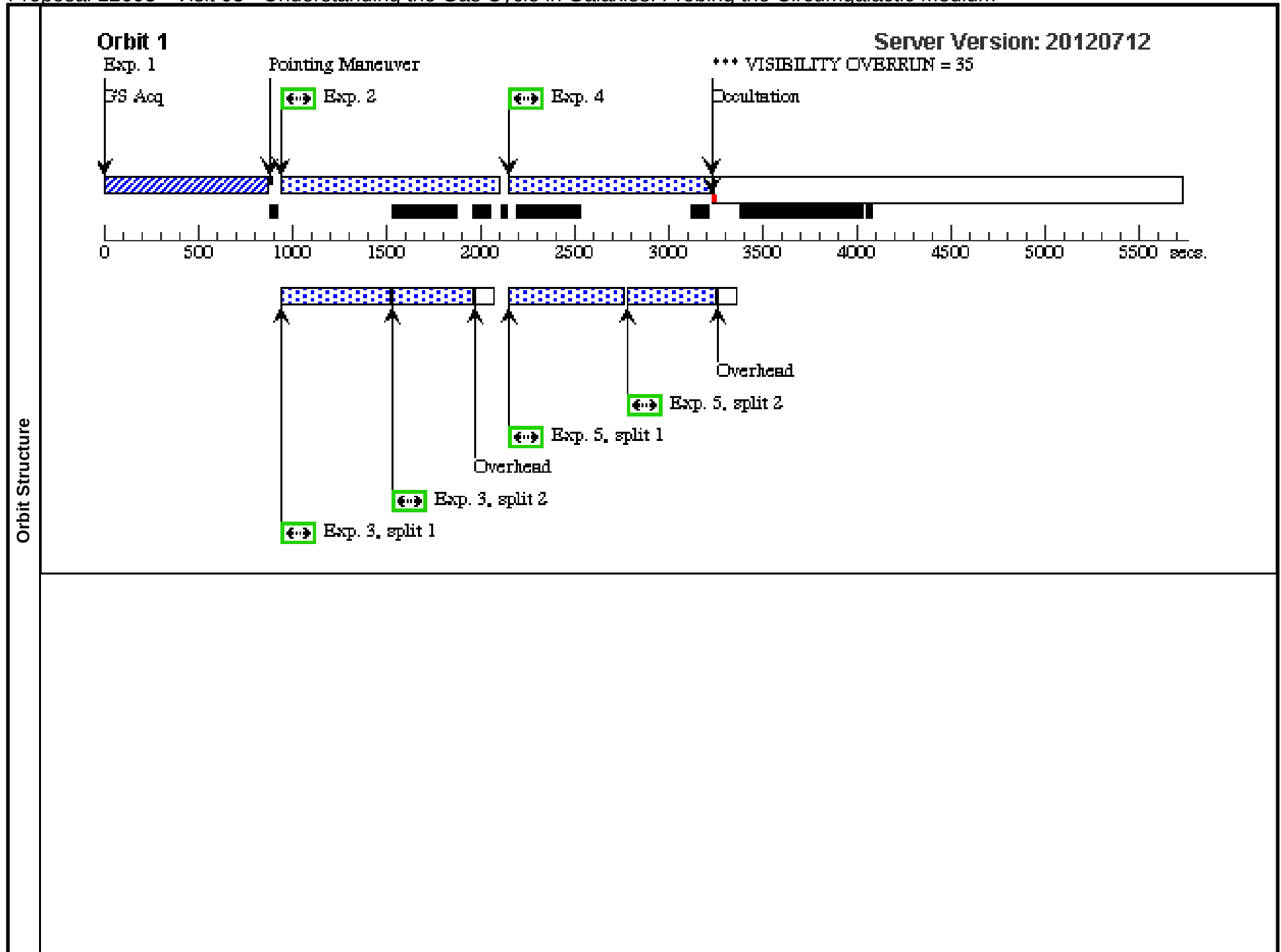


# Proposal 12603 - Visit 05 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                    |                          |                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|------------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 05, completed</b> <span style="float: right;">Thu Jul 26 01:14:35 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                                                                                    |                          |                                                |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 270.0D TO 280.0 D<br><i>Comments: 2-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                                                                                    |                          |                                                |
| Diagnostics   | (Visit 05) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 05) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 05) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. |                          |                                                                                    |                          |                                                |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                    |                          |                                                |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                         |
|               | (5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2MASS-J10131797+0500342  | RA: 10 13 17.9843 (153.3249346d)<br>Dec: +05 00 34.04 (5.00946d)<br>Equinox: J2000 | Redshift: 0.2658         | V=17.973<br>FUV mag= 18.2387 & NUV mag= 18.628 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                                                                                    |                          |                                                |
|               | (55)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSSJ101324.42+050131.71 | RA: 10 13 24.4200 (153.3517500d)<br>Dec: +05 01 31.71 (5.02548d)<br>Equinox: J2000 | Redshift: 0.0464         | V=17.9032<br>Reference Frame: ICRS             |

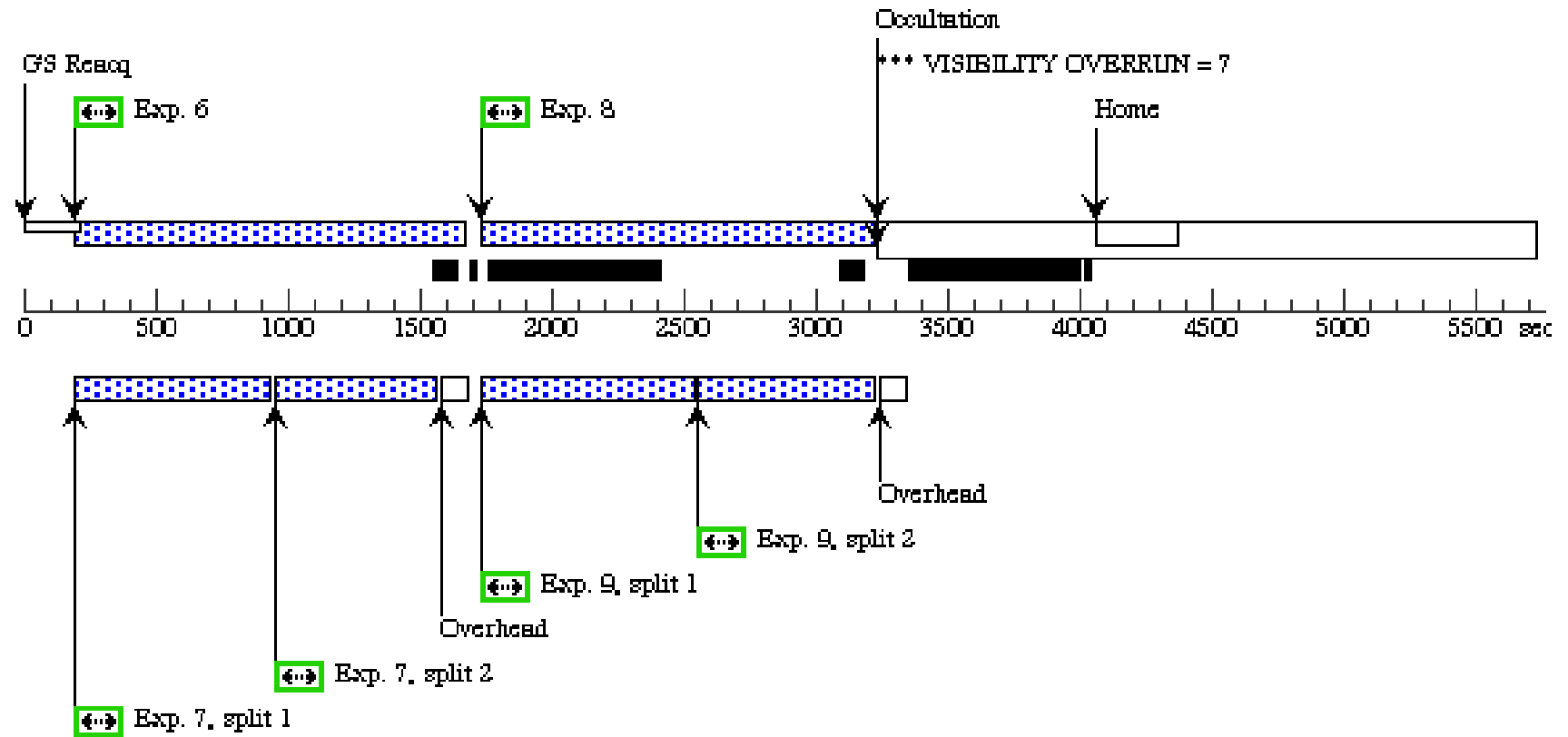
# Proposal 12603 - Visit 05 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                             | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|---------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (5) 2MASS-J101317<br>97+0500342   | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 219 Secs<br>[==>]                                                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (5) 2MASS-J101317<br>97+0500342   | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>3;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 2-3 in Visit 05 | 973 Secs<br>[==>]                                                   | [1]   |
|           | 3 |                        | (55) SDSSJ101324.4<br>2+050131.71 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 05 | 827 Secs<br>[==>430.5 Secs (Split 1)]<br>[==>430.5 Secs (Split 2)]  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (5) 2MASS-J101317<br>97+0500342   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>3;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 05 | 973 Secs<br>[==>]                                                   | [1]   |
|           | 5 |                        | (55) SDSSJ101324.4<br>2+050131.71 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 4-5 in Visit 05 | 870 Secs<br>[==>472.0 Secs (Split 1)]<br>[==>472.0 Secs (Split 2)]  | [1]   |
|           | 6 | (COS.sp.184<br>757)    | (5) 2MASS-J101317<br>97+0500342   | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>50;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 05 | 1360 Secs<br>[==>]                                                  | [2]   |
|           | 7 |                        | (55) SDSSJ101324.4<br>2+050131.71 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 05 | 1200 Secs<br>[==>611.0 Secs (Split 1)]<br>[==>611.0 Secs (Split 2)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (5) 2MASS-J101317<br>97+0500342   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>58;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 05 | 1368 Secs<br>[==>]                                                  | [2]   |
|           | 9 |                        | (55) SDSSJ101324.4<br>2+050131.71 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 05 | 1250 Secs<br>[==>670.0 Secs (Split 1)]<br>[==>670.0 Secs (Split 2)] | [2]   |



## Orbit 2

Server Version: 20120712

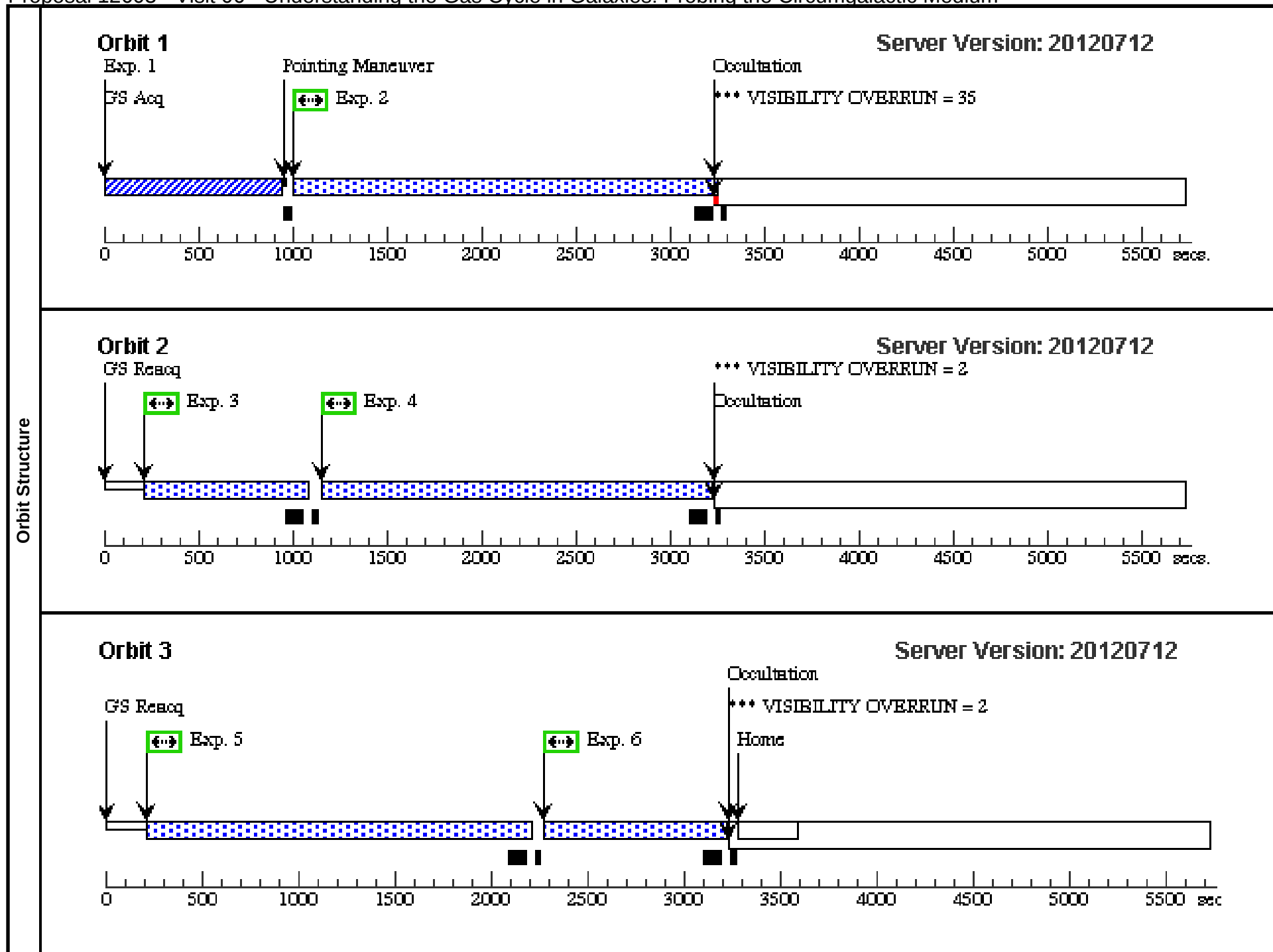


# Proposal 12603 - Visit 06 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                          |                         |                                                                                     |                          |                                                    |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 06, scheduling                                                                                                                                                     |                         |                                                                                     |                          |                                                    | Thu Jul 26 01:14:37 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                                               |                         |                                                                                     |                          |                                                    |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                                                 |                         |                                                                                     |                          |                                                    |                              |
|               | Special Requirements: (none)                                                                                                                                                             |                         |                                                                                     |                          |                                                    |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                                  |                         |                                                                                     |                          |                                                    |                              |
| Diagnostics   | (Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                                   |                         |                                                                                     |                          |                                                    |                              |
|               | (Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                                   |                         |                                                                                     |                          |                                                    |                              |
|               | (Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                                   |                         |                                                                                     |                          |                                                    |                              |
|               | (Visit 06) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                                       |                         |                                                                                     |                          |                                                    |                              |
|               | (Visit 06) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                                               |                         |                                                                                     |                          |                                                    |                              |
|               | (Visit 06) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.                   |                         |                                                                                     |                          |                                                    |                              |
| Fixed Targets | #                                                                                                                                                                                        | Name                    | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                             | Miscellaneous                |
|               | (6)                                                                                                                                                                                      | VV2006-J105956.1+121151 | RA: 10 59 56.1449 (164.9839371d)<br>Dec: +12 11 51.14 (12.19754d)<br>Equinox: J2000 | Redshift: 0.9932         | V=17.75<br>FUV mag= 18.5651 & NUV ma<br>g= 17.8807 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                         |                                                                                     |                          |                                                    |                              |

# Proposal 12603 - Visit 06 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                          | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|---------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (6) VV2006-J105956<br>.1+121151 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs<br>[==>]       | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (6) VV2006-J105956<br>.1+121151 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>61;<br>FLASH=YES |               |        | 2071 Secs<br>[==>]      | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (6) VV2006-J105956<br>.1+121151 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>1;<br>FLASH=YES  |               |        | 821 Secs<br>[==>]       | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (6) VV2006-J105956<br>.1+121151 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs<br>[==>]      | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (6) VV2006-J105956<br>.1+121151 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs<br>[==>]      | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (6) VV2006-J105956<br>.1+121151 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=72<br>1;<br>FLASH=YES  |               |        | 831 Secs<br>[==>]       | [3]   |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |



# Proposal 12603 - Visit 07 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

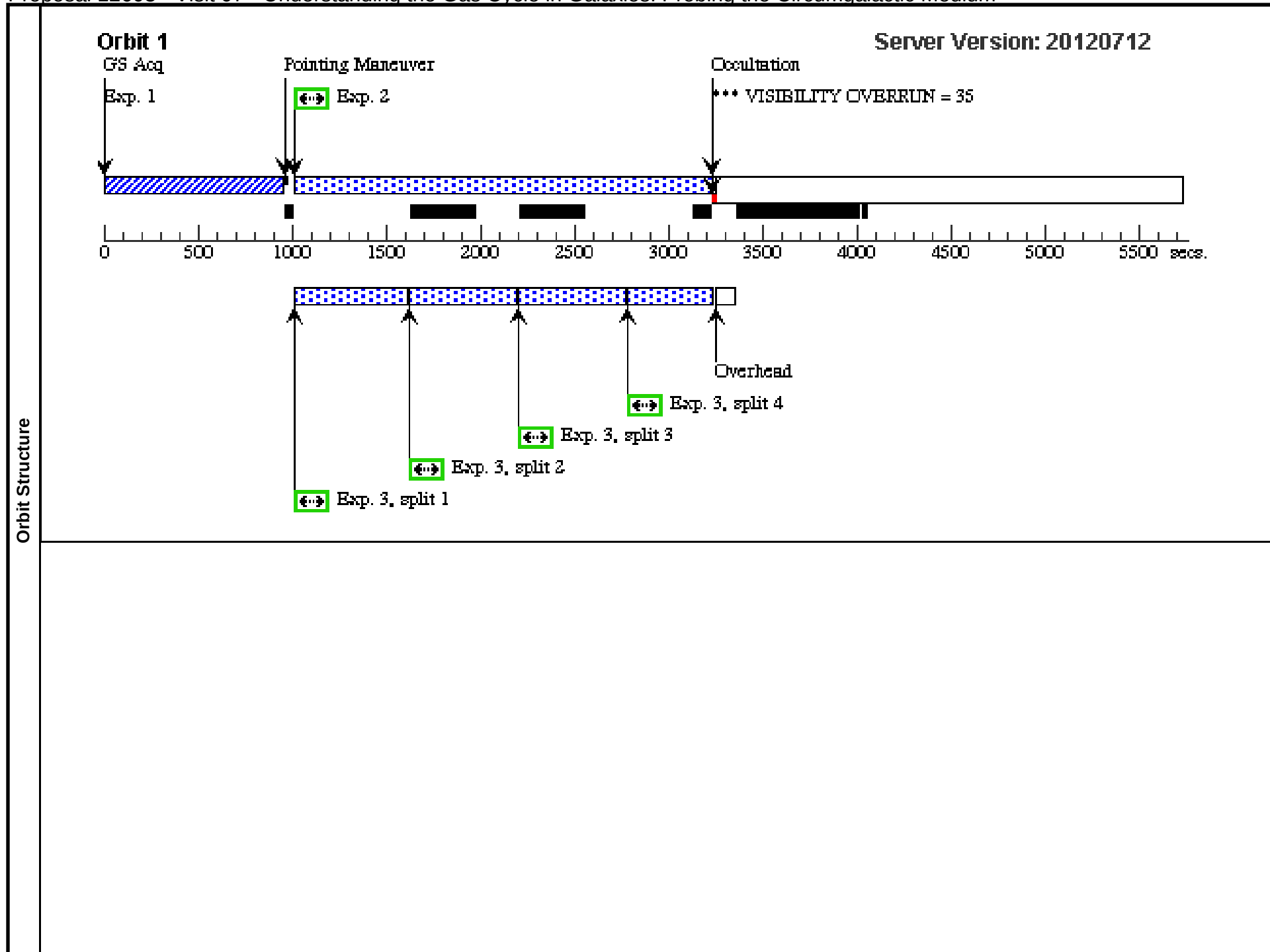
|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 07, scheduling                                                                                                                                   |                          |                                                                                     |                          |                                                   | Thu Jul 26 01:14:40 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                                   |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                                   |                              |
|               | Special Requirements: ORIENT 65.0D TO 95.0 D                                                                                                                           |                          |                                                                                     |                          |                                                   |                              |
|               | Comments: 4-orbit Visit                                                                                                                                                |                          |                                                                                     |                          |                                                   |                              |
| Diagnostics   | (Visit 07) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 07) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                                   |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|               | (7)                                                                                                                                                                    | 2MASS-J10512569+1247462  | RA: 10 51 25.7284 (162.8572017d)<br>Dec: +12 47 46.29 (12.79619d)<br>Equinox: J2000 | Redshift: 1.281          | V=17.6<br><br>FUV mag= 18.9978 & NUV mag= 18.1743 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                                   |                              |
|               | (57)                                                                                                                                                                   | SDSSJ105118.51+124523.50 | RA: 10 51 18.5100 (162.8271250d)<br>Dec: +12 45 23.50 (12.75653d)<br>Equinox: J2000 | Redshift: 0.03997        | V=17.5836                                         | Reference Frame: ICRS        |
|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |

# Proposal 12603 - Visit 07 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                                                                                       | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198675) | (7) 2MASS-J105125<br>69+1247462   | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 257 Secs<br>[==>]                                                                                                             | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (7) 2MASS-J105125<br>69+1247462   | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>51;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 2-3 in Visit 07 | 2061 Secs<br>[==>]                                                                                                            | [1]   |
|           | 3 |                        | (57) SDSSJ105118.5<br>1+124523.50 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=4                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 07 | 1780 Secs<br>[==>452.0 Secs (Split 1)]<br>[==>452.0 Secs (Split 2)]<br>[==>452.0 Secs (Split 3)]<br>[==>452.0 Secs (Split 4)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (7) 2MASS-J105125<br>69+1247462   | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>49;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 4-5 in Visit 07 | 2959 Secs<br>[==>]                                                                                                            | [2]   |
|           | 5 |                        | (57) SDSSJ105118.5<br>1+124523.50 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |                             | Prime + Parallel Gro<br>up 4-5 in Visit 07 | 2600 Secs<br>[==>653.0 Secs (Split 1)]<br>[==>653.0 Secs (Split 2)]<br>[==>653.0 Secs (Split 3)]<br>[==>653.0 Secs (Split 4)] | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (7) 2MASS-J105125<br>69+1247462   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=27<br>79;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 07 | 2889 Secs<br>[==>]                                                                                                            | [3]   |
|           | 7 |                        | (57) SDSSJ105118.5<br>1+124523.50 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 07 | 2600 Secs<br>[==>657.0 Secs (Split 1)]<br>[==>657.0 Secs (Split 2)]<br>[==>657.0 Secs (Split 3)]<br>[==>657.0 Secs (Split 4)] | [3]   |
|           | 8 | (COS.sp.184<br>757)    | (7) 2MASS-J105125<br>69+1247462   | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>49;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 07 | 2959 Secs<br>[==>]                                                                                                            | [4]   |

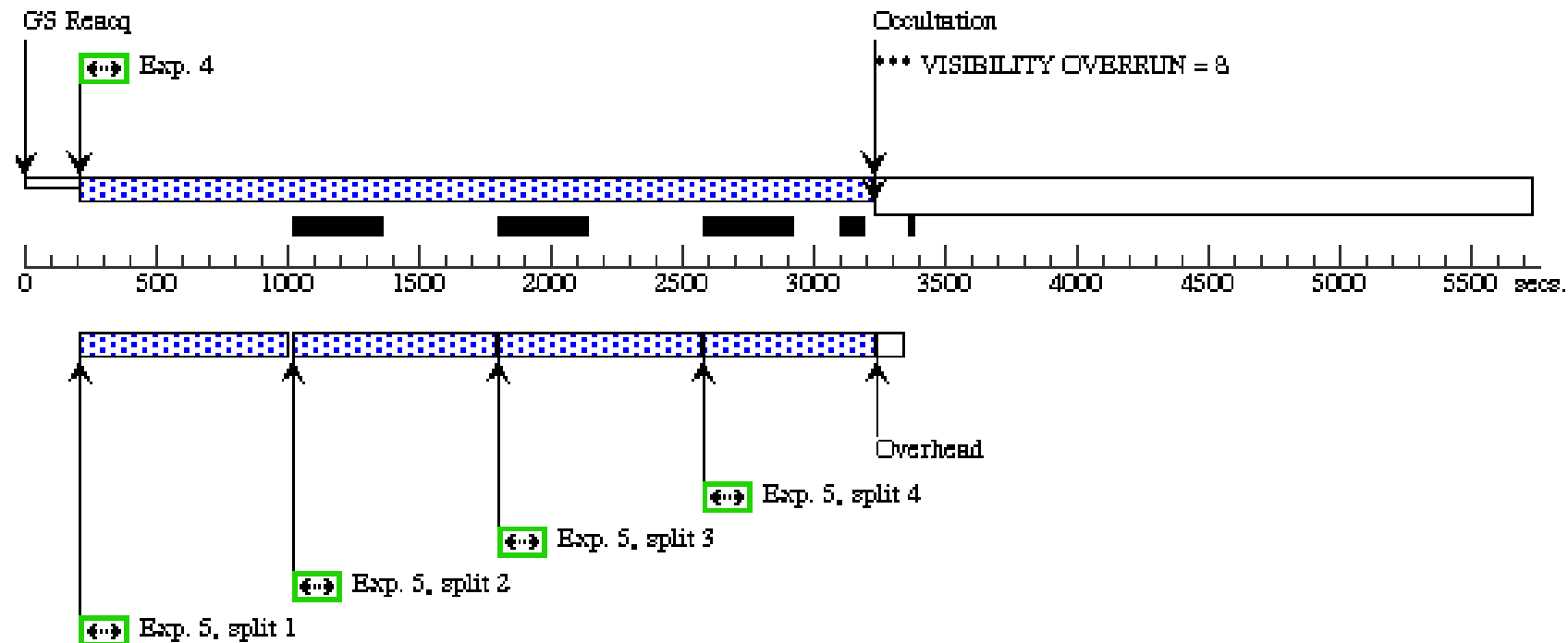
Proposal 12603 - Visit 07 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |   |                                                          |        |            |                                        |                |     |
|--|---|----------------------------------------------------------|--------|------------|----------------------------------------|----------------|-----|
|  | 9 | (57) SDSSJ105118.5 WFC3/UVIS, ACCUM, UVIS<br>1+124523.50 | F350LP | CR-SPLIT=4 | Prime + Parallel Group 8-9 in Visit 07 | 2600 Secs      | [4] |
|  |   |                                                          |        |            |                                        | [==>(Split 1)] |     |
|  |   |                                                          |        |            |                                        | [==>(Split 2)] |     |
|  |   |                                                          |        |            |                                        | [==>(Split 3)] |     |
|  |   |                                                          |        |            |                                        | [==>(Split 4)] |     |



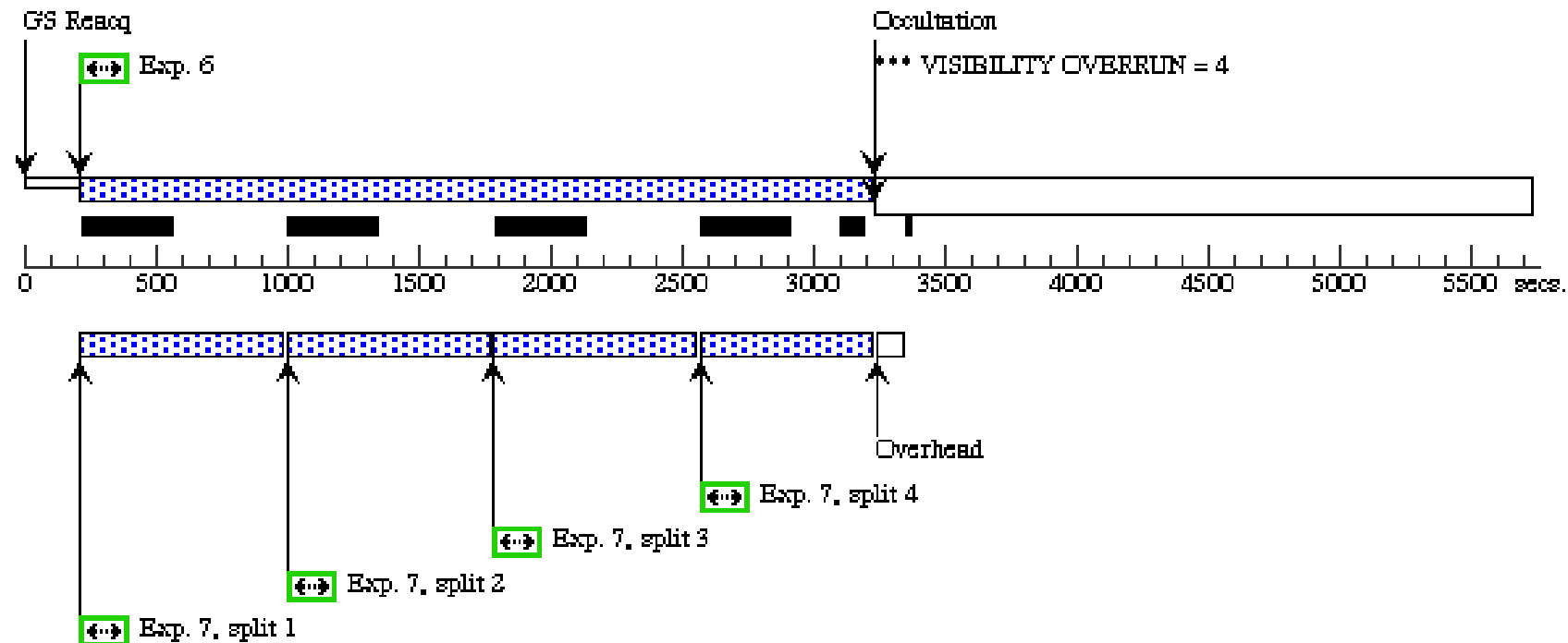
## Orbit 2

Server Version: 20120712



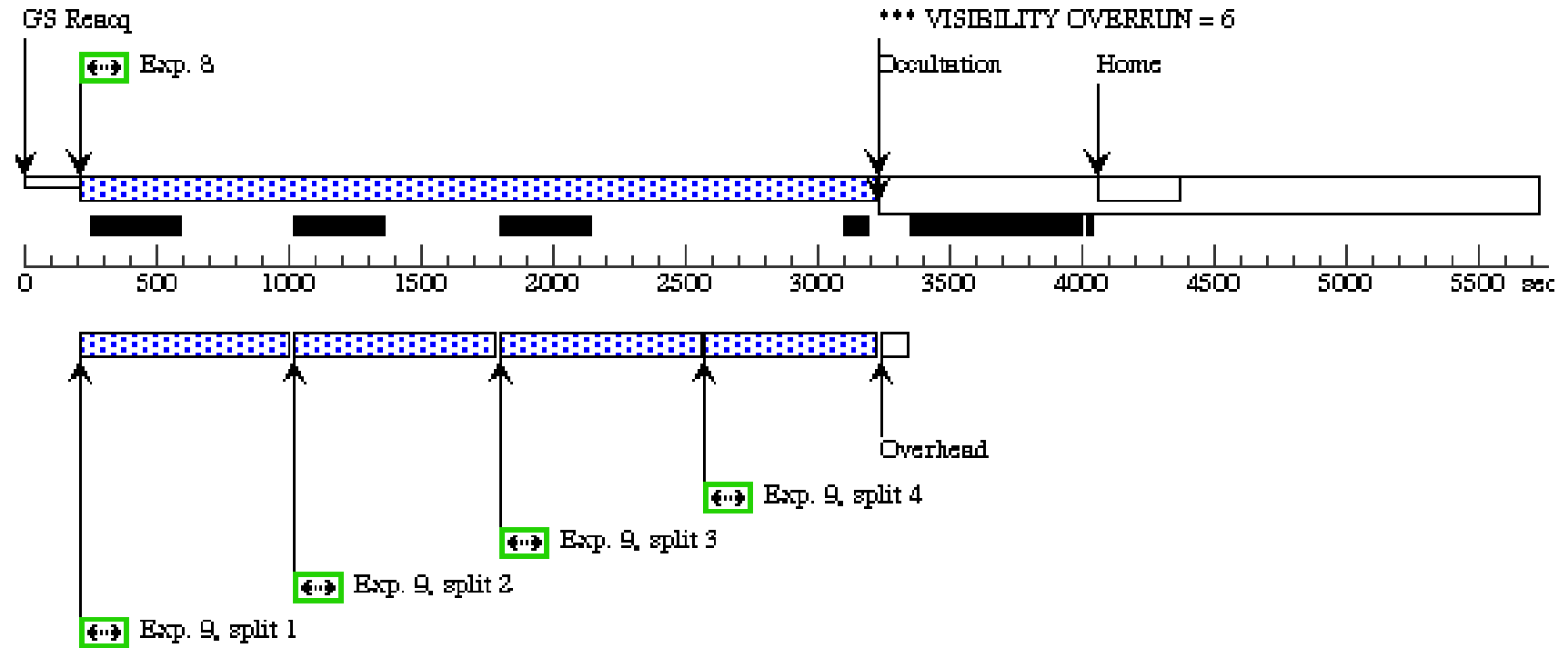
### Orbit 3

Server Version: 20120712



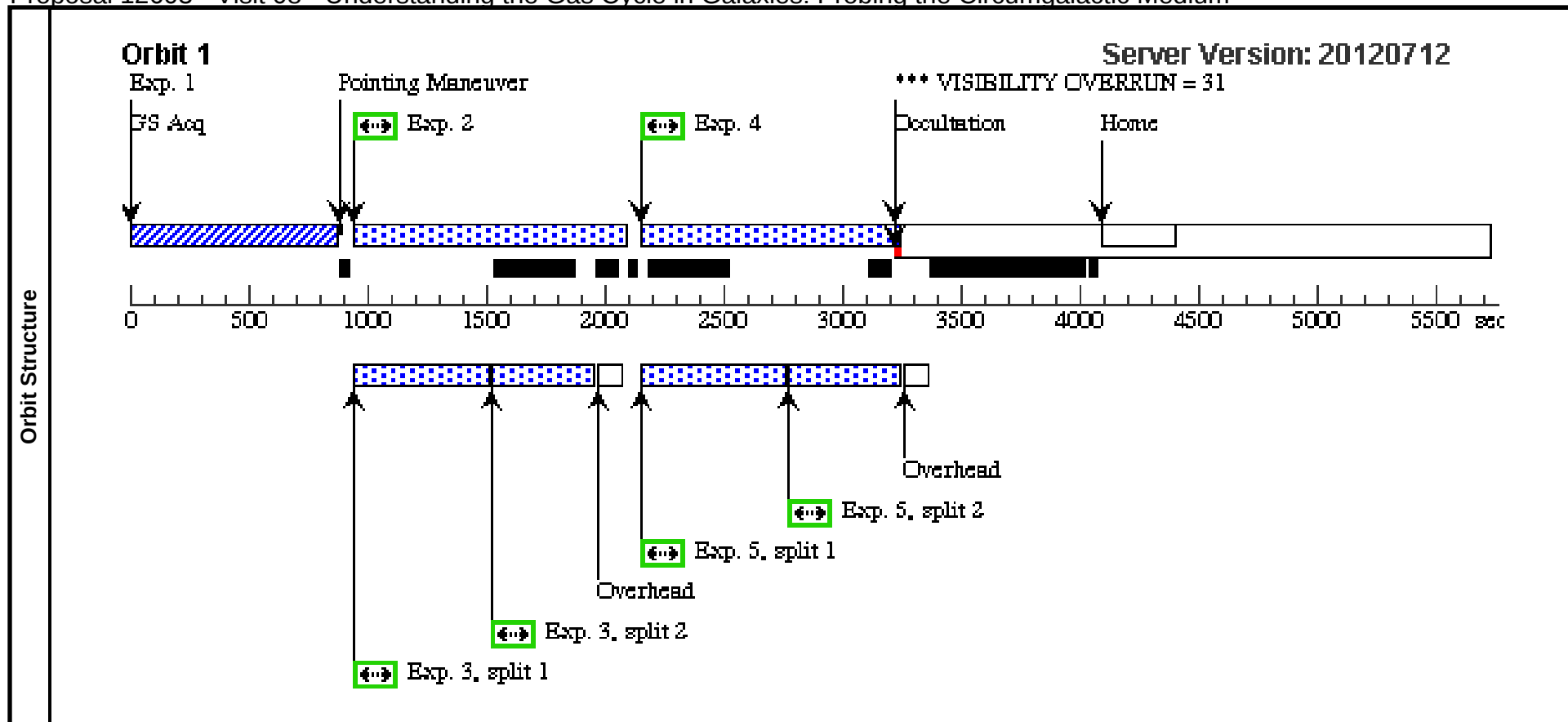
# Orbit 4

Server Version: 20120712



# Proposal 12603 - Visit 08 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------|-------------------------|--------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------|----------------------------------------|---------------------------|-----|------------------------------|
| Visit                                            | Proposal 12603, Visit 08, completed                                                                                                                                    |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     | Thu Jul 26 01:14:45 GMT 2012 |
|                                                  | Diagnostic Status: Warning                                                                                                                                             |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | Special Requirements: ORIENT 280.0D TO 300.0 D                                                                                                                         |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
| Comments: First Visit of 2, paired with Visit 80 |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
| Diagnostics                                      | (Visit 08) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | (Visit 08) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | (Visit 08) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | (Visit 08) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
| Fixed Targets                                    | #                                                                                                                                                                      | Name                          | Target Coordinates                                                                 |                         | Targ. Coord. Corrections |                                                                             | Fluxes                                              |                                        | Miscellaneous             |     |                              |
|                                                  | (8)                                                                                                                                                                    | 2MASS-J14294076+0321257       | RA: 14 29 40.7445 (217.4197687d)<br>Dec: +03 21 25.83 (3.35718d)<br>Equinox: J2000 |                         | Redshift: 0.2531         |                                                                             | V=18.313<br><br>FUV mag= 18.1243 & NUV mag= 18.2414 |                                        | Reference Frame: ICRS     |     |                              |
|                                                  | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        |                           |     |                              |
|                                                  | (58)                                                                                                                                                                   | SDSSJ143001.87+032352.12      | RA: 14 30 1.8700 (217.5077917d)<br>Dec: +03 23 52.12 (3.39781d)<br>Equinox: J2000  |                         | Redshift: 0.03330        |                                                                             | V=18.2107                                           |                                        | Reference Frame: ICRS     |     |                              |
| Exposures                                        | #                                                                                                                                                                      | Label (ETC Run)               | Target                                                                             | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                | Special Reqs.                                       | Groups                                 | Exp. Time/[Actual Dur.]   |     | Orbit                        |
|                                                  | 1                                                                                                                                                                      | Target Acq (198668)           | (8) 2MASS-J14294076+0321257                                                        | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                             |                                                     |                                        | 219 Secs                  |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        | [==>]                     |     | [1]                          |
|                                                  | 2                                                                                                                                                                      | (COS.sp.184 757)              | (8) 2MASS-J14294076+0321257                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=859;<br>FLASH=YES |                                                     | Prime + Parallel Group 2-3 in Visit 08 | 969 Secs                  |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        | [==>]                     |     | [1]                          |
|                                                  | 3                                                                                                                                                                      |                               | (58) SDSSJ143001.87+032352.12                                                      | WFC3/UVIS, ACCUM, UVIS  | F200LP                   | CR-SPLIT=2                                                                  |                                                     | Prime + Parallel Group 2-3 in Visit 08 | 800 Secs                  |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        | [==>429.0 Secs (Split 1)] |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        | [==>429.0 Secs (Split 2)] |     | [1]                          |
|                                                  | 4                                                                                                                                                                      | (COS.sp.184 757)              | (8) 2MASS-J14294076+0321257                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=859;<br>FLASH=YES |                                                     | Prime + Parallel Group 4-5 in Visit 08 | 969 Secs                  |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     |                                        | [==>]                     |     | [1]                          |
| 5                                                |                                                                                                                                                                        | (58) SDSSJ143001.87+032352.12 | WFC3/UVIS, ACCUM, UVIS                                                             | F350LP                  | CR-SPLIT=2               |                                                                             | Prime + Parallel Group 4-5 in Visit 08              | 900 Secs                               |                           |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     | [==>470.0 Secs (Split 1)]              |                           |     |                              |
|                                                  |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                             |                                                     | [==>470.0 Secs (Split 2)]              |                           | [1] |                              |

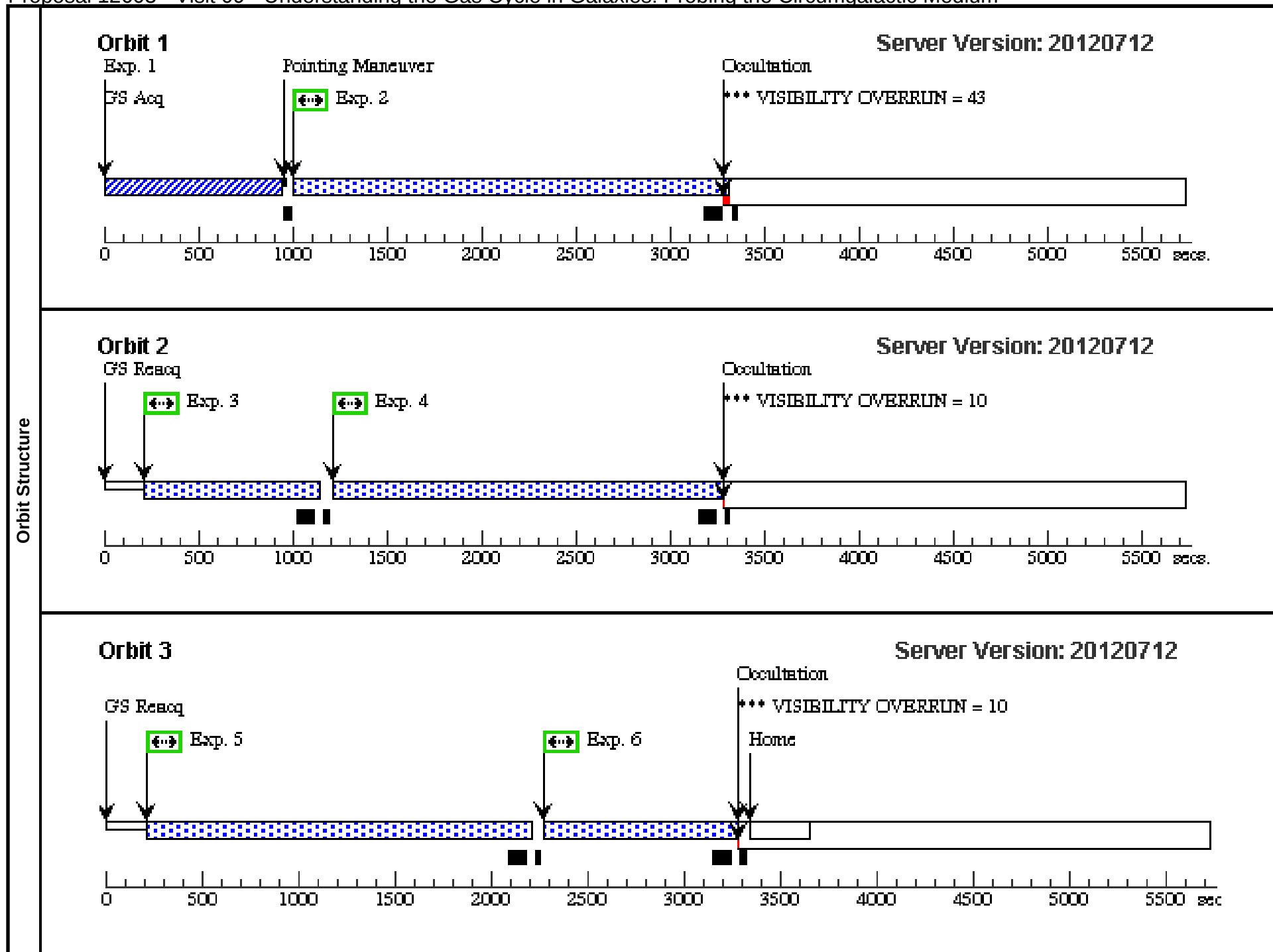


# Proposal 12603 - Visit 09 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                     |                          |                                                       |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 09, completed                                                                                                                                    |                         |                                                                                     |                          |                                                       | Thu Jul 26 01:14:46 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                     |                          |                                                       |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                     |                          |                                                       |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                     |                          |                                                       |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                     |                          |                                                       |                              |
| Diagnostics   | (Visit 09) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                     |                          |                                                       |                              |
|               | (Visit 09) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                     |                          |                                                       |                              |
|               | (Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                          |                                                       |                              |
|               | (Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                          |                                                       |                              |
|               | (Visit 09) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                     |                          |                                                       |                              |
|               | (Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                          |                                                       |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                                | Miscellaneous                |
|               | (9)                                                                                                                                                                    | 2MASS-J09512393+3542490 | RA: 09 51 23.9256 (147.8496900d)<br>Dec: +35 42 48.87 (35.71358d)<br>Equinox: J2000 | Redshift: 0.3983         | V=16.3<br><br>FUV mag= 18.7377 & NUV ma<br>g= 18.6235 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                     |                          |                                                       |                              |

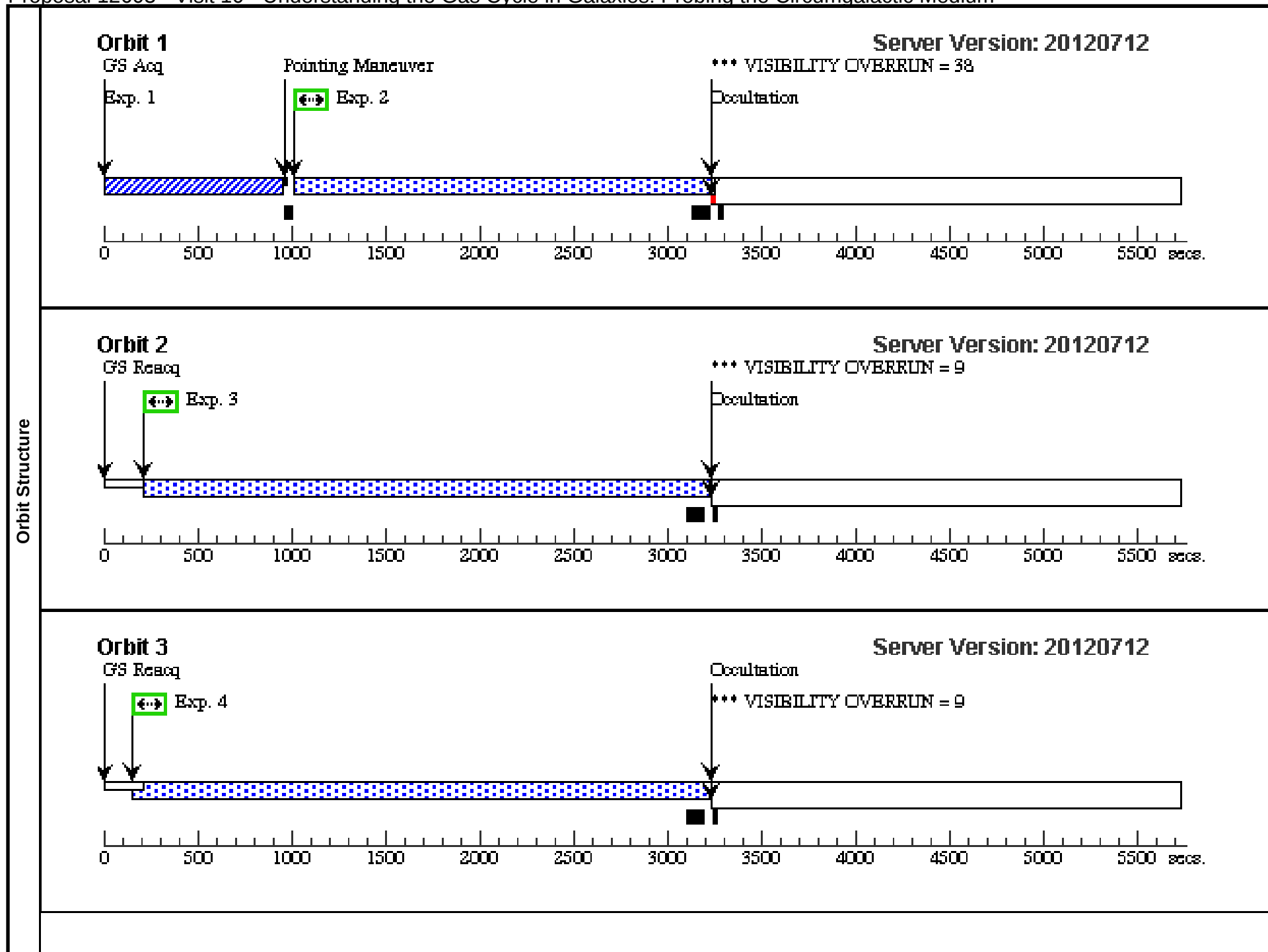
# Proposal 12603 - Visit 09 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

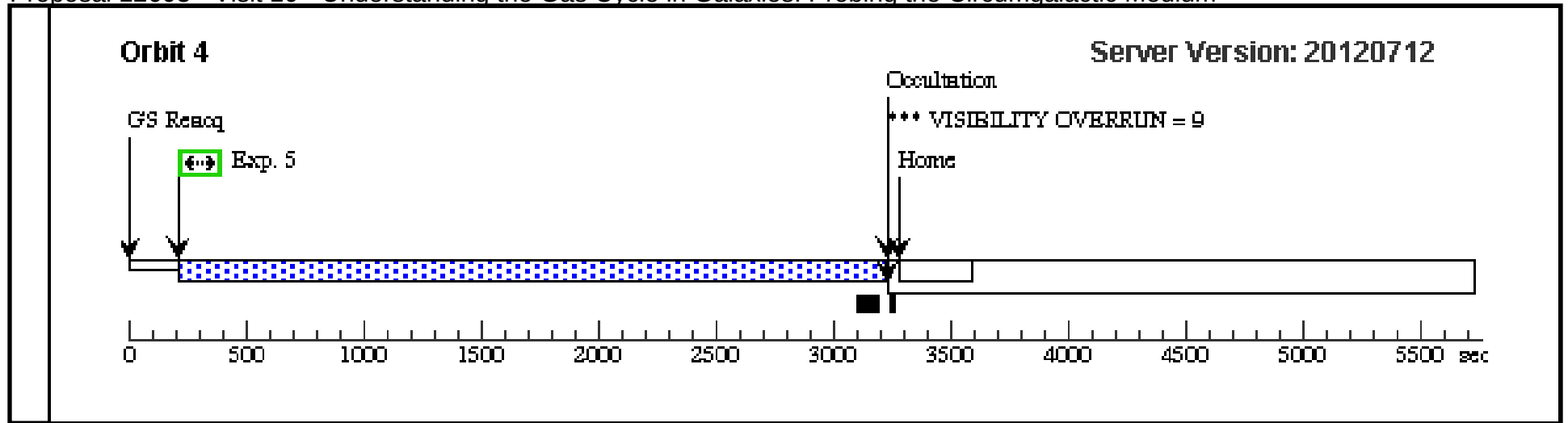
| Exposures | # | Label<br>(ETC Run)     | Target                          | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|---------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (9) 2MASS-J095123<br>93+3542490 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (9) 2MASS-J095123<br>93+3542490 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=20<br>17;<br>FLASH=YES |               |        | 2127 Secs               |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (9) 2MASS-J095123<br>93+3542490 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=76<br>7;<br>FLASH=YES  |               |        | 877 Secs                |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
| Exposures | 4 | (COS.sp.184<br>757)    | (9) 2MASS-J095123<br>93+3542490 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (9) 2MASS-J095123<br>93+3542490 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (9) 2MASS-J095123<br>93+3542490 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=77<br>7;<br>FLASH=YES  |               |        | 887 Secs                |       |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           |   |                        |                                 |                         |                 |                                                                                  |               |        |                         |       |



# Proposal 12603 - Visit 10 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|-------------------------|--------------------------|-------------------------------------------------------------------------------|------------------------------------------------|--------|-------------------------|-----|------------------------------|
| Visit                   | Proposal 12603, Visit 10, completed                                                                                                                                    |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     | Thu Jul 26 01:14:49 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
| Comments: 4-orbit Visit |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
| Diagnostics             | (Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
|                         | (Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 |                         | Targ. Coord. Corrections |                                                                               | Fluxes                                         |        | Miscellaneous           |     |                              |
|                         | (10)                                                                                                                                                                   | VV2006-J105910.9+051935 | RA: 10 59 10.8941 (164.7953921d)<br>Dec: +05 19 35.46 (5.32652d)<br>Equinox: J2000 |                         | Redshift: 0.7543         |                                                                               | V=17.58<br>FUV mag= 18.9874 & NUV mag= 18.0781 |        | Reference Frame: ICRS   |     |                              |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                         |                          |                                                                               |                                                |        |                         |     |                              |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)         | Target                                                                             | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                  | Special Reqs.                                  | Groups | Exp. Time/[Actual Dur.] |     | Orbit                        |
|                         | 1                                                                                                                                                                      | Target Acq (198675)     | (10) VV2006-J10591 0.9+051935                                                      | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                               |                                                |        | 257 Secs                |     |                              |
|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        | [==>]                   |     | [1]                          |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)        | (10) VV2006-J10591 0.9+051935                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19 48;<br>FLASH=YES |                                                |        | 2058 Secs               |     |                              |
|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        | [==>]                   |     | [1]                          |
|                         | 3                                                                                                                                                                      | (COS.sp.184 757)        | (10) VV2006-J10591 0.9+051935                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A          | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28 46;<br>FLASH=YES |                                                |        | 2956 Secs               |     |                              |
|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        | [==>]                   |     | [2]                          |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)        | (10) VV2006-J10591 0.9+051935                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=28 46;<br>FLASH=YES |                                                |        | 2956 Secs               |     |                              |
|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                |        | [==>]                   |     | [3]                          |
|                         | 5                                                                                                                                                                      | (COS.sp.184 757)        | (10) VV2006-J10591 0.9+051935                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28 46;<br>FLASH=YES |                                                |        | 2956 Secs               |     |                              |
|                         |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                               |                                                | [==>]  |                         | [4] |                              |



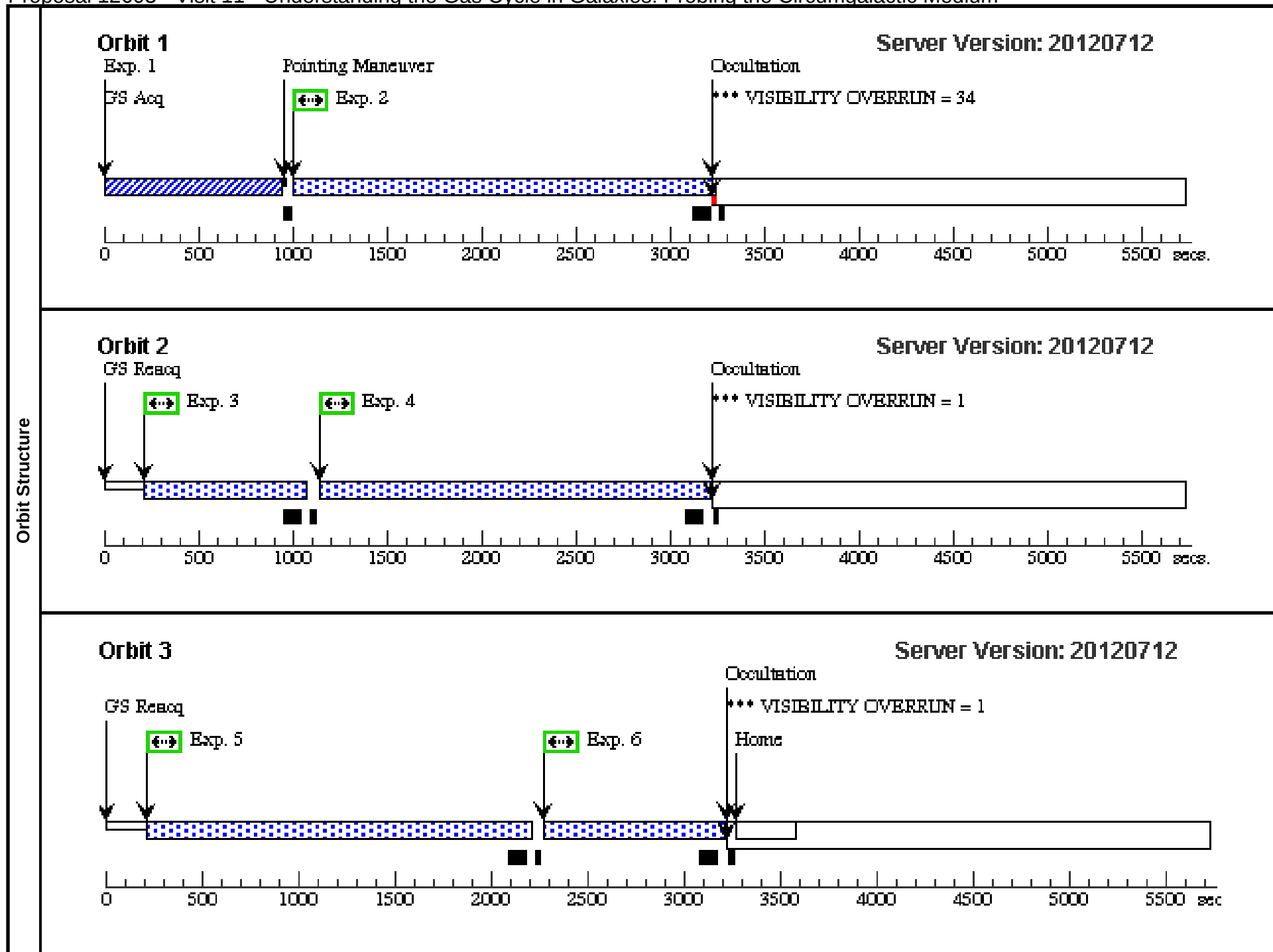


# Proposal 12603 - Visit 11 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                   |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 11, scheduled                                                                                                                                    |                         |                                                                                    |                          |                                                   | Thu Jul 26 01:14:53 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                          |                                                   |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                    |                          |                                                   |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                          |                                                   |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                    |                          |                                                   |                              |
| Diagnostics   | (Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                   |                              |
|               | (Visit 11) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                          |                                                   |                              |
|               | (Visit 11) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                          |                                                   |                              |
|               | (Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                   |                              |
|               | (Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                   |                              |
|               | (Visit 11) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                          |                                                   |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|               | (11)                                                                                                                                                                   | SDSS-J151237.05+012846. | RA: 15 12 37.1500 (228.1547917d)<br>Dec: +01 28 46.00 (1.47944d)<br>Equinox: J2000 | Redshift: 0.2654         | V=17.8<br><br>FUV mag= 18.7731 & NUV mag= 18.5441 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                          |                                                   |                              |

# Proposal 12603 - Visit 11 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (11) SDSS-J151237.<br>05+012846. | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (11) SDSS-J151237.<br>05+012846. | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>50;<br>FLASH=YES |               |        | 2060 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (11) SDSS-J151237.<br>05+012846. | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>0;<br>FLASH=YES  |               |        | 810 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (11) SDSS-J151237.<br>05+012846. | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (11) SDSS-J151237.<br>05+012846. | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (11) SDSS-J151237.<br>05+012846. | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>0;<br>FLASH=YES  |               |        | 820 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |

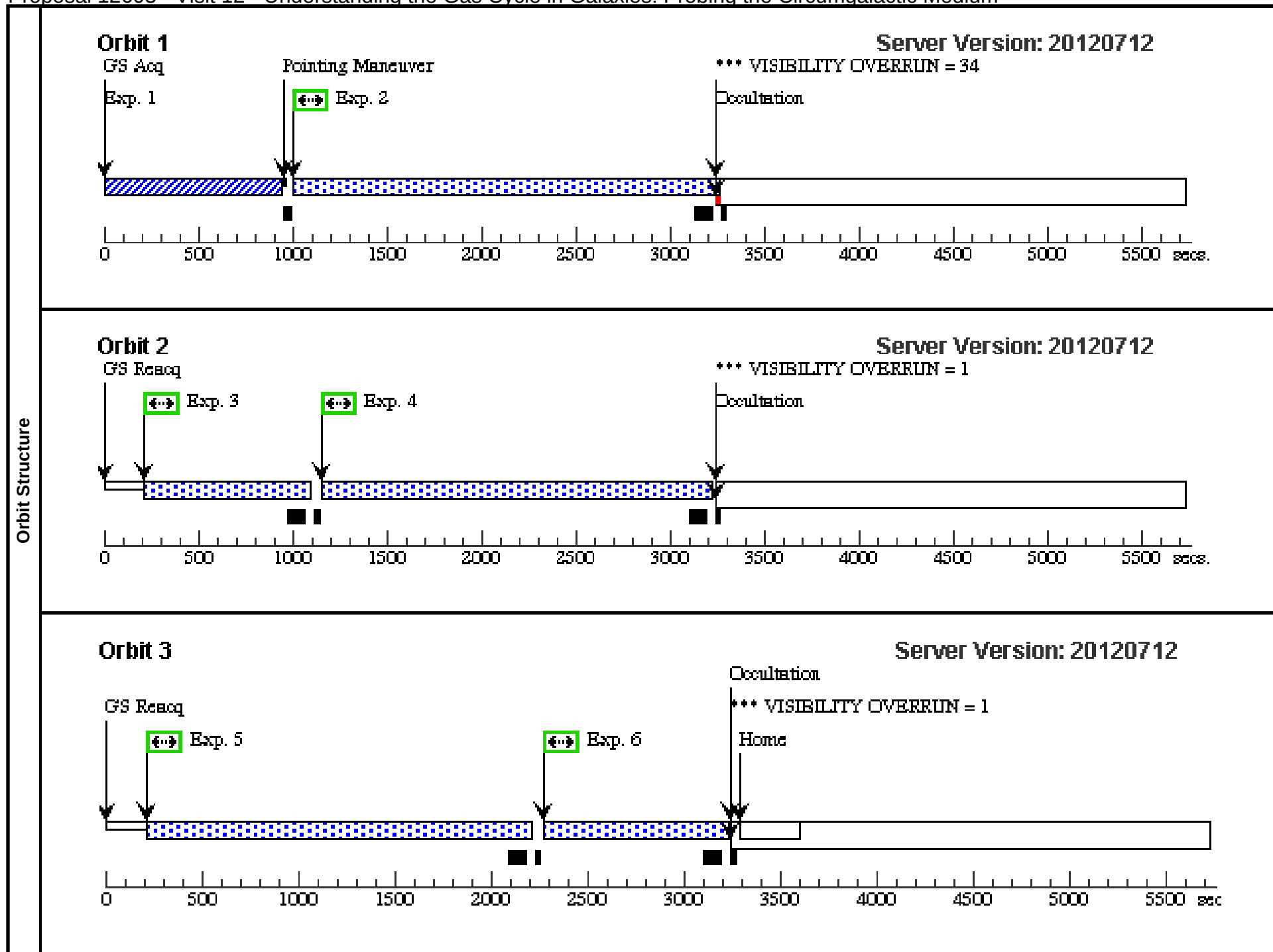


## Proposal 12603 - Visit 12 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                               |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 12, completed                                                                                                                                    |                          |                                                                                     |                          |                                               | Thu Jul 26 01:14:57 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                               |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                          |                                                                                     |                          |                                               |                              |
|               | Special Requirements: (none)                                                                                                                                           |                          |                                                                                     |                          |                                               |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                          |                                                                                     |                          |                                               |                              |
| Diagnostics   | (Visit 12) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                               |                              |
|               | (Visit 12) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                               |                              |
|               | (Visit 12) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                               |                              |
|               | (Visit 12) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                               |                              |
|               | (Visit 12) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                               |                              |
|               | (Visit 12) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                               |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        | Miscellaneous                |
|               | (12)                                                                                                                                                                   | SDSS-J113137.16+155645.3 | RA: 11 31 37.1630 (172.9048458d)<br>Dec: +15 56 45.34 (15.94593d)<br>Equinox: J2000 | Redshift: 0.1829         | V=17.8<br>FUV mag= 18.8234 & NUV mag= 18.7792 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                               |                              |

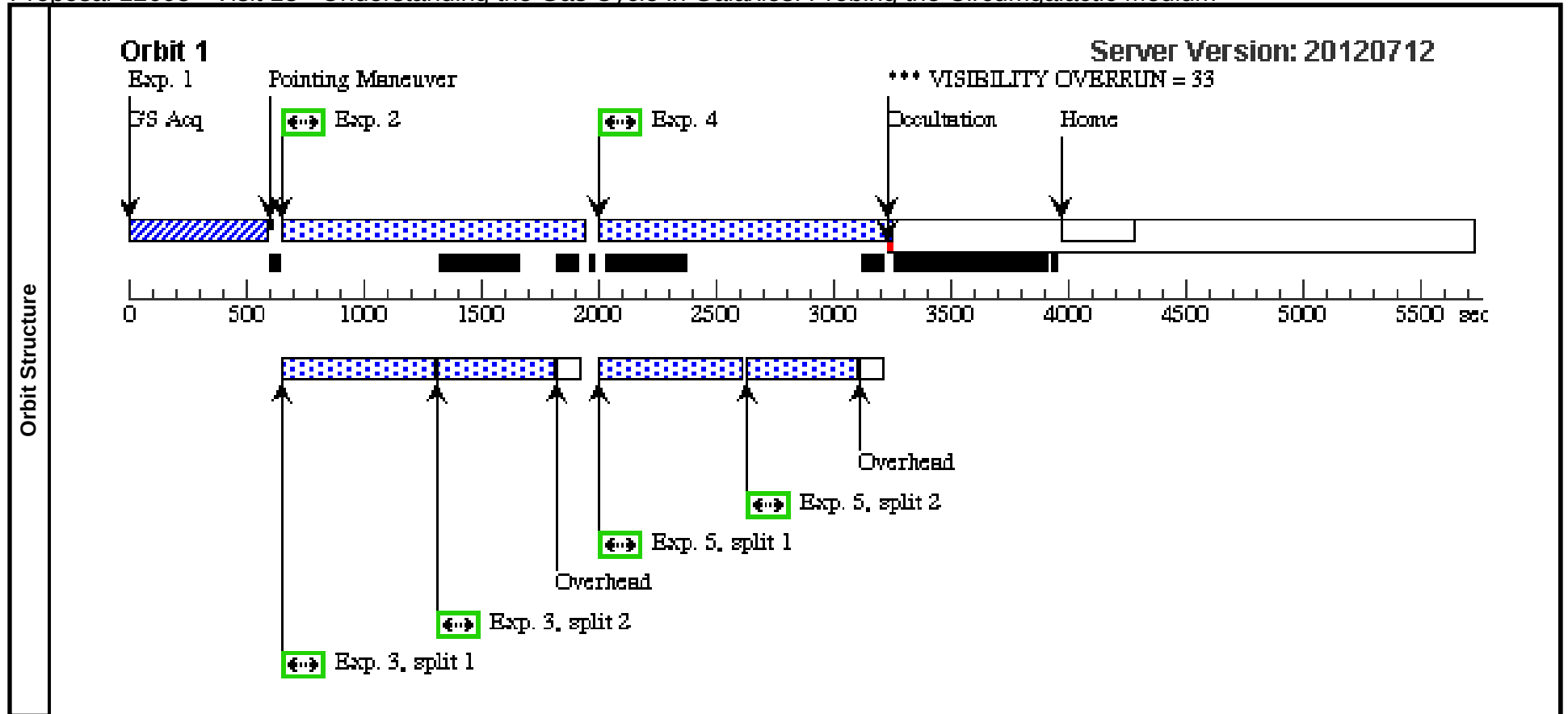
# Proposal 12603 - Visit 12 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (12) SDSS-J113137.16+155645.3 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              |               |        | 252 Secs                |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (12) SDSS-J113137.16+155645.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=1965;<br>FLASH=YES |               |        | 2075 Secs               |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (12) SDSS-J113137.16+155645.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=715;<br>FLASH=YES  |               |        | 825 Secs                |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (12) SDSS-J113137.16+155645.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (12) SDSS-J113137.16+155645.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (12) SDSS-J113137.16+155645.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=725;<br>FLASH=YES  |               |        | 835 Secs                |       |
|           |   |                        |                               |                         |                 |                                                                              |               |        | [==>]                   | [3]   |



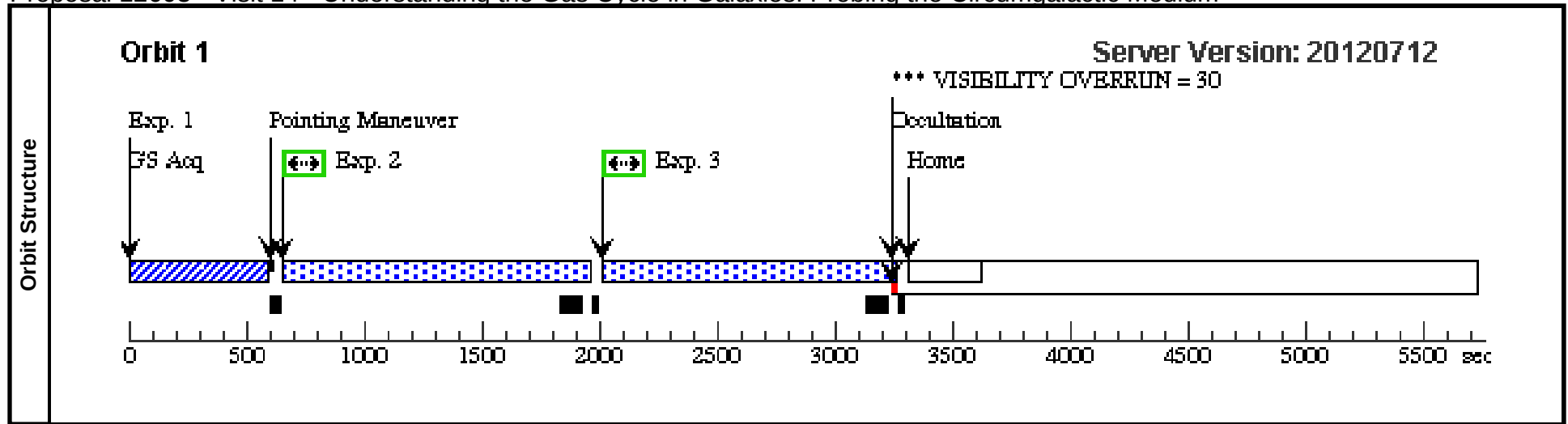
# Proposal 12603 - Visit 13 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------|---------------------------|-----|------------------------------|
| Visit                   | Proposal 12603, Visit 13, completed                                                                                                                                    |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     | Thu Jul 26 01:15:00 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | Special Requirements: ORIENT 215D TO 235 D                                                                                                                             |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Diagnostics             | (Visit 13) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 13) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 13) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 13) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                          | Target Coordinates                                                                |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                            |                                        | Miscellaneous             |     |                              |
|                         | (13)                                                                                                                                                                   | VV2000-J150204.1+064514       | RA: 15 02 4.1000 (225.5170833d)<br>Dec: +06 45 16.00 (6.75444d)<br>Equinox: J2000 |                         | Redshift: 0.2878         |                                                                              | V=16.6<br><br>FUV mag= 17.1843 & NUV mag= 17.1617 |                                        | Reference Frame: ICRS     |     |                              |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (63)                                                                                                                                                                   | SDSSJ150204.09+064922.80      | RA: 15 02 4.0900 (225.5170417d)<br>Dec: +06 49 22.80 (6.82300d)<br>Equinox: J2000 |                         | Redshift: 0.04623        |                                                                              | V=16.7495                                         |                                        | Reference Frame: ICRS     |     |                              |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)               | Target                                                                            | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                     | Groups                                 | Exp. Time/[Actual Dur.]   |     | Orbit                        |
|                         | 1                                                                                                                                                                      | Target Acq (198588)           | (13) VV2000-J150204.1+064514                                                      | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              | GS ACQ SCENARIO BASE1B3                           |                                        | 77 Secs                   |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)              | (13) VV2000-J150204.1+064514                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A          | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=1000;<br>FLASH=YES;<br>FP-POS=1 |                                                   | Prime + Parallel Group 2-3 in Visit 13 | 1110 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
|                         | 3                                                                                                                                                                      | (WFC3UVIS.im.185675)          | (63) SDSSJ150204.09+064922.80                                                     | WFC3/UVIS, ACCUM, UVIS  | F200LP                   | CR-SPLIT=2                                                                   |                                                   | Prime + Parallel Group 2-3 in Visit 13 | 1000 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        | [==>500.0 Secs (Split 1)] |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        | [==>500.0 Secs (Split 2)] |     | [1]                          |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)              | (13) VV2000-J150204.1+064514                                                      | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1019;<br>FLASH=YES |                                                   | Prime + Parallel Group 4-5 in Visit 13 | 1129 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
| 5                       | (WFC3UVIS.im.185677)                                                                                                                                                   | (63) SDSSJ150204.09+064922.80 | WFC3/UVIS, ACCUM, UVIS                                                            | F350LP                  | CR-SPLIT=2               |                                                                              | Prime + Parallel Group 4-5 in Visit 13            | 950 Secs                               |                           |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   | [==>475.0 Secs (Split 1)]              |                           |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                   |                         |                          |                                                                              |                                                   | [==>475.0 Secs (Split 2)]              |                           | [1] |                              |



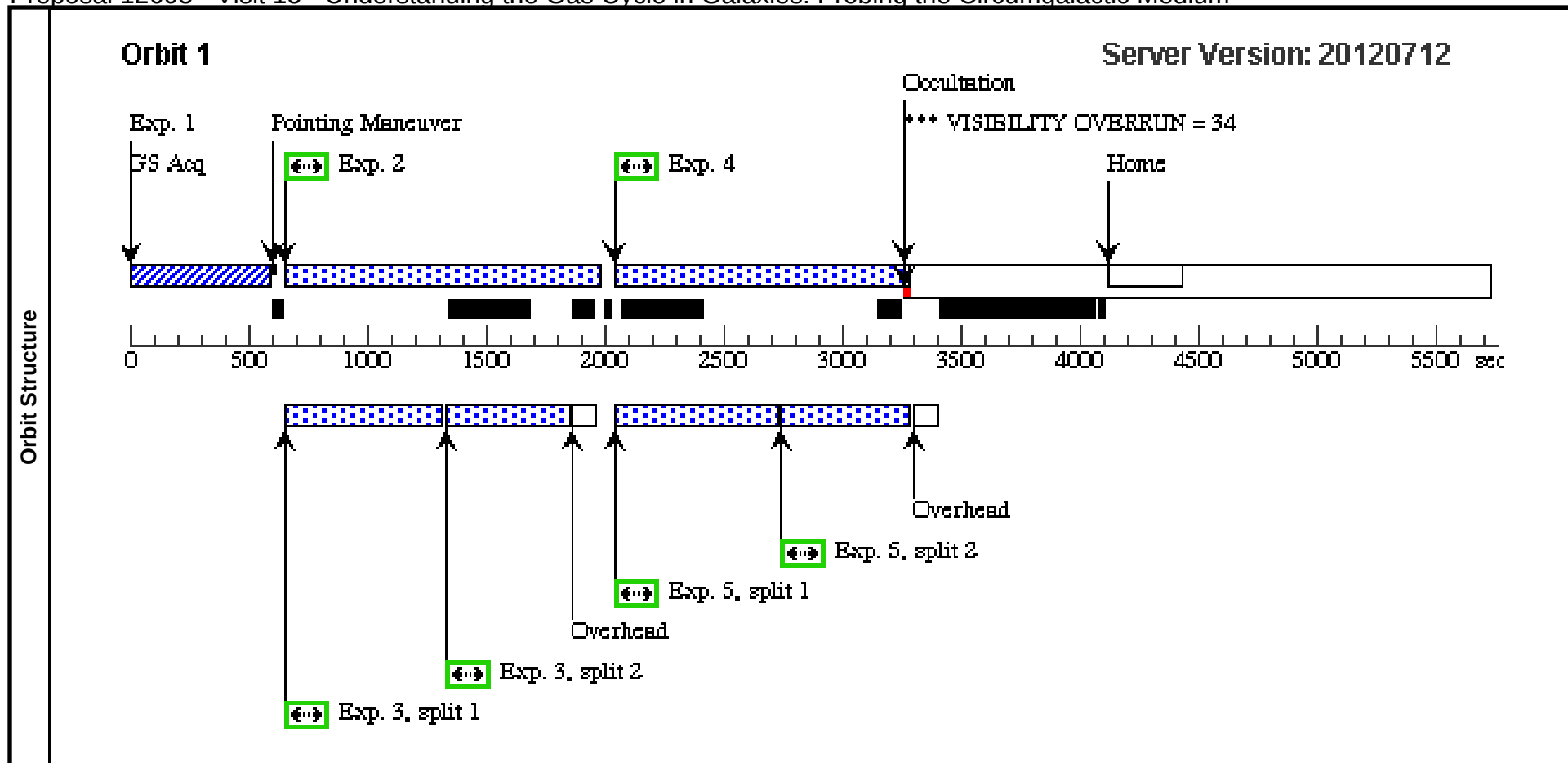
# Proposal 12603 - Visit 14 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|-------------------------|--------------------------|-----------------|------------------------------------------------------------------------------|-------------------------|-----------------------|-------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 14, scheduling                                                                                                                                   |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         | Thu Jul 26 01:15:01 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|                         | Special Requirements: (none)                                                                                                                                           |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
| Diagnostics             | (Visit 14) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|                         | (Visit 14) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|                         | (Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
|                         | (Visit 14) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                  |                         | Targ. Coord. Corrections |                 | Fluxes                                                                       |                         | Miscellaneous         |                         |                              |
|                         | (14)                                                                                                                                                                   | 2MASS-J14312586+2442203 | RA: 14 31 25.8813 (217.8578388d)<br>Dec: +24 42 20.60 (24.70572d)<br>Equinox: J2000 |                         | Redshift: 0.4066         |                 | V=17.9<br>FUV mag= 17.5117 & NUV mag= 17.423                                 |                         | Reference Frame: ICRS |                         |                              |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       |                         |                              |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)         | Target                                                                              | Config,Mode,Aperture    |                          | Spectral Els.   | Opt. Params.                                                                 | Special Reqs.           | Groups                | Exp. Time/[Actual Dur.] | Orbit                        |
|                         | 1                                                                                                                                                                      | Target Acq (198588)     | (14) 2MASS-J14312586+2442203                                                        | COS/NUV, ACQ/IMAGE, PSA |                          | MIRRORB         |                                                                              | GS ACQ SCENARIO BASE1B3 |                       | 77 Secs                 |                              |
|                         |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       | [==>]                   | [1]                          |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)        | (14) 2MASS-J14312586+2442203                                                        | COS/FUV, TIME-TAG, PSA  |                          | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1013;<br>FLASH=YES |                         |                       | 1123 Secs               |                              |
|                         |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                 |                                                                              |                         |                       | [==>]                   | [1]                          |
|                         | 3                                                                                                                                                                      | (COS.sp.184 757)        | (14) 2MASS-J14312586+2442203                                                        | COS/FUV, TIME-TAG, PSA  |                          | G130M<br>1327 A | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=1014;<br>FLASH=YES;<br>FP-POS=1 |                         |                       | 1124 Secs               |                              |
|                         |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                 |                                                                              |                         | [==>]                 | [1]                     |                              |



# Proposal 12603 - Visit 15 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------|---------------------------|-----|------------------------------|
| Visit                   | Proposal 12603, Visit 15, completed                                                                                                                                    |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     | Thu Jul 26 01:15:02 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | Special Requirements: ORIENT 130D TO 150 D                                                                                                                             |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Diagnostics             | (Visit 15) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 15) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 15) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (Visit 15) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                          | Target Coordinates                                                                  |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                            |                                        | Miscellaneous             |     |                              |
|                         | (15)                                                                                                                                                                   | 2MASS-J09591486+3203573       | RA: 09 59 14.8400 (149.8118333d)<br>Dec: +32 03 57.24 (32.06590d)<br>Equinox: J2000 |                         | Redshift: 0.56390        |                                                                              | V=16.9<br><br>FUV mag= 17.4409 & NUV mag= 17.0298 |                                        | Reference Frame: ICRS     |     |                              |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        |                           |     |                              |
|                         | (65)                                                                                                                                                                   | SDSSJ095851.33+320423.09      | RA: 09 58 51.3300 (149.7138750d)<br>Dec: +32 04 23.09 (32.07308d)<br>Equinox: J2000 |                         | Redshift: 0.02703        |                                                                              | V=16.9336                                         |                                        | Reference Frame: ICRS     |     |                              |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)               | Target                                                                              | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                     | Groups                                 | Exp. Time/[Actual Dur.]   |     | Orbit                        |
|                         | 1                                                                                                                                                                      | Target Acq (198588)           | (15) 2MASS-J09591486+3203573                                                        | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              | GS ACQ SCENARIO BASE1B3                           |                                        | 77 Secs                   |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)              | (15) 2MASS-J09591486+3203573                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A          | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=1040;<br>FLASH=YES;<br>FP-POS=4 |                                                   | Prime + Parallel Group 2-3 in Visit 15 | 1150 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
|                         | 3                                                                                                                                                                      | (WFC3UVIS.im.185675)          | (65) SDSSJ095851.33+320423.09                                                       | WFC3/UVIS, ACCUM, UVIS  | F200LP                   | CR-SPLIT=2                                                                   |                                                   | Prime + Parallel Group 2-3 in Visit 15 | 1000 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        | [==>519.0 Secs (Split 1)] |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        | [==>519.0 Secs (Split 2)] |     | [1]                          |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)              | (15) 2MASS-J09591486+3203573                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1013;<br>FLASH=YES |                                                   | Prime + Parallel Group 4-5 in Visit 15 | 1123 Secs                 |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   |                                        | [==>]                     |     | [1]                          |
| 5                       | (WFC3UVIS.im.185677)                                                                                                                                                   | (65) SDSSJ095851.33+320423.09 | WFC3/UVIS, ACCUM, UVIS                                                              | F350LP                  | CR-SPLIT=2               |                                                                              | Prime + Parallel Group 4-5 in Visit 15            | 1050 Secs                              |                           |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   | [==>547.0 Secs (Split 1)]              |                           |     |                              |
|                         |                                                                                                                                                                        |                               |                                                                                     |                         |                          |                                                                              |                                                   | [==>547.0 Secs (Split 2)]              |                           | [1] |                              |



# Proposal 12603 - Visit 16 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                   |                          |                                               |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 16, completed</b> <span style="float: right;">Thu Jul 26 01:15:03 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                          |                                                                                   |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 210.0D TO 240.0 D<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                   |                          |                                               |
| Diagnostics   | (Visit 16) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 16) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 16) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 16) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 16) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 16) Warning (Orbit Planner): VISIBILITY OVERRUN |                          |                                                                                   |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                   |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Name                     | Target Coordinates                                                                | Targ. Coord. Corrections | Fluxes                                        |
|               | (16)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SDSS-J151507.43+065708.3 | RA: 15 15 7.4310 (228.7809625d)<br>Dec: +06 57 8.37 (6.95232d)<br>Equinox: J2000  | Redshift: 0.26790        | V=17.8<br>FUV mag= 18.5985 & NUV mag= 18.3598 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                   |                          |                                               |
|               | (66)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SDSSJ151507.55+070116.51 | RA: 15 15 7.5500 (228.7814583d)<br>Dec: +07 01 16.51 (7.02125d)<br>Equinox: J2000 | Redshift: 0.03671        | V=17.8140<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 16 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

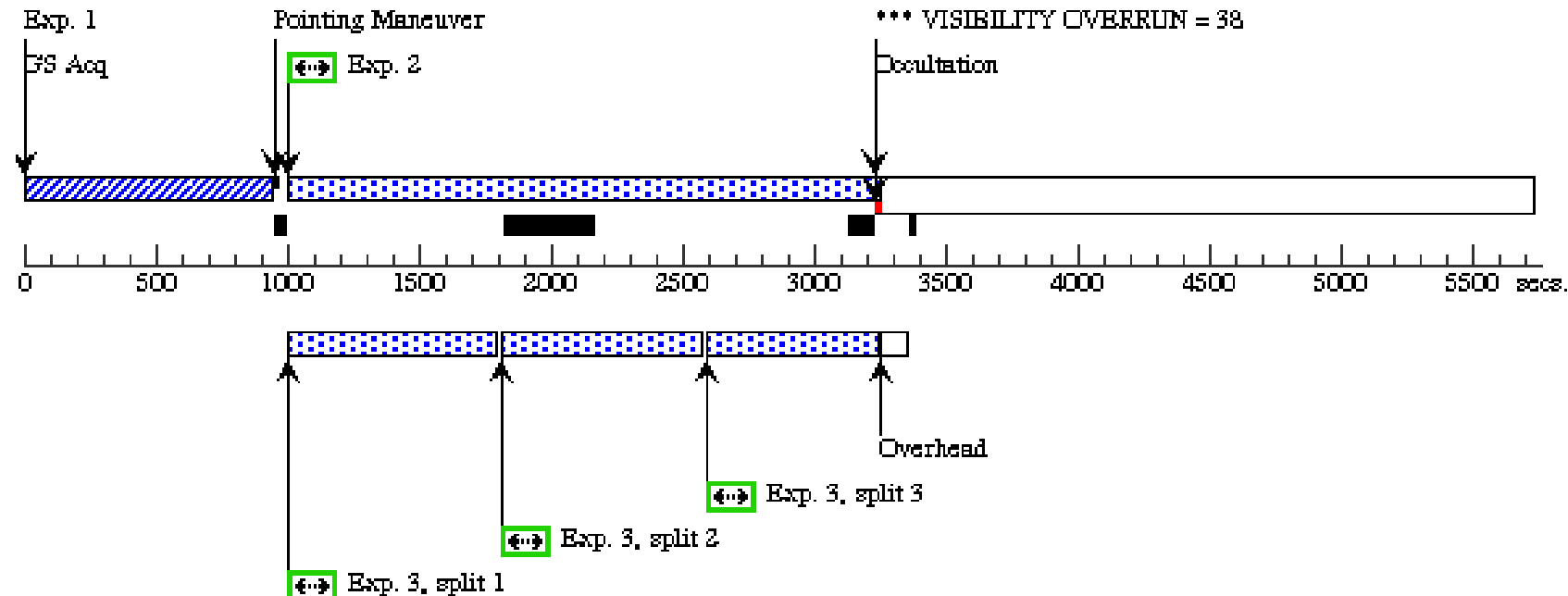
| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (16) SDSS-J151507.43+065708.3     | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (16) SDSS-J151507.43+065708.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>58;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 2-3 in Visit 16 | 2068 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (66) SDSSJ151507.5<br>5+070116.51 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 16 | 1902 Secs<br>[==>648.0 Secs (Split 1)]<br>[==>648.0 Secs (Split 2)]<br>[==>648.0 Secs (Split 3)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (16) SDSS-J151507.43+065708.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>2;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 16 | 812 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (66) SDSSJ151507.5<br>5+070116.51 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |                             | Prime + Parallel Gro<br>up 4-5 in Visit 16 | 600 Secs<br>[==>753.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (16) SDSS-J151507.43+065708.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>45;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 16 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (66) SDSSJ151507.5<br>5+070116.51 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 16 | 1797 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (16) SDSS-J151507.43+065708.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 16 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (66) SDSSJ151507.5<br>5+070116.51 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 16 | 1602 Secs<br>[==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |

# Proposal 12603 - Visit 16 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                |                        |                 |                                                                             |                                          |                                                        |     |
|--|----|------------------------------------------------|------------------------|-----------------|-----------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----|
|  | 10 | (COS.sp.184 (16) SDSS-J151507.757) 43+065708.3 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=717;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 16 | 827 Secs                                               |     |
|  |    |                                                |                        |                 |                                                                             |                                          | [==>]                                                  | [3] |
|  | 11 | (66) SDSSJ151507.5 5+070116.51                 | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                  | Prime + Parallel Group 10-11 in Visit 16 | 780 Secs                                               |     |
|  |    |                                                |                        |                 |                                                                             |                                          | [==>402.0 Secs (Split 1)]<br>[==>402.0 Secs (Split 2)] | [3] |

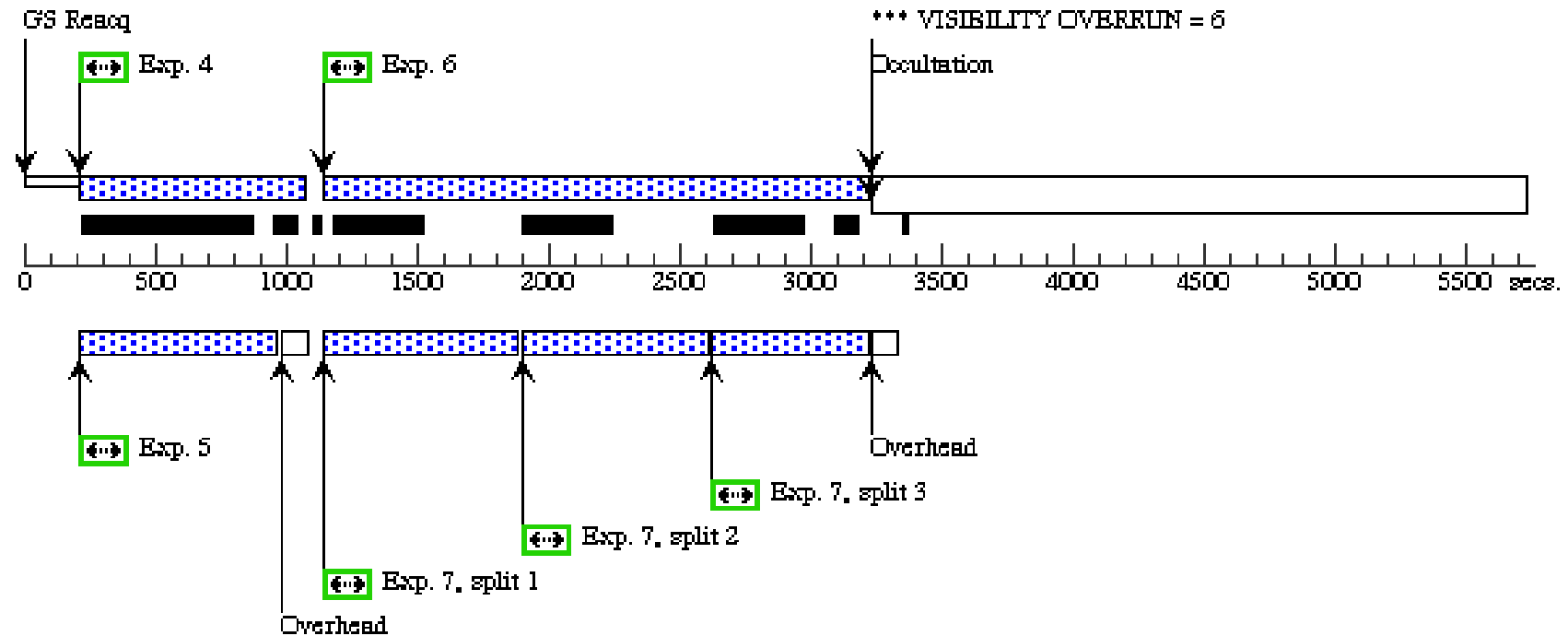
# Orbit 1

Server Version: 20120712



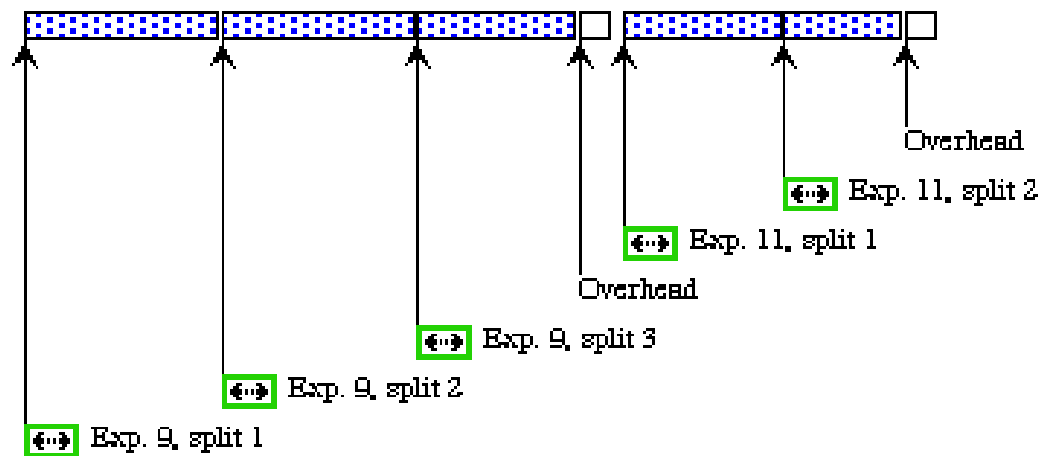
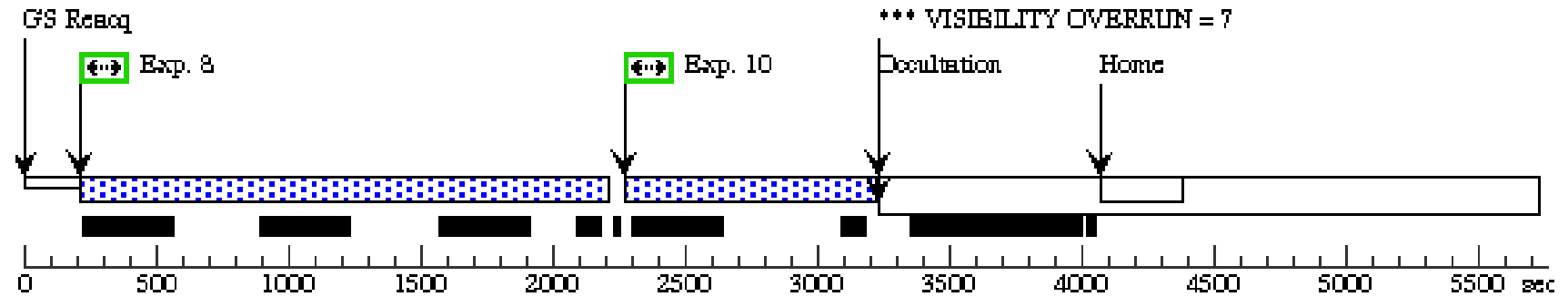
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 17 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                                                                                    |                          |                                               |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 17, completed</b> <span style="float: right;">Thu Jul 26 01:15:07 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                                                                                    |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 150.0D TO 215.0 D<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                         |                          |                                                                                    |                          |                                               |
| Diagnostics   | (Visit 17) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 17) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 17) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 17) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. |                          |                                                                                    |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                                                                                    |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                        |
|               | (17)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SDSS-J150928.29+070235.7 | RA: 15 09 28.2910 (227.3678792d)<br>Dec: +07 02 35.76 (7.04327d)<br>Equinox: J2000 | Redshift: 0.4179         | V=18.6<br>FUV mag= 18.595 & NUV mag = 18.3232 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                    |                          |                                               |
|               | (67)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | SDSSJ150921.50+070439.82 | RA: 15 09 21.5000 (227.3395833d)<br>Dec: +07 04 39.82 (7.07773d)<br>Equinox: J2000 | Redshift: 0.04141        | V=18.5893<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 17 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

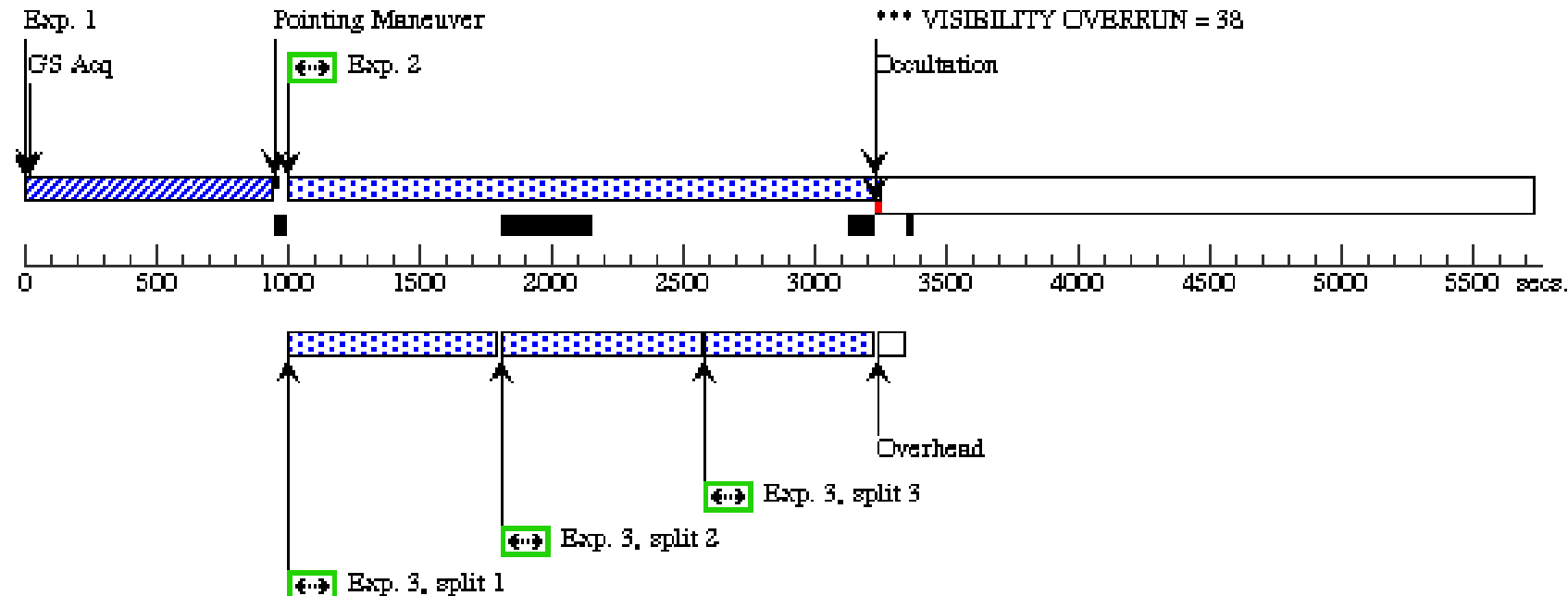
| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs.          | Groups                                 | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (17) SDSS-J150928.29+070235.7 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              | GS ACQ SCENARIO SINGLE |                                        | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184757)        | (17) SDSS-J150928.29+070235.7 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1958;<br>FLASH=YES |                        | Prime + Parallel Group 2-3 in Visit 17 | 2068 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (67) SDSSJ150921.50+070439.82 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 2-3 in Visit 17 | 1935 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184757)        | (17) SDSS-J150928.29+070235.7 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=702;<br>FLASH=YES  |                        | Prime + Parallel Group 4-5 in Visit 17 | 812 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (67) SDSSJ150921.50+070439.82 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                  |                        | Prime + Parallel Group 4-5 in Visit 17 | 600 Secs<br>[==>753.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184757)        | (17) SDSS-J150928.29+070235.7 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1845;<br>FLASH=YES |                        | Prime + Parallel Group 6-7 in Visit 17 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (67) SDSSJ150921.50+070439.82 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 6-7 in Visit 17 | 1791 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [2]   |
|           | 8 | (COS.sp.184757)        | (17) SDSS-J150928.29+070235.7 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |                        | Prime + Parallel Group 8-9 in Visit 17 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (67) SDSSJ150921.50+070439.82 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 8-9 in Visit 17 | 1602 Secs<br>[==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |

# Proposal 12603 - Visit 17 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                |                        |                 |                                                                             |                                          |                                                        |     |
|--|----|------------------------------------------------|------------------------|-----------------|-----------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----|
|  | 10 | (COS.sp.184 (17) SDSS-J150928.757) 29+070235.7 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=717;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 17 | 827 Secs                                               |     |
|  |    |                                                |                        |                 |                                                                             |                                          | [==>]                                                  | [3] |
|  | 11 | (67) SDSSJ150921.5 0+070439.82                 | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                  | Prime + Parallel Group 10-11 in Visit 17 | 783 Secs                                               |     |
|  |    |                                                |                        |                 |                                                                             |                                          | [==>401.5 Secs (Split 1)]<br>[==>401.5 Secs (Split 2)] | [3] |

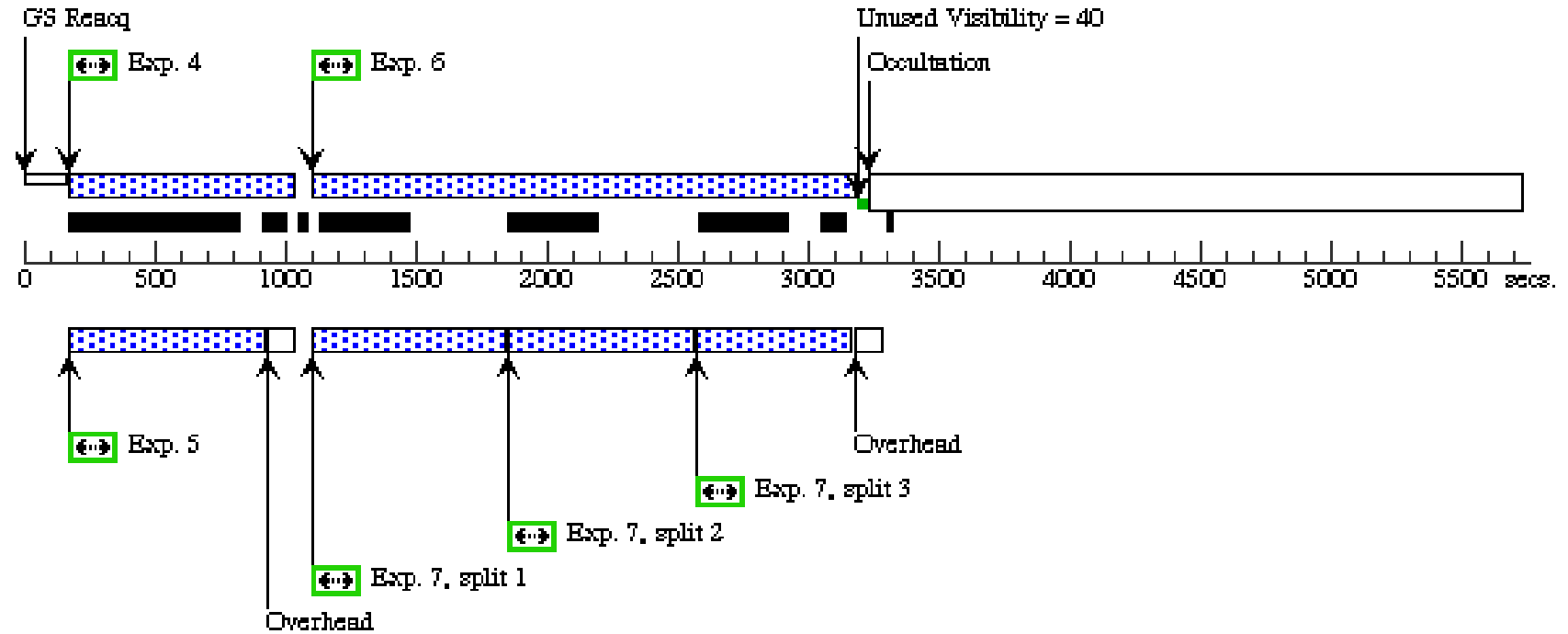
# Orbit 1

Server Version: 20120712



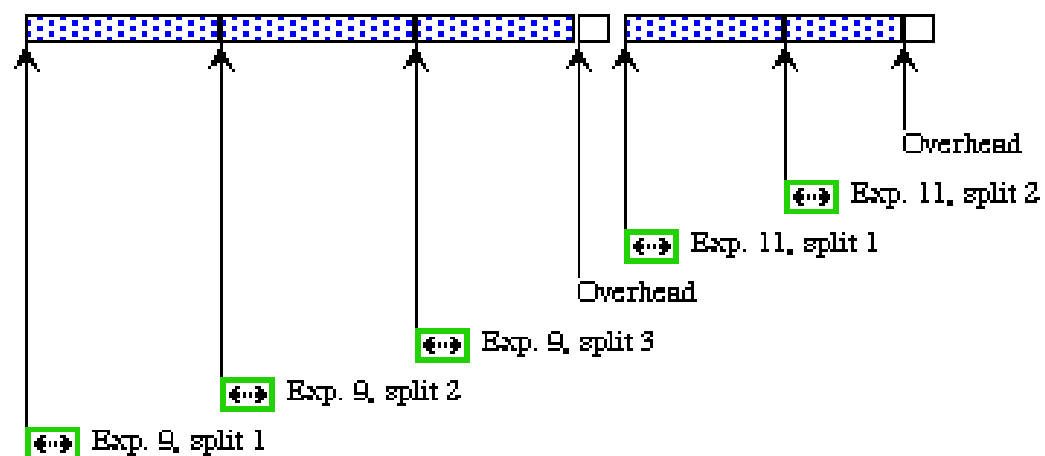
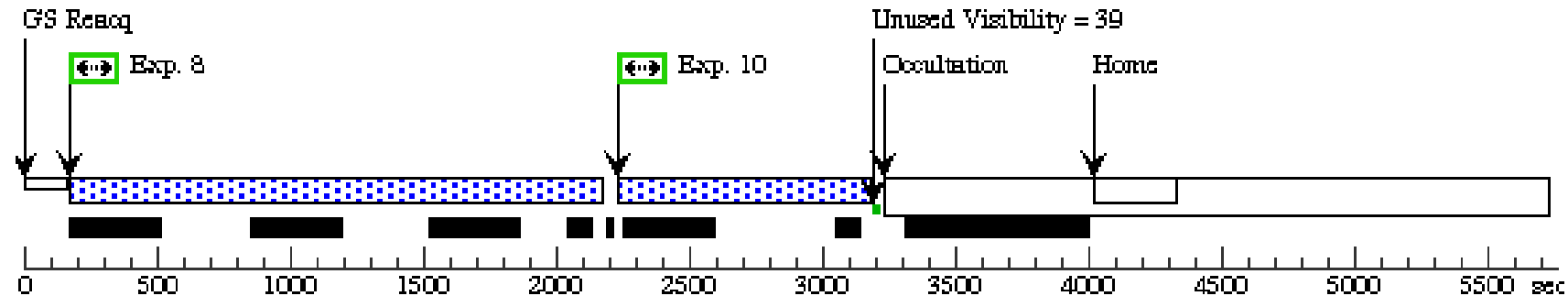
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 18 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                   |                          |                                               |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 18, scheduling                                                                                                                                   |                         |                                                                                   |                          |                                               | Thu Jul 26 01:15:09 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                   |                          |                                               |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                         |                                                                                   |                          |                                               |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                   |                          |                                               |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                   |                          |                                               |                              |
| Diagnostics   | (Visit 18) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                   |                          |                                               |                              |
|               | (Visit 18) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                   |                          |                                               |                              |
|               | (Visit 18) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                               |                              |
|               | (Visit 18) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                   |                          |                                               |                              |
|               | (Visit 18) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                               |                              |
|               | (Visit 18) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                               |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                | Targ. Coord. Corrections | Fluxes                                        | Miscellaneous                |
|               | (18)                                                                                                                                                                   | VV2006-J112224.1+031802 | RA: 11 22 24.1472 (170.6006133d)<br>Dec: +03 18 2.60 (3.30072d)<br>Equinox: J2000 | Redshift: 0.4745         | V=17.69<br>FUV mag= 18.6137 & NUV mag= 18.258 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                   |                          |                                               |                              |

# Proposal 12603 - Visit 18 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

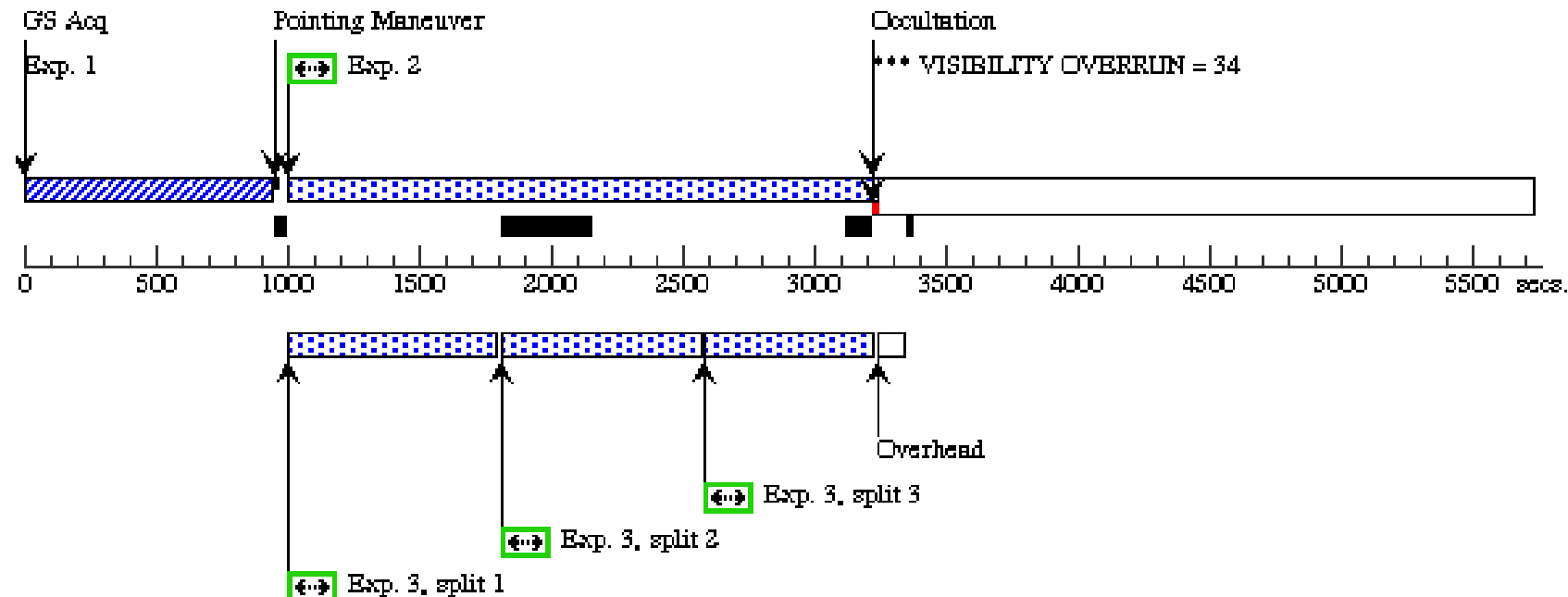
| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                                             | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|-------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (18) VV2006-J11222<br>4.1+031802 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 252 Secs                                                                            |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (18) VV2006-J11222<br>4.1+031802 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>50;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 2-3 in Visit 18 | 2060 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 3 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 18 | 1920 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>645.0 Secs (Split 1)]<br>[==>645.0 Secs (Split 2)]<br>[==>645.0 Secs (Split 3)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (18) VV2006-J11222<br>4.1+031802 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>0;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 18 | 810 Secs                                                                            |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 5 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |               | Prime + Parallel Gro<br>up 4-5 in Visit 18 | 600 Secs                                                                            |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>751.0 Secs ]                                                                    | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (18) VV2006-J11222<br>4.1+031802 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>39;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 18 | 1949 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 7 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 18 | 1770 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>597.0 Secs (Split 1)]<br>[==>597.0 Secs (Split 2)]<br>[==>597.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (18) VV2006-J11222<br>4.1+031802 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>39;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 18 | 1949 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [3]   |
|           | 9 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 18 | 1602 Secs                                                                           |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            | [==>544.0 Secs (Split 1)]<br>[==>544.0 Secs (Split 2)]<br>[==>544.0 Secs (Split 3)] | [3]   |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            |                                                                                     |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |                                            |                                                                                     |       |

# Proposal 12603 - Visit 18 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                                          |                        |                                                                                 |                                              |                                              |                |
|--|----|--------------------------------------------------------------------------|------------------------|---------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------|----------------|
|  | 10 | (COS.sp.184 (18) VV2006-J11222 COS/FUV, TIME-TAG, PSA<br>757) 4.1+031802 | G130M<br>1309 A        | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>0;<br>FLASH=YES | Prime + Parallel Gro<br>up 10-11 in Visit 18 | 820 Secs                                     |                |
|  |    |                                                                          |                        |                                                                                 |                                              | [==>]                                        | [3]            |
|  |    |                                                                          |                        |                                                                                 |                                              |                                              |                |
|  | 11 | ANY                                                                      | WFC3/UVIS, ACCUM, UVIS | F200LP                                                                          | CR-SPLIT=2                                   | Prime + Parallel Gro<br>up 10-11 in Visit 18 | 798 Secs       |
|  |    |                                                                          |                        |                                                                                 |                                              |                                              | [==>(Split 1)] |
|  |    |                                                                          |                        |                                                                                 |                                              |                                              | [==>(Split 2)] |
|  |    |                                                                          |                        |                                                                                 |                                              |                                              | [3]            |

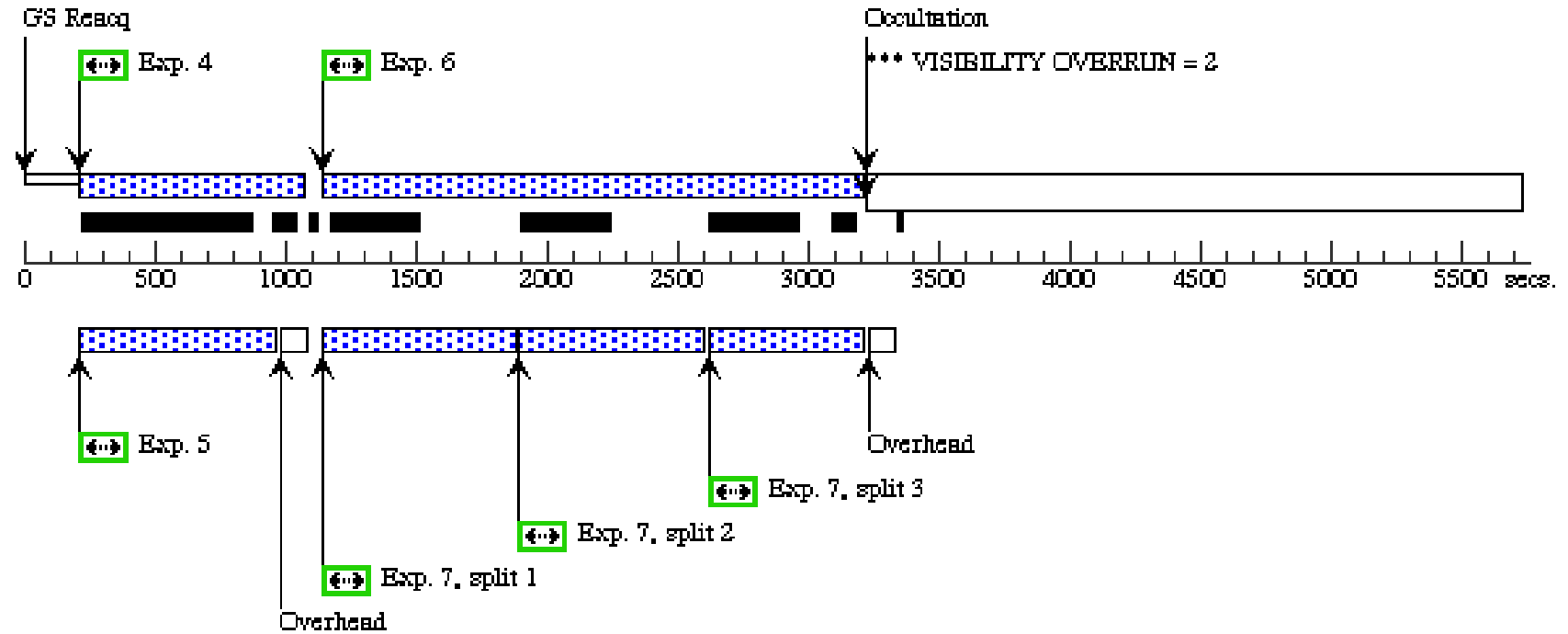
# Orbit 1

Server Version: 20120712



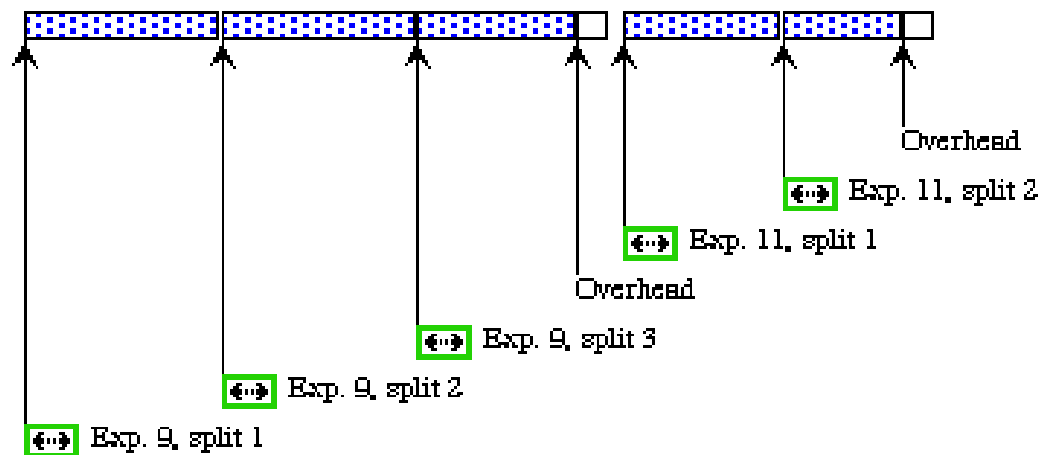
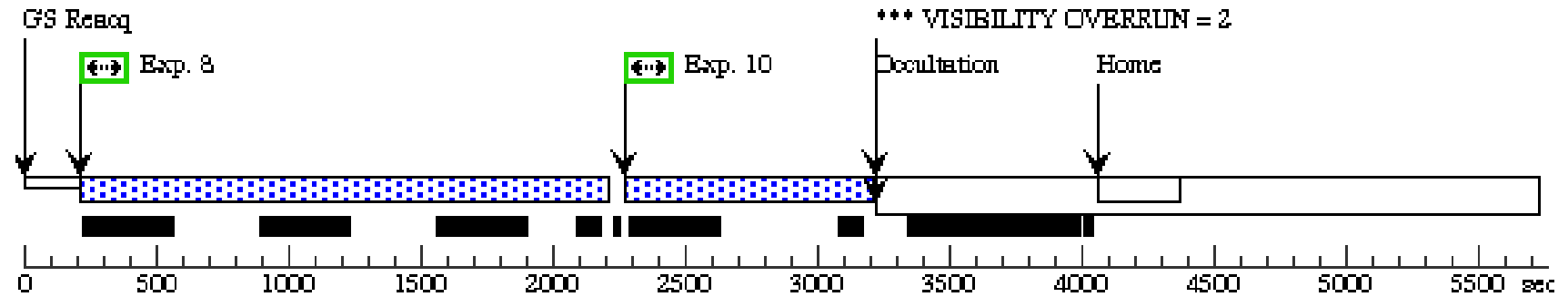
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712

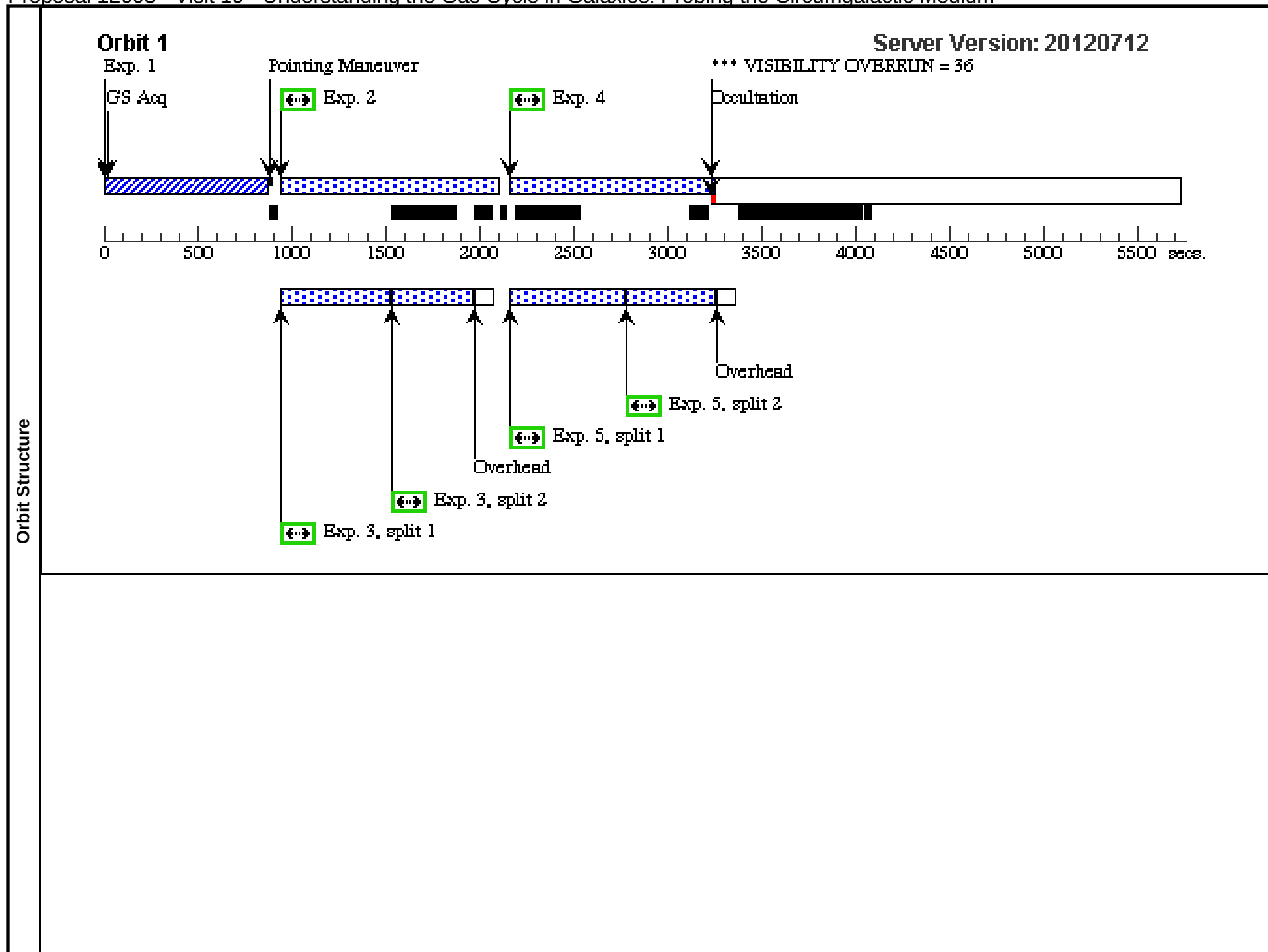


# Proposal 12603 - Visit 19 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                          |                                                                                    |                          |                                                        |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 19, completed                                                                                                                                    |                          |                                                                                    |                          |                                                        | Thu Jul 26 01:15:13 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                          |                                                        |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                    |                          |                                                        |                              |
|                         | Special Requirements: ORIENT 150.0D TO 190.0 D                                                                                                                         |                          |                                                                                    |                          |                                                        |                              |
| Comments: 2-orbit Visit |                                                                                                                                                                        |                          |                                                                                    |                          |                                                        |                              |
| Diagnostics             | (Visit 19) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                          |                                                        |                              |
|                         | (Visit 19) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                          |                                                        |                              |
|                         | (Visit 19) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                                        |                              |
|                         | (Visit 19) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                          |                                                        |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                                 | Miscellaneous                |
|                         | (19)                                                                                                                                                                   | QSO-B1115+080A           | RA: 11 18 16.9520 (169.5706333d)<br>Dec: +07 45 58.20 (7.76617d)<br>Equinox: J2000 | Redshift: 1.735          | V=16.99<br><br>FUV mag= 18.0316 & NUV ma<br>g= 16.9445 | Reference Frame: ICRS        |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                          |                                                        |                              |
|                         | (69)                                                                                                                                                                   | SDSSJ111809.91+074653.94 | RA: 11 18 9.9100 (169.5412917d)<br>Dec: +07 46 53.94 (7.78165d)<br>Equinox: J2000  | Redshift: 0.04206        | V=16.2644                                              | Reference Frame: ICRS        |

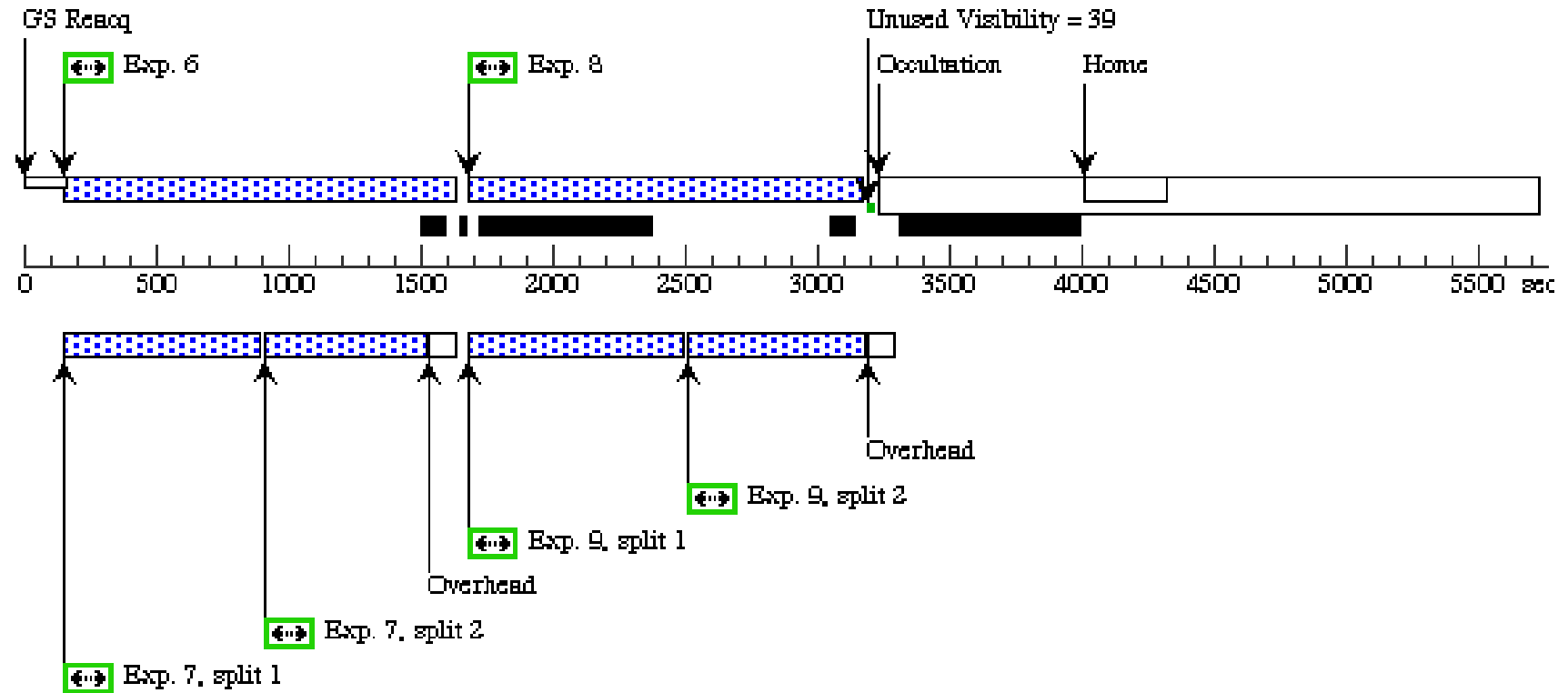
# Proposal 12603 - Visit 19 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.              | Groups                                     | Exp. Time/[Actual Dur.]                                             | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|----------------------------|--------------------------------------------|---------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (19) QSO-B1115+08<br>0A           | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O SINGLE |                                            | 219 Secs<br>[==>]                                                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (19) QSO-B1115+08<br>0A           | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>6;<br>FLASH=YES  |                            | Prime + Parallel Gro<br>up 2-3 in Visit 19 | 976 Secs<br>[==>]                                                   | [1]   |
|           | 3 |                        | (69) SDSSJ111809.9<br>1+074653.94 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 2-3 in Visit 19 | 832 Secs<br>[==>432.0 Secs (Split 1)]<br>[==>432.0 Secs (Split 2)]  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (19) QSO-B1115+08<br>0A           | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>0;<br>FLASH=YES  |                            | Prime + Parallel Gro<br>up 4-5 in Visit 19 | 970 Secs<br>[==>]                                                   | [1]   |
|           | 5 |                        | (69) SDSSJ111809.9<br>1+074653.94 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 4-5 in Visit 19 | 908 Secs<br>[==>471.0 Secs (Split 1)]<br>[==>471.0 Secs (Split 2)]  | [1]   |
|           | 6 | (COS.sp.184<br>757)    | (19) QSO-B1115+08<br>0A           | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>50;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 6-7 in Visit 19 | 1360 Secs<br>[==>]                                                  | [2]   |
|           | 7 |                        | (69) SDSSJ111809.9<br>1+074653.94 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 6-7 in Visit 19 | 1200 Secs<br>[==>611.0 Secs (Split 1)]<br>[==>611.0 Secs (Split 2)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (19) QSO-B1115+08<br>0A           | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>58;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 8-9 in Visit 19 | 1368 Secs<br>[==>]                                                  | [2]   |
|           | 9 |                        | (69) SDSSJ111809.9<br>1+074653.94 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 8-9 in Visit 19 | 1250 Secs<br>[==>670.0 Secs (Split 1)]<br>[==>670.0 Secs (Split 2)] | [2]   |



## Orbit 2

Server Version: 20120712



# Proposal 12603 - Visit 20 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                     |                          |                                               |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 20, scheduling</b> <span style="float: right;">Thu Jul 26 01:15:15 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 220.0D TO 240.0 D<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 20) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 20) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 20) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 20) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 20) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 20) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100. |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (20)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 2MASS-J14042827+3353426  | RA: 14 04 28.2826 (211.1178442d)<br>Dec: +33 53 42.68 (33.89519d)<br>Equinox: J2000 | Redshift: 0.5492         | V=18.3<br>FUV mag= 18.9264 & NUV mag= 18.7249 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                     |                          |                                               |
|               | (70)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SDSSJ140429.24+335712.11 | RA: 14 04 29.2400 (211.1218333d)<br>Dec: +33 57 12.11 (33.95336d)<br>Equinox: J2000 | Redshift: 0.02642        | V=18.3089<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 20 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

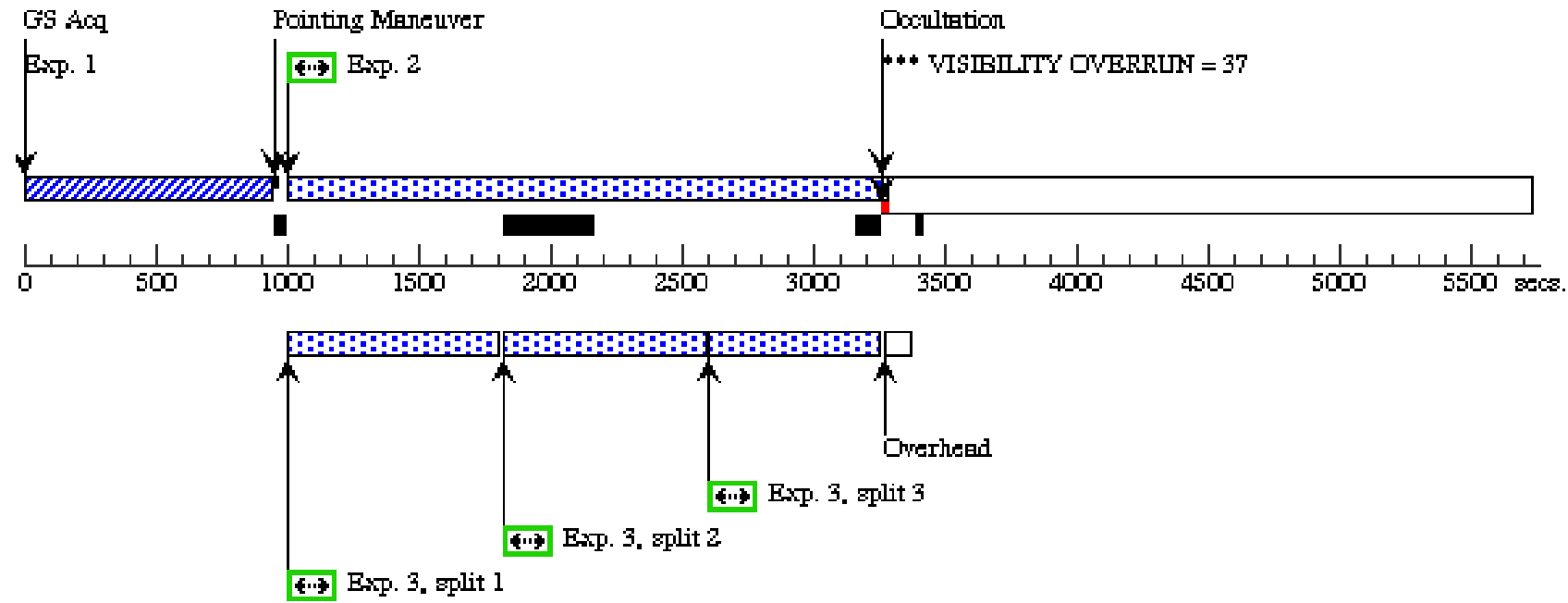
| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                                             | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|-------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (20) 2MASS-J14042<br>827+3353426  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 252 Secs                                                                            |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (20) 2MASS-J14042<br>827+3353426  | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>91;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 2-3 in Visit 20 | 2101 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [1]   |
|           | 3 |                        | (70) SDSSJ140429.2<br>4+335712.11 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 20 | 1971 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (20) 2MASS-J14042<br>827+3353426  | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=73<br>4;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 20 | 844 Secs                                                                            |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 5 |                        | (70) SDSSJ140429.2<br>4+335712.11 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |               | Prime + Parallel Gro<br>up 4-5 in Visit 20 | 600 Secs                                                                            |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>785.0 Secs ]                                                                    | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (20) 2MASS-J14042<br>827+3353426  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 20 | 1950 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [2]   |
|           | 7 |                        | (70) SDSSJ140429.2<br>4+335712.11 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 20 | 1800 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>598.0 Secs (Split 1)]<br>[==>598.0 Secs (Split 2)]<br>[==>598.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (20) 2MASS-J14042<br>827+3353426  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 20 | 1950 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                               | [3]   |
|           | 9 |                        | (70) SDSSJ140429.2<br>4+335712.11 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 20 | 1602 Secs                                                                           |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            |                                                                                     |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            |                                                                                     |       |

# Proposal 12603 - Visit 20 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                   |                                  |                        |                 |                                                                                 |                                              |                                                        |     |
|--|----|-----------------------------------|----------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------|-----|
|  | 10 | (COS.sp.184<br>757)               | (20) 2MASS-J14042<br>827+3353426 | COS/FUV, TIME-TAG, PSA | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=75<br>0;<br>FLASH=YES | Prime + Parallel Gro<br>up 10-11 in Visit 20 | 860 Secs                                               |     |
|  |    |                                   |                                  |                        |                 |                                                                                 |                                              | [==>]                                                  | [3] |
|  | 11 | (70) SDSSJ140429.2<br>4+335712.11 | WFC3/UVIS, ACCUM, UVIS           | F200LP                 | CR-SPLIT=2      |                                                                                 | Prime + Parallel Gro<br>up 10-11 in Visit 20 | 780 Secs                                               |     |
|  |    |                                   |                                  |                        |                 |                                                                                 |                                              | [==>419.0 Secs (Split 1)]<br>[==>419.0 Secs (Split 2)] | [3] |

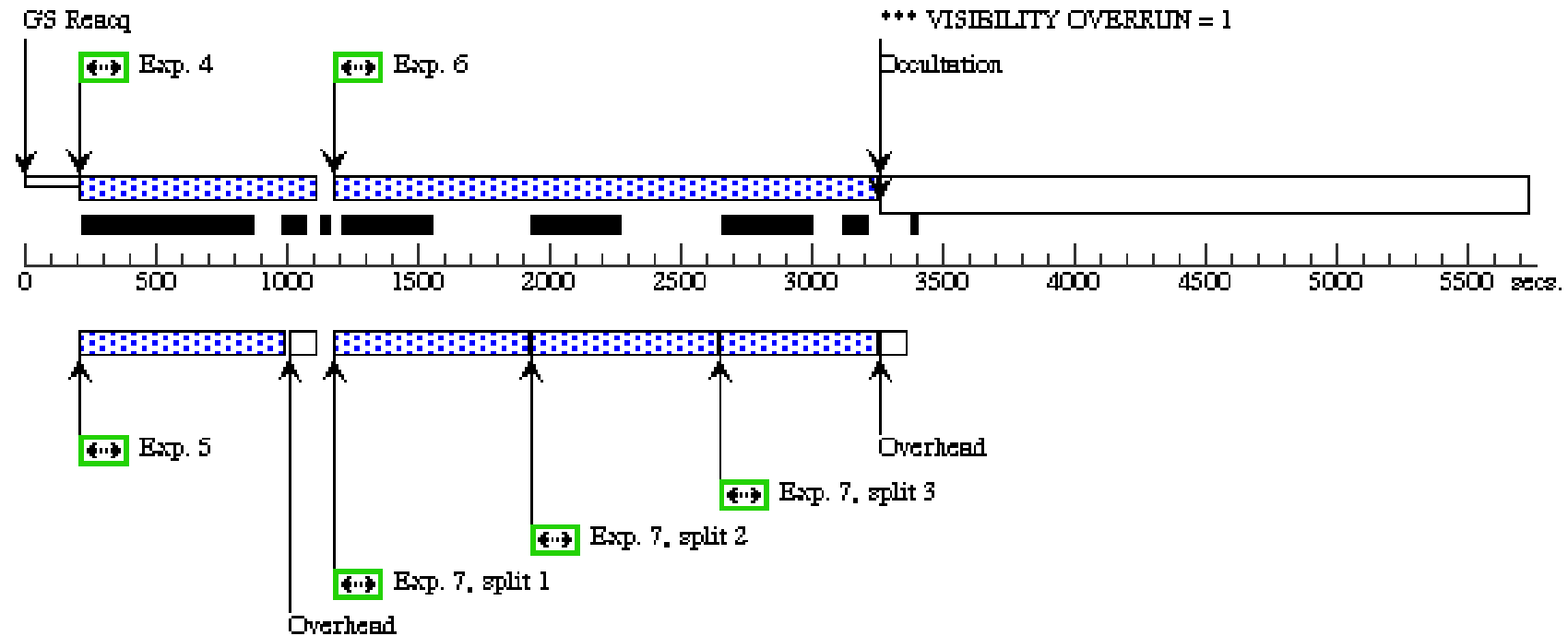
# Orbit 1

Server Version: 20120712



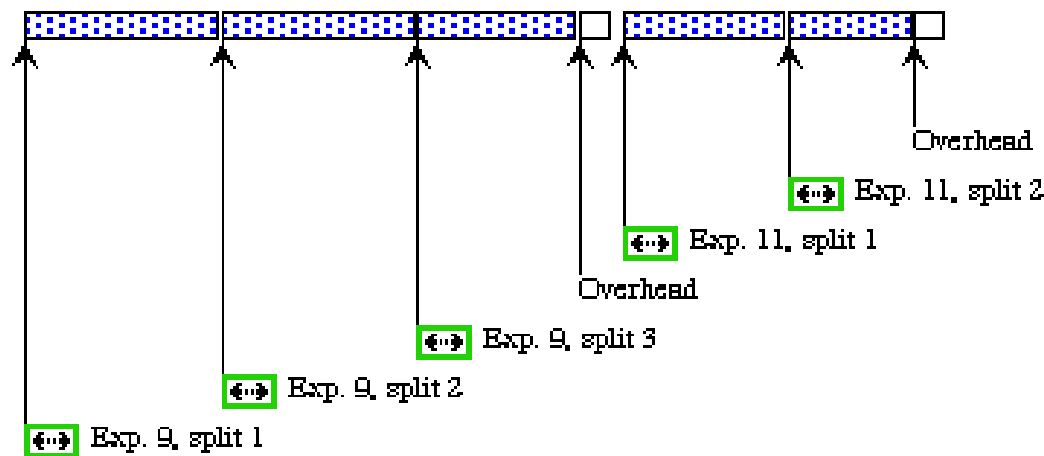
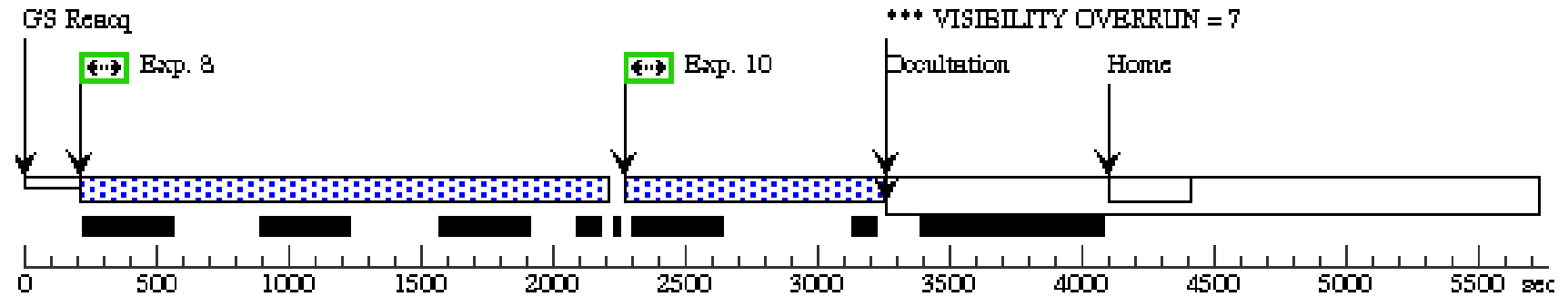
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 21 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

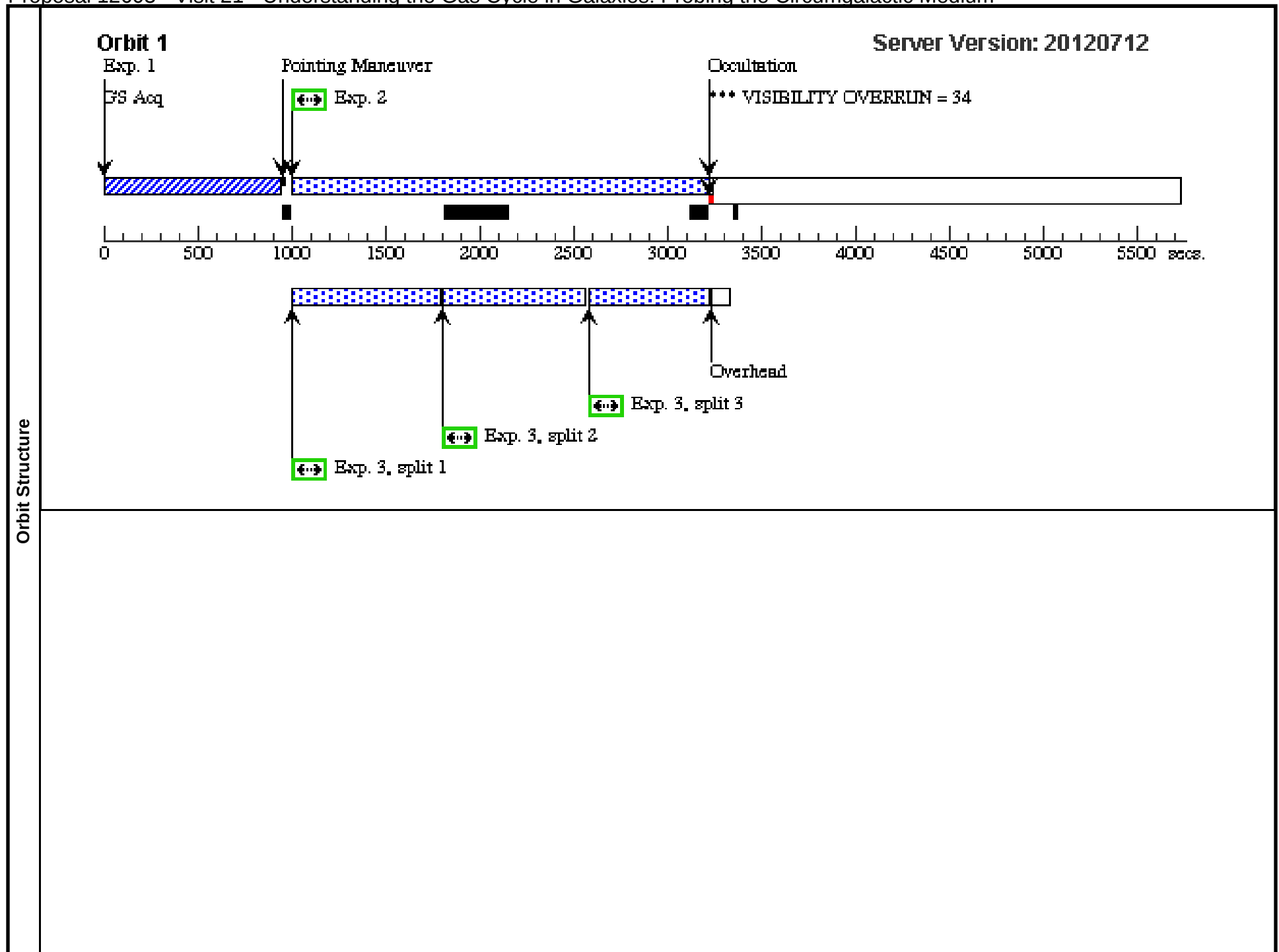
|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 21, completed                                                                                                                                    |                         |                                                                                    |                          |                                                 | Thu Jul 26 01:15:19 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                          |                                                 |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                         |                                                                                    |                          |                                                 |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                          |                                                 |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                    |                          |                                                 |                              |
| Diagnostics   | (Visit 21) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 21) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 21) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 21) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 21) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                          | Miscellaneous                |
|               | (21)                                                                                                                                                                   | VV2006-J130524.3+035731 | RA: 13 05 24.2571 (196.3510713d)<br>Dec: +03 57 30.90 (3.95858d)<br>Equinox: J2000 | Redshift: 0.5492         | V=17.678<br>FUV mag= 18.6902 & NUV mag= 18.0245 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                          |                                                 |                              |

# Proposal 12603 - Visit 21 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (21) VV2006-J13052<br>4.3+035731 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (21) VV2006-J13052<br>4.3+035731 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>50;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 2-3 in Visit 21 | 2060 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 21 | 1929 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (21) VV2006-J13052<br>4.3+035731 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>0;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 21 | 810 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |                             | Prime + Parallel Gro<br>up 4-5 in Visit 21 | 600 Secs<br>[==>751.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (21) VV2006-J13052<br>4.3+035731 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>39;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 21 | 1949 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 21 | 1788 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (21) VV2006-J13052<br>4.3+035731 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>39;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 21 | 1949 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | ANY                              | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 21 | 1602 Secs<br>[==>544.0 Secs (Split 1)]<br>[==>544.0 Secs (Split 2)]<br>[==>544.0 Secs (Split 3)] | [3]   |

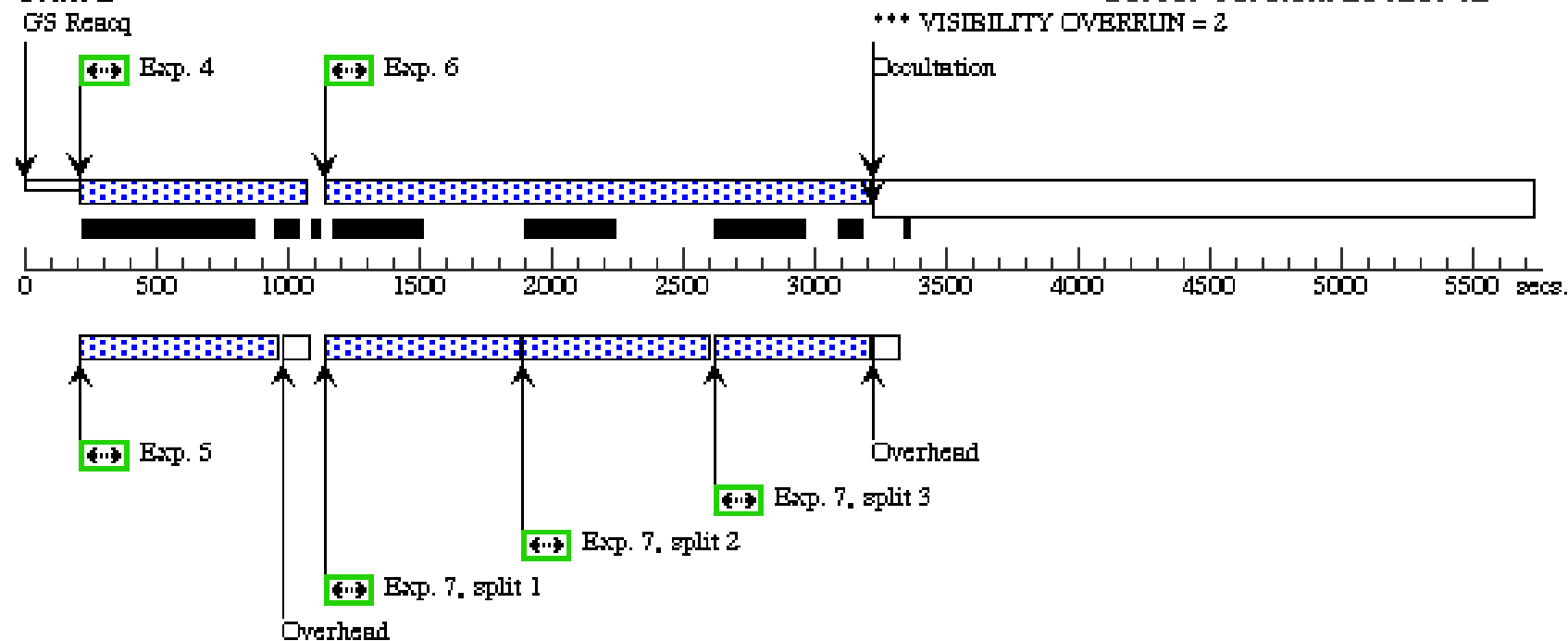
# Proposal 12603 - Visit 21 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                     |                                  |                        |                 |                                                                                 |                                              |                |     |
|--|----|---------------------|----------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|----------------------------------------------|----------------|-----|
|  | 10 | (COS.sp.184<br>757) | (21) VV2006-J13052<br>4.3+035731 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>0;<br>FLASH=YES | Prime + Parallel Gro<br>up 10-11 in Visit 21 | 820 Secs       |     |
|  |    |                     |                                  |                        |                 |                                                                                 |                                              | [==>]          | [3] |
|  |    |                     |                                  |                        |                 |                                                                                 |                                              |                |     |
|  | 11 | ANY                 |                                  | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Gro<br>up 10-11 in Visit 21 | 792 Secs       |     |
|  |    |                     |                                  |                        |                 |                                                                                 |                                              | [==>(Split 1)] | [3] |
|  |    |                     |                                  |                        |                 |                                                                                 |                                              | [==>(Split 2)] |     |



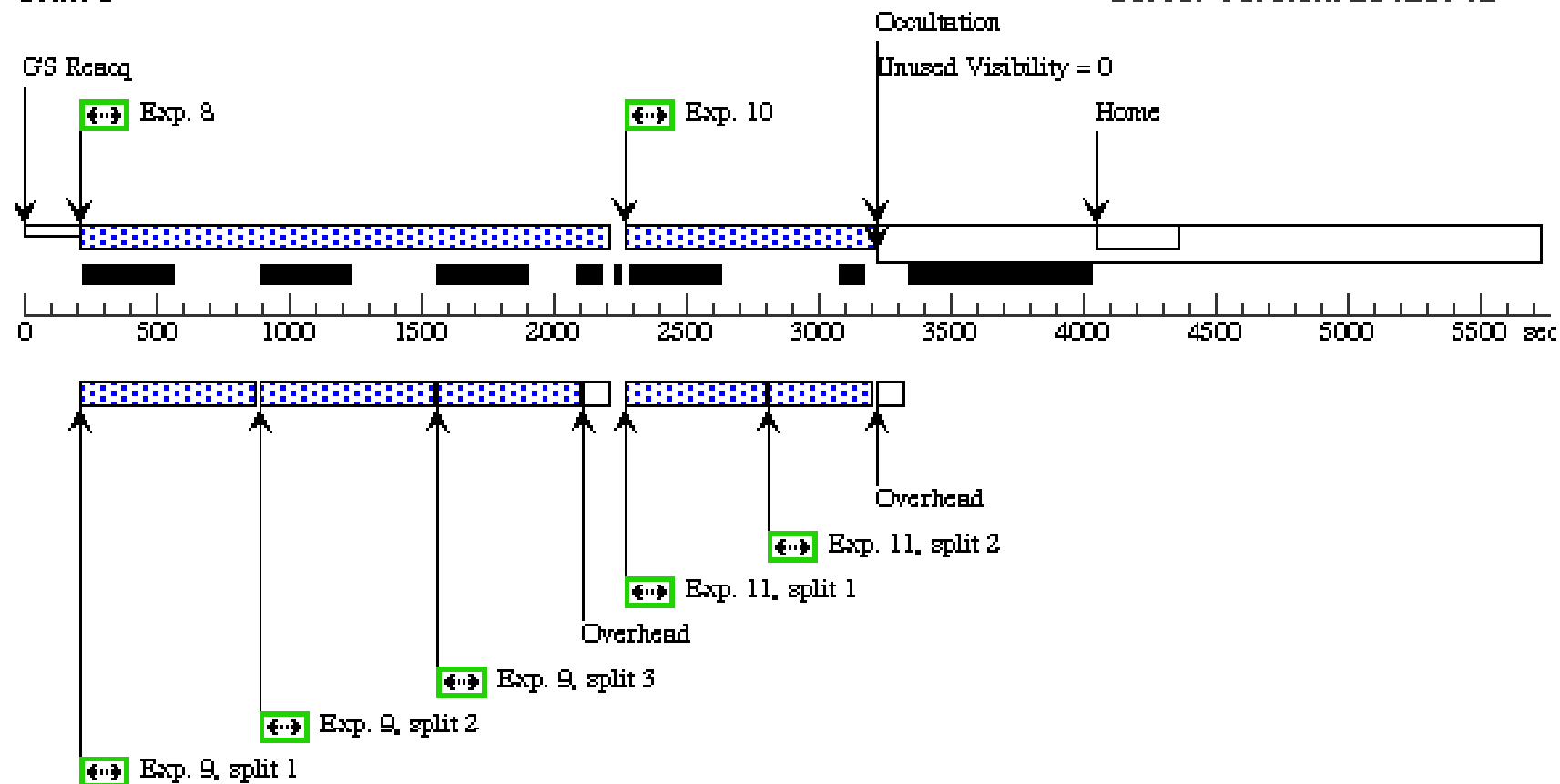
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712

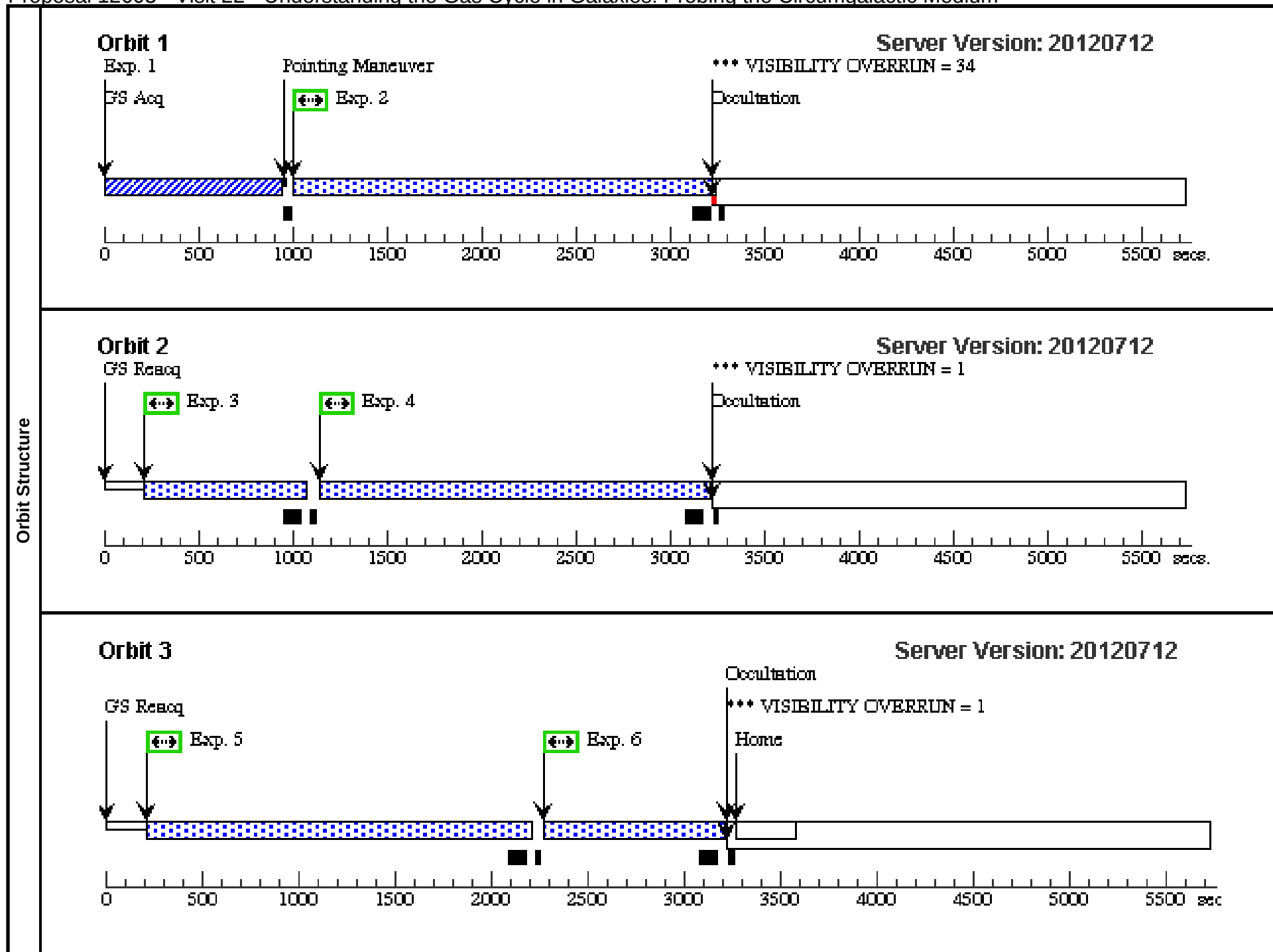


Proposal 12603 - Visit 22 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                   |                          |                                                     |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 22, completed                                                                                                                                    |                         |                                                                                   |                          |                                                     | Thu Jul 26 01:15:22 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                   |                          |                                                     |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                   |                          |                                                     |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                   |                          |                                                     |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                   |                          |                                                     |                              |
| Diagnostics   | (Visit 22) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                     |                              |
|               | (Visit 22) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                   |                          |                                                     |                              |
|               | (Visit 22) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                   |                          |                                                     |                              |
|               | (Visit 22) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                     |                              |
|               | (Visit 22) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                     |                              |
|               | (Visit 22) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                   |                          |                                                     |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                | Targ. Coord. Corrections | Fluxes                                              | Miscellaneous                |
|               | (22)                                                                                                                                                                   | VV2006-J111507.6+023757 | RA: 11 15 7.6537 (168.7818904d)<br>Dec: +02 37 57.54 (2.63265d)<br>Equinox: J2000 | Redshift: 0.5665         | V=17.227<br>FUV mag= 18.6332 & NUV ma<br>g= 17.9589 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                   |                          |                                                     |                              |

# Proposal 12603 - Visit 22 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (22) VV2006-J11150<br>7.6+023757 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (22) VV2006-J11150<br>7.6+023757 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>50;<br>FLASH=YES |               |        | 2060 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (22) VV2006-J11150<br>7.6+023757 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>0;<br>FLASH=YES  |               |        | 810 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (22) VV2006-J11150<br>7.6+023757 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (22) VV2006-J11150<br>7.6+023757 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (22) VV2006-J11150<br>7.6+023757 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>0;<br>FLASH=YES  |               |        | 820 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |

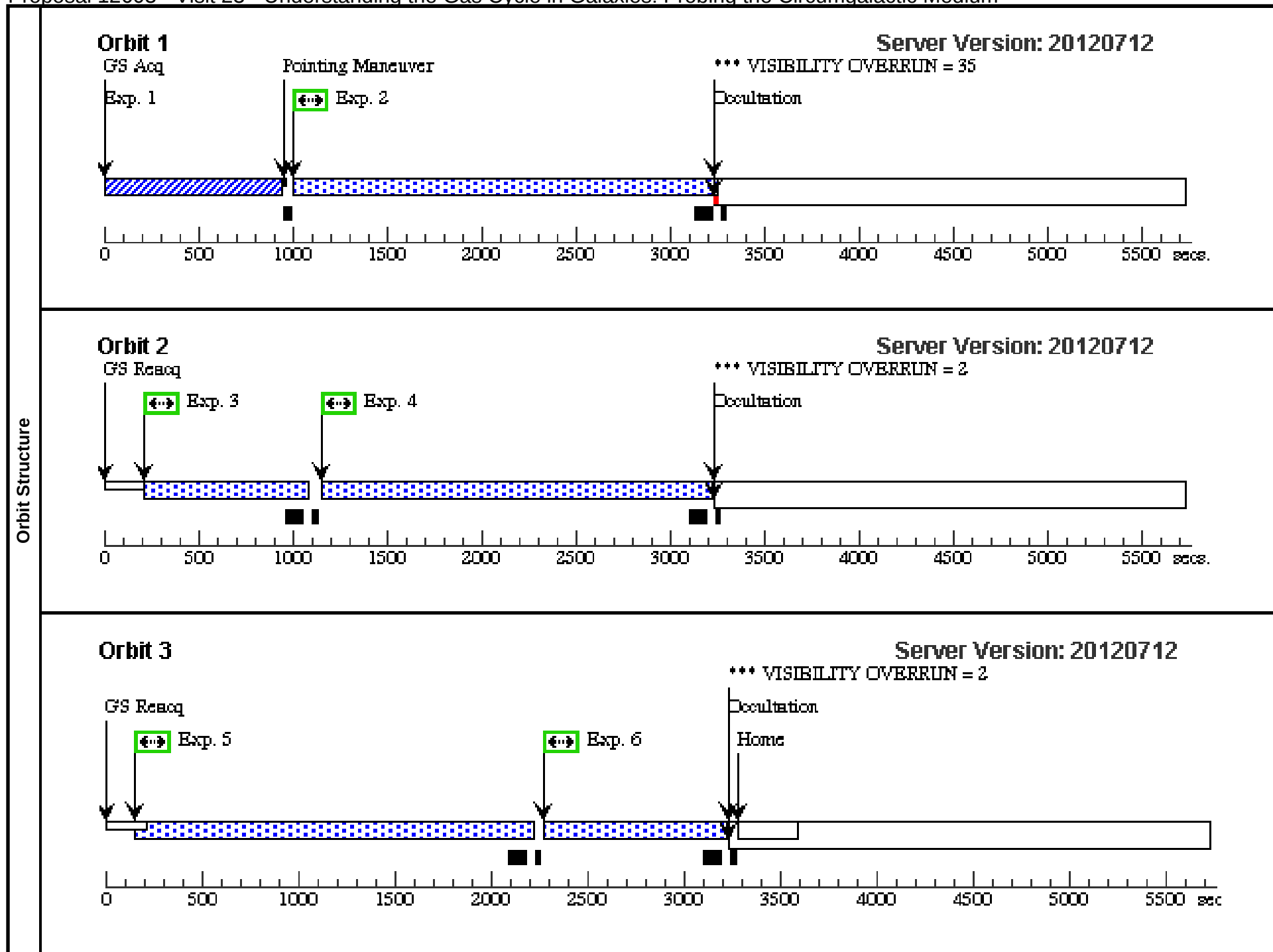


# Proposal 12603 - Visit 23 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 23, scheduling                                                                                                                                   |                         |                                                                                    |                          |                                                 | Thu Jul 26 01:15:25 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                          |                                                 |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                    |                          |                                                 |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                          |                                                 |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                    |                          |                                                 |                              |
| Diagnostics   | (Visit 23) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS                                                                                           |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
|               | (Visit 23) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                          |                                                 |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                          | Miscellaneous                |
|               | (23)                                                                                                                                                                   | VV2006-J015953.0+134554 | RA: 01 59 52.9631 (29.9706796d)<br>Dec: +13 45 54.39 (13.76511d)<br>Equinox: J2000 | Redshift: 0.5038         | V=17.841<br>FUV mag= 18.8569 & NUV mag= 18.4764 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                    |                          |                                                 |                              |
|               |                                                                                                                                                                        |                         |                                                                                    |                          |                                                 |                              |

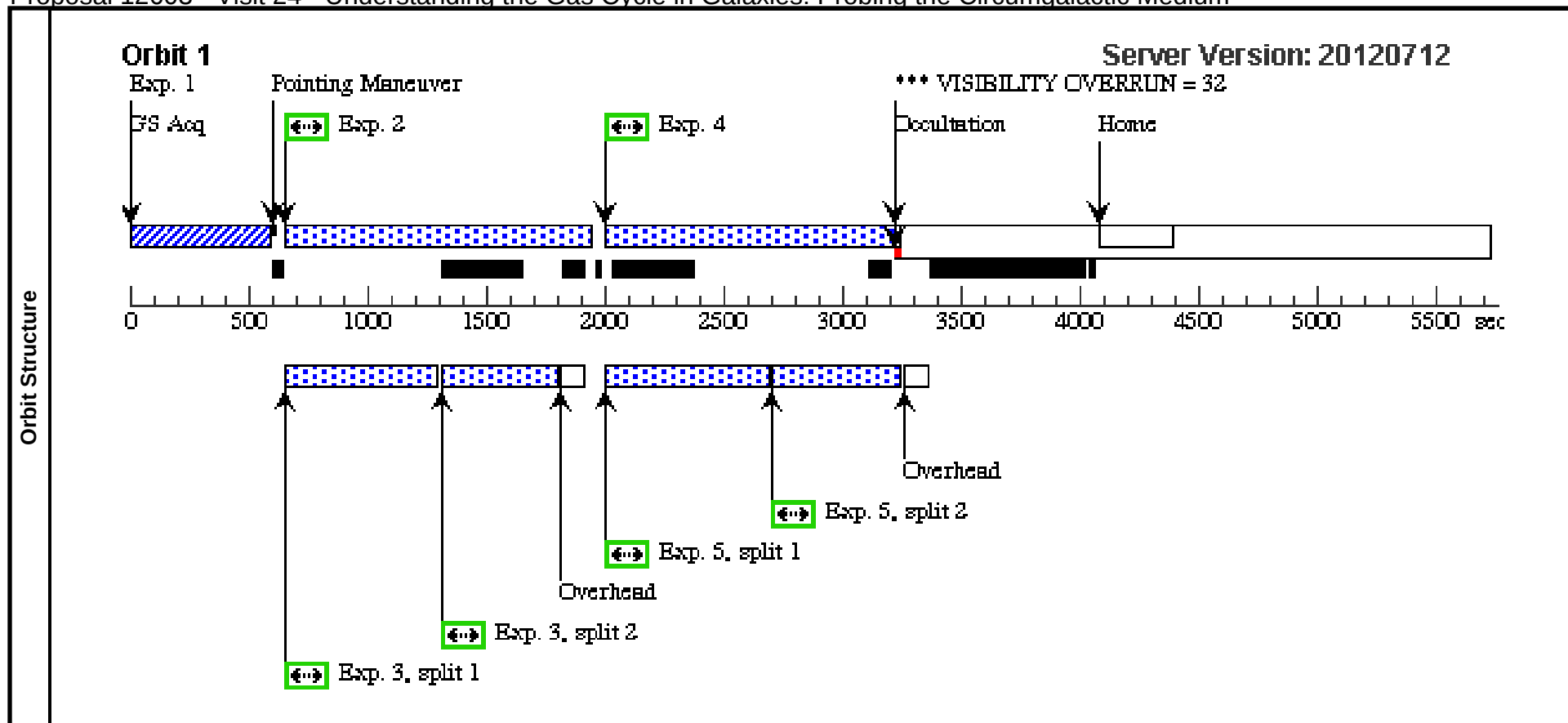
# Proposal 12603 - Visit 23 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (23) VV2006-J01595<br>3.0+134554 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (23) VV2006-J01595<br>3.0+134554 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>61;<br>FLASH=YES |               |        | 2071 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (23) VV2006-J01595<br>3.0+134554 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>1;<br>FLASH=YES  |               |        | 821 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (23) VV2006-J01595<br>3.0+134554 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (23) VV2006-J01595<br>3.0+134554 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (23) VV2006-J01595<br>3.0+134554 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=72<br>1;<br>FLASH=YES  |               |        | 831 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |



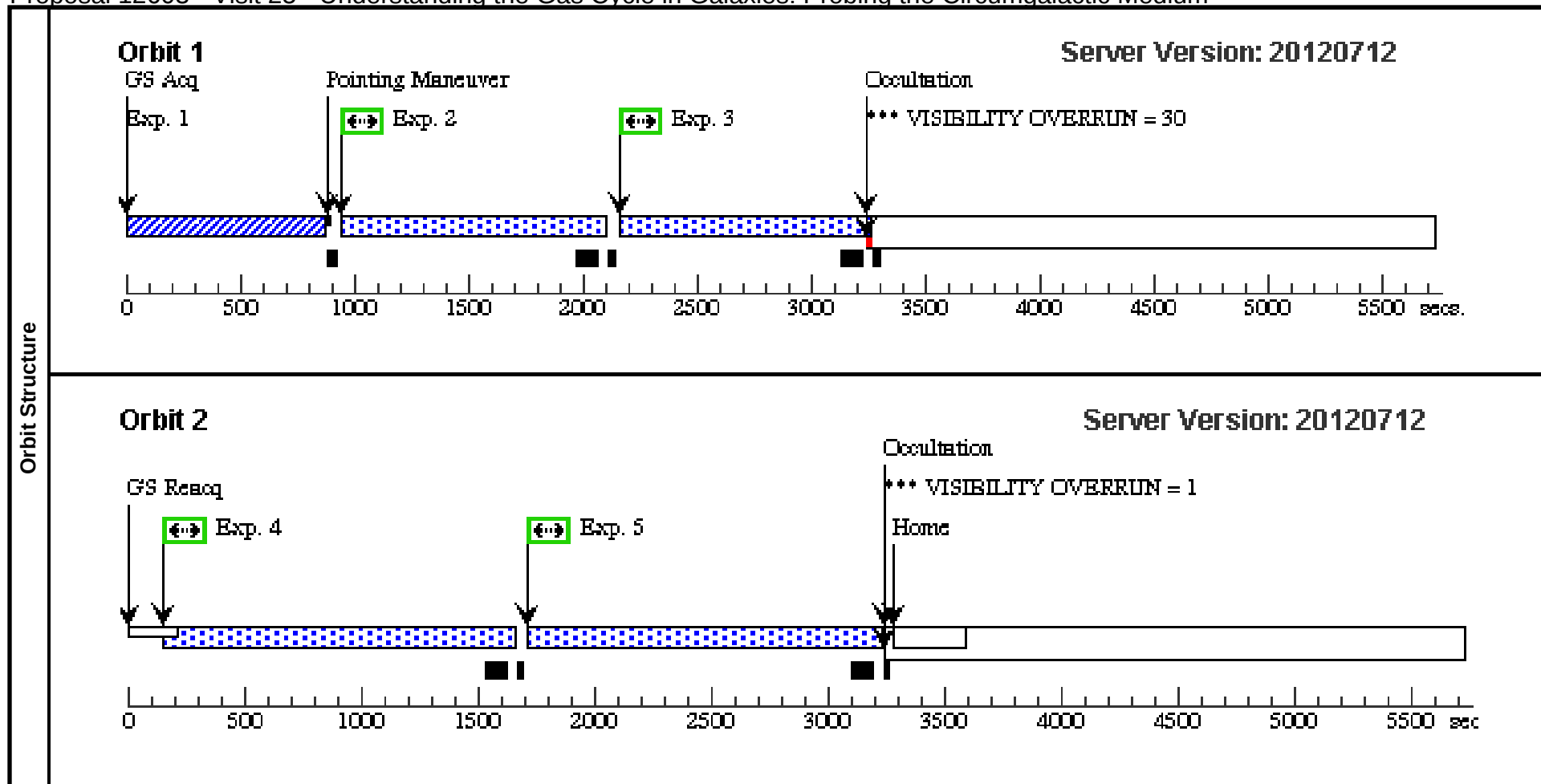
# Proposal 12603 - Visit 24 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------|-------------------------|-----|------------------------------|--|
| Visit                   | Proposal 12603, Visit 24, completed                                                                                                                                    |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     | Thu Jul 26 01:15:29 GMT 2012 |  |
|                         | Diagnostic Status: Warning                                                                                                                                             |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | Special Requirements: ORIENT 50D TO 70 D                                                                                                                               |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
| Diagnostics             | (Visit 24) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | (Visit 24) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | (Visit 24) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | (Visit 24) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
| Fixed Targets           | #                                                                                                                                                                      | Name                          | Target Coordinates                                                                 |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                             |                                        | Miscellaneous           |     |                              |  |
|                         | (24)                                                                                                                                                                   | VV2006-J085259.2+031320       | RA: 08 52 59.2234 (133.2467642d)<br>Dec: +03 13 20.59 (3.22239d)<br>Equinox: J2000 |                         | Redshift: 0.2972         |                                                                              | V=16.219<br><br>FUV mag= 17.4975 & NUV mag= 17.342 |                                        | Reference Frame: ICRS   |     |                              |  |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        |                         |     |                              |  |
|                         | (74)                                                                                                                                                                   | SDSSJ085254.99+030908.43      | RA: 08 52 54.9900 (133.2291250d)<br>Dec: +03 09 8.43 (3.15234d)<br>Equinox: J2000  |                         | Redshift: 0.03453        |                                                                              | V=16.1754                                          |                                        | Reference Frame: ICRS   |     |                              |  |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)               | Target                                                                             | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                      | Groups                                 | Exp. Time/[Actual Dur.] |     | Orbit                        |  |
|                         | 1                                                                                                                                                                      | Target Acq (198588)           | (24) VV2006-J085259.2+031320                                                       | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              |                                                    |                                        | 77 Secs                 |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        | [==>]                   |     | [1]                          |  |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)              | (24) VV2006-J085259.2+031320                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=1000;<br>FLASH=YES;<br>FP-POS=1 |                                                    | Prime + Parallel Group 2-3 in Visit 24 | 1110 Secs               |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        | [==>]                   |     | [1]                          |  |
|                         | 3                                                                                                                                                                      | (WFC3UVIS.im.185675)          | (74) SDSSJ085254.99+030908.43                                                      | WFC3/UVIS, ACCUM, UVIS  | F200LP                   | CR-SPLIT=2                                                                   |                                                    | Prime + Parallel Group 2-3 in Visit 24 | 990 Secs                |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        | [==>(Split 1)]          |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        | [==>(Split 2)]          |     | [1]                          |  |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)              | (24) VV2006-J085259.2+031320                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1012;<br>FLASH=YES |                                                    | Prime + Parallel Group 4-5 in Visit 24 | 1122 Secs               |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    |                                        | [==>]                   |     | [1]                          |  |
| 5                       | (WFC3UVIS.im.185677)                                                                                                                                                   | (74) SDSSJ085254.99+030908.43 | WFC3/UVIS, ACCUM, UVIS                                                             | F350LP                  | CR-SPLIT=2               |                                                                              | Prime + Parallel Group 4-5 in Visit 24             | 1000 Secs                              |                         |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    | [==>547.0 Secs (Split 1)]              |                         |     |                              |  |
|                         |                                                                                                                                                                        |                               |                                                                                    |                         |                          |                                                                              |                                                    | [==>547.0 Secs (Split 2)]              |                         | [1] |                              |  |



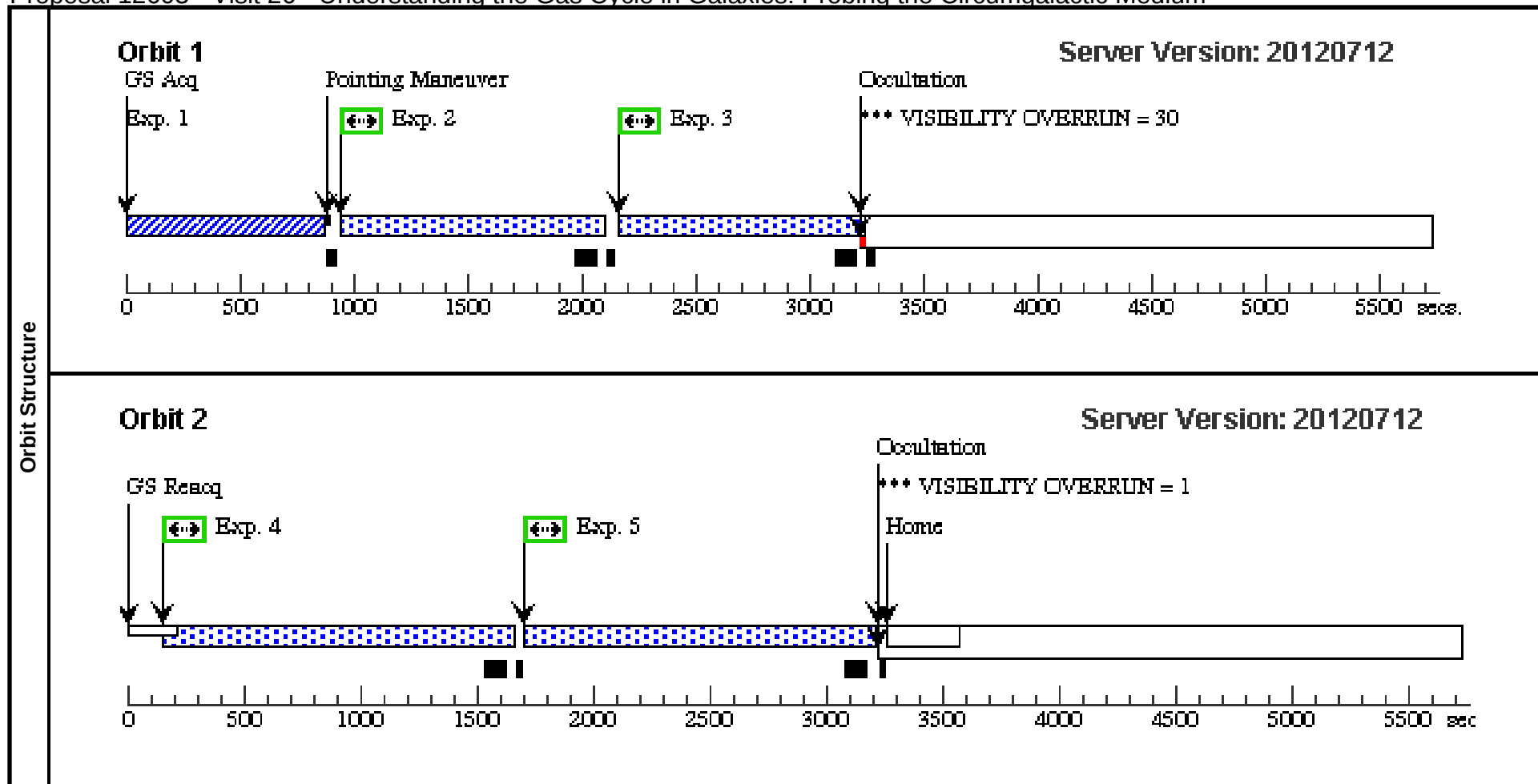
# Proposal 12603 - Visit 25 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|----------------------------------------------|--------|-------------------------|--|------------------------------|
| Visit         | Proposal 12603, Visit 25, scheduling                                                                                                                                   |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  | Thu Jul 26 01:15:30 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | Comments: 2-orbit Visit                                                                                                                                                |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
| Diagnostics   | (Visit 25) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | (Visit 25) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | (Visit 25) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | (Visit 25) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
|               | (Visit 25) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                  |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                       |        | Miscellaneous           |  |                              |
|               | (25)                                                                                                                                                                   | 2MASS-J13482237+2456498 | RA: 13 48 22.3165 (207.0929854d)<br>Dec: +24 56 50.09 (24.94725d)<br>Equinox: J2000 |                         | Redshift: 0.2934         |                                                                              | V=18.1<br>FUV mag= 18.4557 & NUV mag= 18.598 |        | Reference Frame: ICRS   |  |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |
| Exposures     | #                                                                                                                                                                      | Label (ETC Run)         | Target                                                                              | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                | Groups | Exp. Time/[Actual Dur.] |  | Orbit                        |
|               | 1                                                                                                                                                                      | Target Acq (198668)     | (25) 2MASS-J1348237+2456498                                                         | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              |                                              |        | 219 Secs<br>[==>]       |  | [1]                          |
|               | 2                                                                                                                                                                      | (COS.sp.184 757)        | (25) 2MASS-J1348237+2456498                                                         | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=865;<br>FLASH=YES  |                                              |        | 975 Secs<br>[==>]       |  | [1]                          |
|               | 3                                                                                                                                                                      | (COS.sp.184 757)        | (25) 2MASS-J1348237+2456498                                                         | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=868;<br>FLASH=YES  |                                              |        | 978 Secs<br>[==>]       |  | [1]                          |
|               | 4                                                                                                                                                                      | (COS.sp.184 757)        | (25) 2MASS-J1348237+2456498                                                         | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1280;<br>FLASH=YES |                                              |        | 1390 Secs<br>[==>]      |  | [2]                          |
|               | 5                                                                                                                                                                      | (COS.sp.184 757)        | (25) 2MASS-J1348237+2456498                                                         | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1285;<br>FLASH=YES |                                              |        | 1395 Secs<br>[==>]      |  | [2]                          |
|               |                                                                                                                                                                        |                         |                                                                                     |                         |                          |                                                                              |                                              |        |                         |  |                              |



# Proposal 12603 - Visit 26 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|------------------------------------------------|--------|-------------------------|-------|------------------------------|
| Visit         | Proposal 12603, Visit 26, completed                                                                                                                                    |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       | Thu Jul 26 01:15:32 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | Comments: 2-orbit Visit                                                                                                                                                |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
| Diagnostics   | (Visit 26) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | (Visit 26) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | (Visit 26) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | (Visit 26) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               | (Visit 26) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                         |        | Miscellaneous           |       |                              |
|               | (26)                                                                                                                                                                   | VV2006-J112005.0+041323 | RA: 11 20 4.9916 (170.0207983d)<br>Dec: +04 13 23.32 (4.22314d)<br>Equinox: J2000 |                         | Redshift: 0.5452         |                                                                              | V=17.23<br>FUV mag= 18.1395 & NUV mag= 17.6127 |        | Reference Frame: ICRS   |       |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
| Exposures     | #                                                                                                                                                                      | Label (ETC Run)         | Target                                                                            | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                  | Groups | Exp. Time/[Actual Dur.] | Orbit |                              |
|               | 1                                                                                                                                                                      | Target Acq (198668)     | (26) VV2006-J11200 5.0+041323                                                     | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              |                                                |        | 219 Secs<br>[==>]       | [1]   |                              |
|               | 2                                                                                                                                                                      | (COS.sp.184 757)        | (26) VV2006-J11200 5.0+041323                                                     | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=865;<br>FLASH=YES  |                                                |        | 975 Secs<br>[==>]       | [1]   |                              |
|               | 3                                                                                                                                                                      | (COS.sp.184 757)        | (26) VV2006-J11200 5.0+041323                                                     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=853;<br>FLASH=YES  |                                                |        | 963 Secs<br>[==>]       | [1]   |                              |
|               | 4                                                                                                                                                                      | (COS.sp.184 757)        | (26) VV2006-J11200 5.0+041323                                                     | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A          | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1275;<br>FLASH=YES |                                                |        | 1385 Secs<br>[==>]      | [2]   |                              |
|               | 5                                                                                                                                                                      | (COS.sp.184 757)        | (26) VV2006-J11200 5.0+041323                                                     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1275;<br>FLASH=YES |                                                |        | 1385 Secs<br>[==>]      | [2]   |                              |
|               |                                                                                                                                                                        |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               |                                                                                                                                                                        |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               |                                                                                                                                                                        |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |
|               |                                                                                                                                                                        |                         |                                                                                   |                         |                          |                                                                              |                                                |        |                         |       |                              |

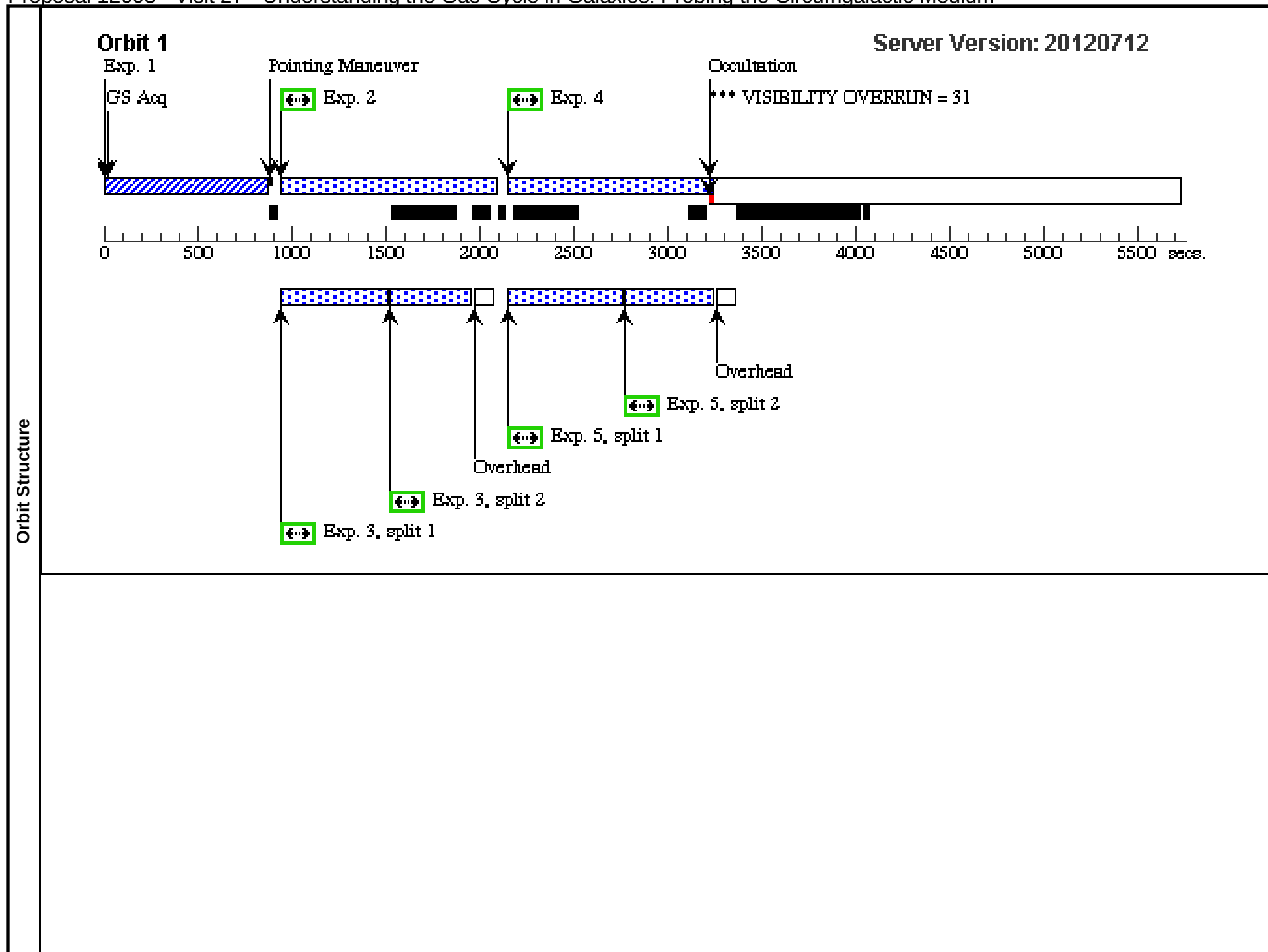


# Proposal 12603 - Visit 27 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                          |                                                                                    |                          |                                                 |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 27, completed                                                                                                                                    |                          |                                                                                    |                          |                                                 | Thu Jul 26 01:15:34 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                          |                                                 |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                    |                          |                                                 |                              |
|                         | Special Requirements: ORIENT 90.0D TO 110.0 D                                                                                                                          |                          |                                                                                    |                          |                                                 |                              |
| Comments: 2-orbit Visit |                                                                                                                                                                        |                          |                                                                                    |                          |                                                 |                              |
| Diagnostics             | (Visit 27) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                          |                                                 |                              |
|                         | (Visit 27) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                          |                                                 |                              |
|                         | (Visit 27) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                          |                                                 |                              |
|                         | (Visit 27) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                                 |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                          | Miscellaneous                |
|                         | (27)                                                                                                                                                                   | VV2006-J140655.7+015713  | RA: 14 06 55.6629 (211.7319287d)<br>Dec: +01 57 12.85 (1.95357d)<br>Equinox: J2000 | Redshift: 0.4266         | V=18.147<br>FUV mag= 18.2443 & NUV mag= 18.1943 | Reference Frame: ICRS        |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                          |                                                 |                              |
|                         | (77)                                                                                                                                                                   | SDSSJ140642.63+015452.25 | RA: 14 06 42.6300 (211.6776250d)<br>Dec: +01 54 52.25 (1.91451d)<br>Equinox: J2000 | Redshift: 0.04721        | V=18.1455                                       | Reference Frame: ICRS        |

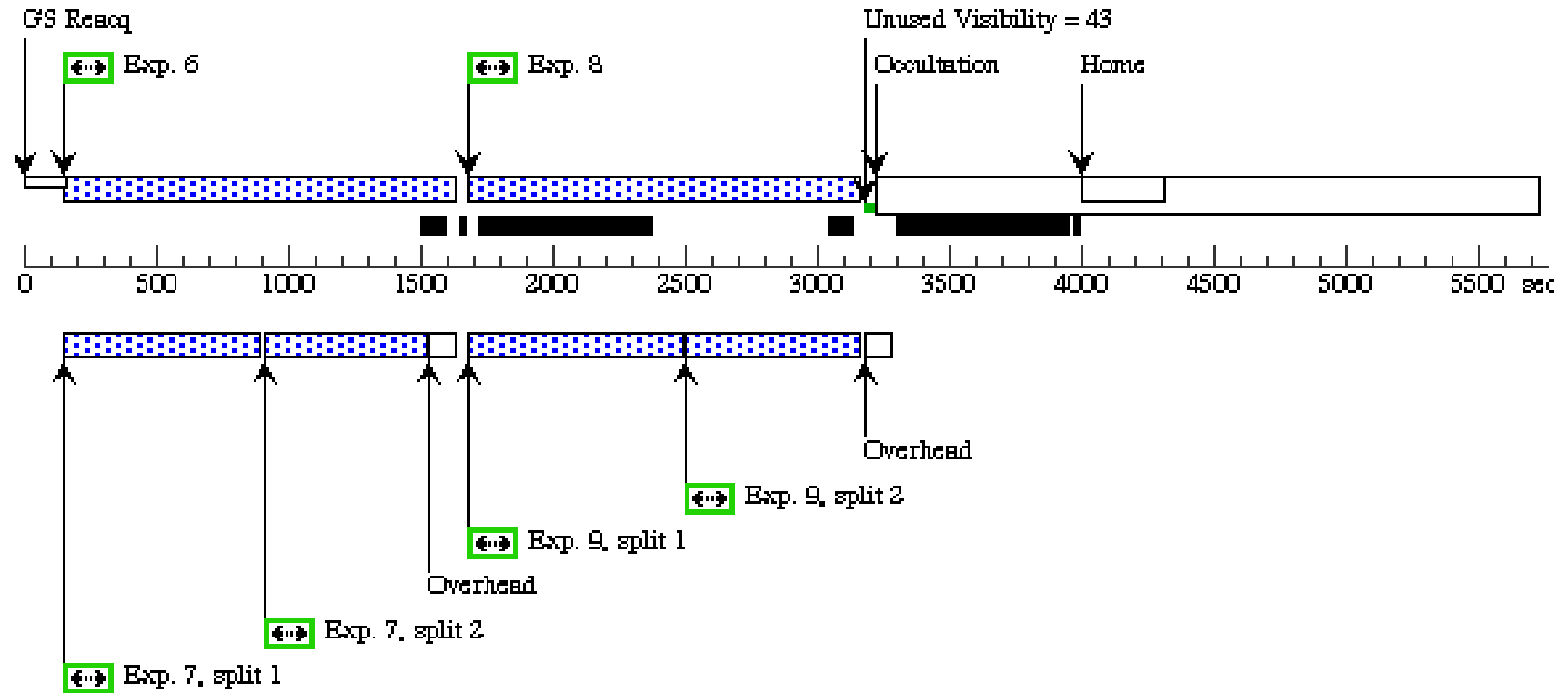
# Proposal 12603 - Visit 27 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.              | Groups                                     | Exp. Time/[Actual Dur.]                                             | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|----------------------------|--------------------------------------------|---------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (27) VV2006-J14065<br>5.7+015713  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O SINGLE |                                            | 219 Secs<br>[==>]                                                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (27) VV2006-J14065<br>5.7+015713  | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=85<br>9;<br>FLASH=YES  |                            | Prime + Parallel Gro<br>up 2-3 in Visit 27 | 969 Secs<br>[==>]                                                   | [1]   |
|           | 3 |                        | (77) SDSSJ140642.6<br>3+015452.25 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 2-3 in Visit 27 | 825 Secs<br>[==>428.5 Secs (Split 1)]<br>[==>428.5 Secs (Split 2)]  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (27) VV2006-J14065<br>5.7+015713  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=85<br>9;<br>FLASH=YES  |                            | Prime + Parallel Gro<br>up 4-5 in Visit 27 | 969 Secs<br>[==>]                                                   | [1]   |
|           | 5 |                        | (77) SDSSJ140642.6<br>3+015452.25 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 4-5 in Visit 27 | 900 Secs<br>[==>470.0 Secs (Split 1)]<br>[==>470.0 Secs (Split 2)]  | [1]   |
|           | 6 | (COS.sp.184<br>757)    | (27) VV2006-J14065<br>5.7+015713  | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>50;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 6-7 in Visit 27 | 1360 Secs<br>[==>]                                                  | [2]   |
|           | 7 |                        | (77) SDSSJ140642.6<br>3+015452.25 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 6-7 in Visit 27 | 1200 Secs<br>[==>611.0 Secs (Split 1)]<br>[==>611.0 Secs (Split 2)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (27) VV2006-J14065<br>5.7+015713  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>50;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 8-9 in Visit 27 | 1360 Secs<br>[==>]                                                  | [2]   |
|           | 9 |                        | (77) SDSSJ140642.6<br>3+015452.25 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                            | Prime + Parallel Gro<br>up 8-9 in Visit 27 | 1250 Secs<br>[==>666.0 Secs (Split 1)]<br>[==>666.0 Secs (Split 2)] | [2]   |



## Orbit 2

Server Version: 20120712

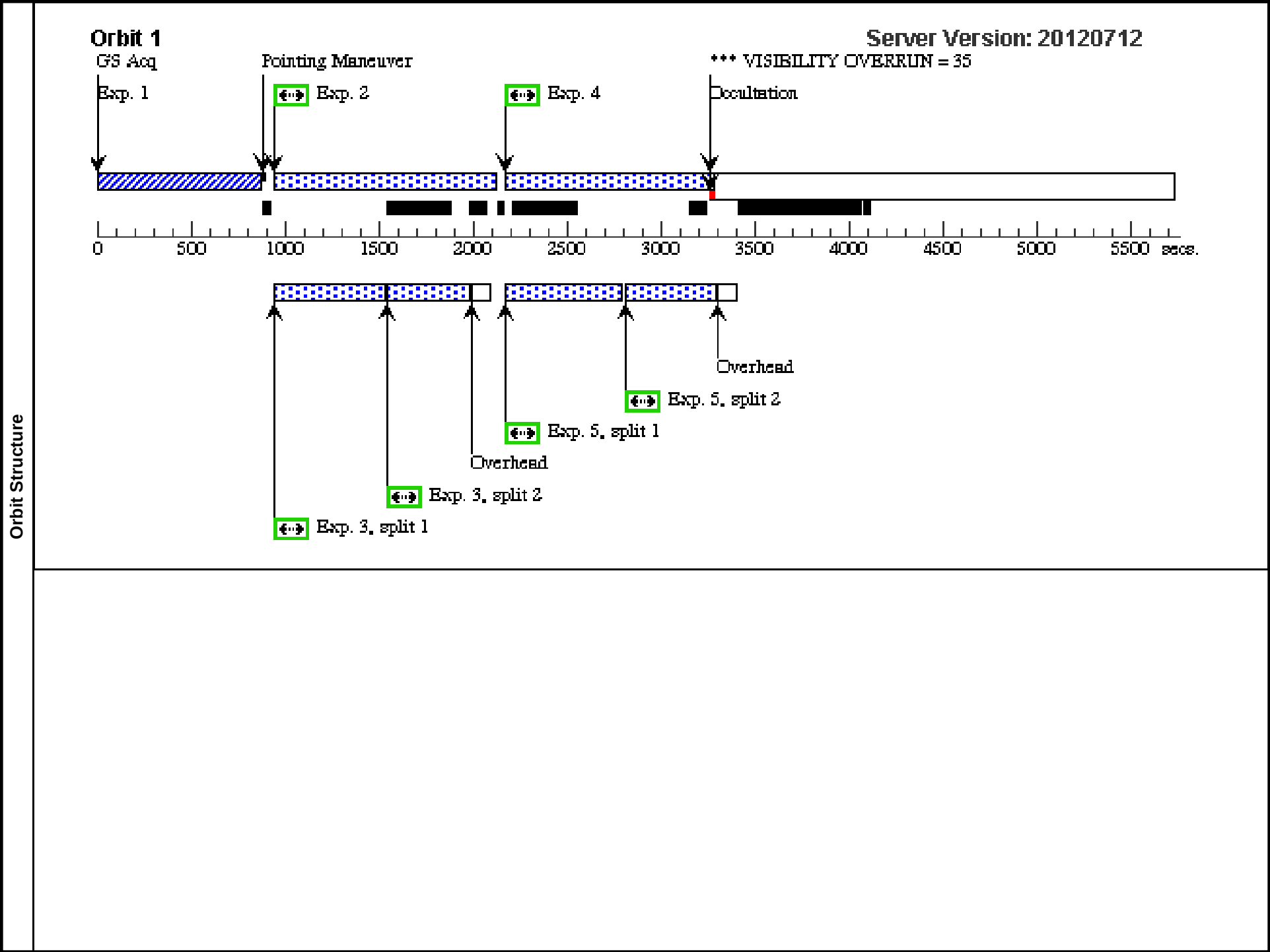


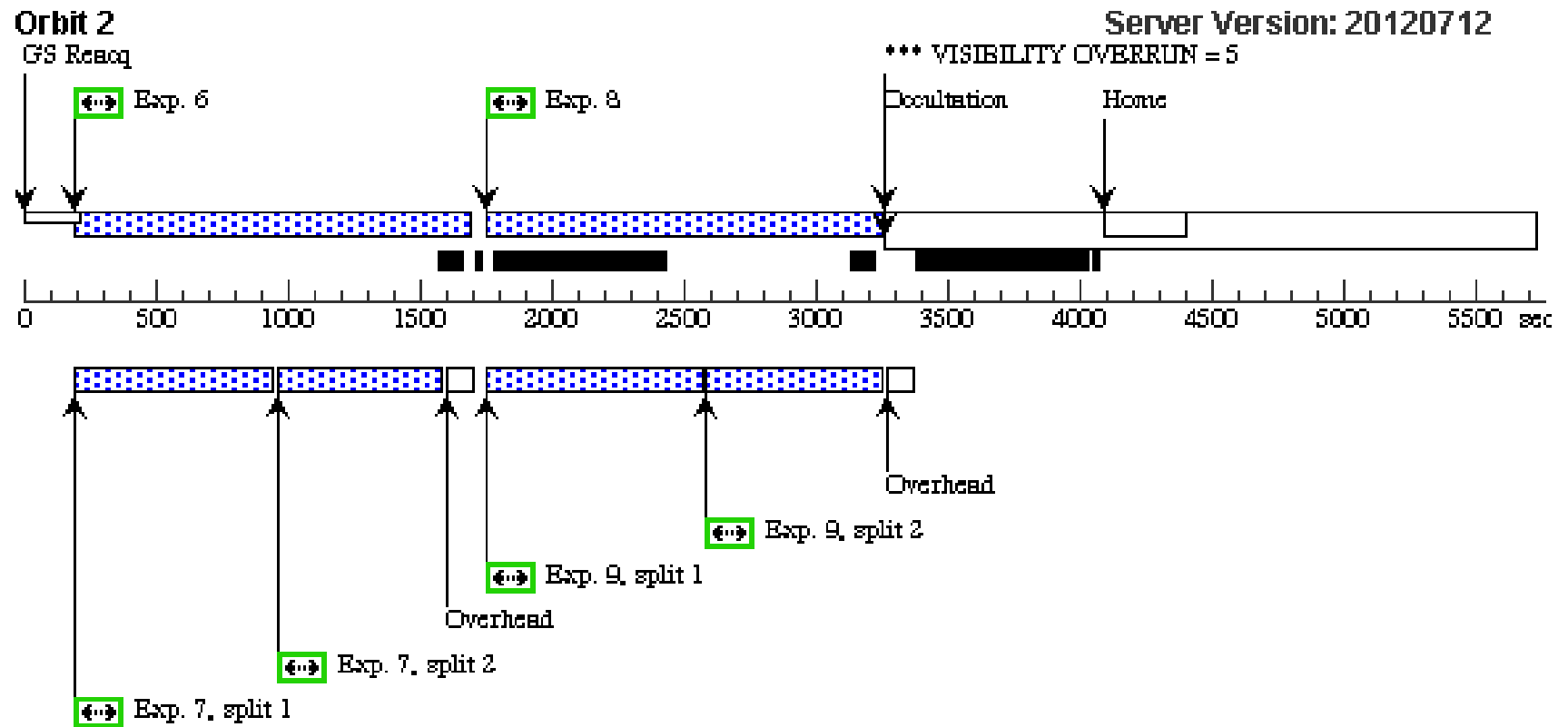
# Proposal 12603 - Visit 28 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 28, completed</b> <span>Thu Jul 26 01:15:36 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 85.0D TO 100.0 D<br><i>Comments: 2-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                    |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 28) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 28) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 28) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 28) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 28) Warning (Orbit Planner): VISIBILITY OVERRUN |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (28)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QSO-B0906+3248           | RA: 09 09 6.1778 (137.2757408d)<br>Dec: +32 36 30.10 (32.60836d)<br>Equinox: J2000  | Redshift: 0.8087         | V=17.0<br>FUV mag= 17.9564 & NUV mag= 17.2372 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                                                                                     |                          |                                               |
|               | (78)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSSJ090855.57+323433.08 | RA: 09 08 55.5700 (137.2315417d)<br>Dec: +32 34 33.08 (32.57586d)<br>Equinox: J2000 | Redshift: 0.04896        | V=17.0250<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 28 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                             | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|---------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (28) QSO-B0906+32<br>48           | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 219 Secs<br>[==>]                                                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (28) QSO-B0906+32<br>48           | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=88<br>3;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 2-3 in Visit 28 | 993 Secs<br>[==>]                                                   | [1]   |
|           | 3 |                        | (78) SDSSJ090855.5<br>7+323433.08 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 28 | 849 Secs<br>[==>440.5 Secs (Split 1)]<br>[==>440.5 Secs (Split 2)]  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (28) QSO-B0906+32<br>48           | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=87<br>6;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 28 | 986 Secs<br>[==>]                                                   | [1]   |
|           | 5 |                        | (78) SDSSJ090855.5<br>7+323433.08 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 4-5 in Visit 28 | 900 Secs<br>[==>479.0 Secs (Split 1)]<br>[==>479.0 Secs (Split 2)]  | [1]   |
|           | 6 | (COS.sp.184<br>757)    | (28) QSO-B0906+32<br>48           | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>70;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 28 | 1380 Secs<br>[==>]                                                  | [2]   |
|           | 7 |                        | (78) SDSSJ090855.5<br>7+323433.08 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 28 | 1200 Secs<br>[==>621.0 Secs (Split 1)]<br>[==>621.0 Secs (Split 2)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (28) QSO-B0906+32<br>48           | COS/FUV, TIME-TAG, PSA  | G130M<br>1318 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>71;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 28 | 1381 Secs<br>[==>]                                                  | [2]   |
|           | 9 |                        | (78) SDSSJ090855.5<br>7+323433.08 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 28 | 1250 Secs<br>[==>676.0 Secs (Split 1)]<br>[==>676.0 Secs (Split 2)] | [2]   |



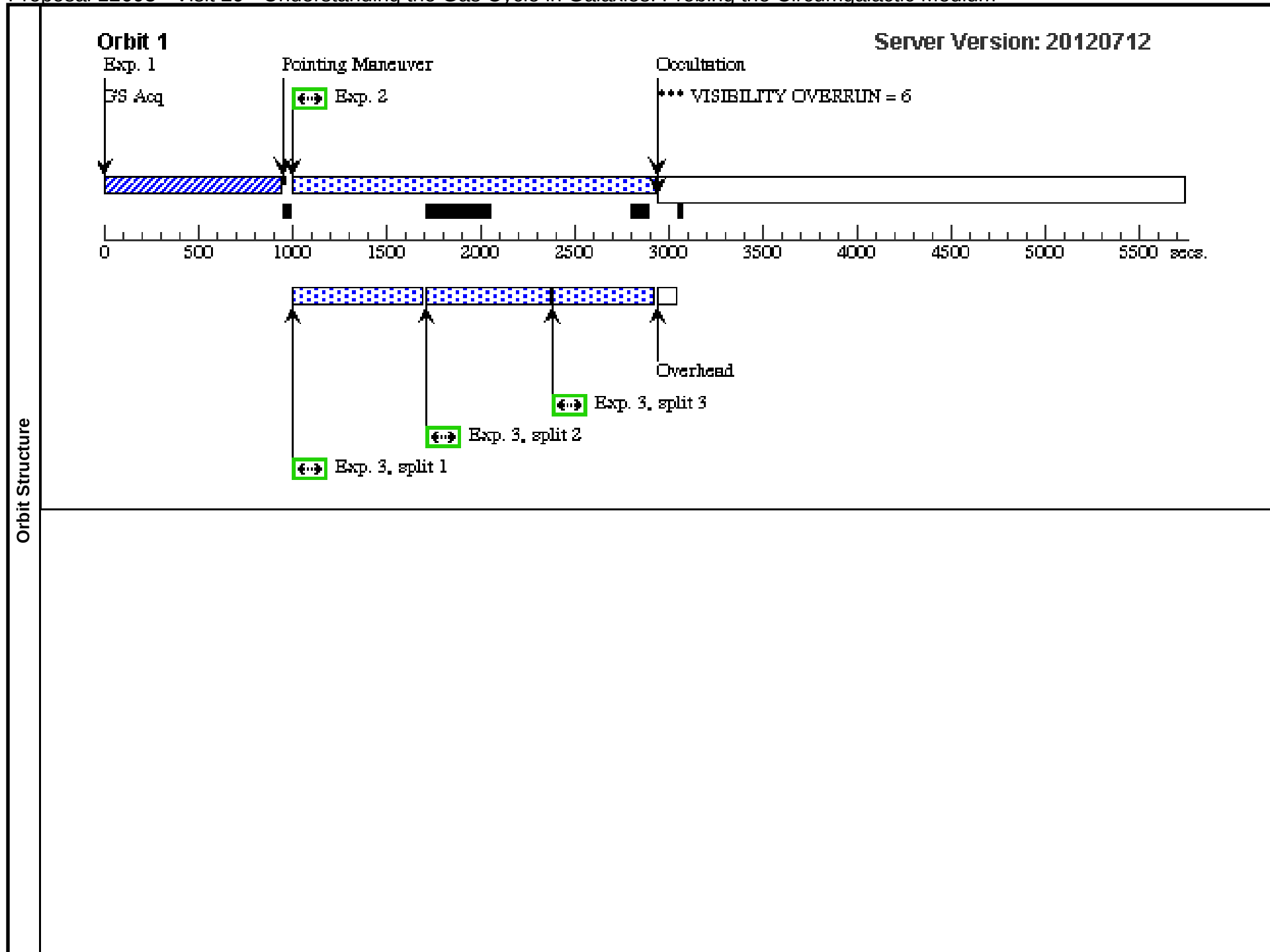


# Proposal 12603 - Visit 29 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                     |                          |                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 29, implementation</b> <span style="float: right;">Thu Jul 26 01:15:38 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 170.0D TO 190.0 D; VISIBILITY INTERVAL 49 M<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 29) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 29) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 29) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100. |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (29)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SDSS-J135424.90+243006.3 | RA: 13 54 24.9030 (208.6037625d)<br>Dec: +24 30 6.32 (24.50176d)<br>Equinox: J2000  | Redshift: 1.8782         | V=17.7<br>FUV mag= 18.6303 & NUV mag= 18.4328 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                                                                                     |                          |                                               |
|               | (79)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | SDSSJ135411.14+243322.55 | RA: 13 54 11.1400 (208.5464167d)<br>Dec: +24 33 22.55 (24.55626d)<br>Equinox: J2000 | Redshift: 0.02863        | V=17.7167<br>Reference Frame: ICRS            |

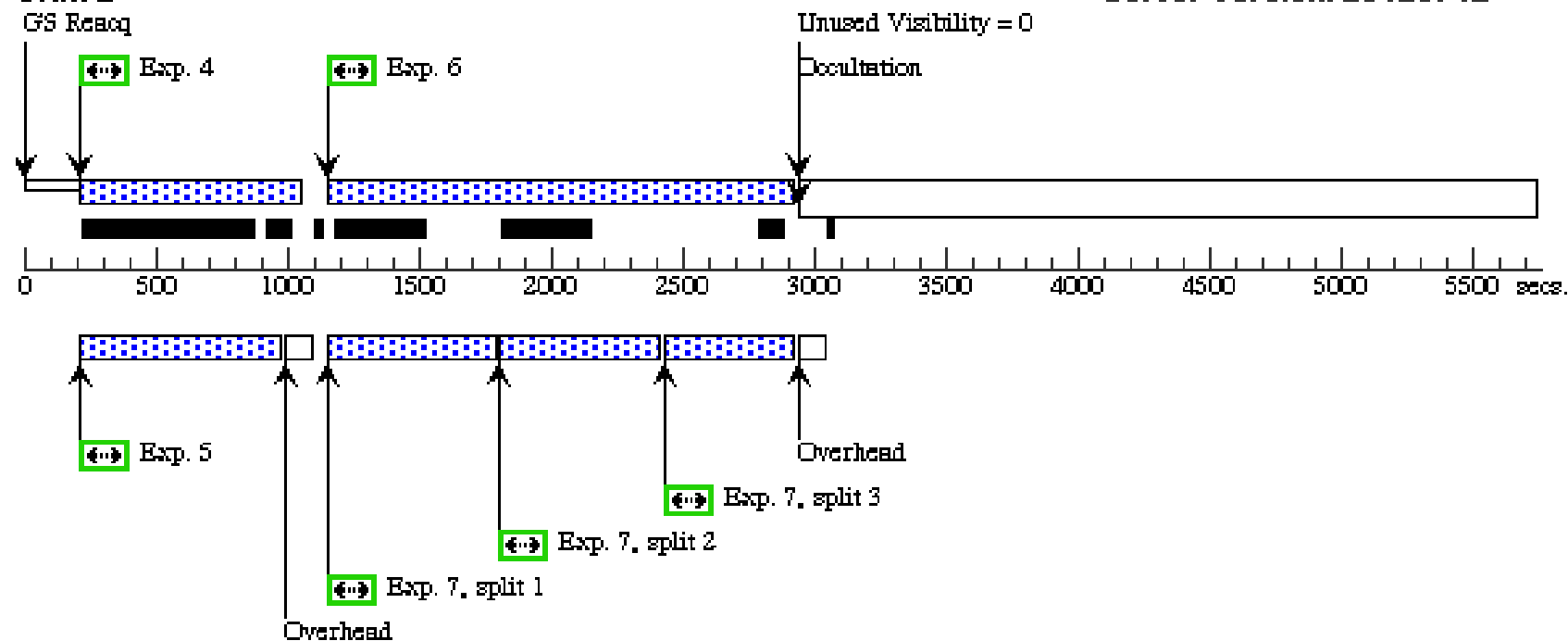
# Proposal 12603 - Visit 29 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs. | Groups                                 | Exp. Time/[Actual Dur.]                            | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|---------------|----------------------------------------|----------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (29) SDSS-J135424.90+243006.3     | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              |               |                                        | 252 Secs                                           |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>]                                              | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (29) SDSS-J135424.90+243006.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=1633;<br>FLASH=YES |               | Prime + Parallel Group 2-3 in Visit 29 | 1743 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>]                                              | [1]   |
|           | 3 |                        | (79) SDSSJ135411.1<br>4+243322.55 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 2-3 in Visit 29 | 1633 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (29) SDSS-J135424.90+243006.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=673;<br>FLASH=YES  |               | Prime + Parallel Group 4-5 in Visit 29 | 783 Secs                                           |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>]                                              | [2]   |
|           | 5 |                        | (79) SDSSJ135411.1<br>4+243322.55 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                  |               | Prime + Parallel Group 4-5 in Visit 29 | 600 Secs                                           |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>760.0 Secs ]                                   | [2]   |
| Exposures | 6 | (COS.sp.184<br>757)    | (29) SDSS-J135424.90+243006.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=1539;<br>FLASH=YES |               | Prime + Parallel Group 6-7 in Visit 29 | 1649 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>]                                              | [2]   |
|           | 7 |                        | (79) SDSSJ135411.1<br>4+243322.55 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 6-7 in Visit 29 | 1490 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (29) SDSS-J135424.90+243006.3     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=2544;<br>FLASH=YES |               | Prime + Parallel Group 8-9 in Visit 29 | 2654 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>]                                              | [3]   |
|           | 9 |                        | (79) SDSSJ135411.1<br>4+243322.55 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 8-9 in Visit 29 | 2450 Secs                                          |       |
|           |   |                        |                                   |                         |                 |                                                                              |               |                                        | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [3]   |



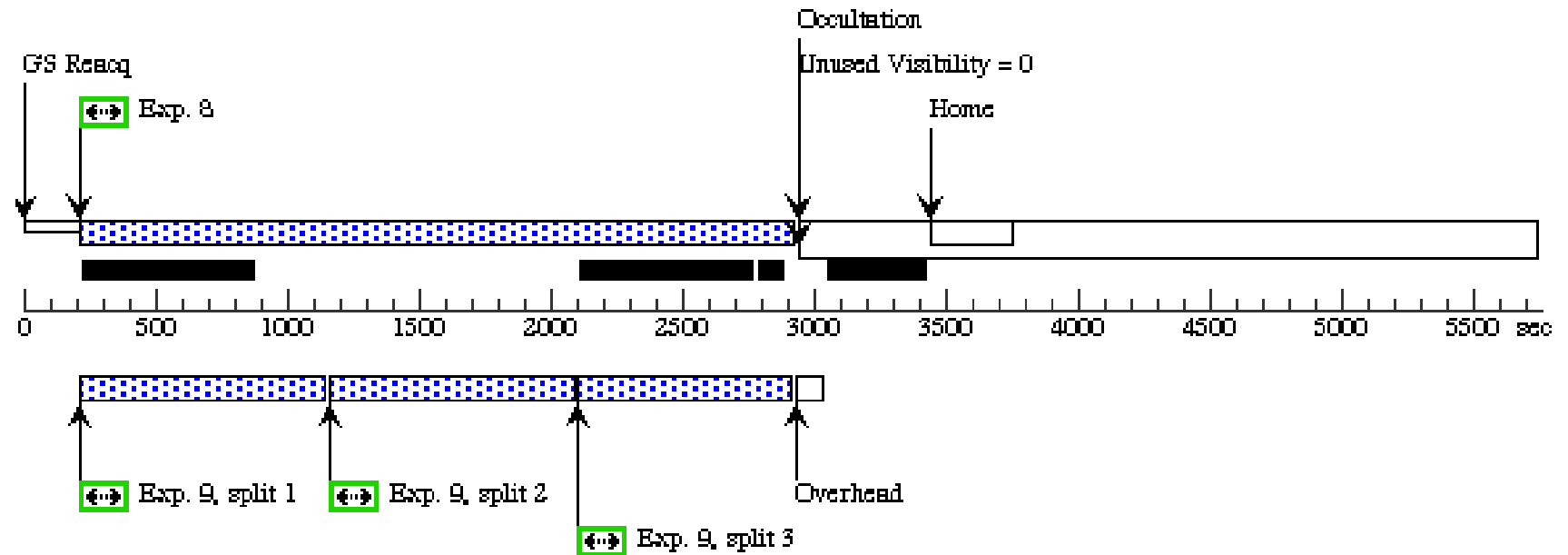
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712

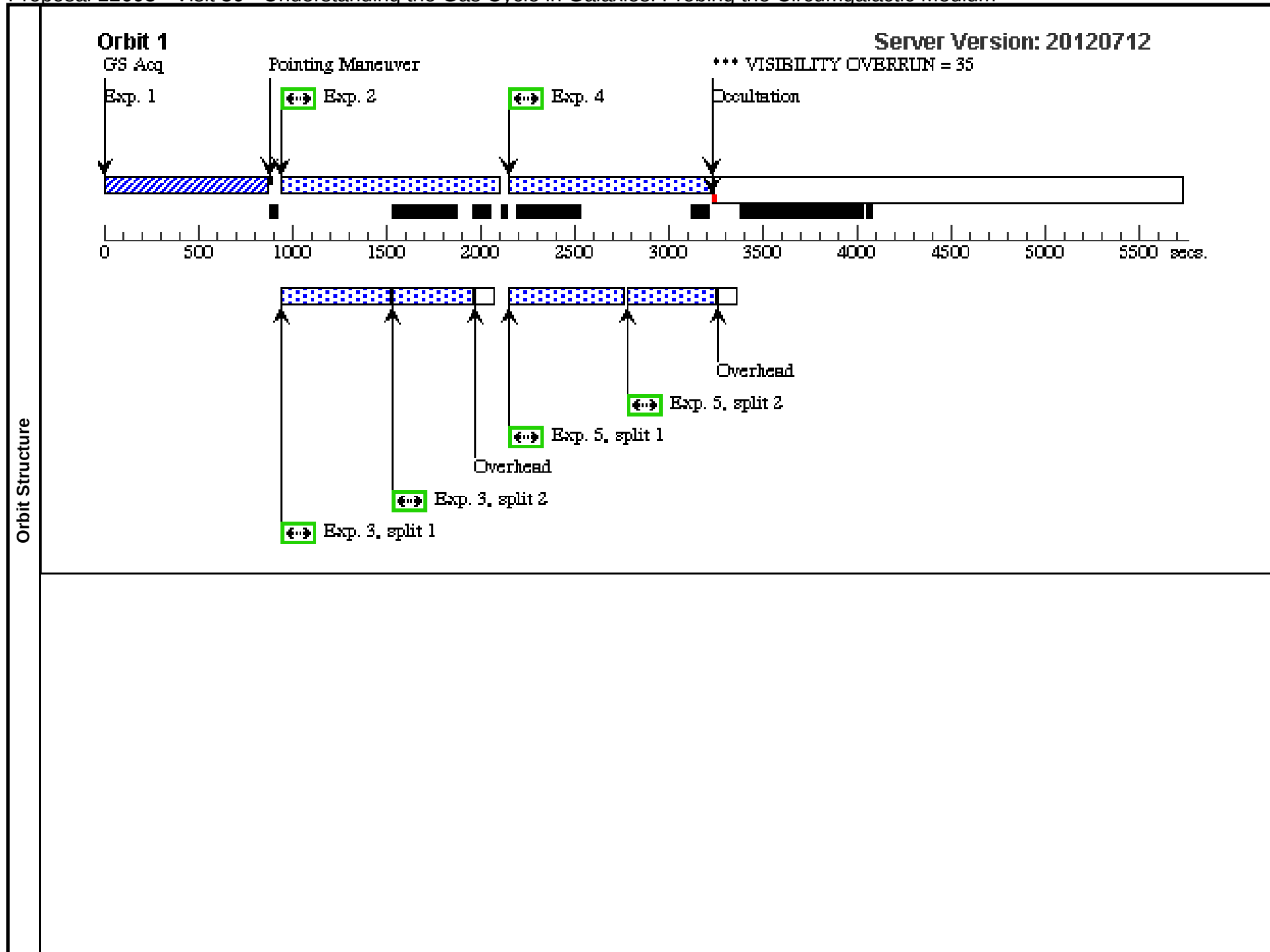


# Proposal 12603 - Visit 30 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                    |                          |                                                |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|------------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 30, completed</b> <span style="float: right;">Thu Jul 26 01:15:45 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                                                                                    |                          |                                                |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 110.0D TO 125.0 D<br><i>Comments: 2-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                                                                                    |                          |                                                |
| Diagnostics   | (Visit 30) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 30) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 30) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 30) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 30) Warning (Orbit Planner): VISIBILITY OVERRUN |                          |                                                                                    |                          |                                                |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                    |                          |                                                |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                         |
|               | (30)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | VV2006-J080838.8+051440  | RA: 08 08 38.8499 (122.1618746d)<br>Dec: +05 14 40.00 (5.24444d)<br>Equinox: J2000 | Redshift: 0.3606         | V=18.56<br>FUV mag= 18.3463 & NUV mag= 18.0771 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                                                                                    |                          |                                                |
|               | (80)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSSJ080816.44+051258.03 | RA: 08 08 16.4400 (122.0685000d)<br>Dec: +05 12 58.03 (5.21612d)<br>Equinox: J2000 | Redshift: 0.03078        | V=18.2877<br>Reference Frame: ICRS             |

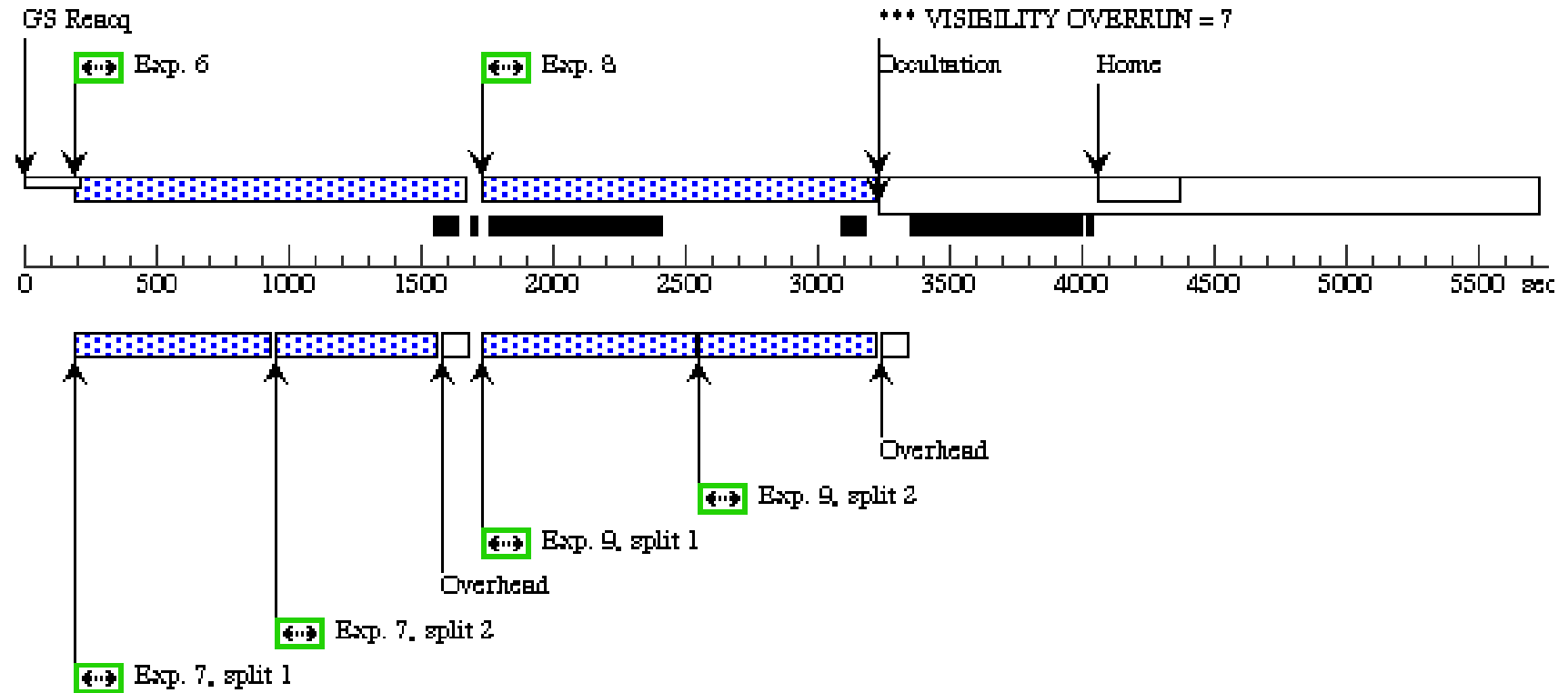
# Proposal 12603 - Visit 30 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]   | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|---------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (30) VV2006-J08083<br>8.8+051440  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 219 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (30) VV2006-J08083<br>8.8+051440  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>3;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 2-3 in Visit 30 | 973 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 3 |                        | (80) SDSSJ080816.4<br>4+051258.03 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 30 | 829 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>430.5 Secs (Split 1)] | [1]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>430.5 Secs (Split 2)] |       |
|           | 4 | (COS.sp.184<br>757)    | (30) VV2006-J08083<br>8.8+051440  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>3;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 30 | 973 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 5 |                        | (80) SDSSJ080816.4<br>4+051258.03 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 4-5 in Visit 30 | 900 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>472.0 Secs (Split 1)] | [1]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>472.0 Secs (Split 2)] |       |
|           | 6 | (COS.sp.184<br>757)    | (30) VV2006-J08083<br>8.8+051440  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>50;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 30 | 1360 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [2]   |
|           | 7 |                        | (80) SDSSJ080816.4<br>4+051258.03 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 30 | 1200 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>611.0 Secs (Split 1)] | [2]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>611.0 Secs (Split 2)] |       |
|           | 8 | (COS.sp.184<br>757)    | (30) VV2006-J08083<br>8.8+051440  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>58;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 30 | 1368 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [2]   |
|           | 9 |                        | (80) SDSSJ080816.4<br>4+051258.03 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 30 | 1250 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>670.0 Secs (Split 1)] | [2]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>670.0 Secs (Split 2)] |       |



## Orbit 2

Server Version: 20120712

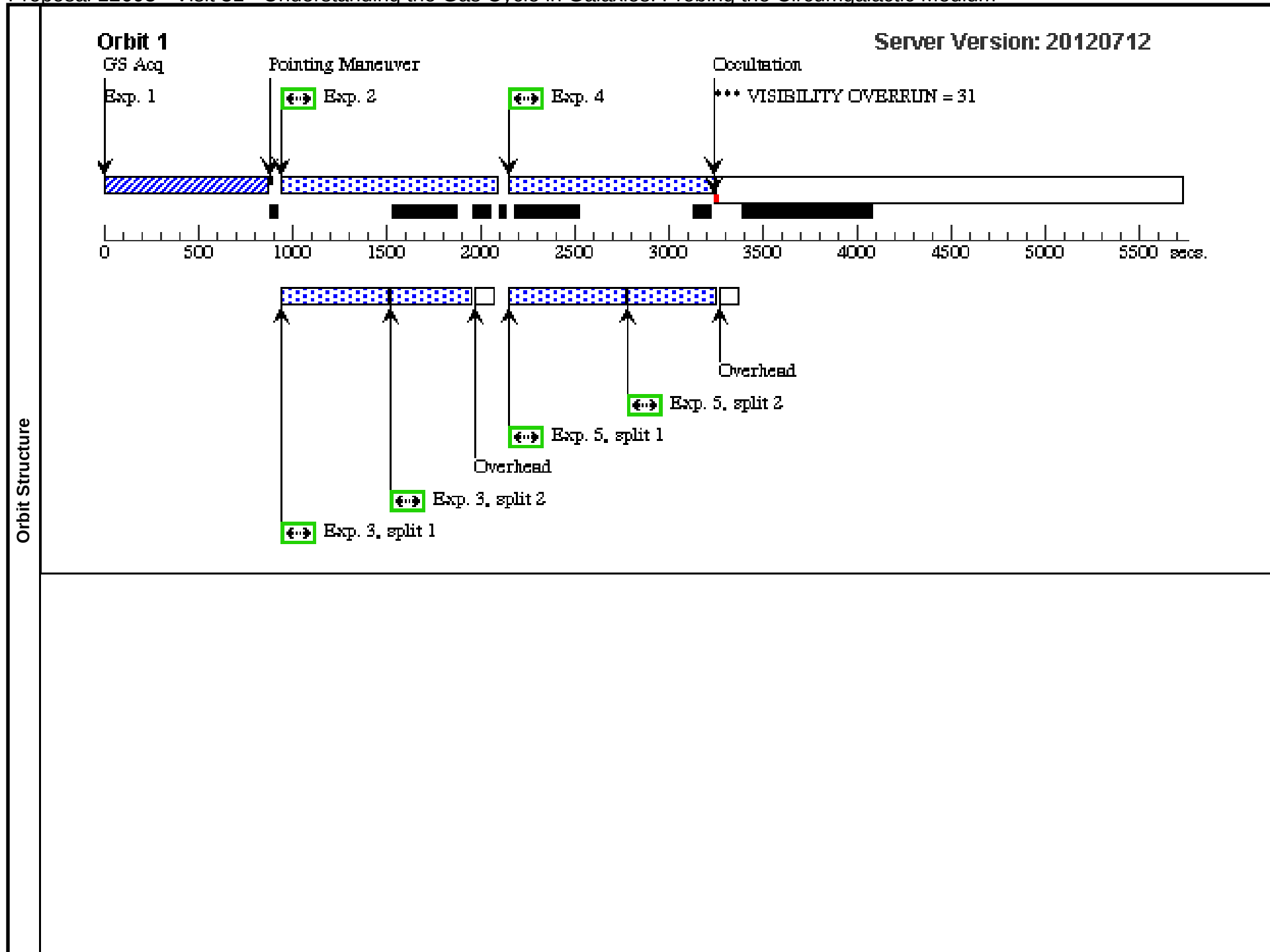


# Proposal 12603 - Visit 31 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 31, completed</b> <span style="float: right;">Thu Jul 26 01:15:47 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 115.0D TO 140.0 D<br><i>Comments: 2-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 31) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 31) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 31) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 31) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 31) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | VV2006-J131545.2+152556  | RA: 13 15 45.2103 (198.9383762d)<br>Dec: +15 25 56.38 (15.43233d)<br>Equinox: J2000 | Redshift: 0.4483         | V=17.7<br>FUV mag= 18.3927 & NUV mag= 18.0896 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                                                                                     |                          |                                               |
|               | (81)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSSJ131525.21+152522.27 | RA: 13 15 25.2100 (198.8550417d)<br>Dec: +15 25 22.27 (15.42285d)<br>Equinox: J2000 | Redshift: 0.02655        | V=17.3240<br>Reference Frame: ICRS            |

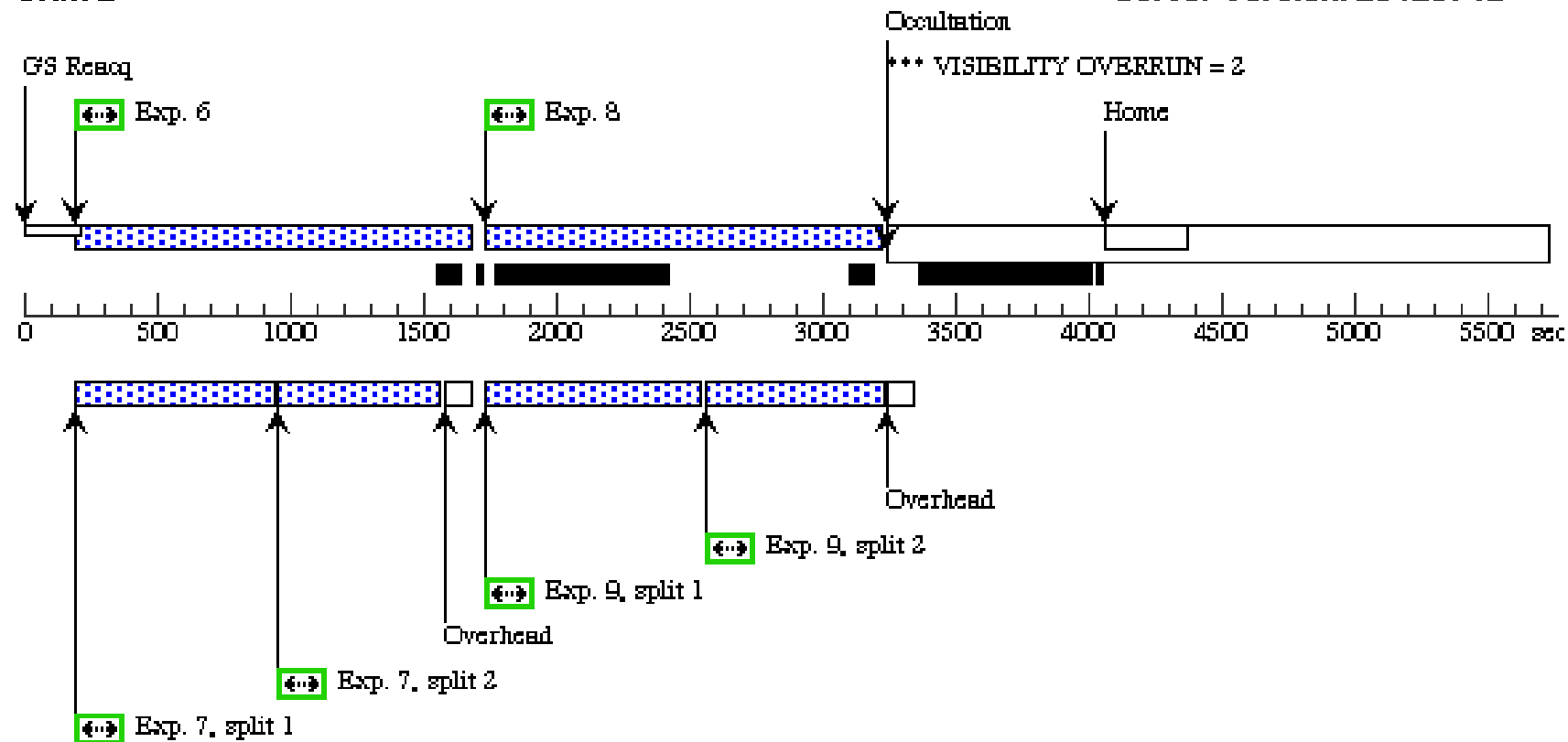
# Proposal 12603 - Visit 31 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]   | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|---------------------------|-------|
|           | 1 | Target Acq<br>(198668) | (31) VV2006-J13154<br>5.2+152556  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 219 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (31) VV2006-J13154<br>5.2+152556  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=86<br>0;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 2-3 in Visit 31 | 970 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 3 |                        | (81) SDSSJ131525.2<br>1+152522.27 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 31 | 826 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>429.0 Secs (Split 1)] | [1]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>429.0 Secs (Split 2)] |       |
|           | 4 | (COS.sp.184<br>757)    | (31) VV2006-J13154<br>5.2+152556  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=87<br>3;<br>FLASH=YES  |               | Prime + Parallel Gro<br>up 4-5 in Visit 31 | 983 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [1]   |
|           | 5 |                        | (81) SDSSJ131525.2<br>1+152522.27 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 4-5 in Visit 31 | 900 Secs                  |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>477.0 Secs (Split 1)] | [1]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>477.0 Secs (Split 2)] |       |
|           | 6 | (COS.sp.184<br>757)    | (31) VV2006-J13154<br>5.2+152556  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>55;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 31 | 1365 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [2]   |
|           | 7 |                        | (81) SDSSJ131525.2<br>1+152522.27 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 31 | 1200 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>613.0 Secs (Split 1)] | [2]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>613.0 Secs (Split 2)] |       |
|           | 8 | (COS.sp.184<br>757)    | (31) VV2006-J13154<br>5.2+152556  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=12<br>60;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 31 | 1370 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                     | [2]   |
|           | 9 |                        | (81) SDSSJ131525.2<br>1+152522.27 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=2                                                                       |               | Prime + Parallel Gro<br>up 8-9 in Visit 31 | 1250 Secs                 |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>671.0 Secs (Split 1)] | [2]   |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>671.0 Secs (Split 2)] |       |



## Orbit 2

Server Version: 20120712



# Proposal 12603 - Visit 32 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 32, scheduling                                                                                                                                   |                          |                                                                                     |                          |                                                   | Thu Jul 26 01:15:50 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                                   |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                                   |                              |
|               | Special Requirements: ORIENT 20.0D TO 65.0 D                                                                                                                           |                          |                                                                                     |                          |                                                   |                              |
|               | Comments: 4-orbit Visit                                                                                                                                                |                          |                                                                                     |                          |                                                   |                              |
| Diagnostics   | (Visit 32) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 32) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|               | (32)                                                                                                                                                                   | 2MASS-J15412146+2817063  | RA: 15 41 21.4812 (235.3395050d)<br>Dec: +28 17 6.29 (28.28508d)<br>Equinox: J2000  | Redshift: 0.3756         | V=17.9<br><br>FUV mag= 18.9416 & NUV mag= 18.8059 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                                   |                              |
|               | (82)                                                                                                                                                                   | SDSSJ154122.59+281347.11 | RA: 15 41 22.5900 (235.3441250d)<br>Dec: +28 13 47.11 (28.22975d)<br>Equinox: J2000 | Redshift: 0.03209        | V=17.8743                                         | Reference Frame: ICRS        |
|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |

# Proposal 12603 - Visit 32 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

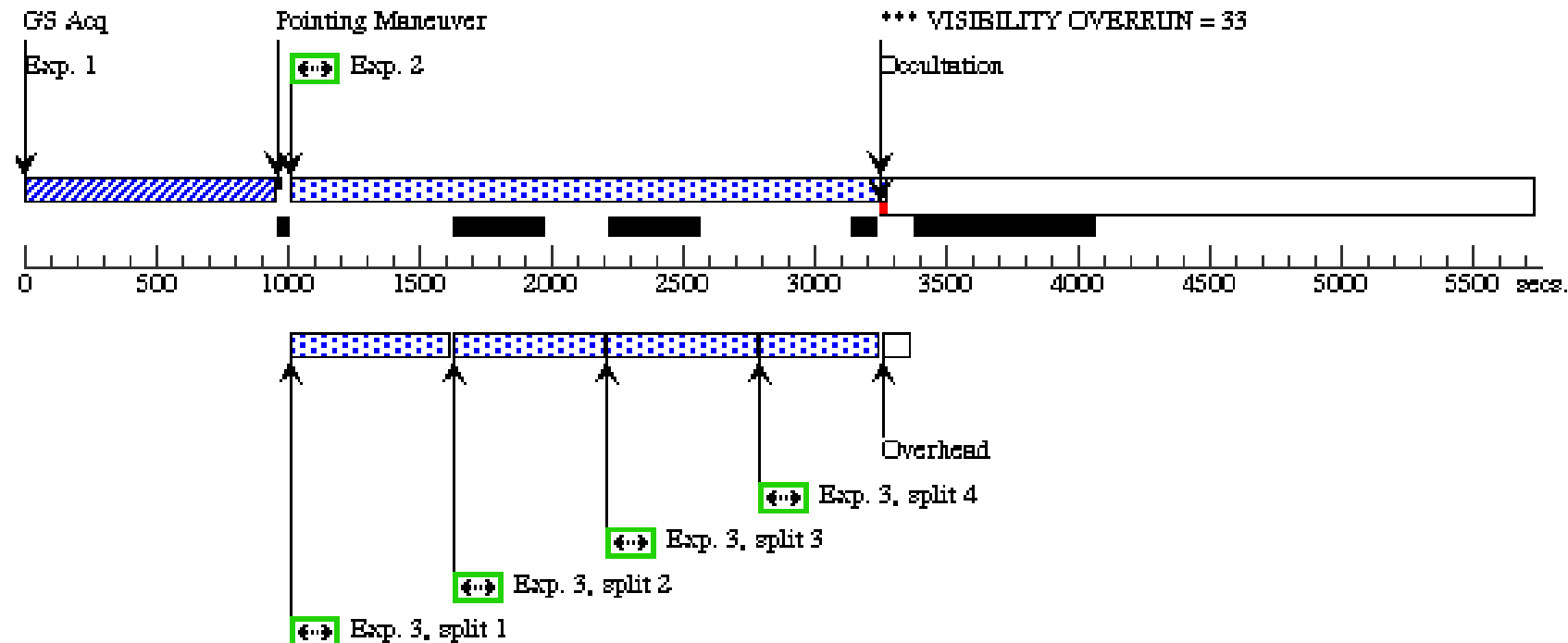
| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                                                                          | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198675) | (32) 2MASS-J15412<br>146+2817063  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 257 Secs                                                                                                         |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (32) 2MASS-J15412<br>146+2817063  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>63;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 2-3 in Visit 32 | 2073 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [1]   |
|           | 3 |                        | (82) SDSSJ154122.5<br>9+281347.11 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 32 | 1820 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]<br>[==>(Split 4)]                                             | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (32) 2MASS-J15412<br>146+2817063  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>61;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 4-5 in Visit 32 | 2971 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [2]   |
|           | 5 |                        | (82) SDSSJ154122.5<br>9+281347.11 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 4-5 in Visit 32 | 2600 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>656.0 Secs (Split 1)]<br>[==>656.0 Secs (Split 2)]<br>[==>656.0 Secs (Split 3)]<br>[==>656.0 Secs (Split 4)] | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (32) 2MASS-J15412<br>146+2817063  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=27<br>91;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 32 | 2901 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [3]   |
|           | 7 |                        | (82) SDSSJ154122.5<br>9+281347.11 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 32 | 2600 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>660.0 Secs (Split 1)]<br>[==>660.0 Secs (Split 2)]<br>[==>660.0 Secs (Split 3)]<br>[==>660.0 Secs (Split 4)] | [3]   |
|           | 8 | (COS.sp.184<br>757)    | (32) 2MASS-J15412<br>146+2817063  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>61;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 32 | 2971 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [4]   |

Proposal 12603 - Visit 32 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |   |                                                          |        |            |                                              |                          |     |
|--|---|----------------------------------------------------------|--------|------------|----------------------------------------------|--------------------------|-----|
|  | 9 | (82) SDSSJ154122.5 WFC3/UVIS, ACCUM, UVIS<br>9+281347.11 | F350LP | CR-SPLIT=4 | Prime + Parallel Group<br>up 8-9 in Visit 32 | 2600 Secs                |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 1)] | [4] |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 2)] |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 3)] |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 4)] |     |

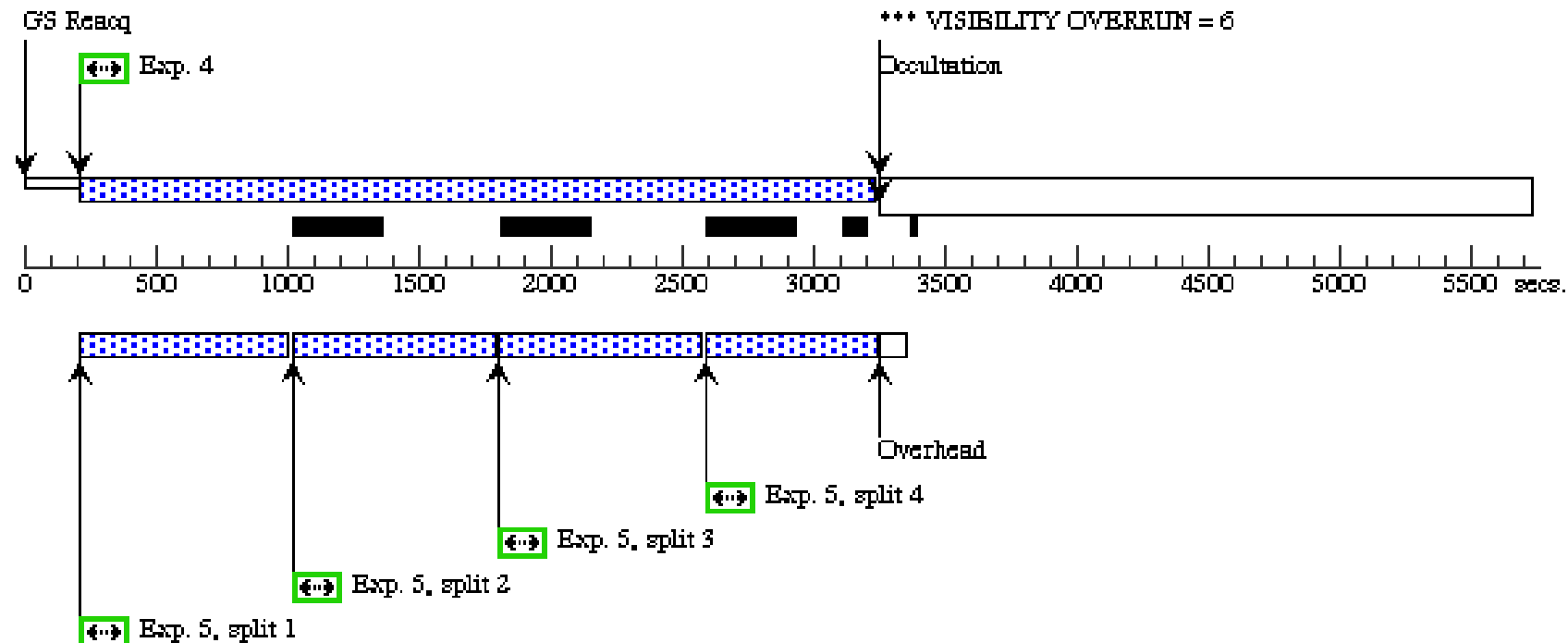
# Orbit 1

Server Version: 20120712



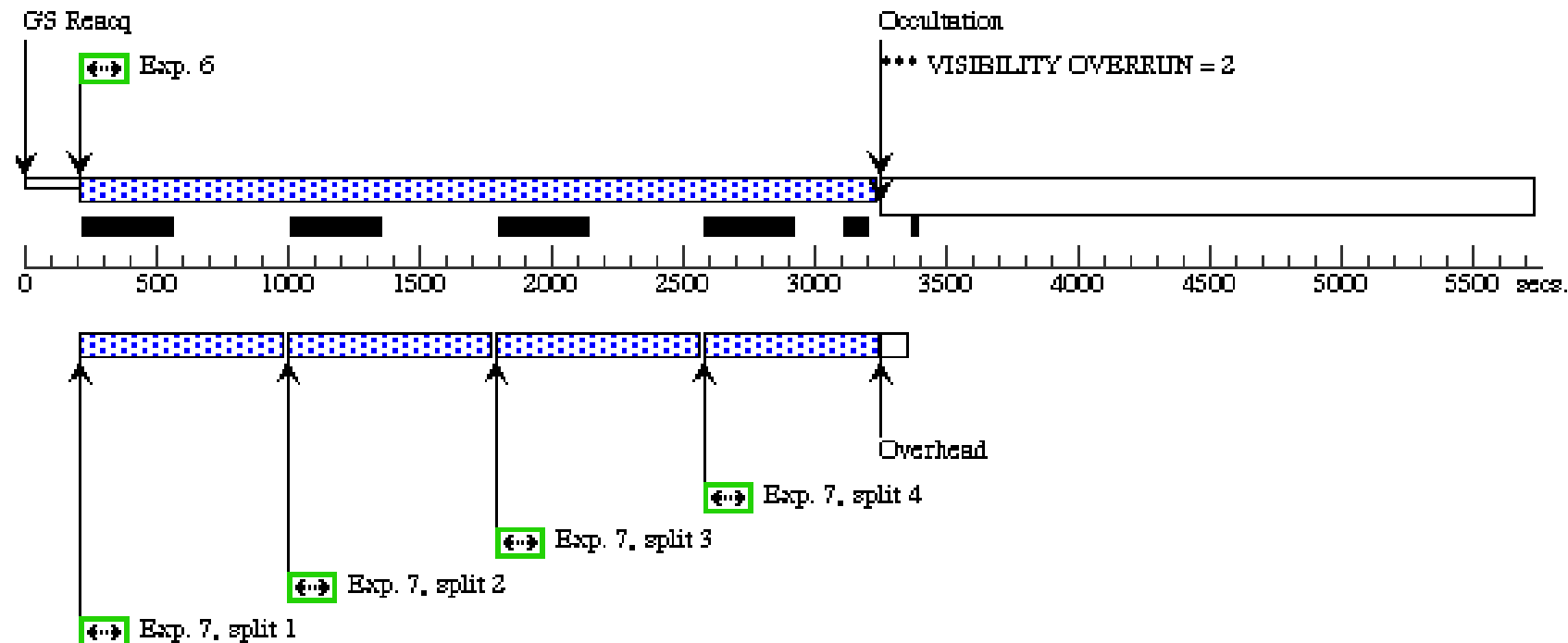
## Orbit 2

Server Version: 20120712



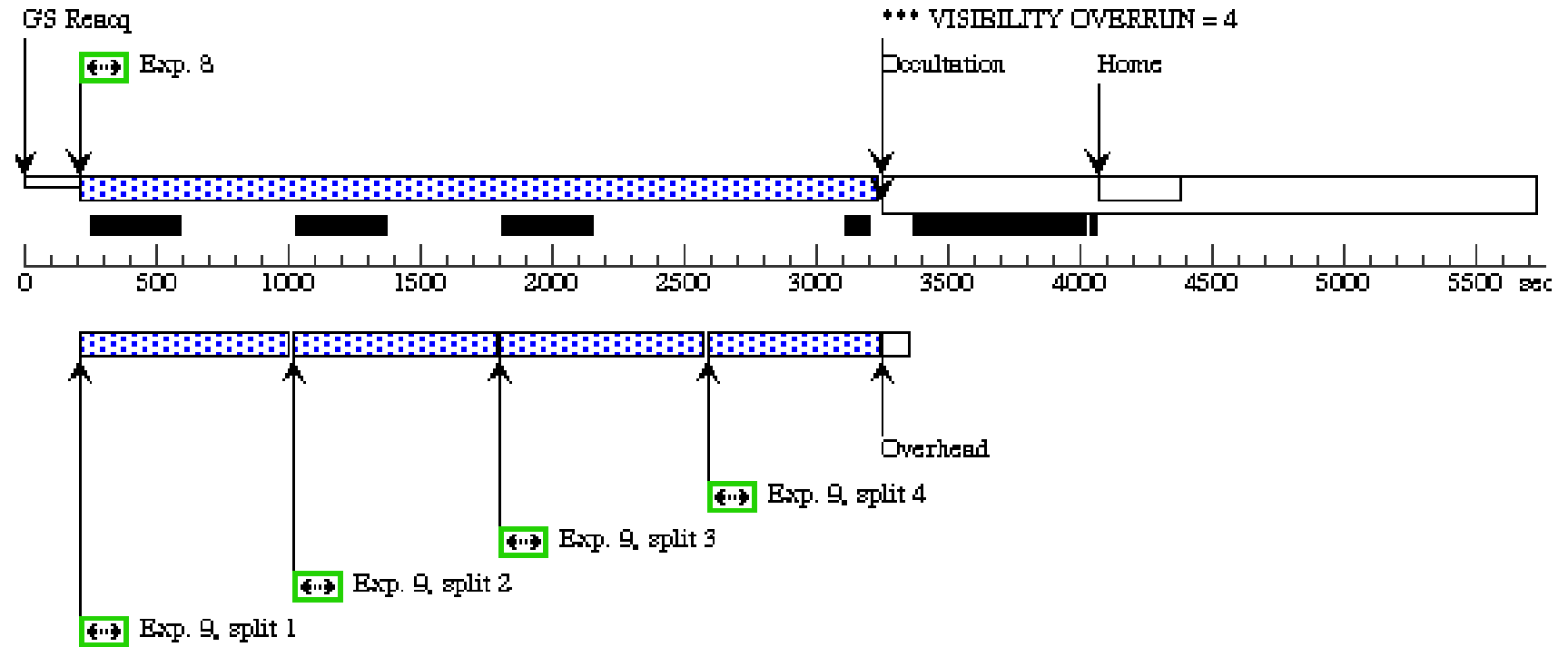
### Orbit 3

Server Version: 20120712



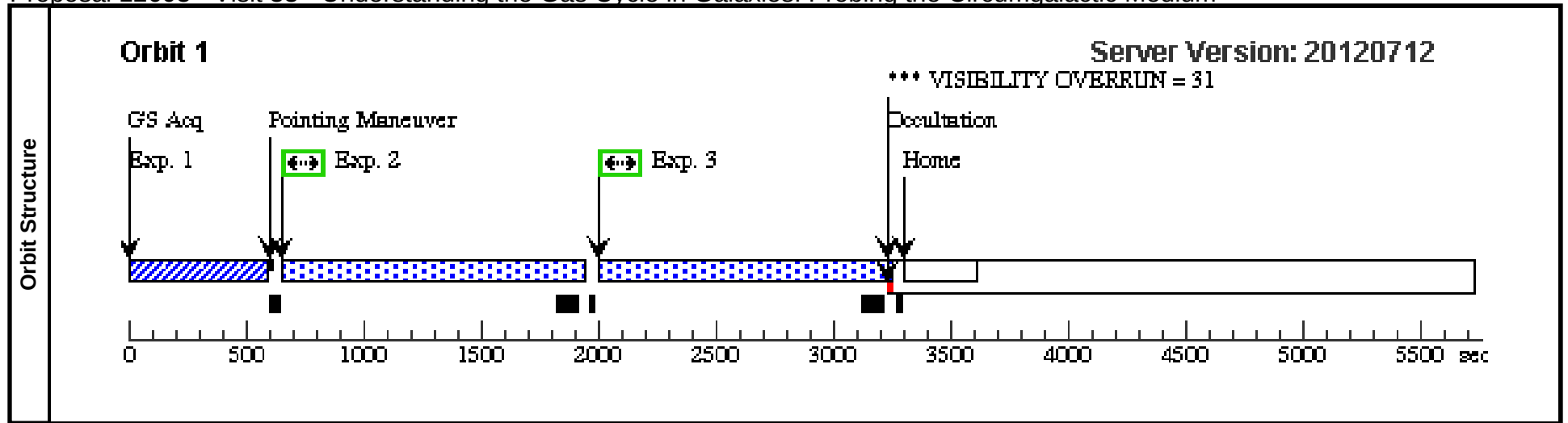
# Orbit 4

Server Version: 20120712



# Proposal 12603 - Visit 33 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                                                                                                   |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------|-------------------------|--------------------------|------------------------------------------------------------------------------|-----------------------------------------------|--------|-------------------------|-------|------------------------------|
| Visit                                                                                             | Proposal 12603, Visit 33, completed                                                                                                                                    |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       | Thu Jul 26 01:15:54 GMT 2012 |
|                                                                                                   | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|                                                                                                   | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|                                                                                                   | Special Requirements: (none)                                                                                                                                           |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
| Comments: 1-orbit Visit                                                                           |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
| Diagnostics                                                                                       | (Visit 33) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|                                                                                                   | (Visit 33) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|                                                                                                   | (Visit 33) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
|                                                                                                   | (Visit 33) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
| Fixed Targets                                                                                     | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                 |                         | Targ. Coord. Corrections |                                                                              | Fluxes                                        |        | Miscellaneous           |       |                              |
|                                                                                                   | (33)                                                                                                                                                                   | 2MASS-J11321056+1335091 | RA: 11 32 10.5576 (173.0439900d)<br>Dec: +13 35 9.27 (13.58591d)<br>Equinox: J2000 |                         | Redshift: 0.2006         |                                                                              | V=17.5<br>FUV mag= 17.6008 & NUV mag= 17.5055 |        | Reference Frame: ICRS   |       |                              |
| Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               |        |                         |       |                              |
| Exposures                                                                                         | #                                                                                                                                                                      | Label (ETC Run)         | Target                                                                             | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                 | Groups | Exp. Time/[Actual Dur.] | Orbit |                              |
|                                                                                                   | 1                                                                                                                                                                      | Target Acq (198588)     | (33) 2MASS-J11321056+1335091                                                       | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                              |                                               |        | 77 Secs                 |       |                              |
|                                                                                                   |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               |        | [==>]                   | [1]   |                              |
|                                                                                                   | 2                                                                                                                                                                      | (COS.sp.184 757)        | (33) 2MASS-J11321056+1335091                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=1000;<br>FLASH=YES;<br>FP-POS=1 |                                               |        | 1110 Secs               |       |                              |
|                                                                                                   |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               |        | [==>]                   | [1]   |                              |
|                                                                                                   | 3                                                                                                                                                                      | (COS.sp.184 757)        | (33) 2MASS-J11321056+1335091                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1023;<br>FLASH=YES |                                               |        | 1133 Secs               |       |                              |
|                                                                                                   |                                                                                                                                                                        |                         |                                                                                    |                         |                          |                                                                              |                                               | [==>]  | [1]                     |       |                              |



# Proposal 12603 - Visit 35 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

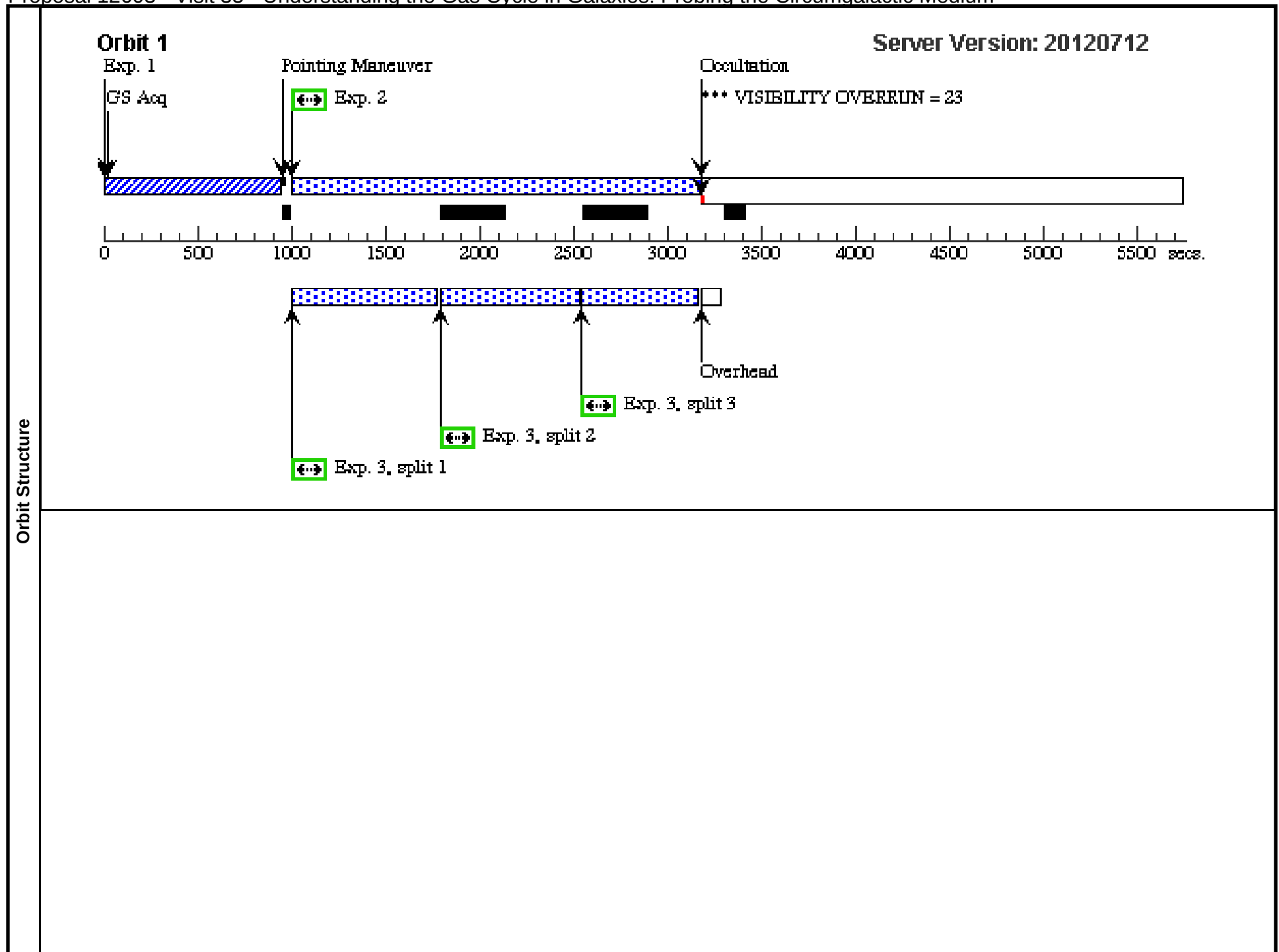
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                                                                                     |                          |                                               |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 35, completed</b> <span>Thu Jul 26 01:15:55 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 304D TO 360.0 D; VISIBILITY INTERVAL 53 M<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 35) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 35) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED<br>(Visit 35) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 35) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 35) Warning (Orbit Planner): WFC3 EXPOSURE TIME ADJUSTED |                         |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                         |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Name                    | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (35)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 2MASS-J13250381+2717189 | RA: 13 25 3.8200 (201.2659167d)<br>Dec: +27 17 18.70 (27.28853d)<br>Equinox: J2000  | Redshift: 0.5221         | V=18.0<br>FUV mag= 18.5819 & NUV mag= 18.2839 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                         |                                                                                     |                          |                                               |
|               | (85)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SDSSJ132522.78+271456.6 | RA: 13 25 22.7800 (201.3449167d)<br>Dec: +27 14 56.60 (27.24906d)<br>Equinox: J2000 | Redshift: 0.03448        | V=17.9469<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 35 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.              | Groups                                     | Exp. Time/[Actual Dur.]                                         | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|----------------------------|--------------------------------------------|-----------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (35) 2MASS-J13250<br>381+2717189 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O SINGLE |                                            | 252 Secs<br>[==>]                                               | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (35) 2MASS-J13250<br>381+2717189 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>73;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 2-3 in Visit 35 | 2000 Secs<br>[==>]                                              | [1]   |
|           | 3 |                        | (85) SDSSJ132522.7<br>8+271456.6 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |                            | Prime + Parallel Gro<br>up 2-3 in Visit 35 | 1880 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (35) 2MASS-J13250<br>381+2717189 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=71<br>7;<br>FLASH=YES  |                            | Prime + Parallel Gro<br>up 4-5 in Visit 35 | 827 Secs<br>[==>]                                               | [2]   |
|           | 5 |                        | (85) SDSSJ132522.7<br>8+271456.6 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |                            | Prime + Parallel Gro<br>up 4-5 in Visit 35 | 600 Secs<br>[==>]                                               | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (35) 2MASS-J13250<br>381+2717189 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>45;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 6-7 in Visit 35 | 1924 Secs<br>[==>]                                              | [2]   |
|           | 7 |                        | (85) SDSSJ132522.7<br>8+271456.6 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                            | Prime + Parallel Gro<br>up 6-7 in Visit 35 | 1757 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (35) 2MASS-J13250<br>381+2717189 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |                            | Prime + Parallel Gro<br>up 8-9 in Visit 35 | 1935 Secs<br>[==>]                                              | [3]   |
|           | 9 |                        | (85) SDSSJ132522.7<br>8+271456.6 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                            | Prime + Parallel Gro<br>up 8-9 in Visit 35 | 1602 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)] | [3]   |

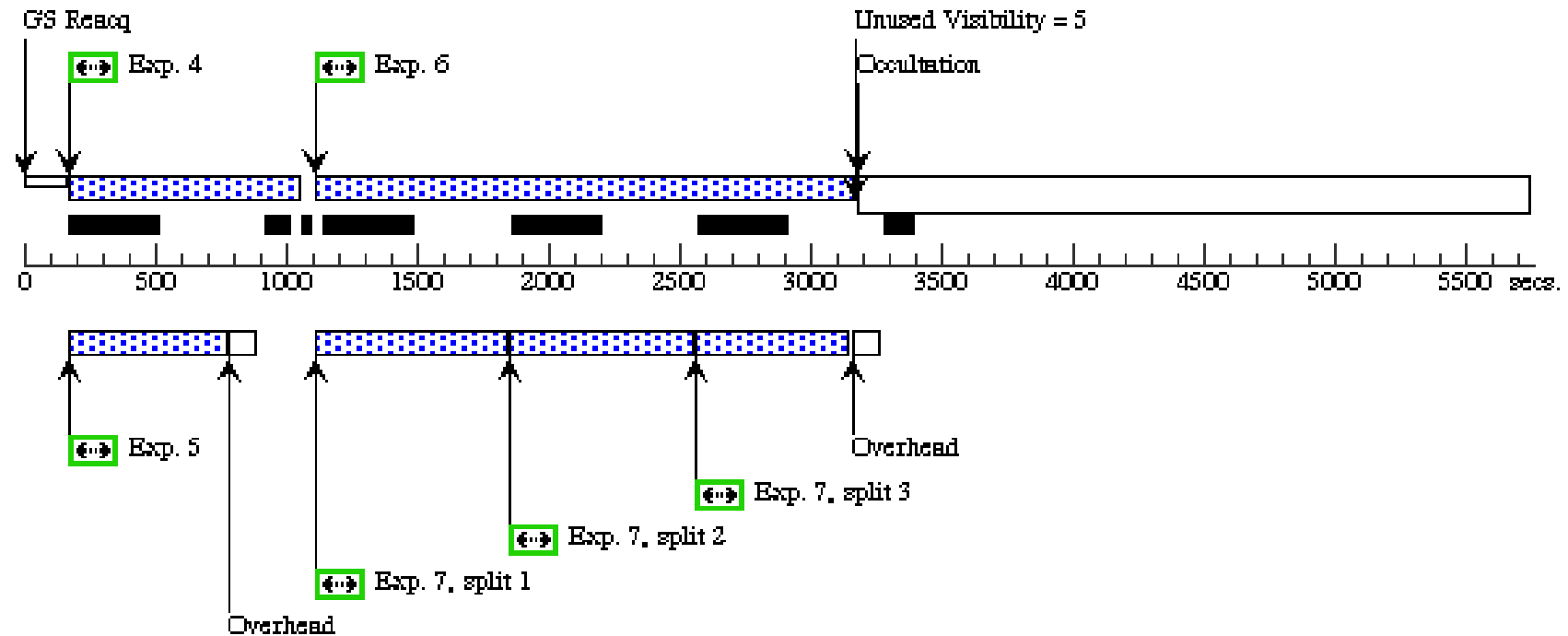
# Proposal 12603 - Visit 35 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                |                        |                 |                                                                                 |                                          |                                  |     |
|--|----|------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------|----------------------------------|-----|
|  | 10 | (COS.sp.184 (35) 2MASS-J13250 757) 381+2717189 | COS/FUV, TIME-TAG, PSA | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=73<br>2;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 35 | 820 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>]                            | [3] |
|  | 11 | (85) SDSSJ132522.7 8+271456.6                  | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Group 10-11 in Visit 35 | 780 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>(Split 1)]<br>[==>(Split 2)] | [3] |



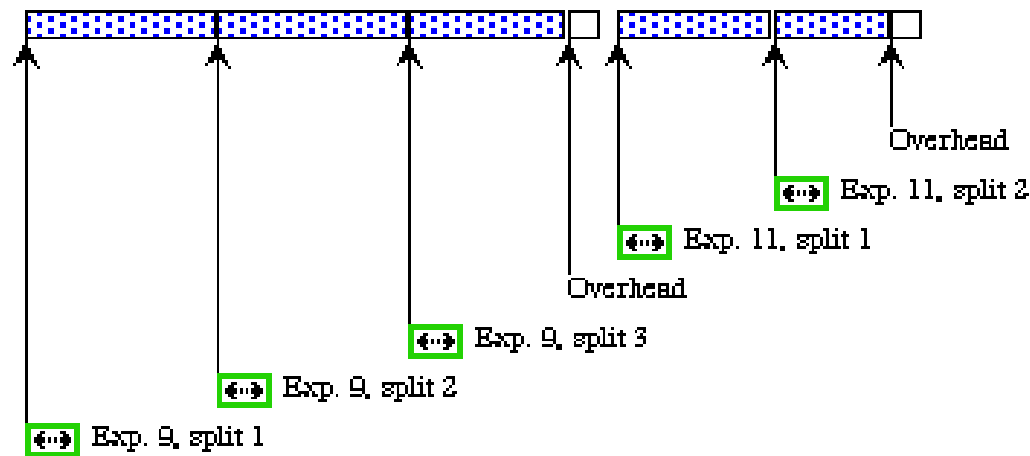
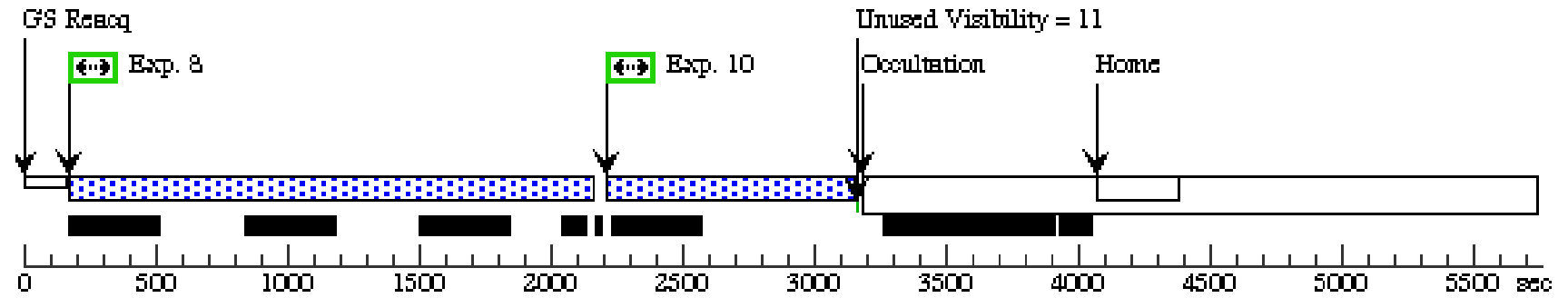
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 36 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

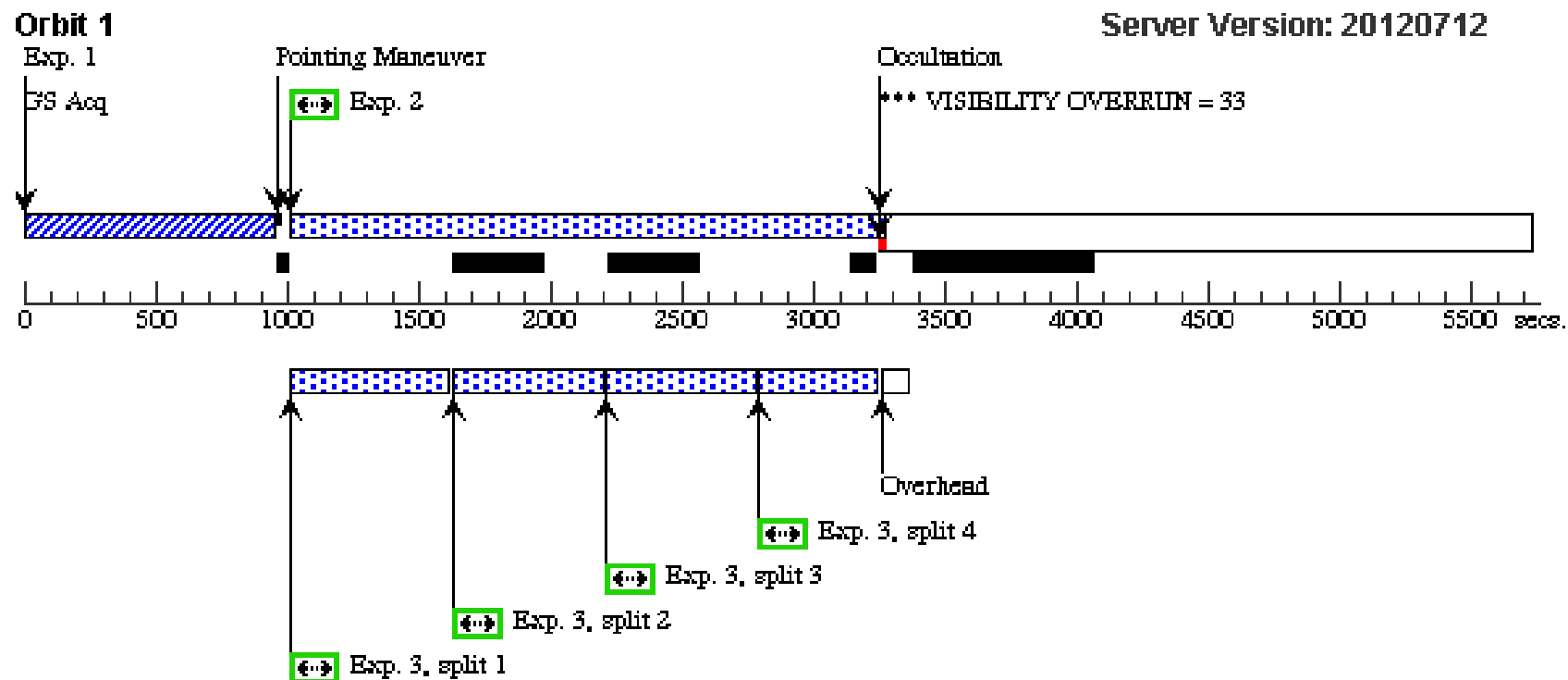
| Visit                                                                                                    | <b>Proposal 12603, Visit 36, completed</b> <div> Thu Jul 26 01:16:00 GMT 2012 </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|-----------------------|---|------|--------------------|--------------------------|--------|---------------|------|--------------------------|-------------------------------------------------------------------------------------|------------------|-----------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------|--|--|--|--|--|------|--------------------------|------------------------------------------------------------------------------------|-------------------|-----------|
|                                                                                                          | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 100.0D TO 120.0 D<br><i>Comments: 4-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
| Diagnostics                                                                                              | (Visit 36) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 36) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 36) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 36) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 36) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 36) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 36) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.                                                                                                   |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
|                                                                                                          | <table> <tr> <th>#</th><th>Name</th><th>Target Coordinates</th><th>Targ. Coord. Corrections</th><th>Fluxes</th><th>Miscellaneous</th></tr> <tr> <td>(36)</td><td>SDSS-J115552.80+292238.4</td><td>RA: 11 55 52.8020 (178.9700083d)<br/>Dec: +29 22 38.45 (29.37735d)<br/>Equinox: J2000</td><td>Redshift: 0.5201</td><td>V=18.0<br/>FUV mag= 18.9547 &amp; NUV mag= 18.5227</td><td>Reference Frame: ICRS</td></tr> <tr> <td colspan="6"><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></td></tr> <tr> <td>(86)</td><td>SDSSJ115536.63+292104.46</td><td>RA: 11 55 36.6300 (178.9026250d)<br/>Dec: +29 21 4.46 (29.35124d)<br/>Equinox: J2000</td><td>Redshift: 0.04576</td><td>V=17.9909</td><td>Reference Frame: ICRS</td></tr> </table> |                                                                                     |                          |                                               |                       | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | (36) | SDSS-J115552.80+292238.4 | RA: 11 55 52.8020 (178.9700083d)<br>Dec: +29 22 38.45 (29.37735d)<br>Equinox: J2000 | Redshift: 0.5201 | V=18.0<br>FUV mag= 18.9547 & NUV mag= 18.5227 | Reference Frame: ICRS | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> |  |  |  |  |  | (86) | SDSSJ115536.63+292104.46 | RA: 11 55 36.6300 (178.9026250d)<br>Dec: +29 21 4.46 (29.35124d)<br>Equinox: J2000 | Redshift: 0.04576 | V=17.9909 |
| #                                                                                                        | Name                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        | Miscellaneous         |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
| (36)                                                                                                     | SDSS-J115552.80+292238.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RA: 11 55 52.8020 (178.9700083d)<br>Dec: +29 22 38.45 (29.37735d)<br>Equinox: J2000 | Redshift: 0.5201         | V=18.0<br>FUV mag= 18.9547 & NUV mag= 18.5227 | Reference Frame: ICRS |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
| (86)                                                                                                     | SDSSJ115536.63+292104.46                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | RA: 11 55 36.6300 (178.9026250d)<br>Dec: +29 21 4.46 (29.35124d)<br>Equinox: J2000  | Redshift: 0.04576        | V=17.9909                                     | Reference Frame: ICRS |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
| Fixed Targets                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |
|                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                     |                          |                                               |                       |   |      |                    |                          |        |               |      |                          |                                                                                     |                  |                                               |                       |                                                                                                          |  |  |  |  |  |      |                          |                                                                                    |                   |           |

# Proposal 12603 - Visit 36 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs. | Groups                                 | Exp. Time/[Actual Dur.]                                                                                                       | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|---------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198675) | (36) SDSS-J115552.80+292238.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              |               |                                        | 257 Secs<br>[==>]                                                                                                             | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (36) SDSS-J115552.80+292238.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1963;<br>FLASH=YES |               | Prime + Parallel Group 2-3 in Visit 36 | 2073 Secs<br>[==>]                                                                                                            | [1]   |
|           | 3 |                        | (86) SDSSJ115536.63+292104.46 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=4                                                                   |               | Prime + Parallel Group 2-3 in Visit 36 | 1820 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]<br>[==>(Split 4)]                                             | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (36) SDSS-J115552.80+292238.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=2861;<br>FLASH=YES |               | Prime + Parallel Group 4-5 in Visit 36 | 2971 Secs<br>[==>]                                                                                                            | [2]   |
|           | 5 |                        | (86) SDSSJ115536.63+292104.46 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                   |               | Prime + Parallel Group 4-5 in Visit 36 | 2600 Secs<br>[==>656.0 Secs (Split 1)]<br>[==>656.0 Secs (Split 2)]<br>[==>656.0 Secs (Split 3)]<br>[==>656.0 Secs (Split 4)] | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (36) SDSS-J115552.80+292238.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=2791;<br>FLASH=YES |               | Prime + Parallel Group 6-7 in Visit 36 | 2901 Secs<br>[==>]                                                                                                            | [3]   |
|           | 7 |                        | (86) SDSSJ115536.63+292104.46 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                   |               | Prime + Parallel Group 6-7 in Visit 36 | 2600 Secs<br>[==>660.0 Secs (Split 1)]<br>[==>660.0 Secs (Split 2)]<br>[==>660.0 Secs (Split 3)]<br>[==>660.0 Secs (Split 4)] | [3]   |
|           | 8 | (COS.sp.184<br>757)    | (36) SDSS-J115552.80+292238.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=2861;<br>FLASH=YES |               | Prime + Parallel Group 8-9 in Visit 36 | 2971 Secs<br>[==>]                                                                                                            | [4]   |

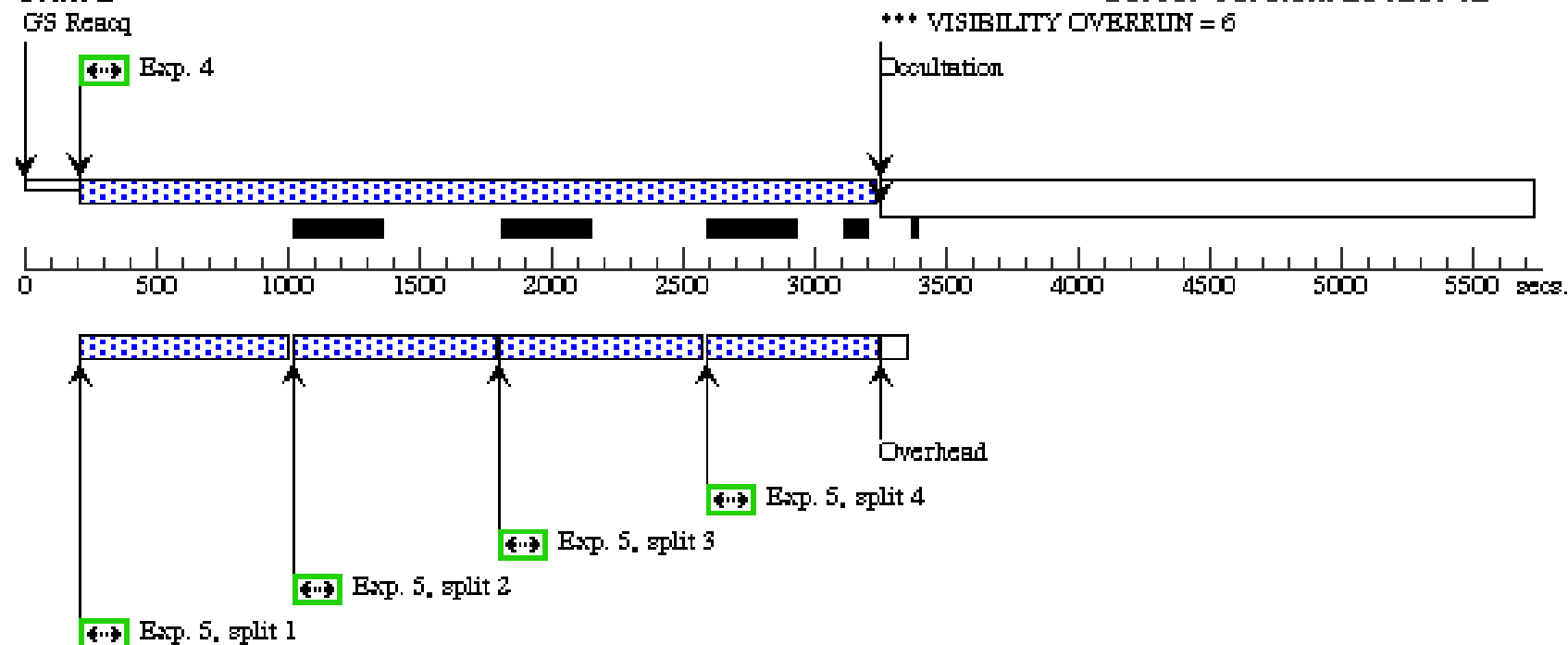
Proposal 12603 - Visit 36 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |   |                                                          |        |            |                                            |                           |     |
|--|---|----------------------------------------------------------|--------|------------|--------------------------------------------|---------------------------|-----|
|  | 9 | (86) SDSSJ115536.6 WFC3/UVIS, ACCUM, UVIS<br>3+292104.46 | F350LP | CR-SPLIT=4 | Prime + Parallel Gro<br>up 8-9 in Visit 36 | 2600 Secs                 | [4] |
|  |   |                                                          |        |            |                                            | [==>654.0 Secs (Split 1)] |     |
|  |   |                                                          |        |            |                                            | [==>654.0 Secs (Split 2)] |     |
|  |   |                                                          |        |            |                                            | [==>654.0 Secs (Split 3)] |     |
|  |   |                                                          |        |            |                                            | [==>654.0 Secs (Split 4)] |     |



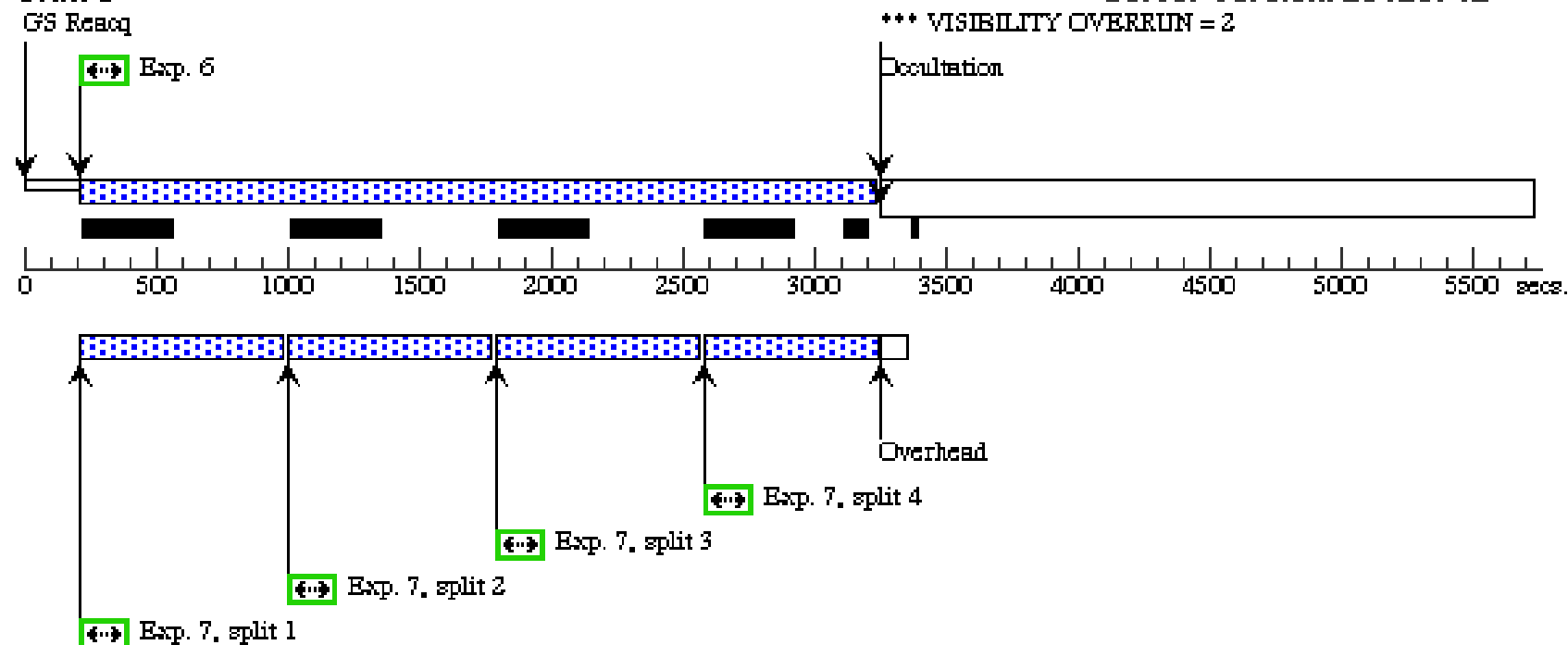
## Orbit 2

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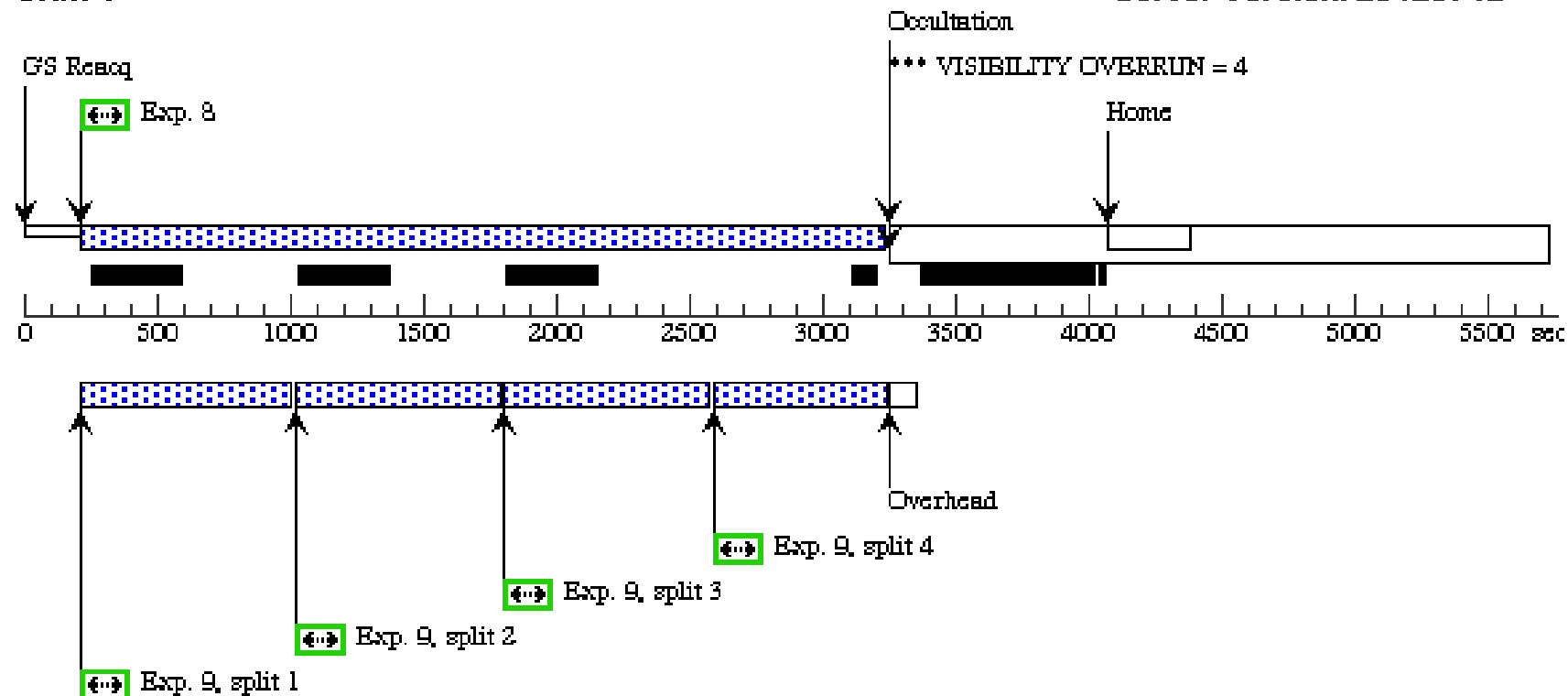
### Orbit 3

Server Version: 20120712



## Orbit 4

Server Version: 20120712



# Proposal 12603 - Visit 37 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

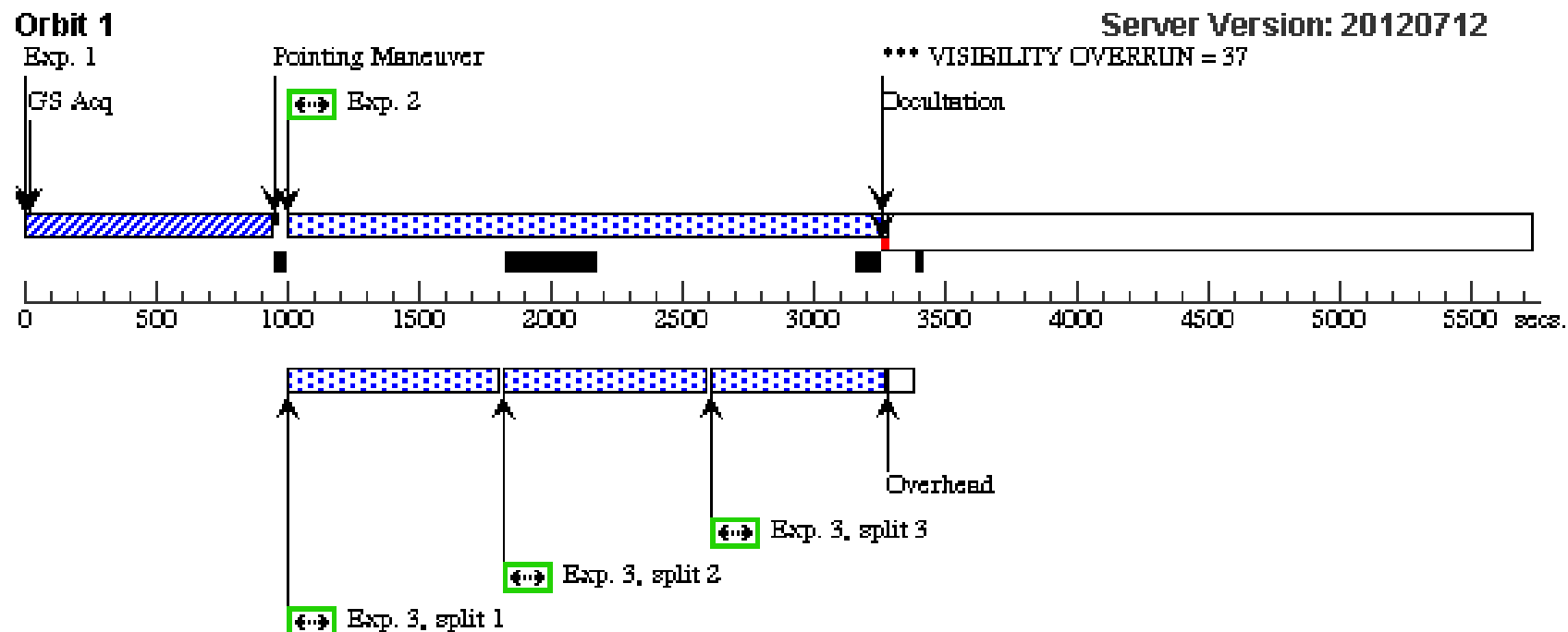
|                         |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 37, scheduling                                                                                                                                   |                          |                                                                                     |                          |                                                   | Thu Jul 26 01:16:05 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                                   |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                                   |                              |
|                         | Special Requirements: ORIENT 165.0D TO 180.0 D                                                                                                                         |                          |                                                                                     |                          |                                                   |                              |
| Comments: 3-orbit Visit |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |
| Diagnostics             | (Visit 37) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                                   |                              |
|                         | (Visit 37) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                                   |                              |
|                         | (Visit 37) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                                   |                              |
|                         | (Visit 37) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|                         | (37)                                                                                                                                                                   | SDSS-J145424.33+304658.3 | RA: 14 54 24.3390 (223.6014125d)<br>Dec: +30 46 58.35 (30.78288d)<br>Equinox: J2000 | Redshift: 0.4653         | V=18.2<br><br>FUV mag= 18.7903 & NUV mag= 18.5875 | Reference Frame: ICRS        |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                                   |                              |
|                         | (87)                                                                                                                                                                   | SDSSJ145403.74+305046.50 | RA: 14 54 3.7400 (223.5155833d)<br>Dec: +30 50 46.50 (30.84625d)<br>Equinox: J2000  | Redshift: 0.03197        | V=18.3197                                         | Reference Frame: ICRS        |

# Proposal 12603 - Visit 37 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs.          | Groups                                 | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (37) SDSS-J145424.33+304658.3 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              | GS ACQ SCENARIO SINGLE |                                        | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184757)        | (37) SDSS-J145424.33+304658.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1991;<br>FLASH=YES |                        | Prime + Parallel Group 2-3 in Visit 37 | 2101 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (87) SDSSJ145403.74+305046.50 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 2-3 in Visit 37 | 1950 Secs<br>[==>659.0 Secs (Split 1)]<br>[==>659.0 Secs (Split 2)]<br>[==>659.0 Secs (Split 3)] | [1]   |
|           | 4 | (COS.sp.184757)        | (37) SDSS-J145424.33+304658.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=735;<br>FLASH=YES  |                        | Prime + Parallel Group 4-5 in Visit 37 | 845 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (87) SDSSJ145403.74+305046.50 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                  |                        | Prime + Parallel Group 4-5 in Visit 37 | 600 Secs<br>[==>786.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184757)        | (37) SDSS-J145424.33+304658.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1845;<br>FLASH=YES |                        | Prime + Parallel Group 6-7 in Visit 37 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (87) SDSSJ145403.74+305046.50 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 6-7 in Visit 37 | 1782 Secs<br>[==>599.0 Secs (Split 1)]<br>[==>599.0 Secs (Split 2)]<br>[==>599.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184757)        | (37) SDSS-J145424.33+304658.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |                        | Prime + Parallel Group 8-9 in Visit 37 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (87) SDSSJ145403.74+305046.50 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 8-9 in Visit 37 | 1602 Secs<br>[==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |

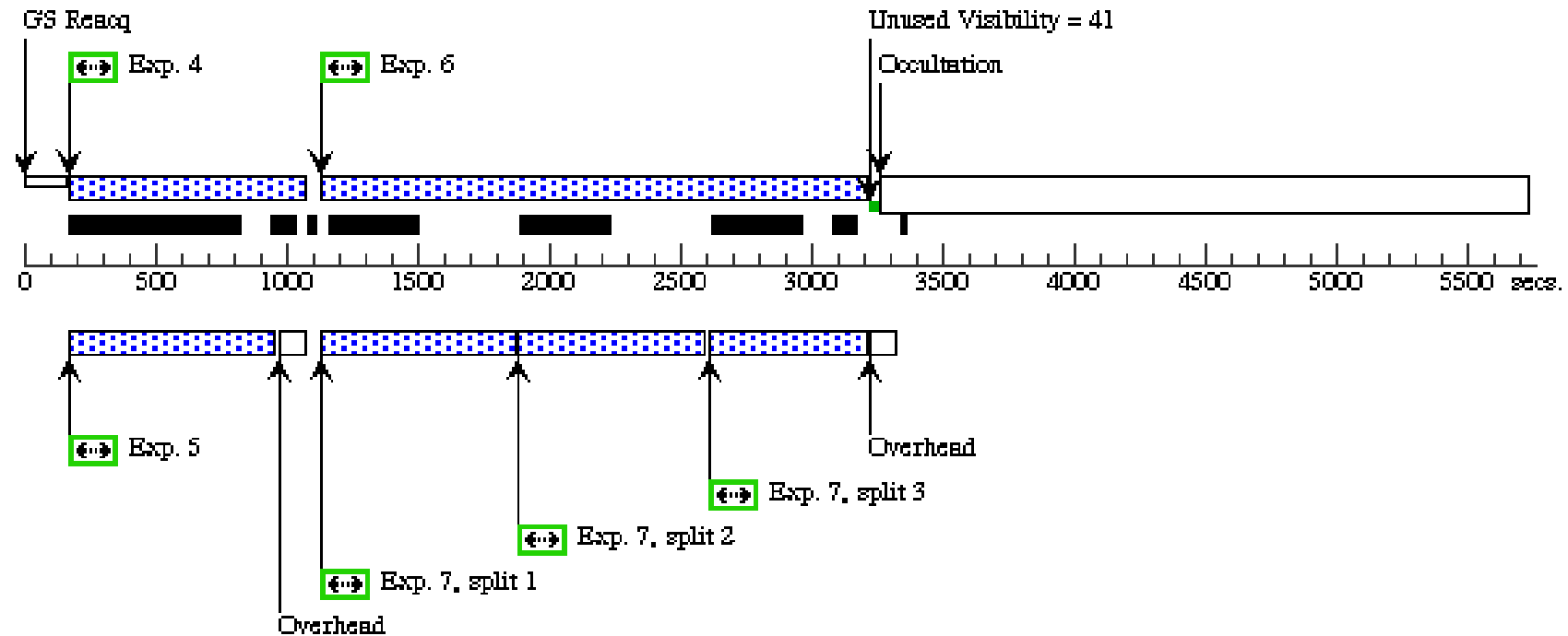
Proposal 12603 - Visit 37 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                           |                        |                 |                                                                             |                                          |                                  |     |
|--|----|-------------------------------------------|------------------------|-----------------|-----------------------------------------------------------------------------|------------------------------------------|----------------------------------|-----|
|  | 10 | (COS.sp.184 (37) SDSS-J145424.33+304658.3 | COS/FUV, TIME-TAG, PSA | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=750;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 37 | 860 Secs                         |     |
|  |    |                                           |                        |                 |                                                                             |                                          | [==>]                            | [3] |
|  | 11 | (87) SDSSJ145403.74+305046.50             | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                  | Prime + Parallel Group 10-11 in Visit 37 | 831 Secs                         |     |
|  |    |                                           |                        |                 |                                                                             |                                          | [==>(Split 1)]<br>[==>(Split 2)] | [3] |



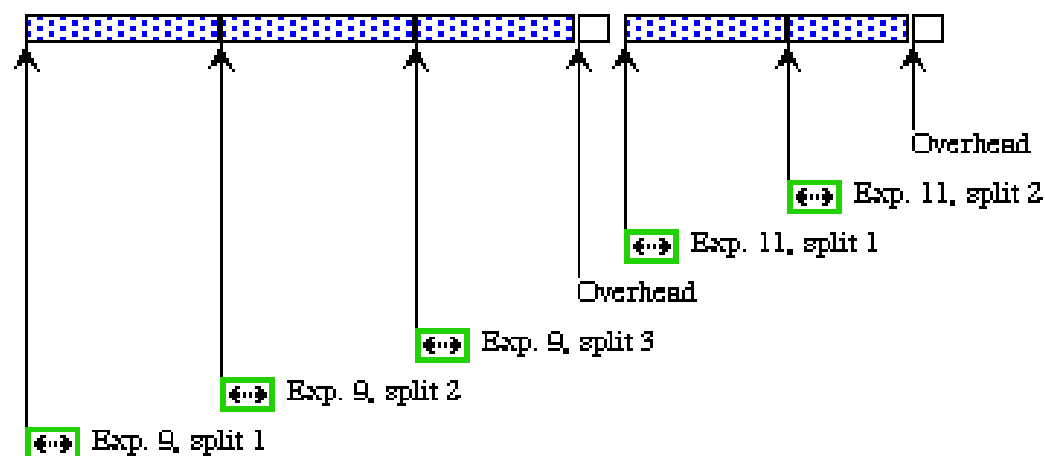
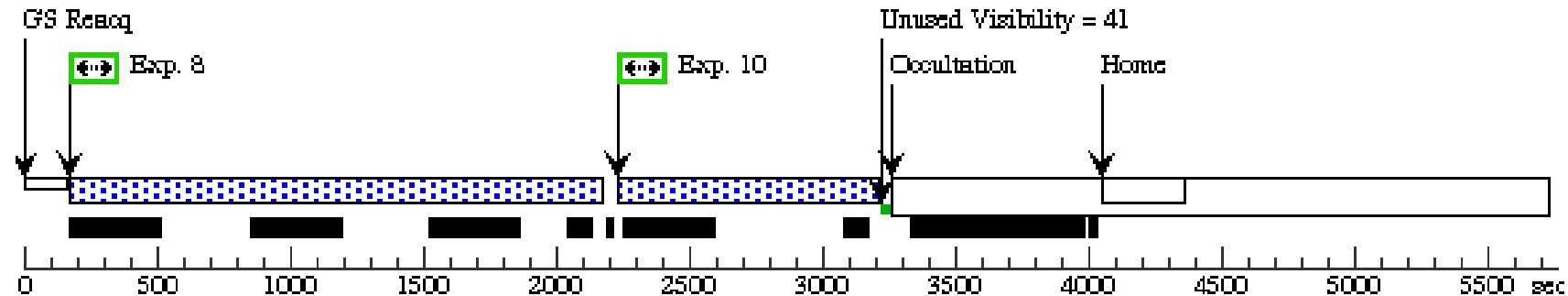
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 38 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                          |                                                                                    |                          |                                                       |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 38, scheduling                                                                                                                                   |                          |                                                                                    |                          |                                                       | Thu Jul 26 01:16:08 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                          |                                                       |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                    |                          |                                                       |                              |
|               | Special Requirements: ORIENT 235.0D TO 255.0 D                                                                                                                         |                          |                                                                                    |                          |                                                       |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                          |                                                                                    |                          |                                                       |                              |
| Diagnostics   | (Visit 38) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                                       |                              |
|               | (Visit 38) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                          |                                                       |                              |
|               | (Visit 38) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                          |                                                       |                              |
|               | (Visit 38) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                                       |                              |
|               | (Visit 38) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                          |                                                       |                              |
|               | (Visit 38) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                          |                                                       |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 | Targ. Coord. Corrections | Fluxes                                                | Miscellaneous                |
|               | (38)                                                                                                                                                                   | SDSS-J093001.90+284858.4 | RA: 09 30 1.9097 (142.5079571d)<br>Dec: +28 48 58.40 (28.81622d)<br>Equinox: J2000 | Redshift: 0.4866         | V=18.2<br><br>FUV mag= 18.7573 & NUV ma<br>g= 18.2696 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                          |                                                       |                              |
|               | (88)                                                                                                                                                                   | SDSSJ93009.19+285351.35  | RA: 09 30 9.1900 (142.5382917d)<br>Dec: +28 53 51.35 (28.89760d)<br>Equinox: J2000 | Redshift: 0.0349         | V=18.0666                                             | Reference Frame: ICRS        |
|               |                                                                                                                                                                        |                          |                                                                                    |                          |                                                       |                              |

# Proposal 12603 - Visit 38 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

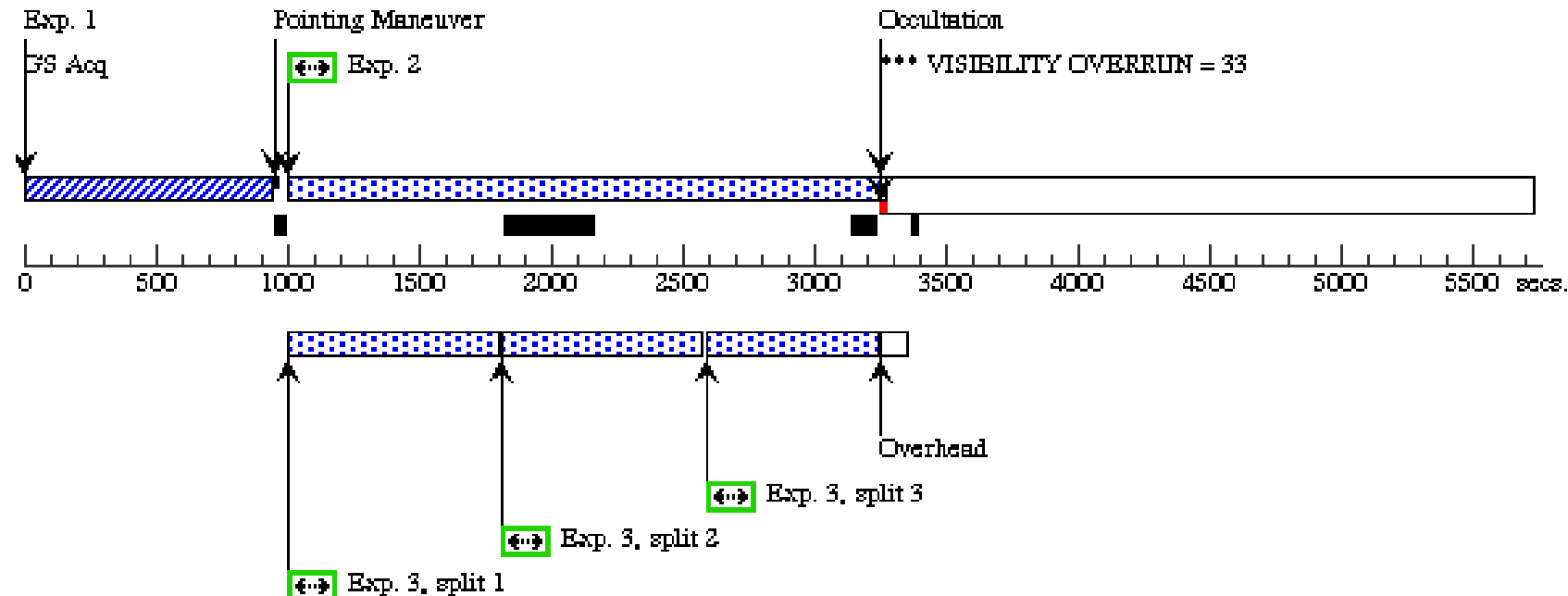
| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs. | Groups                                 | Exp. Time/[Actual Dur.]                                                             | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|---------------|----------------------------------------|-------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (38) SDSS-J093001.90+284858.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              |               |                                        | 252 Secs                                                                            |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>]                                                                               | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (38) SDSS-J093001.90+284858.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1973;<br>FLASH=YES |               | Prime + Parallel Group 2-3 in Visit 38 | 2083 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>]                                                                               | [1]   |
|           | 3 |                        | (88) SDSSJ93009.19+285351.35  | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 2-3 in Visit 38 | 1950 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (38) SDSS-J093001.90+284858.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=717;<br>FLASH=YES  |               | Prime + Parallel Group 4-5 in Visit 38 | 827 Secs                                                                            |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>]                                                                               | [2]   |
|           | 5 |                        | (88) SDSSJ93009.19+285351.35  | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                  |               | Prime + Parallel Group 4-5 in Visit 38 | 600 Secs                                                                            |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>768.0 Secs ]                                                                    | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (38) SDSS-J093001.90+284858.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1845;<br>FLASH=YES |               | Prime + Parallel Group 6-7 in Visit 38 | 1955 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>]                                                                               | [2]   |
|           | 7 |                        | (88) SDSSJ93009.19+285351.35  | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 6-7 in Visit 38 | 1782 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>599.0 Secs (Split 1)]<br>[==>599.0 Secs (Split 2)]<br>[==>599.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (38) SDSS-J093001.90+284858.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |               | Prime + Parallel Group 8-9 in Visit 38 | 1950 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>]                                                                               | [3]   |
|           | 9 |                        | (88) SDSSJ93009.19+285351.35  | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |               | Prime + Parallel Group 8-9 in Visit 38 | 1602 Secs                                                                           |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        | [==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        |                                                                                     |       |
|           |   |                        |                               |                         |                 |                                                                              |               |                                        |                                                                                     |       |

# Proposal 12603 - Visit 38 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                     |                        |                 |                                                                                 |                                          |                                                        |     |
|--|----|-----------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----|
|  | 10 | (COS.sp.184 (38) SDSS-J093001.1<br>757) 90+284858.4 | COS/FUV, TIME-TAG, PSA | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=73<br>2;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 38 | 842 Secs                                               |     |
|  |    |                                                     |                        |                 |                                                                                 |                                          | [==>]                                                  | [3] |
|  | 11 | (88) SDSSJ93009.19<br>+285351.35                    | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Group 10-11 in Visit 38 | 819 Secs                                               |     |
|  |    |                                                     |                        |                 |                                                                                 |                                          | [==>408.5 Secs (Split 1)]<br>[==>408.5 Secs (Split 2)] | [3] |

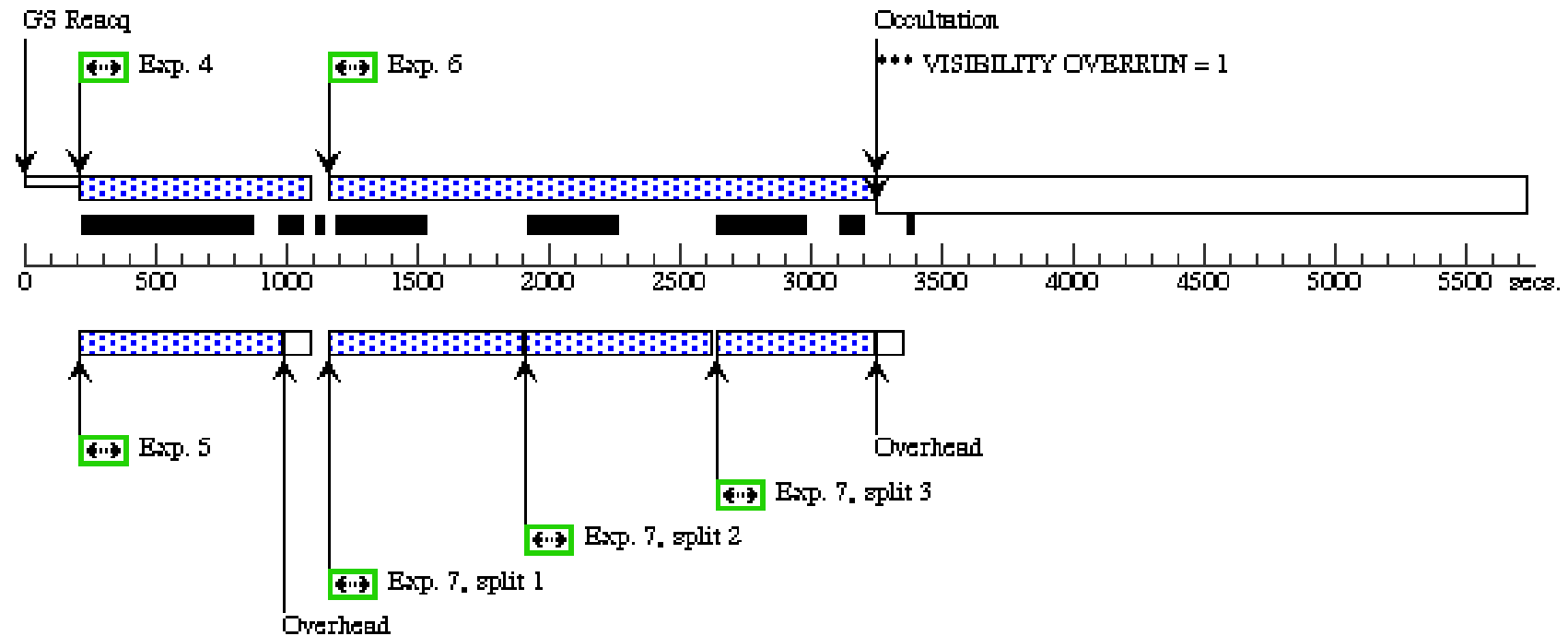
# Orbit 1

Server Version: 20120712



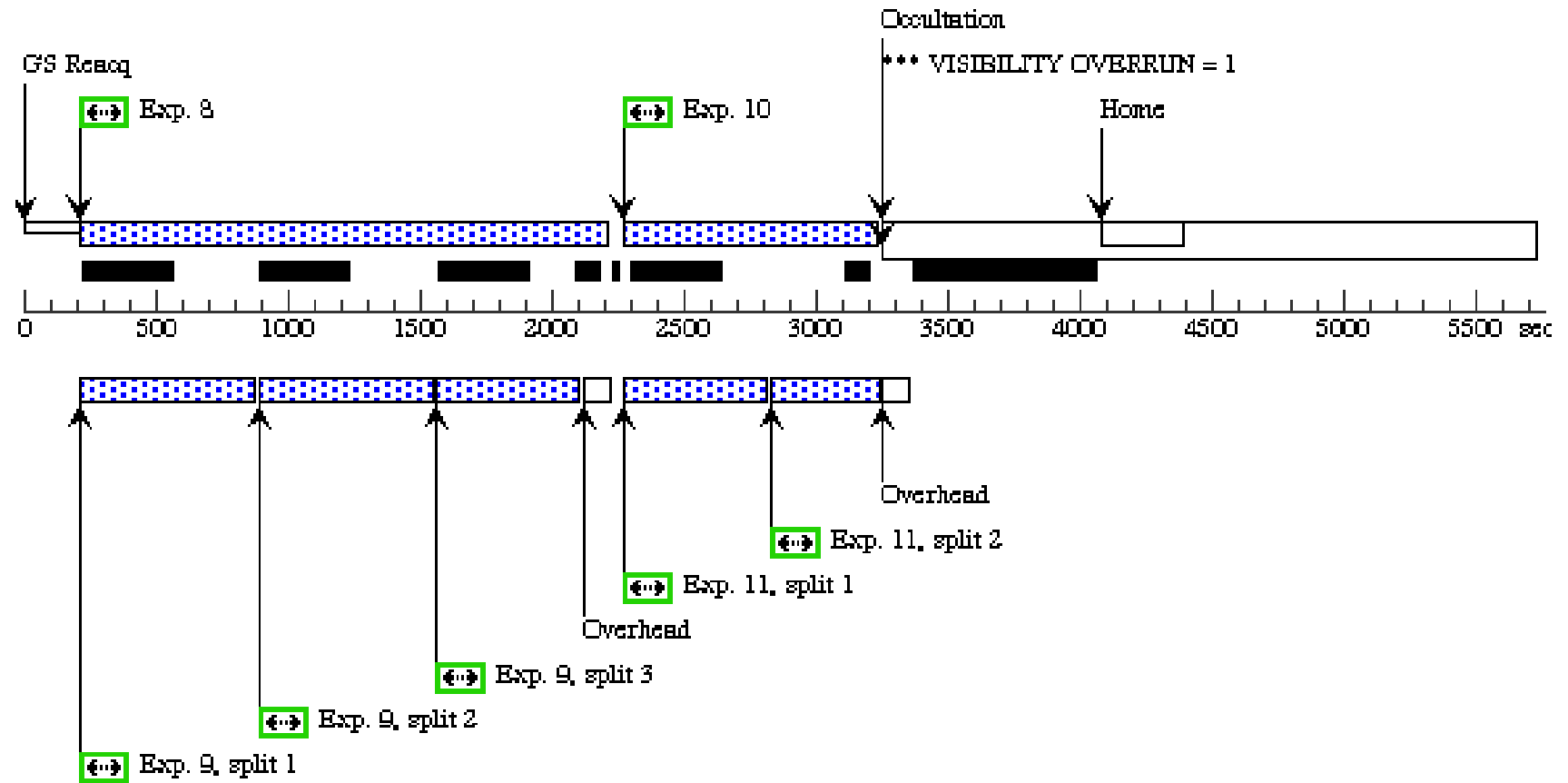
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 39 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                          |                                                                                     |                          |                                                    |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 39, completed                                                                                                                                    |                          |                                                                                     |                          |                                                    | Thu Jul 26 01:16:11 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                                    |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                                    |                              |
|                         | Special Requirements: ORIENT 135.0D TO 155.0 D                                                                                                                         |                          |                                                                                     |                          |                                                    |                              |
| Comments: 3-orbit Visit |                                                                                                                                                                        |                          |                                                                                     |                          |                                                    |                              |
| Diagnostics             | (Visit 39) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                    |                              |
|                         | (Visit 39) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                                    |                              |
|                         | (Visit 39) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                                    |                              |
|                         | (Visit 39) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                                    |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                             | Miscellaneous                |
|                         | (39)                                                                                                                                                                   | SDSS-J131802.01+262830.3 | RA: 13 18 2.0140 (199.5083917d)<br>Dec: +26 28 30.39 (26.47511d)<br>Equinox: J2000  | Redshift: 1.2344         | V=18.55<br><br>FUV mag= 18.9181 & NUV mag= 18.4249 | Reference Frame: ICRS        |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                                    |                              |
|                         | (89)                                                                                                                                                                   | SDSSJ131745.60+262910.80 | RA: 13 17 45.6000 (199.4400000d)<br>Dec: +26 29 10.80 (26.48633d)<br>Equinox: J2000 | Redshift: 0.0450         | V=18.3251                                          | Reference Frame: ICRS        |

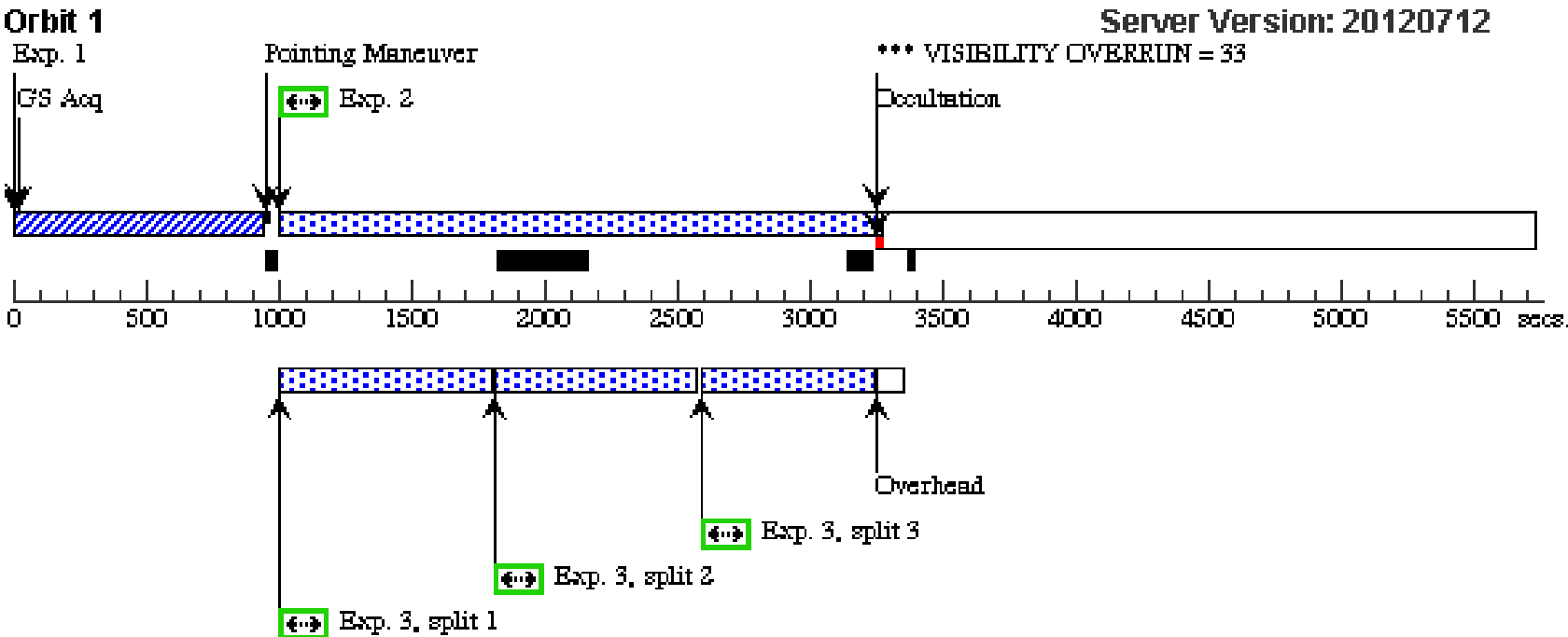
# Proposal 12603 - Visit 39 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                        | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                 | Special Reqs.          | Groups                                 | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-------------------------------|-------------------------|-----------------|------------------------------------------------------------------------------|------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (39) SDSS-J131802.01+262830.3 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                              | GS ACQ SCENARIO SINGLE |                                        | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184757)        | (39) SDSS-J131802.01+262830.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1973;<br>FLASH=YES |                        | Prime + Parallel Group 2-3 in Visit 39 | 2083 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (89) SDSSJ131745.60+262910.80 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 2-3 in Visit 39 | 1950 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184757)        | (39) SDSS-J131802.01+262830.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=717;<br>FLASH=YES  |                        | Prime + Parallel Group 4-5 in Visit 39 | 827 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (89) SDSSJ131745.60+262910.80 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                  |                        | Prime + Parallel Group 4-5 in Visit 39 | 600 Secs<br>[==>768.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184757)        | (39) SDSS-J131802.01+262830.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=1845;<br>FLASH=YES |                        | Prime + Parallel Group 6-7 in Visit 39 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (89) SDSSJ131745.60+262910.80 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 6-7 in Visit 39 | 1782 Secs<br>[==>599.0 Secs (Split 1)]<br>[==>599.0 Secs (Split 2)]<br>[==>599.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184757)        | (39) SDSS-J131802.01+262830.3 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=1840;<br>FLASH=YES |                        | Prime + Parallel Group 8-9 in Visit 39 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (89) SDSSJ131745.60+262910.80 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                   |                        | Prime + Parallel Group 8-9 in Visit 39 | 1602 Secs<br>[==>545.0 Secs (Split 1)]<br>[==>545.0 Secs (Split 2)]<br>[==>545.0 Secs (Split 3)] | [3]   |

# Proposal 12603 - Visit 39 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

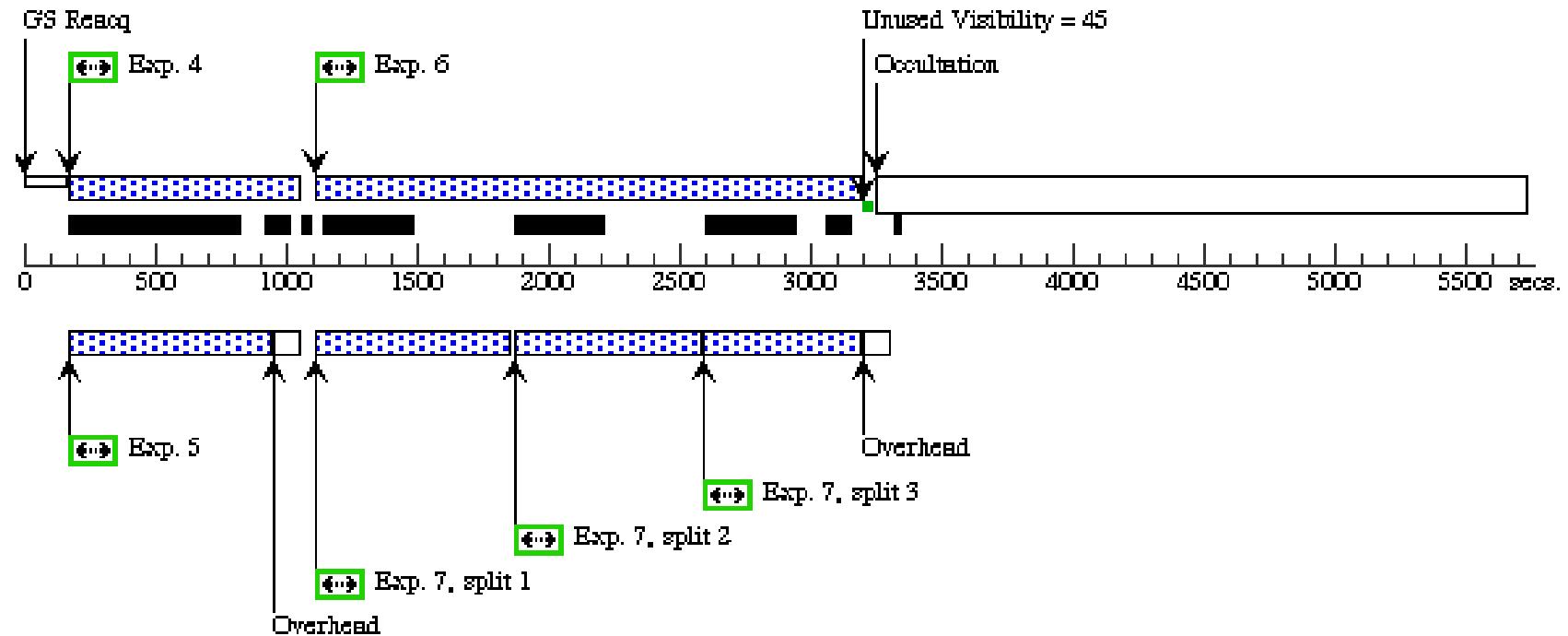
|  |    |                                           |                        |                 |                                                                                 |                                          |                                                        |     |
|--|----|-------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------|--------------------------------------------------------|-----|
|  | 10 | (COS.sp.184 (39) SDSS-J131802.01+262830.3 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=73<br>2;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 39 | 842 Secs                                               |     |
|  |    |                                           |                        |                 |                                                                                 |                                          | [==>]                                                  | [3] |
|  | 11 | (89) SDSSJ131745.6 0+262910.80            | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Group 10-11 in Visit 39 | 819 Secs                                               |     |
|  |    |                                           |                        |                 |                                                                                 |                                          | [==>408.5 Secs (Split 1)]<br>[==>408.5 Secs (Split 2)] | [3] |

Orbit Structure



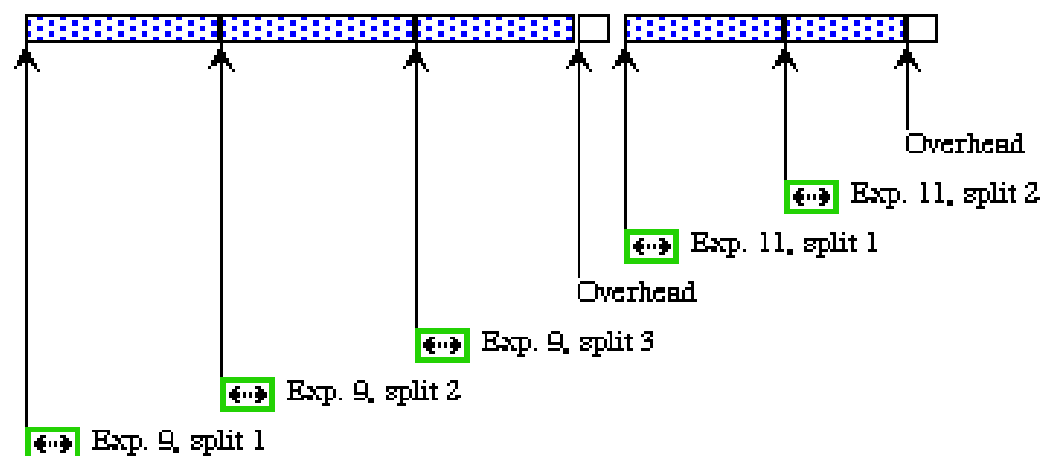
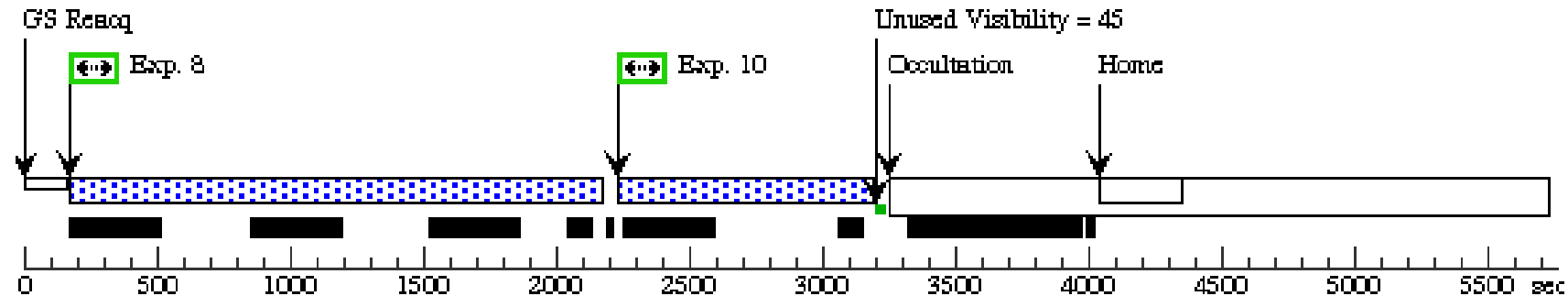
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 40 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
|---------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 40, failed</b> <span>Thu Jul 26 01:16:14 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: ORIENT 130.0D TO 150.0 D<br><i>Comments: 3-orbit Visit</i>                                                                                                                                                                                                                                                                                                                                                                                                   |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 40) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 40) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 40) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 40) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 40) Warning (Orbit Planner): VISIBILITY OVERRUN |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (40)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSS-J103304.86+211216.1 | RA: 10 33 4.8690 (158.2702875d)<br>Dec: +21 12 16.16 (21.20449d)<br>Equinox: J2000  | Redshift: 0.3152         | V=18.5<br>FUV mag= 18.7647 & NUV mag= 18.7793 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                          |                                                                                     |                          |                                               |
|               | (90)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | SDSSJ103246.99+211256.32 | RA: 10 32 46.9900 (158.1957917d)<br>Dec: +21 12 56.32 (21.21564d)<br>Equinox: J2000 | Redshift: 0.04287        | V=18.5053<br>Reference Frame: ICRS            |

# Proposal 12603 - Visit 40 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

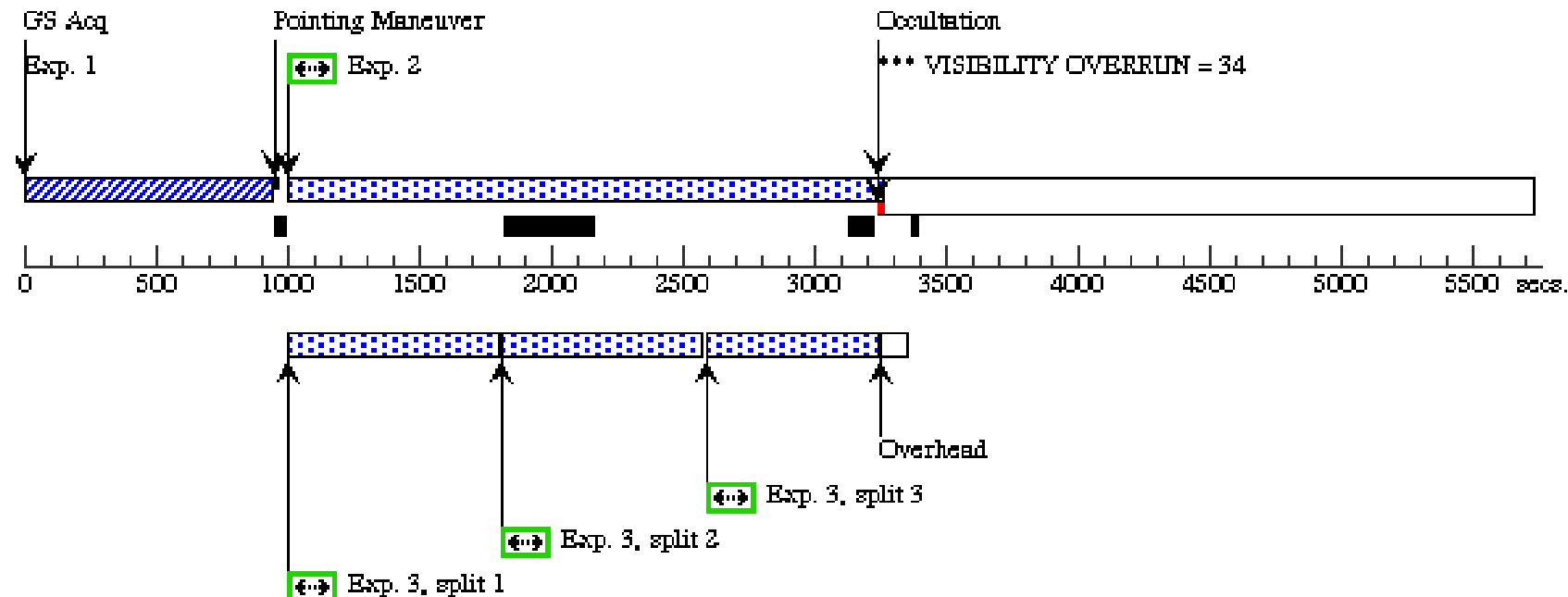
| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (40) SDSS-J103304.86+211216.1     | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>65;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 2-3 in Visit 40 | 2075 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 40 | 1950 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>9;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 40 | 819 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |                             | Prime + Parallel Gro<br>up 4-5 in Visit 40 | 600 Secs<br>[==>760.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>45;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 40 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 40 | 1782 Secs<br>[==>599.0 Secs (Split 1)]<br>[==>599.0 Secs (Split 2)]<br>[==>599.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 40 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 40 | 1701 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [3]   |

# Proposal 12603 - Visit 40 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |    |                                                |                        |                 |                                                                                 |                                          |                                  |     |
|--|----|------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------|----------------------------------|-----|
|  | 10 | (COS.sp.184 (40) SDSS-J103304.757) 86+211216.1 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=65<br>5;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 40 | 765 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>]                            | [3] |
|  | 11 | (90) SDSSJ103246.9 9+211256.32                 | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Group 10-11 in Visit 40 | 741 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>(Split 1)]<br>[==>(Split 2)] | [3] |

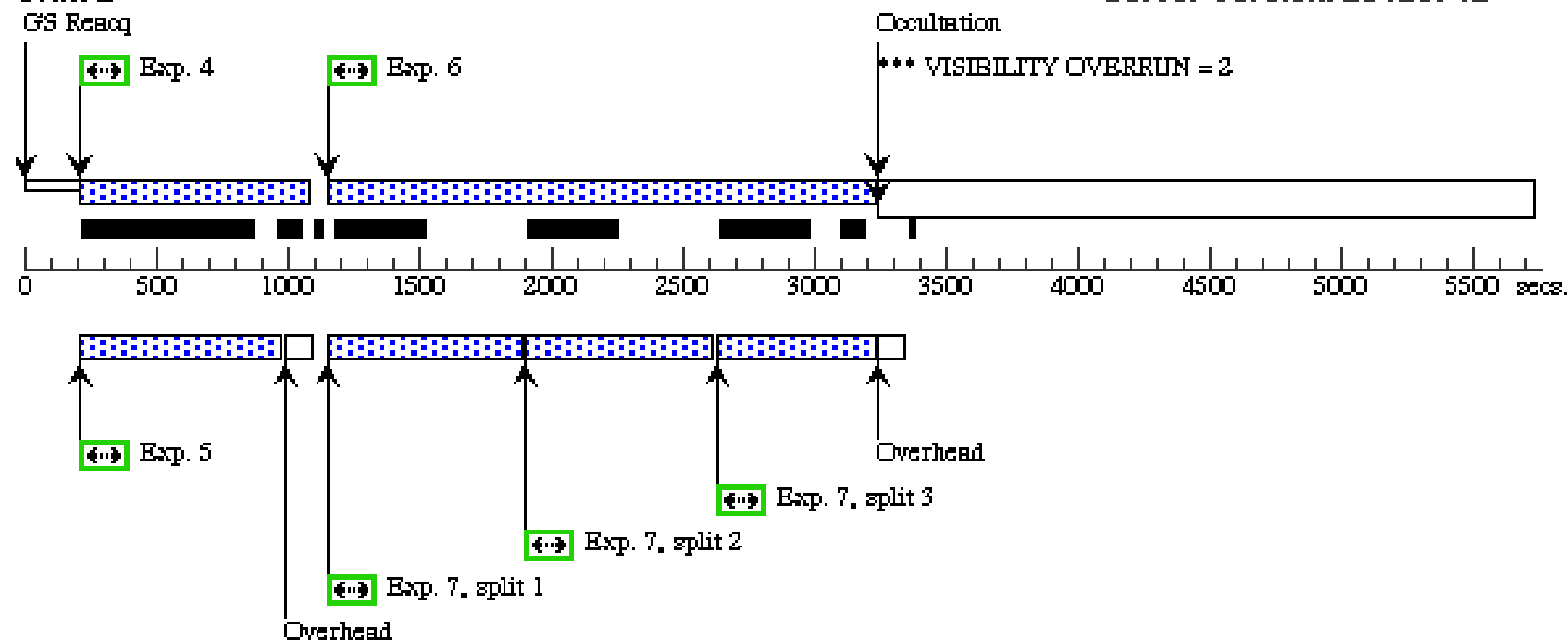
# Orbit 1

Server Version: 20120712



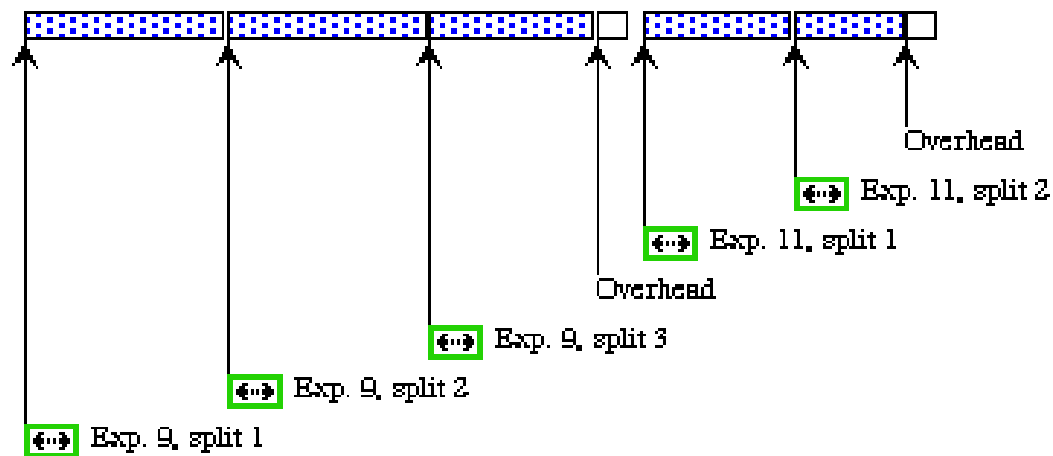
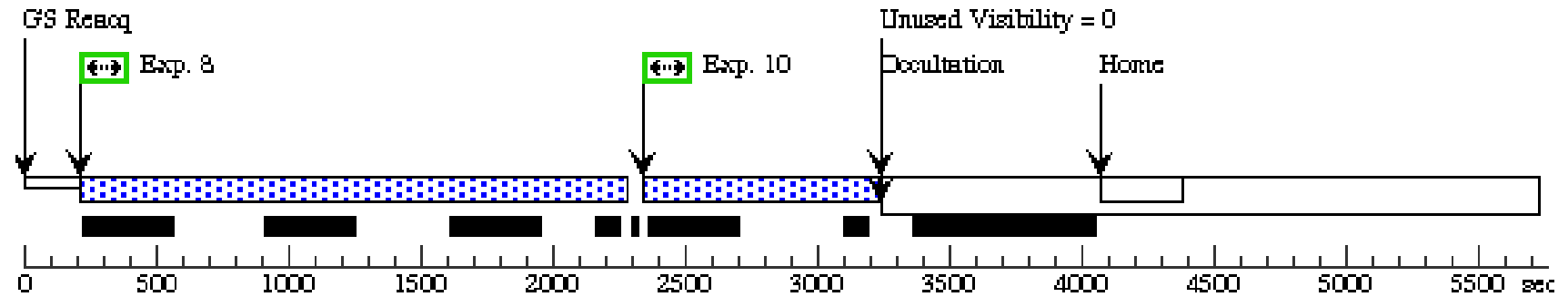
## Orbit 2

Server Version: 20120712



### Orbit 3

Server Version: 20120712



# Proposal 12603 - Visit 81 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                                                                                     |                          |                                               |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------|
| Visit         | <b>Proposal 12603, Visit 81, completed</b> <span>Thu Jul 26 01:16:17 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                     |                          |                                               |
|               | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS<br>Special Requirements: (none)<br><i>Comments: 3-orbit Visit<br/>copy of visit 40 which executed after a COS suspend with no data.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                          |                                                                                     |                          |                                               |
| Diagnostics   | (Visit 81) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 81) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.<br>(Visit 81) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.<br>(Visit 81) Warning (Orbit Planner): NO ORIENT FOR COORDINATED PARALLEL<br>(Visit 81) Warning (Orbit Planner): NO ORIENT FOR COORDINATED PARALLEL<br>(Visit 81) Warning (Orbit Planner): NO ORIENT FOR COORDINATED PARALLEL<br>(Visit 81) Warning (Orbit Planner): NO ORIENT FOR COORDINATED PARALLEL<br>(Visit 81) Warning (Orbit Planner): NO ORIENT FOR COORDINATED PARALLEL<br>(Visit 81) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.<br>(Visit 81) Warning (Orbit Planner): VISIBILITY OVERRUN |                          |                                                                                     |                          |                                               |
|               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                          |                                                                                     |                          |                                               |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                        |
|               | (40)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SDSS-J103304.86+211216.1 | RA: 10 33 4.8690 (158.2702875d)<br>Dec: +21 12 16.16 (21.20449d)<br>Equinox: J2000  | Redshift: 0.3152         | V=18.5<br>FUV mag= 18.7647 & NUV mag= 18.7793 |
| Fixed Targets | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                          |                                                                                     |                          |                                               |
|               | (90)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SDSSJ103246.99+211256.32 | RA: 10 32 46.9900 (158.1957917d)<br>Dec: +21 12 56.32 (21.21564d)<br>Equinox: J2000 | Redshift: 0.04287        | V=18.5053<br>Reference Frame: ICRS            |

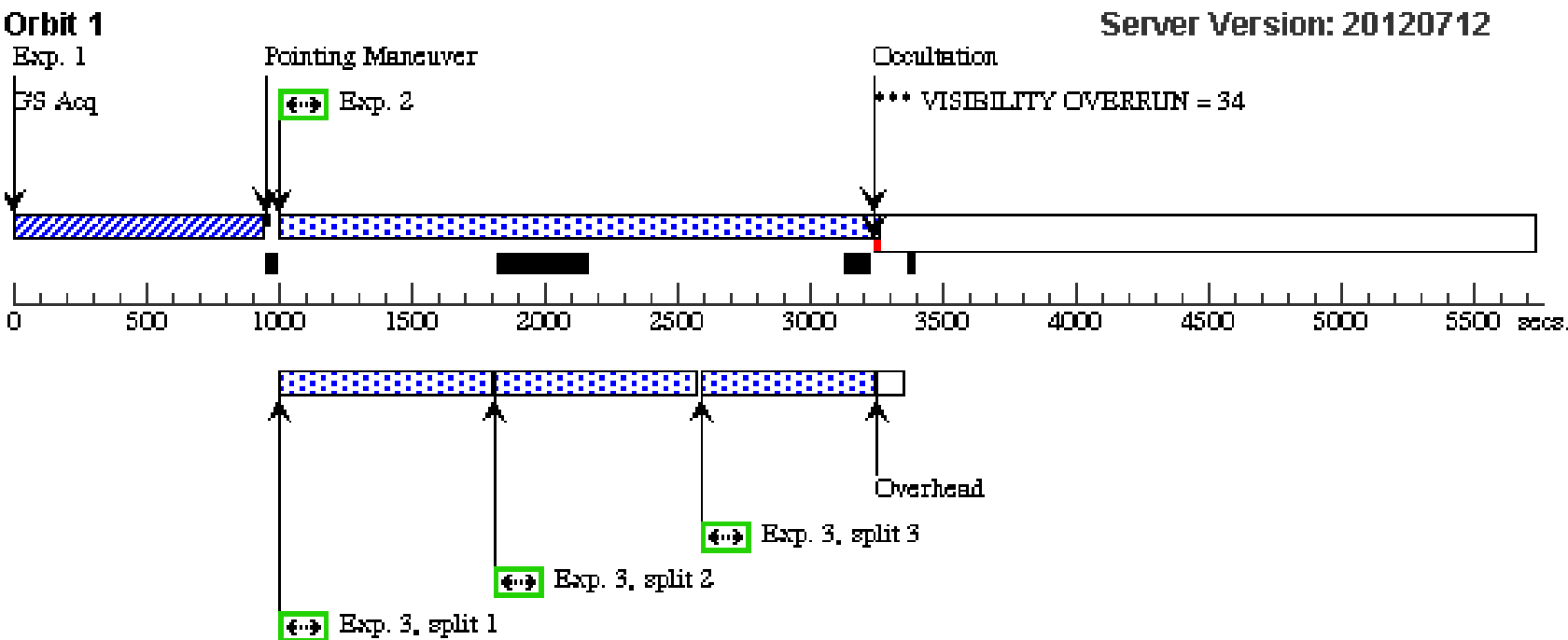
# Proposal 12603 - Visit 81 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs.               | Groups                                     | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (40) SDSS-J103304.86+211216.1     | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  | GS ACQ SCENARI<br>O BASE1B3 |                                            | 252 Secs<br>[==>]                                                                                | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>65;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 2-3 in Visit 81 | 2075 Secs<br>[==>]                                                                               | [1]   |
|           | 3 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 2-3 in Visit 81 | 1950 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=70<br>9;<br>FLASH=YES  |                             | Prime + Parallel Gro<br>up 4-5 in Visit 81 | 819 Secs<br>[==>]                                                                                | [2]   |
|           | 5 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=NO                                                                      |                             | Prime + Parallel Gro<br>up 4-5 in Visit 81 | 600 Secs<br>[==>760.0 Secs ]                                                                     | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>45;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 6-7 in Visit 81 | 1955 Secs<br>[==>]                                                                               | [2]   |
|           | 7 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 6-7 in Visit 81 | 1782 Secs<br>[==>599.0 Secs (Split 1)]<br>[==>599.0 Secs (Split 2)]<br>[==>599.0 Secs (Split 3)] | [2]   |
|           | 8 | (COS.sp.184<br>757)    | (40) SDSS-J103304.86+211216.1     | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |                             | Prime + Parallel Gro<br>up 8-9 in Visit 81 | 1950 Secs<br>[==>]                                                                               | [3]   |
|           | 9 |                        | (90) SDSSJ103246.9<br>9+211256.32 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=3                                                                       |                             | Prime + Parallel Gro<br>up 8-9 in Visit 81 | 1701 Secs<br>[==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]                                  | [3]   |

# Proposal 12603 - Visit 81 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

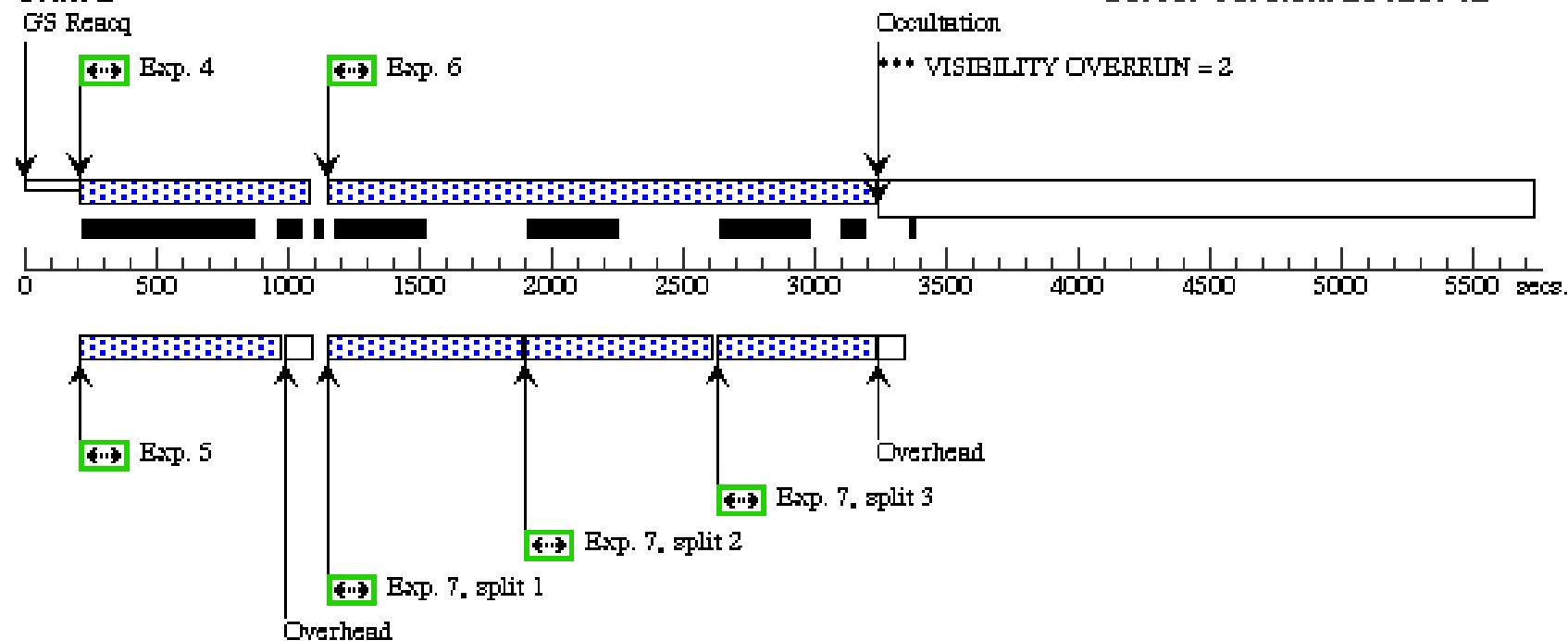
|  |    |                                                |                        |                 |                                                                                 |                                          |                                  |     |
|--|----|------------------------------------------------|------------------------|-----------------|---------------------------------------------------------------------------------|------------------------------------------|----------------------------------|-----|
|  | 10 | (COS.sp.184 (40) SDSS-J103304.757) 86+211216.1 | COS/FUV, TIME-TAG, PSA | G130M<br>1300 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=65<br>5;<br>FLASH=YES | Prime + Parallel Group 10-11 in Visit 81 | 765 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>]                            | [3] |
|  | 11 | (90) SDSSJ103246.9 9+211256.32                 | WFC3/UVIS, ACCUM, UVIS | F200LP          | CR-SPLIT=2                                                                      | Prime + Parallel Group 10-11 in Visit 81 | 741 Secs                         |     |
|  |    |                                                |                        |                 |                                                                                 |                                          | [==>(Split 1)]<br>[==>(Split 2)] | [3] |

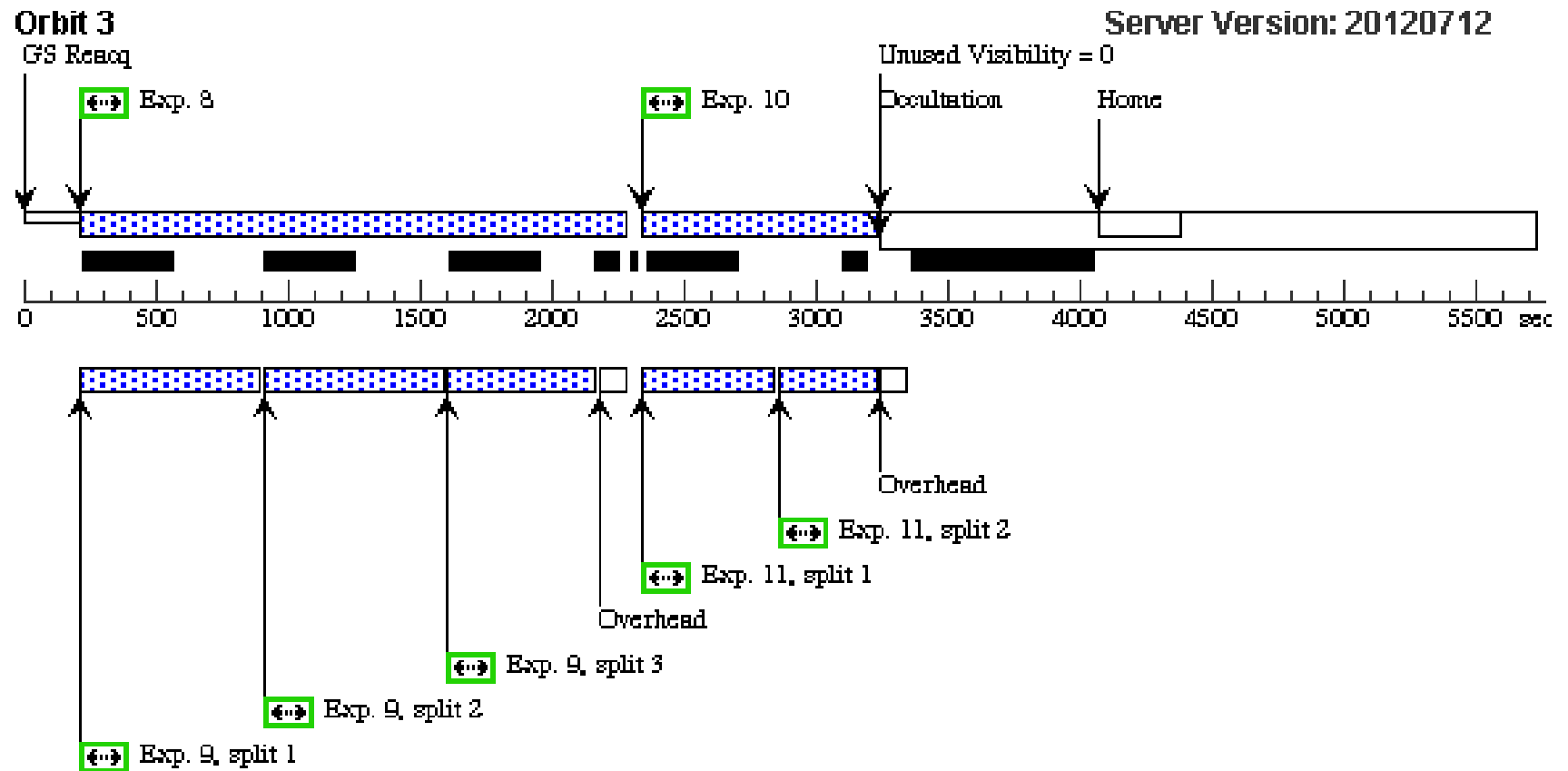
Orbit Structure



## Orbit 2

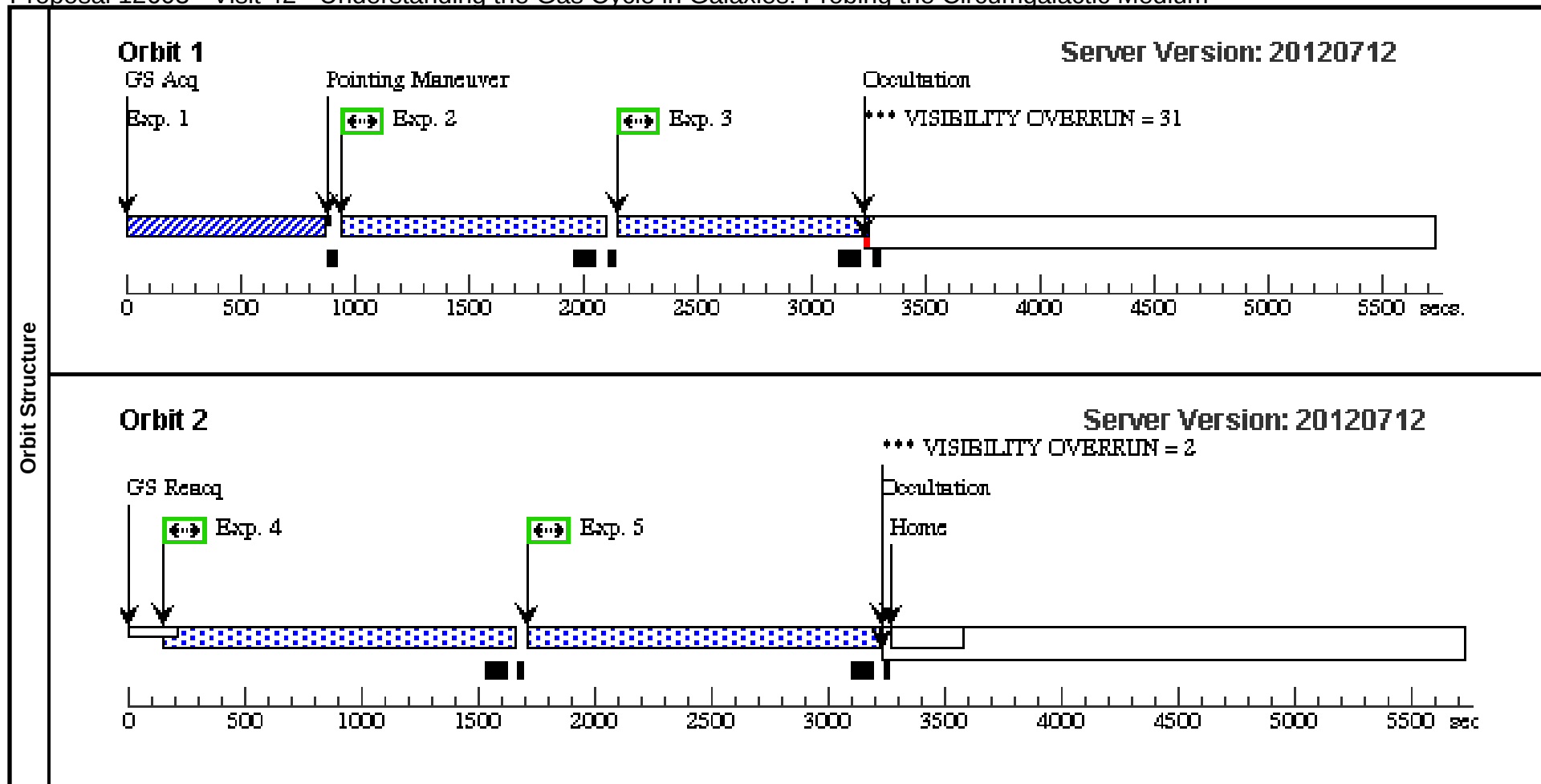
Server Version: 20120712





# Proposal 12603 - Visit 42 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|-------------------------|--|--------------------------|------------------------------------------------------------------------------|---------------------------------------------------|--------|-------------------------|------------------------------|-------|
| Visit         | Proposal 12603, Visit 42, scheduling                                                                                                                                   |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         | Thu Jul 26 01:16:22 GMT 2012 |       |
|               | Diagnostic Status: Warning                                                                                                                                             |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | Special Requirements: (none)                                                                                                                                           |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | Comments: 2-orbit Visit                                                                                                                                                |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
| Diagnostics   | (Visit 42) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | (Visit 42) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | (Visit 42) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | (Visit 42) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               | (Visit 42) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
| Fixed Targets | #                                                                                                                                                                      | Name                   | Target Coordinates                                                                  |                         |  | Targ. Coord. Corrections |                                                                              | Fluxes                                            |        | Miscellaneous           |                              |       |
|               | (42)                                                                                                                                                                   | 2E-1058.1+1102         | RA: 11 00 47.8513 (165.1993804d)<br>Dec: +10 46 13.24 (10.77034d)<br>Equinox: J2000 |                         |  | Redshift: 0.422          |                                                                              | V=18.5<br>FUV mag= 18.4928 & NUV ma<br>g= 18.3495 |        | Reference Frame: ICRS   |                              |       |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
| Exposures     | #                                                                                                                                                                      | Label<br>(ETC Run)     | Target                                                                              | Config,Mode,Aperture    |  | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                     | Groups | Exp. Time/[Actual Dur.] |                              | Orbit |
|               | 1                                                                                                                                                                      | Target Acq<br>(198668) | (42) 2E-1058.1+1102<br>2                                                            | COS/NUV, ACQ/IMAGE, PSA |  | MIRRORB                  |                                                                              |                                                   |        | 219 Secs<br>[==>]       | [1]                          |       |
|               | 2                                                                                                                                                                      | (COS.sp.184<br>757)    | (42) 2E-1058.1+1102<br>2                                                            | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=863;<br>FLASH=YES  |                                                   |        | 973 Secs<br>[==>]       | [1]                          |       |
|               | 3                                                                                                                                                                      | (COS.sp.184<br>757)    | (42) 2E-1058.1+1102<br>2                                                            | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1318 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=866;<br>FLASH=YES  |                                                   |        | 976 Secs<br>[==>]       | [1]                          |       |
|               | 4                                                                                                                                                                      | (COS.sp.184<br>757)    | (42) 2E-1058.1+1102<br>2                                                            | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1280;<br>FLASH=YES |                                                   |        | 1390 Secs<br>[==>]      | [2]                          |       |
|               | 5                                                                                                                                                                      | (COS.sp.184<br>757)    | (42) 2E-1058.1+1102<br>2                                                            | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1281;<br>FLASH=YES |                                                   |        | 1391 Secs<br>[==>]      | [2]                          |       |
|               |                                                                                                                                                                        |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               |                                                                                                                                                                        |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               |                                                                                                                                                                        |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |
|               |                                                                                                                                                                        |                        |                                                                                     |                         |  |                          |                                                                              |                                                   |        |                         |                              |       |

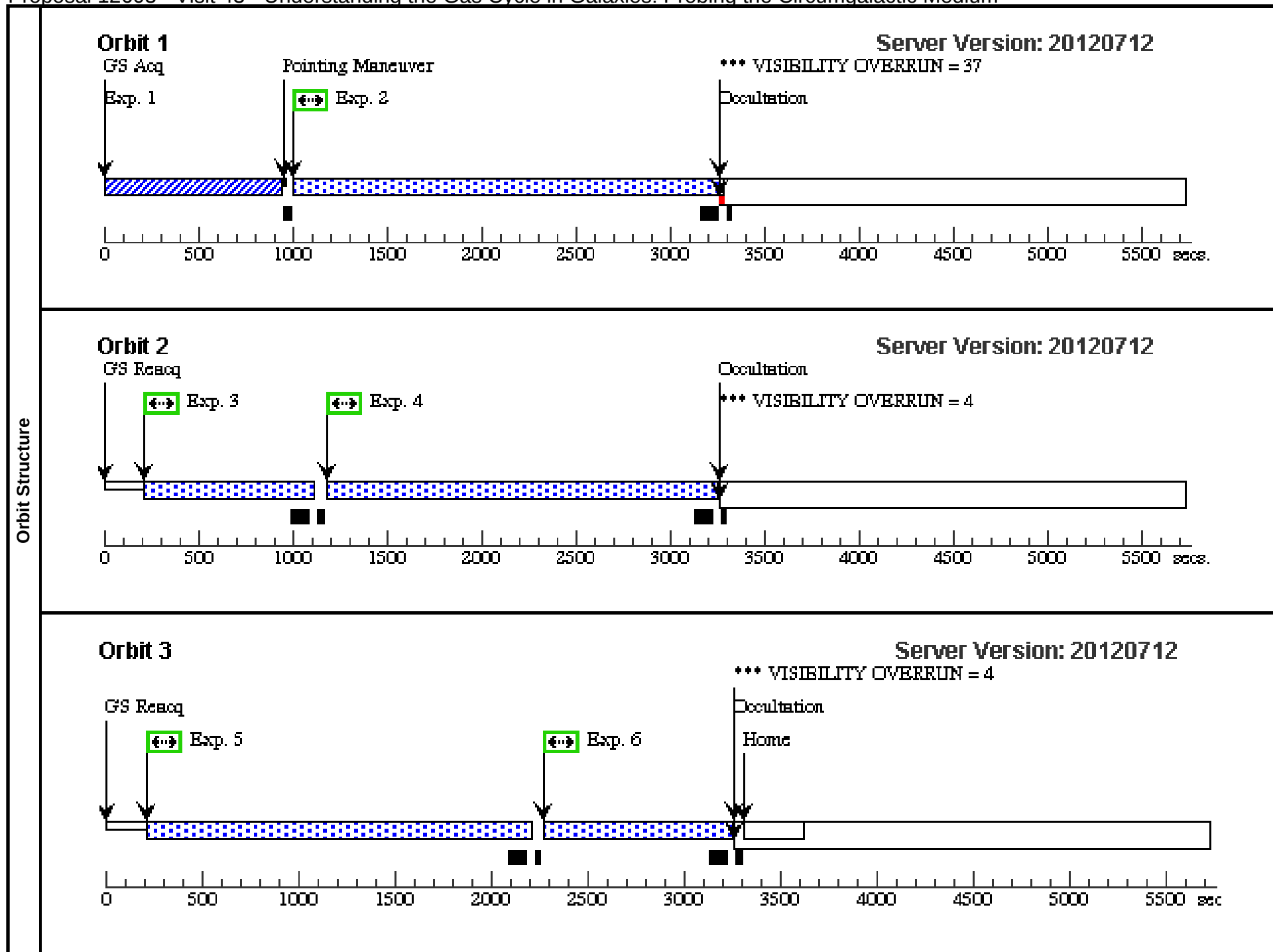


# Proposal 12603 - Visit 43 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                         |                                                                                   |                          |                                                   |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 43, scheduling                                                                                                                                   |                         |                                                                                   |                          |                                                   | Thu Jul 26 01:16:24 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                         |                                                                                   |                          |                                                   |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                         |                                                                                   |                          |                                                   |                              |
|               | Special Requirements: (none)                                                                                                                                           |                         |                                                                                   |                          |                                                   |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                         |                                                                                   |                          |                                                   |                              |
| Diagnostics   | (Visit 43) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                   |                              |
|               | (Visit 43) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                   |                              |
|               | (Visit 43) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                         |                                                                                   |                          |                                                   |                              |
|               | (Visit 43) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                         |                                                                                   |                          |                                                   |                              |
|               | (Visit 43) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                         |                                                                                   |                          |                                                   |                              |
|               | (Visit 43) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                         |                                                                                   |                          |                                                   |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                    | Target Coordinates                                                                | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|               | (43)                                                                                                                                                                   | VV2000-J093603.9+320709 | RA: 09 36 3.8849 (144.0161871d)<br>Dec: +32 07 9.32 (32.11926d)<br>Equinox: J2000 | Redshift: 1.1497         | V=17.8<br>FUV mag= 18.7746 & NUV ma<br>g= 18.0031 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                         |                                                                                   |                          |                                                   |                              |

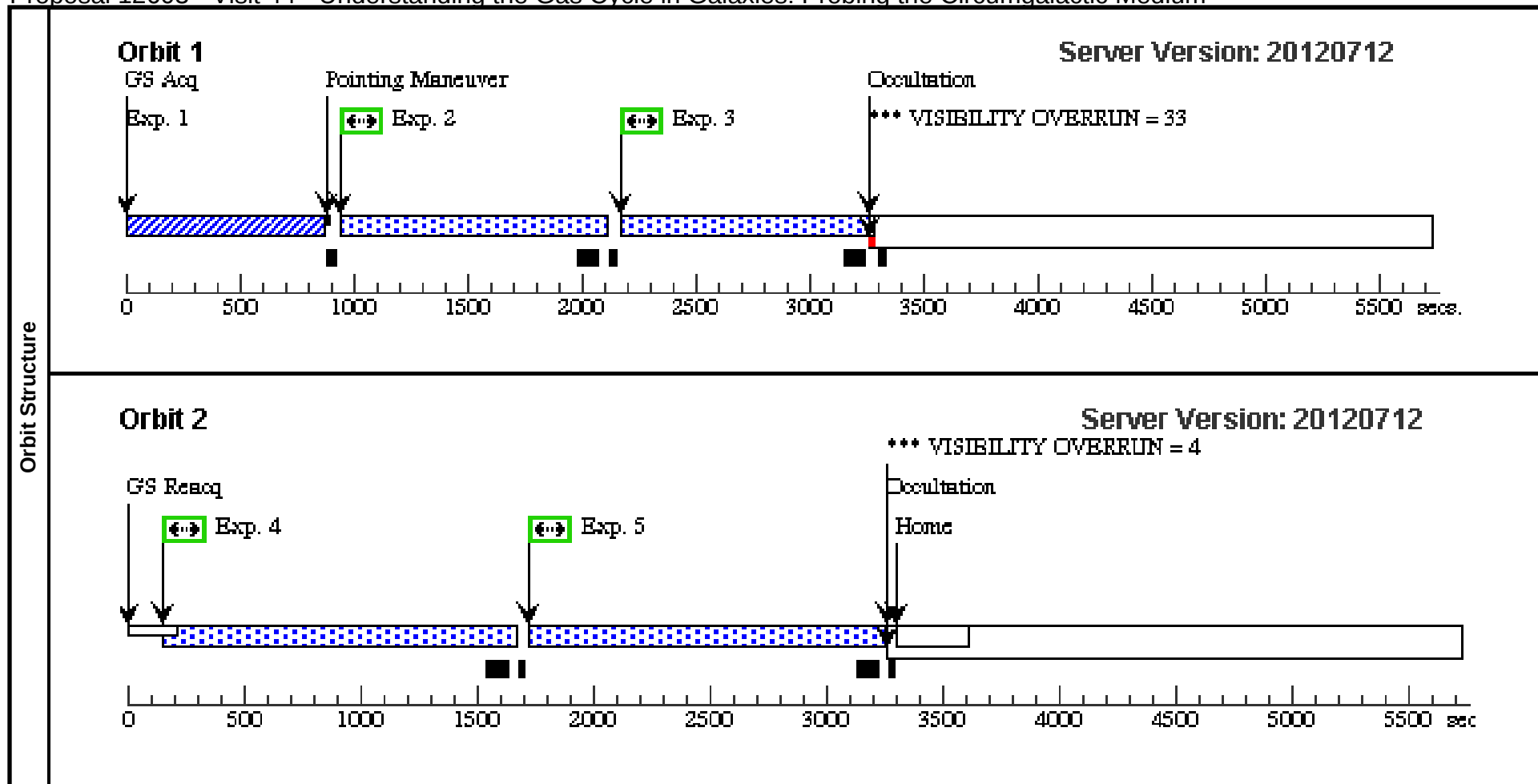
# Proposal 12603 - Visit 43 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                           | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (43) VV2000-J09360<br>3.9+320709 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (43) VV2000-J09360<br>3.9+320709 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>91;<br>FLASH=YES |               |        | 2101 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (43) VV2000-J09360<br>3.9+320709 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=74<br>1;<br>FLASH=YES  |               |        | 851 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (43) VV2000-J09360<br>3.9+320709 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (43) VV2000-J09360<br>3.9+320709 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (43) VV2000-J09360<br>3.9+320709 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=75<br>1;<br>FLASH=YES  |               |        | 861 Secs                |       |
|           |   |                        |                                  |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |



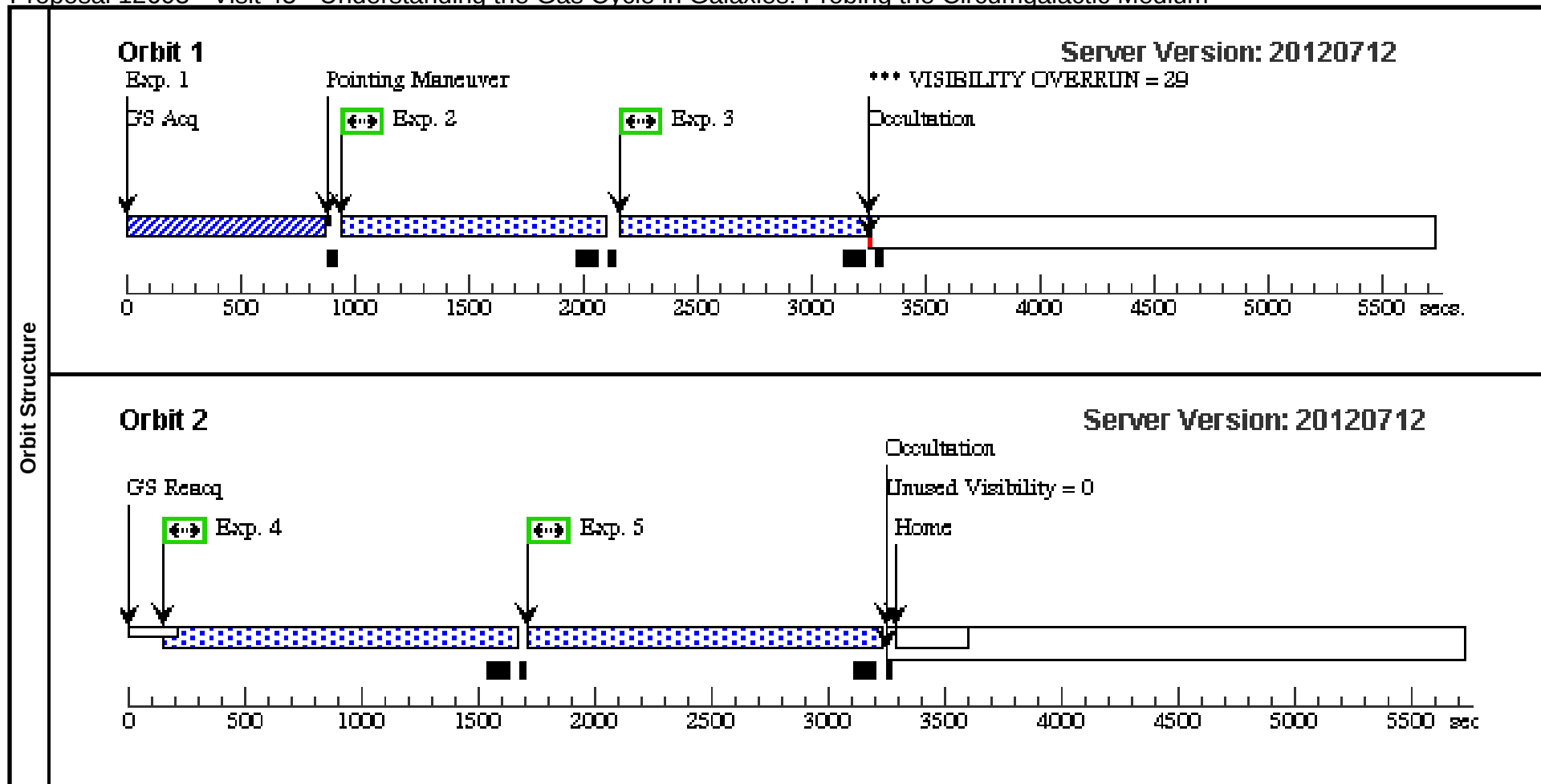
# Proposal 12603 - Visit 44 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------|-------------------------|--|--------------------------|------------------------------------------------------------------------------|-----------------------------------------------|--------|-------------------------|------------------------------|-------|
| Visit                   | Proposal 12603, Visit 44, scheduling                                                                                                                                   |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         | Thu Jul 26 01:16:27 GMT 2012 |       |
|                         | Diagnostic Status: Warning                                                                                                                                             |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | Special Requirements: (none)                                                                                                                                           |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
| Comments: 2-orbit Visit |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
| Diagnostics             | (Visit 44) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | (Visit 44) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | (Visit 44) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | (Visit 44) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
|                         | (Visit 44) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
| Fixed Targets           | #                                                                                                                                                                      | Name                | Target Coordinates                                                                  |                         |  | Targ. Coord. Corrections |                                                                              | Fluxes                                        |        | Miscellaneous           |                              |       |
|                         | (44)                                                                                                                                                                   | QSO-B1139+305       | RA: 11 42 12.3062 (175.5512758d)<br>Dec: +30 16 13.30 (30.27036d)<br>Equinox: J2000 |                         |  | Redshift: 0.4814         |                                                                              | V=17.4<br>FUV mag= 18.3555 & NUV mag= 17.9594 |        | Reference Frame: ICRS   |                              |       |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        |                         |                              |       |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)     | Target                                                                              | Config,Mode,Aperture    |  | Spectral Els.            | Opt. Params.                                                                 | Special Reqs.                                 | Groups | Exp. Time/[Actual Dur.] |                              | Orbit |
|                         | 1                                                                                                                                                                      | Target Acq (198668) | (44) QSO-B1139+305                                                                  | COS/NUV, ACQ/IMAGE, PSA |  | MIRRORB                  |                                                                              | GS ACQ SCENARIO BASE1B3                       |        | 219 Secs                |                              |       |
|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        | [==>]                   |                              | [1]   |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)    | (44) QSO-B1139+305                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=878;<br>FLASH=YES  |                                               |        | 988 Secs                |                              |       |
|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        | [==>]                   |                              | [1]   |
|                         | 3                                                                                                                                                                      | (COS.sp.184 757)    | (44) QSO-B1139+305                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=881;<br>FLASH=YES  |                                               |        | 991 Secs                |                              |       |
|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        | [==>]                   |                              | [1]   |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)    | (44) QSO-B1139+305                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1291 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1290;<br>FLASH=YES |                                               |        | 1400 Secs               |                              |       |
|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               |        | [==>]                   |                              | [2]   |
|                         | 5                                                                                                                                                                      | (COS.sp.184 757)    | (44) QSO-B1139+305                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1301;<br>FLASH=YES |                                               |        | 1411 Secs               |                              |       |
|                         |                                                                                                                                                                        |                     |                                                                                     |                         |  |                          |                                                                              |                                               | [==>]  |                         | [2]                          |       |



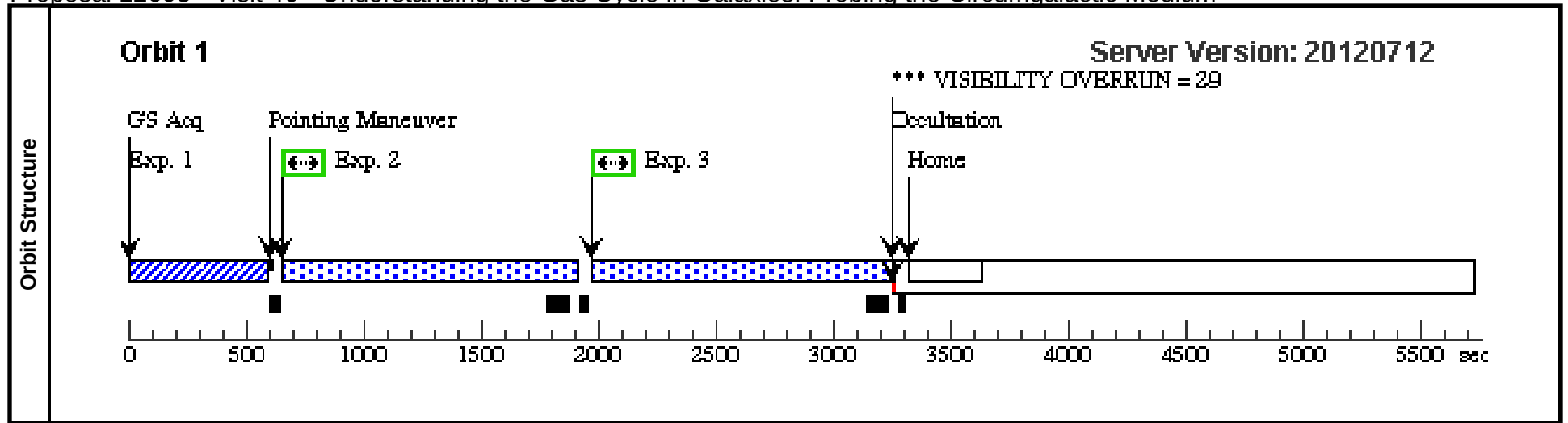
# Proposal 12603 - Visit 45 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------|-----------|-------------------------|-----|------------------------------|
| Visit                                                                                             | Proposal 12603, Visit 45, completed                                                                                                                                    |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     | Thu Jul 26 01:16:29 GMT 2012 |
|                                                                                                   | Diagnostic Status: Warning                                                                                                                                             |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|                                                                                                   | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|                                                                                                   | Special Requirements: (none)                                                                                                                                           |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
| Comments: 2-orbit Visit                                                                           |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
| Diagnostics                                                                                       | (Visit 45) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|                                                                                                   | (Visit 45) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|                                                                                                   | (Visit 45) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
|                                                                                                   | (Visit 45) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
| Fixed Targets                                                                                     | #                                                                                                                                                                      | Name                          | Target Coordinates                                                                  |                         | Targ. Coord. Corrections                                                     |                                                                             | Fluxes                                       |           | Miscellaneous           |     |                              |
|                                                                                                   | (45)                                                                                                                                                                   | SDSS-J124129.64+285212.0      | RA: 12 41 29.6480 (190.3735333d)<br>Dec: +28 52 12.05 (28.87001d)<br>Equinox: J2000 |                         | Redshift: 0.5894                                                             |                                                                             | V=17.8<br>FUV mag= 18.2609 & NUV mag= 18.018 |           | Reference Frame: ICRS   |     |                              |
| Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           |                         |     |                              |
| Exposures                                                                                         | #                                                                                                                                                                      | Label (ETC Run)               | Target                                                                              | Config,Mode,Aperture    | Spectral Els.                                                                | Opt. Params.                                                                | Special Reqs.                                | Groups    | Exp. Time/[Actual Dur.] |     | Orbit                        |
|                                                                                                   | 1                                                                                                                                                                      | Target Acq (198668)           | (45) SDSS-J124129.64+285212.0                                                       | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                                                                      |                                                                             |                                              |           | 219 Secs                |     |                              |
|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           | [==>]                   |     | [1]                          |
|                                                                                                   | 2                                                                                                                                                                      | (COS.sp.184 757)              | (45) SDSS-J124129.64+285212.0                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A                                                              | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=870;<br>FLASH=YES |                                              |           | 980 Secs                |     |                              |
|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           | [==>]                   |     | [1]                          |
|                                                                                                   | 3                                                                                                                                                                      | (COS.sp.184 757)              | (45) SDSS-J124129.64+285212.0                                                       | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A                                                              | SEGMENT=BOTH;<br>FP-POS=3;<br>EXTENDED=NO;<br>BUFFER-TIME=871;<br>FLASH=YES |                                              |           | 981 Secs                |     |                              |
|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              |           | [==>]                   |     | [1]                          |
| 4                                                                                                 | (COS.sp.184 757)                                                                                                                                                       | (45) SDSS-J124129.64+285212.0 | COS/FUV, TIME-TAG, PSA                                                              | G130M<br>1291 A         | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1285;<br>FLASH=YES |                                                                             |                                              | 1395 Secs |                         |     |                              |
|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              | [==>]     |                         | [2] |                              |
| 5                                                                                                 | (COS.sp.184 757)                                                                                                                                                       | (45) SDSS-J124129.64+285212.0 | COS/FUV, TIME-TAG, PSA                                                              | G130M<br>1327 A         | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=1288;<br>FLASH=YES |                                                                             |                                              | 1398 Secs |                         |     |                              |
|                                                                                                   |                                                                                                                                                                        |                               |                                                                                     |                         |                                                                              |                                                                             |                                              | [==>]     |                         | [2] |                              |



# Proposal 12603 - Visit 46 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------|-------------------------|--------------------------|-----------------|-------------------------------------------------------------------------------|---------------|-----------------------|-------------------------|------------------------------|
| Visit                   | Proposal 12603, Visit 46, completed                                                                                                                                    |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         | Thu Jul 26 01:16:31 GMT 2012 |
|                         | Diagnostic Status: Warning                                                                                                                                             |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|                         | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|                         | Special Requirements: (none)                                                                                                                                           |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
| Diagnostics             | (Visit 46) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|                         | (Visit 46) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|                         | (Visit 46) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
|                         | (Visit 46) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
| Fixed Targets           | #                                                                                                                                                                      | Name                 | Target Coordinates                                                                  |                         | Targ. Coord. Corrections |                 | Fluxes                                                                        |               | Miscellaneous         |                         |                              |
|                         | (46)                                                                                                                                                                   | 87GB-142519.5+264555 | RA: 14 27 35.6003 (216.8983346d)<br>Dec: +26 32 14.65 (26.53740d)<br>Equinox: J2000 |                         | Redshift: 0.3641         |                 | V=16.0<br>FUV mag= 17.6676 & NUV mag= 17.1523                                 |               | Reference Frame: ICRS |                         |                              |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       |                         |                              |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)      | Target                                                                              | Config,Mode,Aperture    |                          | Spectral Els.   | Opt. Params.                                                                  | Special Reqs. | Groups                | Exp. Time/[Actual Dur.] | Orbit                        |
|                         | 1                                                                                                                                                                      | Target Acq (198588)  | (46) 87GB-142519.5 +264555                                                          | COS/NUV, ACQ/IMAGE, PSA |                          | MIRRORB         |                                                                               |               |                       | 77 Secs                 |                              |
|                         |                                                                                                                                                                        |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       | [==>]                   | [1]                          |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)     | (46) 87GB-142519.5 +264555                                                          | COS/FUV, TIME-TAG, PSA  |                          | G130M<br>1291 A | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=96 5;<br>FLASH=YES;<br>FP-POS=4  |               |                       | 1075 Secs               |                              |
|                         |                                                                                                                                                                        |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       | [==>]                   | [1]                          |
|                         | 3                                                                                                                                                                      | (COS.sp.184 757)     | (46) 87GB-142519.5 +264555                                                          | COS/FUV, TIME-TAG, PSA  |                          | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=10 60;<br>FLASH=YES |               |                       | 1170 Secs               |                              |
|                         |                                                                                                                                                                        |                      |                                                                                     |                         |                          |                 |                                                                               |               |                       | [==>]                   | [1]                          |



# Proposal 12603 - Visit 47 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

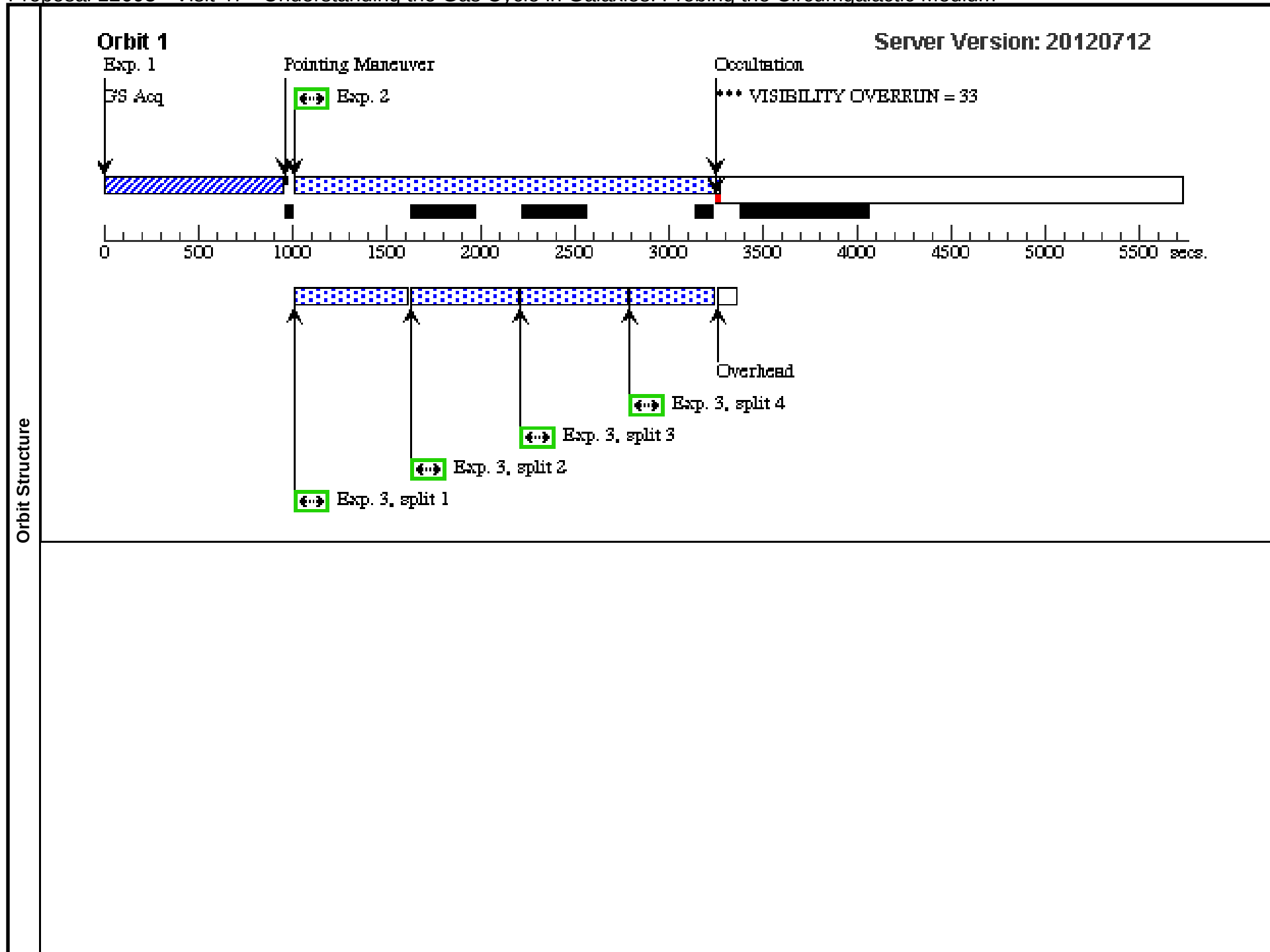
|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 47, scheduling                                                                                                                                   |                          |                                                                                     |                          |                                                   | Thu Jul 26 01:16:32 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                     |                          |                                                   |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                     |                          |                                                   |                              |
|               | Special Requirements: ORIENT 205.0D TO 235.0 D                                                                                                                         |                          |                                                                                     |                          |                                                   |                              |
|               | Comments: 4-orbit Visit                                                                                                                                                |                          |                                                                                     |                          |                                                   |                              |
| Diagnostics   | (Visit 47) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
|               | (Visit 47) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                     |                          |                                                   |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                  | Targ. Coord. Corrections | Fluxes                                            | Miscellaneous                |
|               | (47)                                                                                                                                                                   | 2MASS-J09311671+2628474  | RA: 09 31 16.7099 (142.8196246d)<br>Dec: +26 28 47.50 (26.47986d)<br>Equinox: J2000 | Redshift: 0.7782         | V=17.8<br><br>FUV mag= 18.9763 & NUV mag= 18.2089 | Reference Frame: ICRS        |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                     |                          |                                                   |                              |
|               | (97)                                                                                                                                                                   | SDSSJ093116.01+263259.60 | RA: 09 31 16.0100 (142.8167083d)<br>Dec: +26 32 59.60 (26.54989d)<br>Equinox: J2000 | Redshift: 0.04576        | V=17.7684                                         | Reference Frame: ICRS        |
|               |                                                                                                                                                                        |                          |                                                                                     |                          |                                                   |                              |

# Proposal 12603 - Visit 47 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                            | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.]                                                                                          | Orbit |
|-----------|---|------------------------|-----------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | Target Acq<br>(198675) | (47) 2MASS-J09311<br>671+2628474  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |                                            | 257 Secs                                                                                                         |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (47) 2MASS-J09311<br>671+2628474  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>63;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 2-3 in Visit 47 | 2073 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [1]   |
|           | 3 |                        | (97) SDSSJ093116.0<br>1+263259.60 | WFC3/UVIS, ACCUM, UVIS  | F350LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 2-3 in Visit 47 | 1820 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>(Split 1)]<br>[==>(Split 2)]<br>[==>(Split 3)]<br>[==>(Split 4)]                                             | [1]   |
|           | 4 | (COS.sp.184<br>757)    | (47) 2MASS-J09311<br>671+2628474  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>61;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 4-5 in Visit 47 | 2971 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [2]   |
|           | 5 |                        | (97) SDSSJ093116.0<br>1+263259.60 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 4-5 in Visit 47 | 2600 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>656.0 Secs (Split 1)]<br>[==>656.0 Secs (Split 2)]<br>[==>656.0 Secs (Split 3)]<br>[==>656.0 Secs (Split 4)] | [2]   |
|           | 6 | (COS.sp.184<br>757)    | (47) 2MASS-J09311<br>671+2628474  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=27<br>91;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 6-7 in Visit 47 | 2901 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [3]   |
|           | 7 |                        | (97) SDSSJ093116.0<br>1+263259.60 | WFC3/UVIS, ACCUM, UVIS  | F200LP          | CR-SPLIT=4                                                                       |               | Prime + Parallel Gro<br>up 6-7 in Visit 47 | 2600 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>660.0 Secs (Split 1)]<br>[==>660.0 Secs (Split 2)]<br>[==>660.0 Secs (Split 3)]<br>[==>660.0 Secs (Split 4)] | [3]   |
|           | 8 | (COS.sp.184<br>757)    | (47) 2MASS-J09311<br>671+2628474  | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=28<br>61;<br>FLASH=YES |               | Prime + Parallel Gro<br>up 8-9 in Visit 47 | 2971 Secs                                                                                                        |       |
|           |   |                        |                                   |                         |                 |                                                                                  |               |                                            | [==>]                                                                                                            | [4]   |

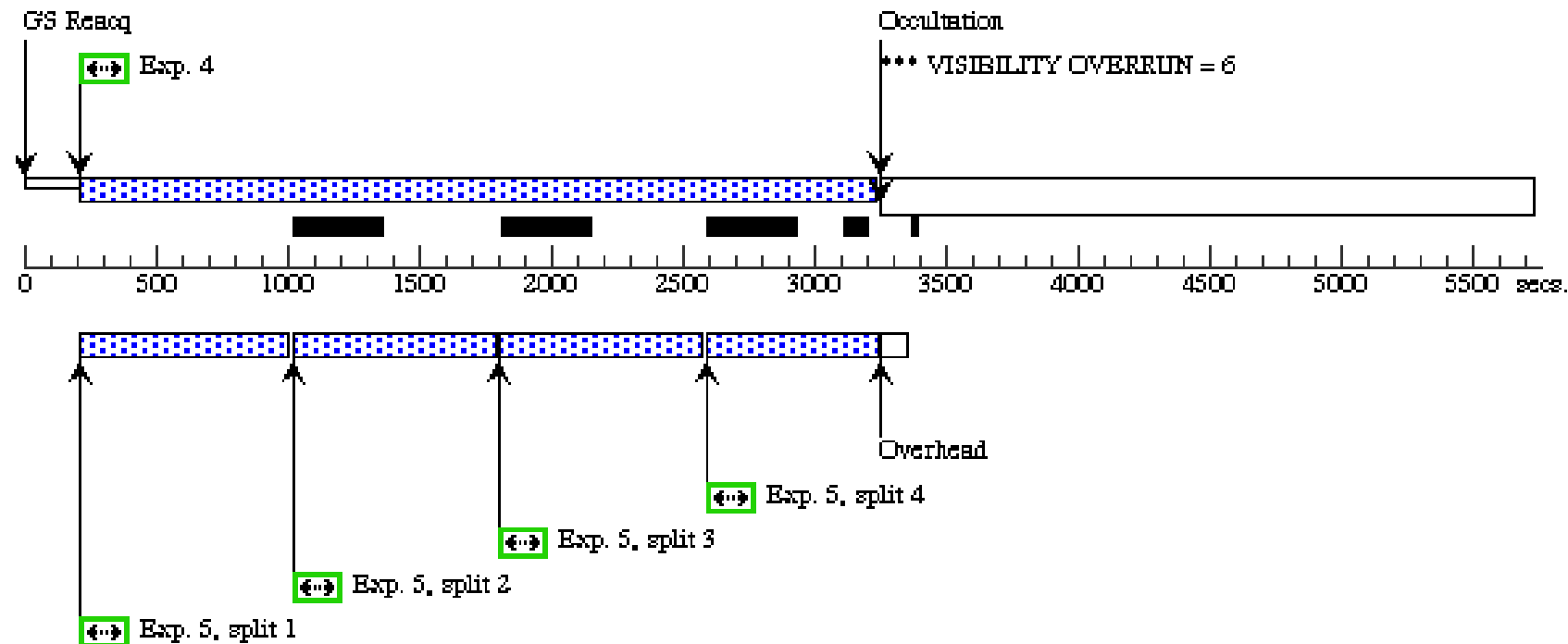
Proposal 12603 - Visit 47 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|  |   |                                                          |        |            |                                              |                          |     |
|--|---|----------------------------------------------------------|--------|------------|----------------------------------------------|--------------------------|-----|
|  | 9 | (97) SDSSJ093116.0 WFC3/UVIS, ACCUM, UVIS<br>1+263259.60 | F350LP | CR-SPLIT=4 | Prime + Parallel Group<br>up 8-9 in Visit 47 | 2600 Secs                | [4] |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 1)] |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 2)] |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 3)] |     |
|  |   |                                                          |        |            |                                              | [=>654.0 Secs (Split 4)] |     |



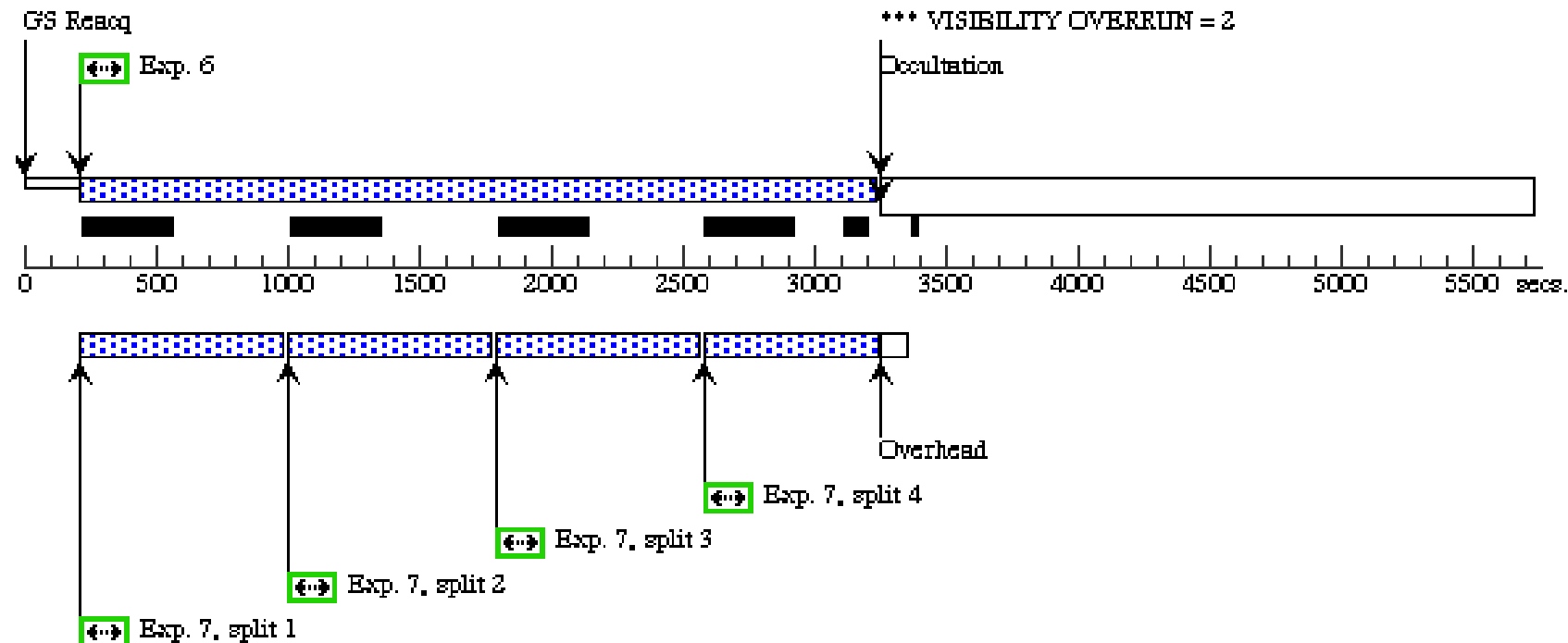
## Orbit 2

Server Version: 20120712



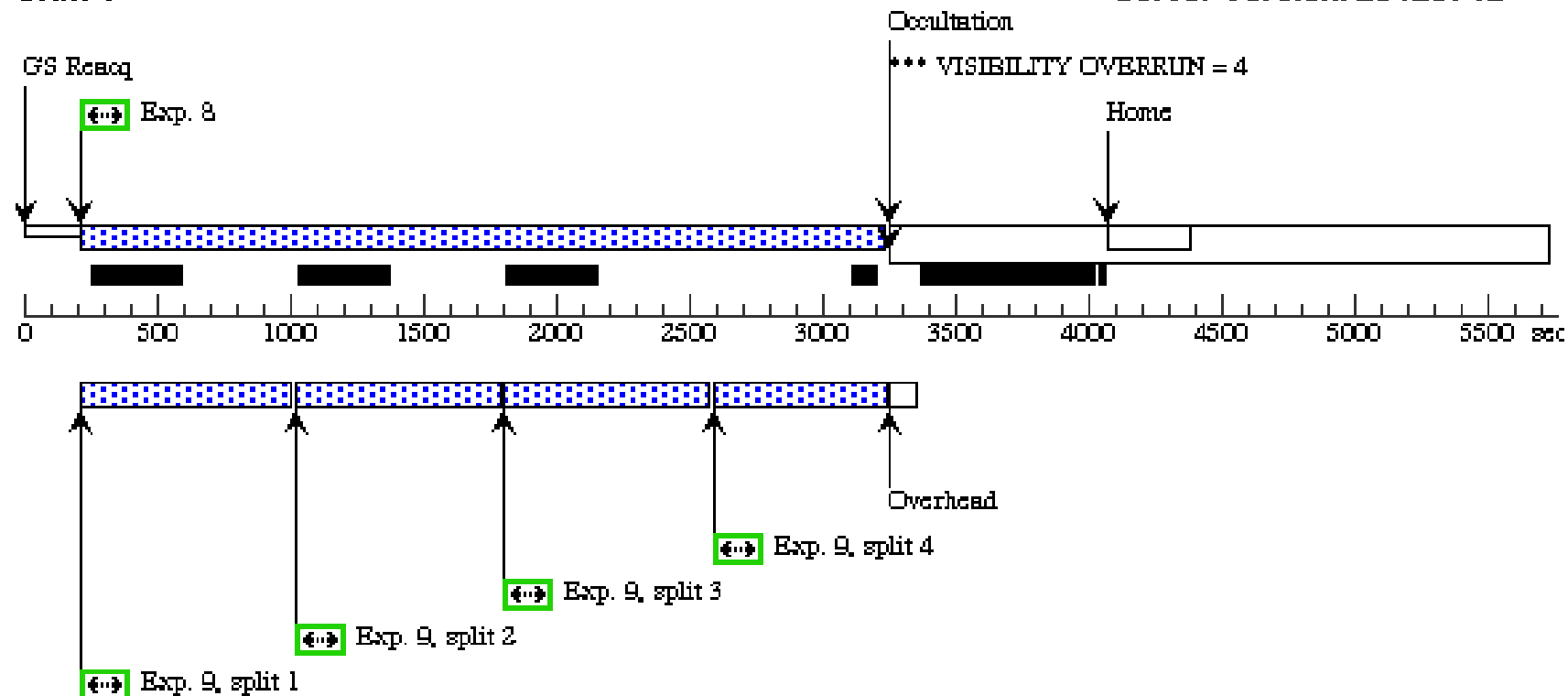
### Orbit 3

Server Version: 20120712



## Orbit 4

Server Version: 20120712

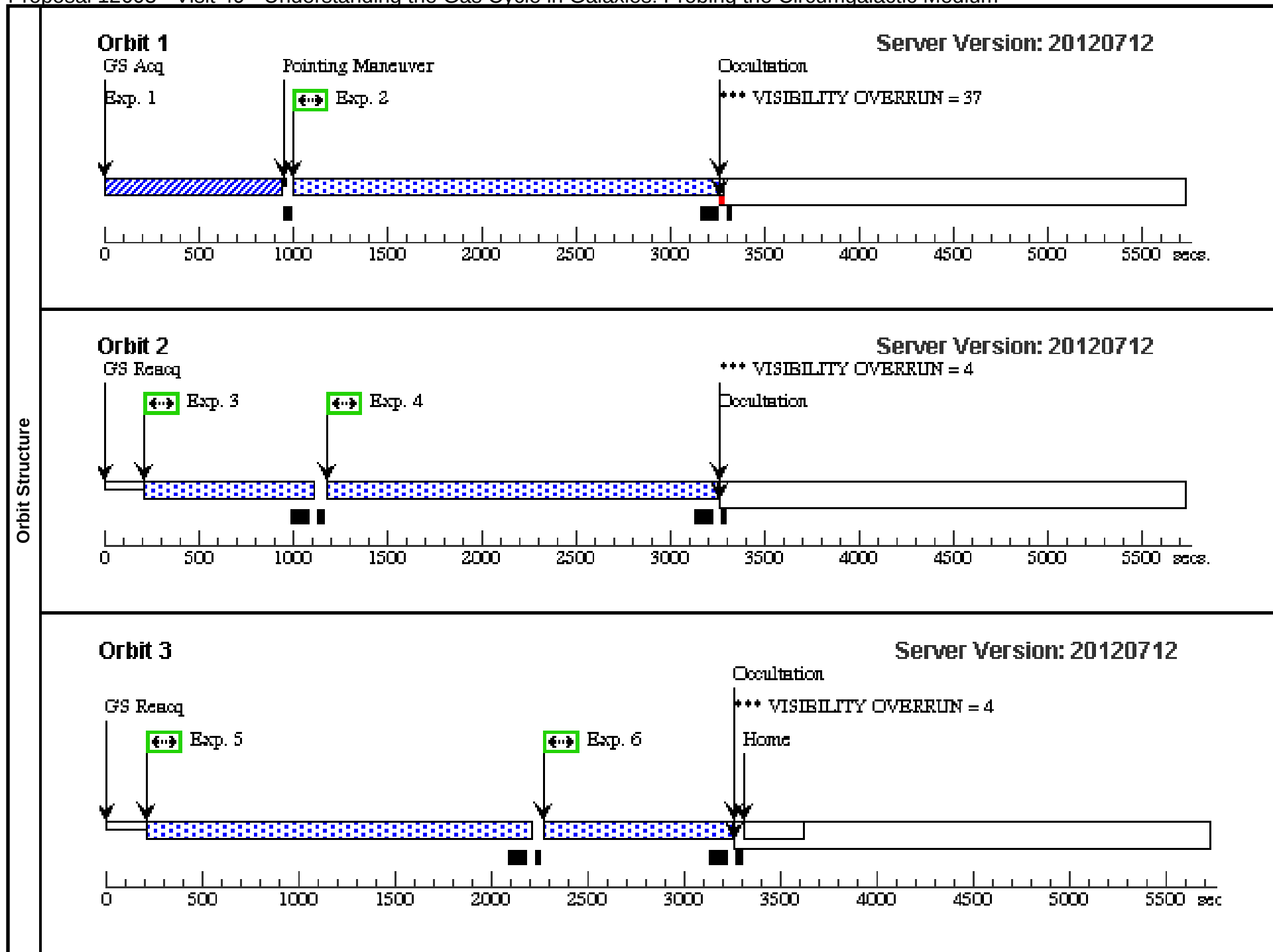


# Proposal 12603 - Visit 49 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|               |                                                                                                                                                                        |                       |                                  |                          |                           |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------|--------------------------|---------------------------|------------------------------|
| Visit         | Proposal 12603, Visit 49, scheduling                                                                                                                                   |                       |                                  |                          |                           | Thu Jul 26 01:16:37 GMT 2012 |
|               | Diagnostic Status: Warning                                                                                                                                             |                       |                                  |                          |                           |                              |
|               | Scientific Instruments: COS/NUV, COS/FUV                                                                                                                               |                       |                                  |                          |                           |                              |
|               | Special Requirements: (none)                                                                                                                                           |                       |                                  |                          |                           |                              |
|               | Comments: 3-orbit Visit                                                                                                                                                |                       |                                  |                          |                           |                              |
| Diagnostics   | (Visit 49) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                       |                                  |                          |                           |                              |
|               | (Visit 49) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                       |                                  |                          |                           |                              |
|               | (Visit 49) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                       |                                  |                          |                           |                              |
|               | (Visit 49) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                       |                                  |                          |                           |                              |
|               | (Visit 49) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                       |                                  |                          |                           |                              |
|               | (Visit 49) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                       |                                  |                          |                           |                              |
| Fixed Targets | #                                                                                                                                                                      | Name                  | Target Coordinates               | Targ. Coord. Corrections | Fluxes                    | Miscellaneous                |
|               | (49)                                                                                                                                                                   | VV96-J100254.6+324039 | RA: 10 02 54.5135 (150.7271396d) | Redshift: 0.8288         | V=16.76                   | Reference Frame: ICRS        |
|               |                                                                                                                                                                        |                       | Dec: +32 40 39.06 (32.67752d)    |                          | FUV mag= 18.8871 & NUV ma |                              |
|               |                                                                                                                                                                        |                       | Equinox: J2000                   |                          | g= 17.7303                |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                       |                                  |                          |                           |                              |

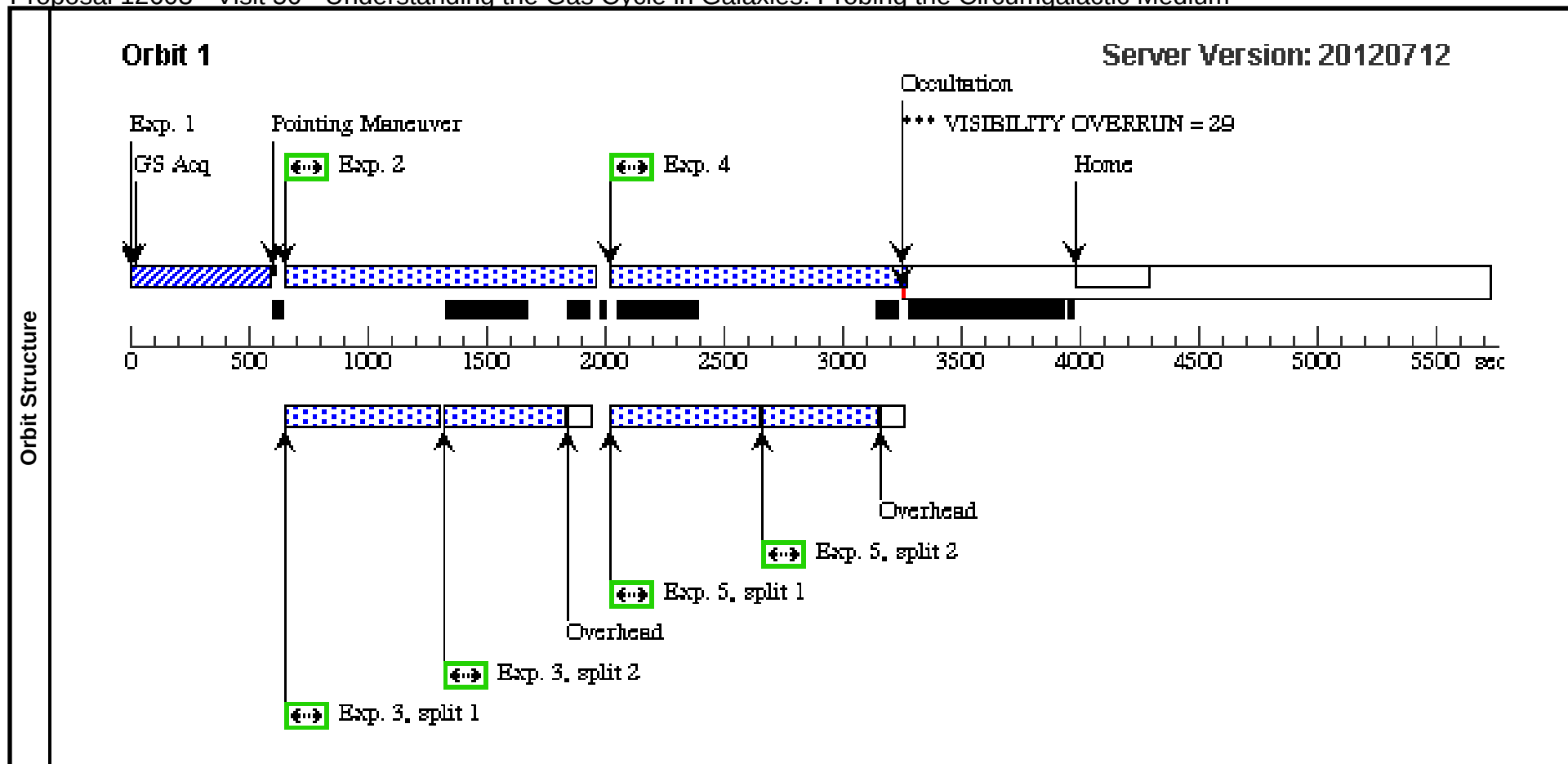
# Proposal 12603 - Visit 49 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

| Exposures | # | Label<br>(ETC Run)     | Target                         | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                                                                     | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------|--------------------------------|-------------------------|-----------------|----------------------------------------------------------------------------------|---------------|--------|-------------------------|-------|
|           | 1 | Target Acq<br>(198672) | (49) VV96-J100254.<br>6+324039 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                                                                  |               |        | 252 Secs                |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 2 | (COS.sp.184<br>757)    | (49) VV96-J100254.<br>6+324039 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=19<br>91;<br>FLASH=YES |               |        | 2101 Secs               |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [1]   |
|           | 3 | (COS.sp.184<br>757)    | (49) VV96-J100254.<br>6+324039 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=74<br>1;<br>FLASH=YES  |               |        | 851 Secs                |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 4 | (COS.sp.184<br>757)    | (49) VV96-J100254.<br>6+324039 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=1;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [2]   |
|           | 5 | (COS.sp.184<br>757)    | (49) VV96-J100254.<br>6+324039 | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=18<br>40;<br>FLASH=YES |               |        | 1950 Secs               |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |
|           | 6 | (COS.sp.184<br>757)    | (49) VV96-J100254.<br>6+324039 | COS/FUV, TIME-TAG, PSA  | G130M<br>1309 A | SEGMENT=BOTH;<br>FP-POS=2;<br>EXTENDED=NO;<br>BUFFER-TIME=75<br>1;<br>FLASH=YES  |               |        | 861 Secs                |       |
|           |   |                        |                                |                         |                 |                                                                                  |               |        | [==>]                   | [3]   |



# Proposal 12603 - Visit 50 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|-------------------------|--|--------------------------|-------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|------------------------------|-------|
| Visit                   | Proposal 12603, Visit 50, completed                                                                                                                                    |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        | Thu Jul 26 01:16:40 GMT 2012 |       |
|                         | Diagnostic Status: Warning                                                                                                                                             |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | Special Requirements: ORIENT 255D TO 275 D                                                                                                                             |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
| Comments: 1-orbit Visit |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
| Diagnostics             | (Visit 50) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | (Visit 50) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | (Visit 50) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | (Visit 50) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
| Fixed Targets           | #                                                                                                                                                                      | Name                        | Target Coordinates                                                                  |                         |  | Targ. Coord. Corrections |                                                                               | Fluxes                                            |                                                        | Miscellaneous                                          |                              |       |
|                         | (50)                                                                                                                                                                   | QSO-B1124+271               | RA: 11 27 36.3816 (171.9015900d)<br>Dec: +26 54 50.49 (26.91402d)<br>Equinox: J2000 |                         |  | Redshift: 0.379          |                                                                               | V=17.0<br><br>FUV mag= 17.6098 & NUV mag= 17.4468 |                                                        | Reference Frame: ICRS                                  |                              |       |
|                         | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        |                                                        |                              |       |
|                         | (100)                                                                                                                                                                  | SDSSJ112746.28+26.005734.54 | RA: 11 27 46.2800 (171.9428333d)<br>Dec: +26 57 34.54 (26.95959d)<br>Equinox: J2000 |                         |  | Redshift: 0.03336        |                                                                               | V=16.8362                                         |                                                        | Reference Frame: ICRS                                  |                              |       |
| Exposures               | #                                                                                                                                                                      | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture    |  | Spectral Els.            | Opt. Params.                                                                  | Special Reqs.                                     | Groups                                                 | Exp. Time/[Actual Dur.]                                |                              | Orbit |
|                         | 1                                                                                                                                                                      | Target Acq (198588)         | (50) QSO-B1124+271                                                                  | COS/NUV, ACQ/IMAGE, PSA |  | MIRRORB                  |                                                                               | GS ACQ SCENARIO SINGLE                            |                                                        | 77 Secs                                                |                              |       |
|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        | [==>]                                                  |                              | [1]   |
|                         | 2                                                                                                                                                                      | (COS.sp.184 757)            | (50) QSO-B1124+271                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1291 A          | SEGMENT=BOTH;<br>EXTENDED=NO;<br>BUFFER-TIME=10 20;<br>FLASH=YES;<br>FP-POS=4 |                                                   | Prime + Parallel Group 2-3 in Visit 50                 | 1130 Secs                                              |                              |       |
|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        | [==>]                                                  |                              | [1]   |
|                         | 3                                                                                                                                                                      | (WFC3UVIS.im.185675)        | (100) SDSSJ112746.28+26.005734.54                                                   | WFC3/UVIS, ACCUM, UVIS  |  | F200LP                   | CR-SPLIT=2                                                                    |                                                   | Prime + Parallel Group 2-3 in Visit 50                 | 950 Secs                                               |                              |       |
|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        | [==>509.0 Secs (Split 1)]<br>[==>509.0 Secs (Split 2)] |                              | [1]   |
|                         | 4                                                                                                                                                                      | (COS.sp.184 757)            | (50) QSO-B1124+271                                                                  | COS/FUV, TIME-TAG, PSA  |  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=10 15;<br>FLASH=YES |                                                   | Prime + Parallel Group 4-5 in Visit 50                 | 1125 Secs                                              |                              |       |
|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   |                                                        | [==>]                                                  |                              | [1]   |
|                         | 5                                                                                                                                                                      | (WFC3UVIS.im.185677)        | (100) SDSSJ112746.28+26.005734.54                                                   | WFC3/UVIS, ACCUM, UVIS  |  | F350LP                   | CR-SPLIT=2                                                                    |                                                   | Prime + Parallel Group 4-5 in Visit 50                 | 950 Secs                                               |                              |       |
|                         |                                                                                                                                                                        |                             |                                                                                     |                         |  |                          |                                                                               |                                                   | [==>490.0 Secs (Split 1)]<br>[==>490.0 Secs (Split 2)] |                                                        | [1]                          |       |



# Proposal 12603 - Visit 80 - Understanding the Gas Cycle in Galaxies: Probing the Circumgalactic Medium

|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------|-------------------------|--------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------|-----|------------------------------|
| Visit                                             | Proposal 12603, Visit 80, completed                                                                                                                                    |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     | Thu Jul 26 01:16:41 GMT 2012 |
|                                                   | Diagnostic Status: Warning                                                                                                                                             |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | Scientific Instruments: COS/NUV, COS/FUV, WFC3/UVIS                                                                                                                    |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | Special Requirements: ORIENT 280.0D TO 300.0 D                                                                                                                         |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
| Comments: Second Visit of 2, paired with Visit 08 |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
| Diagnostics                                       | (Visit 80) Warning (Form): The proposal is part of a large program (100 orbits or more in one cycle) and so should use Schedulability 100.                             |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | (Visit 80) Warning (Orbit Planner): VISIBILITY OVERRUN                                                                                                                 |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | (Visit 80) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting. |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | (Visit 80) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.                                     |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
| Fixed Targets                                     | #                                                                                                                                                                      | Name                     | Target Coordinates                                                                 |                         | Targ. Coord. Corrections |                                                                             | Fluxes                                              |                                                        | Miscellaneous                                          |     |                              |
|                                                   | (8)                                                                                                                                                                    | 2MASS-J14294076+0321257  | RA: 14 29 40.7445 (217.4197687d)<br>Dec: +03 21 25.83 (3.35718d)<br>Equinox: J2000 |                         | Redshift: 0.2531         |                                                                             | V=18.313<br><br>FUV mag= 18.1243 & NUV mag= 18.2414 |                                                        | Reference Frame: ICRS                                  |     |                              |
|                                                   | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.                                                                      |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        |                                                        |     |                              |
|                                                   | (58)                                                                                                                                                                   | SDSSJ143001.87+032352.12 | RA: 14 30 1.8700 (217.5077917d)<br>Dec: +03 23 52.12 (3.39781d)<br>Equinox: J2000  |                         | Redshift: 0.03330        |                                                                             | V=18.2107                                           |                                                        | Reference Frame: ICRS                                  |     |                              |
| Exposures                                         | #                                                                                                                                                                      | Label (ETC Run)          | Target                                                                             | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                                                                | Special Reqs.                                       | Groups                                                 | Exp. Time/[Actual Dur.]                                |     | Orbit                        |
|                                                   | 1                                                                                                                                                                      | Target Acq (198668)      | (8) 2MASS-J14294076+0321257                                                        | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                                                             |                                                     |                                                        | 219 Secs                                               |     |                              |
|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        | [==>]                                                  |     | [1]                          |
|                                                   | 2                                                                                                                                                                      | (COS.sp.184 757)         | (8) 2MASS-J14294076+0321257                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1300 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=859;<br>FLASH=YES |                                                     | Prime + Parallel Group 2-3 in Visit 80                 | 969 Secs                                               |     |                              |
|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        | [==>]                                                  |     | [1]                          |
|                                                   | 3                                                                                                                                                                      |                          | (58) SDSSJ143001.87+032352.12                                                      | WFC3/UVIS, ACCUM, UVIS  | F200LP                   | CR-SPLIT=2                                                                  |                                                     | Prime + Parallel Group 2-3 in Visit 80                 | 823 Secs                                               |     |                              |
|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        | [==>428.5 Secs (Split 1)]<br>[==>428.5 Secs (Split 2)] |     | [1]                          |
|                                                   | 4                                                                                                                                                                      | (COS.sp.184 757)         | (8) 2MASS-J14294076+0321257                                                        | COS/FUV, TIME-TAG, PSA  | G130M<br>1327 A          | SEGMENT=BOTH;<br>FP-POS=4;<br>EXTENDED=NO;<br>BUFFER-TIME=859;<br>FLASH=YES |                                                     | Prime + Parallel Group 4-5 in Visit 80                 | 969 Secs                                               |     |                              |
|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     |                                                        | [==>]                                                  |     | [1]                          |
|                                                   | 5                                                                                                                                                                      |                          | (58) SDSSJ143001.87+032352.12                                                      | WFC3/UVIS, ACCUM, UVIS  | F350LP                   | CR-SPLIT=2                                                                  |                                                     | Prime + Parallel Group 4-5 in Visit 80                 | 900 Secs                                               |     |                              |
|                                                   |                                                                                                                                                                        |                          |                                                                                    |                         |                          |                                                                             |                                                     | [==>470.0 Secs (Split 1)]<br>[==>470.0 Secs (Split 2)] |                                                        | [1] |                              |

