



13473 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Timothy M. Heckman (PI) (Contact)	The Johns Hopkins University	heckman@pha.jhu.edu
Dr. Sanchayeeta Borthakur (CoI)	The Johns Hopkins University	sanch@pha.jhu.edu
Dr. David Schiminovich (CoI)	Columbia University in the City of New York	ds@astro.columbia.edu
Dr. Jason Tumlinson (CoI)	Space Telescope Science Institute	tumlinson@stsci.edu

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) J141949.39+060654.0	COS/FUV COS/NUV	7	03-Dec-2013 21:04:26.0	yes
02	(2) J144625.07+035503.6	COS/FUV COS/NUV	5	03-Dec-2013 21:04:45.0	yes
03	(3) J103748.36+040242.1	COS/FUV COS/NUV	3	03-Dec-2013 21:05:00.0	yes
04	(4) J104923.24+021806.0	COS/FUV COS/NUV	4	03-Dec-2013 21:05:14.0	yes
05	(5) J142614.79+004159.4	COS/FUV COS/NUV	6	03-Dec-2013 21:05:30.0	yes

25 Total Orbits Used

ABSTRACT

One of the major discoveries made with the Cosmic Origins Spectrograph is that the halos of typical star-forming galaxies at low-redshift contain a major baryonic component in the form of highly ionized gas traced by the OVI ion. This discovery raises many important questions. Where did the gas come from, where is it going, and how is it energized? Is it photoionized by the meta-galactic background or is it hot collisionally-ionized gas? Is it gas in hydrostatic equilibrium at the virial temperature? Is it accreted material that is heated mechanically as it flows into the halo from the cosmic web? Is it outflowing material that is heated by feedback supplied by the massive stars in the galaxy? An important first step in answering these questions would be to precisely measure the ionization state of the gas traced by OVI. In this proposal we request 25 orbits using COS to do this by measuring the relative column densities of the NeVIII, OVI, and OIV ions in the halos of five typical star-forming galaxies at $z = 0.5$ to 0.6 . These data will allow us to discriminate between photo- and collisional ionization, to determine whether the gas has a temperature close to the halo virial temperature, and to assess the amount of energy input required to sustain the hot halo. Unlike the three galaxies studied to date using these ions, ours will be the first 'fair sample' of typical L^* star-forming galaxies. As such, these data will provide a unique new benchmark against which the increasingly sophisticated numerical simulations of galactic halos can be compared.

OBSERVING DESCRIPTION

The program is designed to look for Ne VIII absorption originating in the halos of starforming galaxies via QSO absorption lines. Our G130M and G160M COS data will cover wavelength from 1100 - 1448 Å and 1387-1785 Å respectively, which gives us access to a host of important ionization, density, and metallicity diagnostics including NeVIII and OVI. The redshifts of the galaxy range from $z \sim 0.46$ - 0.63 by design, so that we can detect NeVIII with COS.

Sample: We have 5 target galaxies. Our target QSOs are come from the GALEX-SDSS catalog. These QSOs have not den observed with COS so far and hence this program.

Exposure times: To ensure sufficient flux in the G130M and G160M bands at the observed wavelength of OVI (1031) and NeVIII (770) in a resolvable number of orbits, we have used QSOs with measured GALEX FUV magnitudes less than 18.9 (range 18.2-18.5) at redshift greater than the foreground target ($z_{\text{qso}} > 0.75$).

All of the target acquisition will be carried out using MIRROR B.

We use the COS online ETC to calculate the observing time required to achieve a S/N ~ 5 per resolution element at the observed wavelength of the NeVIII and OVI transition at a resolution of 15-20 km/s. This will give us S/N of 10 at ~ 100 km/s resolution. These calculations were made based on GALEX FUV fluxes, which means that we do not need to correct for interstellar extinction.

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 previous HST cycles is that IMAGE acquisitions are working well for these targets. We have set the exposure times for each target at S/N = 40 as the limiting case.

The Phase II ISR says use 1 mag brighter for bright-object check on ACQs. Brightest target here has GALEX NUV = 18.2, and this one is acquired in 154 sec at S/N = 40 for MIRRORB and PSA (ETC COS.im.515192). It has 2 ct/s in the brightest pixel, and 12 ct/s in the selected region. At one magnitude brighter (GALEX FUV = 17.2), this target is still safe to acquire with MIRRORB in the NUV, with 4ct/s in the brightest pixel, 29 ct/s in the selected region, and 1055 ct/s on the entire detector (ETC COS.im.5151) for 154 s observations. Even for our longest exposure of 174 secs this would be safe (COS.im.515206).

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.

The central wavelengths are set to optimally cover the interesting absorption lines from the galaxies of interest.

Proposal 13473 - Visit 01 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

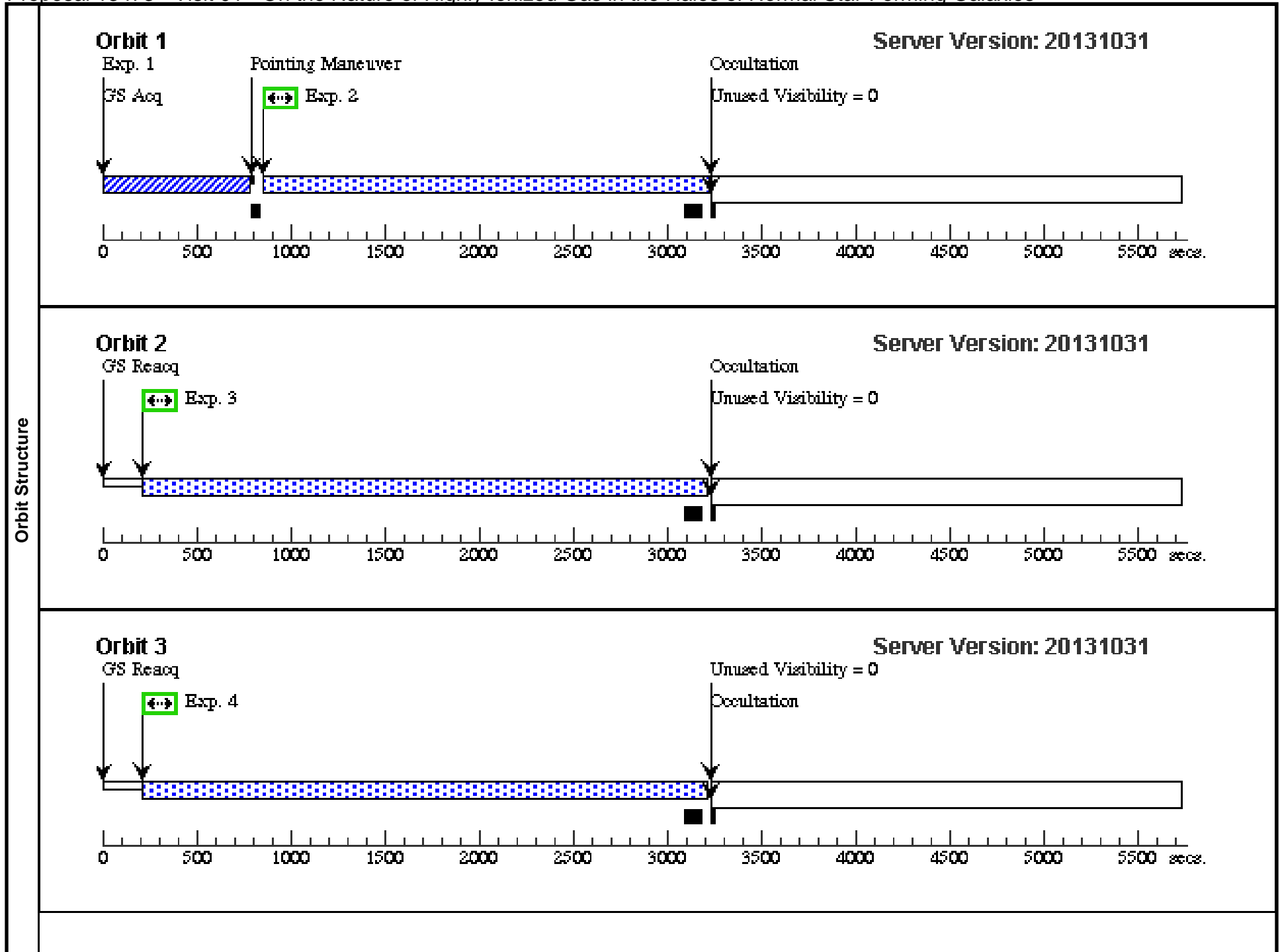
Visit	Proposal 13473, Visit 01, implementation Wed Dec 04 02:05:46 GMT 2013 Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(1)		J141949.39+060654.0	RA: 14 19 49.3920 (214.9558000d) Dec: +06 06 54.04 (6.11501d) Equinox: J2000		V=17.38 GALEX FUV=19.03 GALEX NUV=18.3	Reference Frame: ICRS

Proposal 13473 - Visit 01 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Target Acquisition (515191)	(1) J141949.39+060 654.0	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			174 Secs (174 Secs) [==>]	[1]
	2	Spectrum for Ne VIII - 1/4 (512348)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=20 76; FP-POS=1; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2186 Secs (2186 Secs) [==>]	[1]
	3	Spectrum for Ne VIII - 2/4 (512348)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=28 37; FP-POS=2; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2947 Secs (2947 Secs) [==>]	[2]
	4	Spectrum for Ne VIII - 3/4 (512348)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=28 37; FP-POS=3; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2947 Secs (2947 Secs) [==>]	[3]
	5	Spectrum for Ne VIII - 4/4 (512348)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=28 37; FP-POS=4; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2947 Secs (2947 Secs) [==>]	[4]
	6	Spectrum for O VI - 1/3 (512349)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=12 30; EXTENDED=NO; FLASH=YES; FP-POS=1; SEGMENT=BOTH		1340 Secs (1340 Secs) [==>]	[5]
	7	Spectrum for O VI - 1/3 (512349)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=13 90; EXTENDED=NO; FLASH=YES; FP-POS=2; SEGMENT=BOTH		1500 Secs (1500 Secs) [==>]	[5]
	8	Spectrum for O VI - 2/3 (512349)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=28 37; EXTENDED=NO; FLASH=YES; FP-POS=3; SEGMENT=BOTH		2947 Secs (2947 Secs) [==>]	[6]

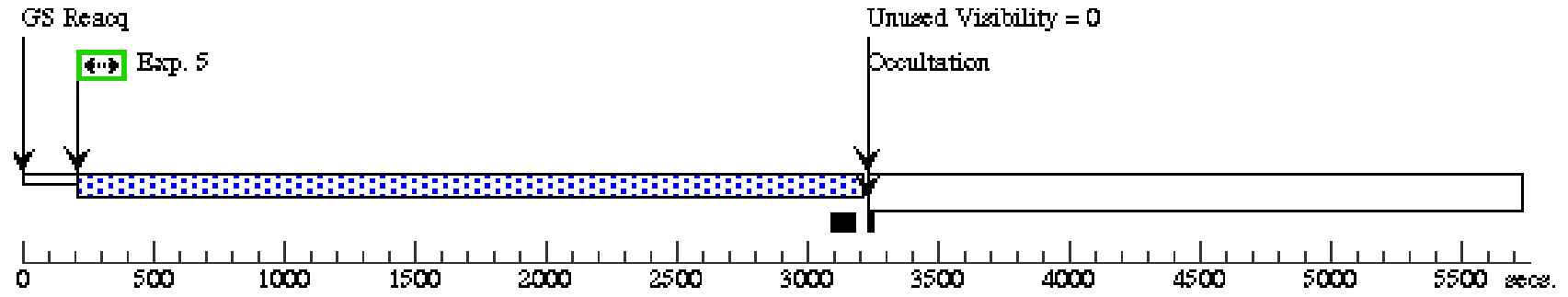
Proposal 13473 - Visit 01 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

9	Spectrum fo r O VI - 3/3 (512349)	(1) J141949.39+060 654.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=28 37; EXTENDED=NO; FLASH=YES; FP-POS=4; SEGMENT=BOTH	2947 Secs (2947 Secs) [==>]	[7]
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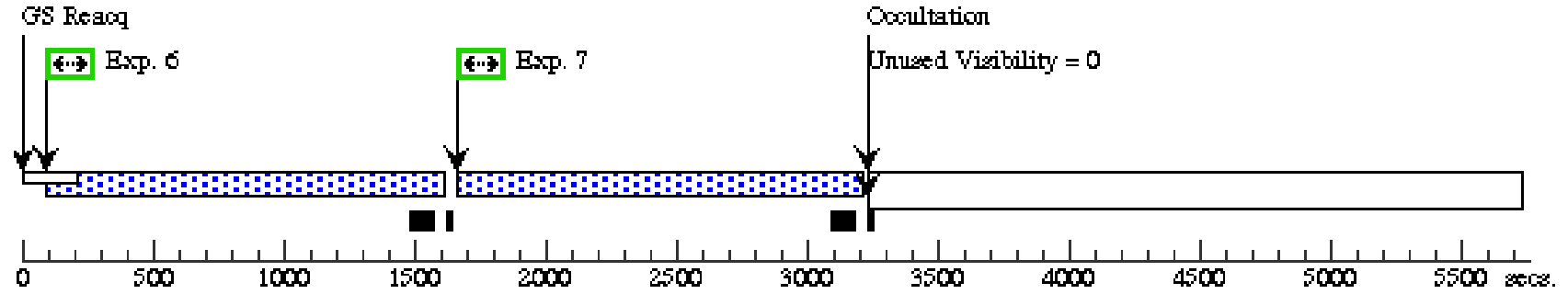
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Server Version: 20131031



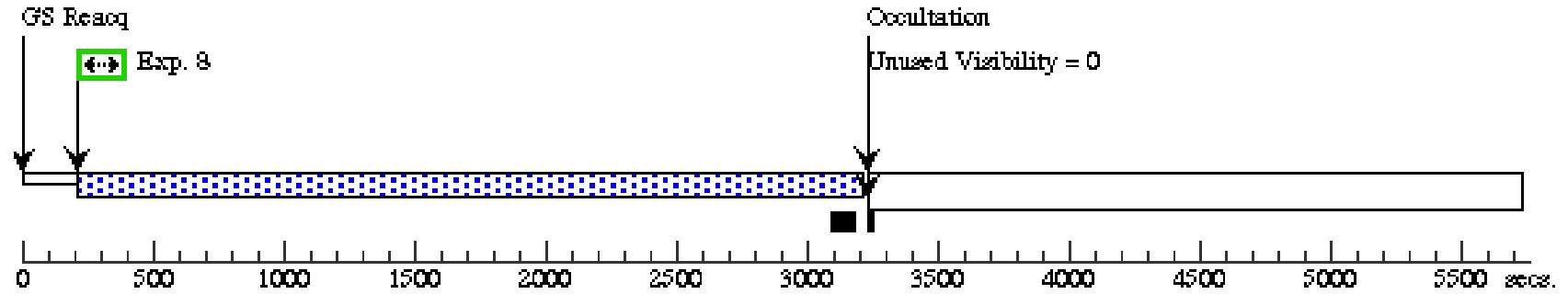
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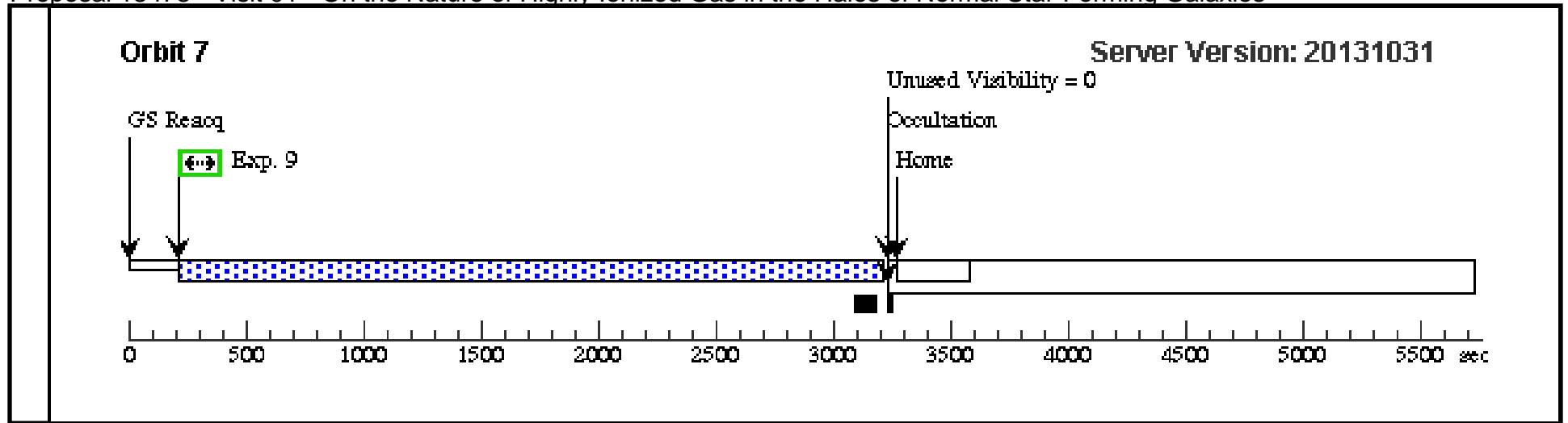
Server Version: 20131031



Orbit 6

Server Version: 20131031





Proposal 13473 - Visit 02 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

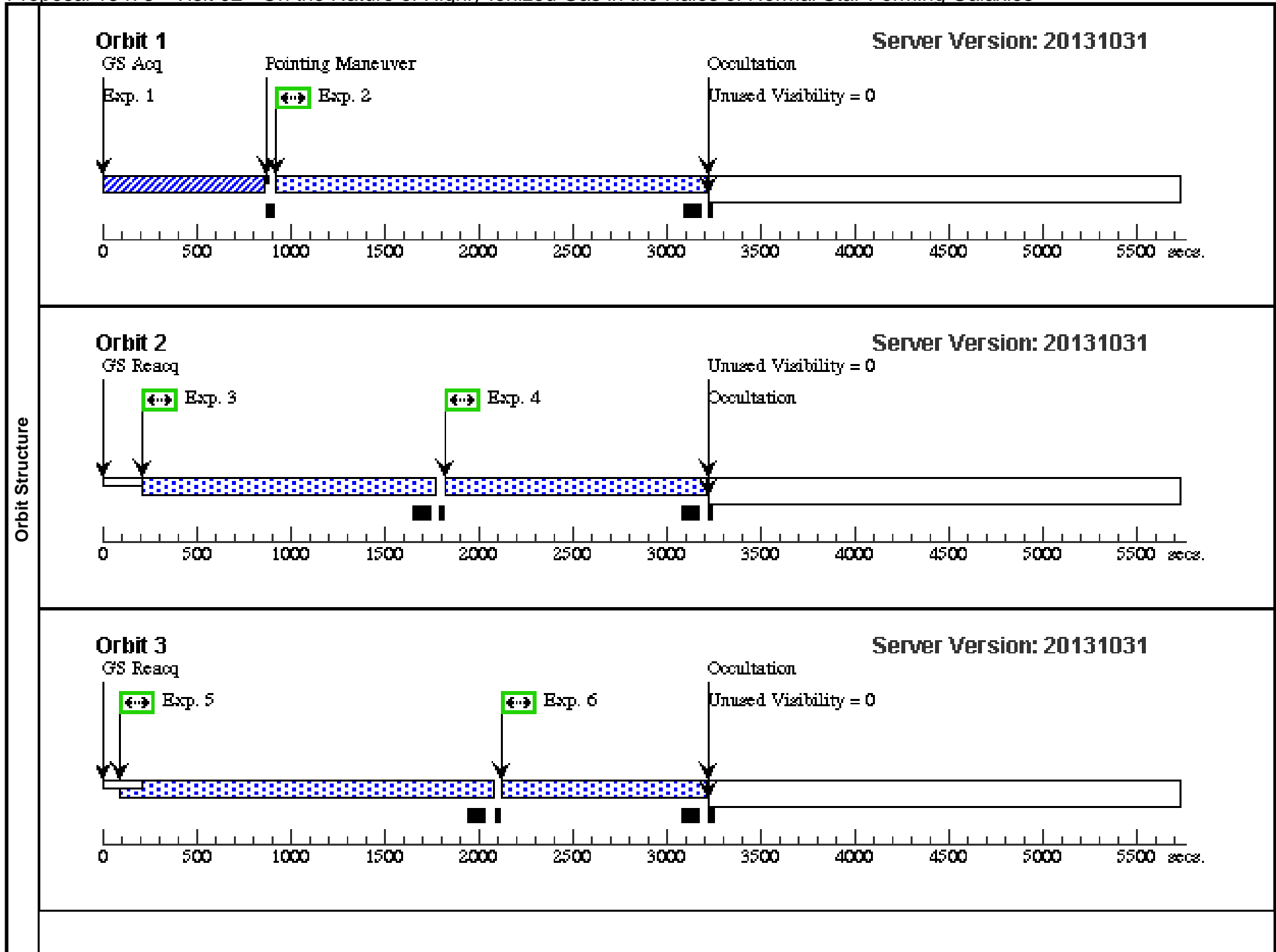
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	Diagnostics	<p>(Visit 02) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.</p>																											
Fixed Targets		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">#</th> <th style="width: 20%;">Name</th> <th style="width: 25%;">Target Coordinates</th> <th style="width: 20%;">Targ. Coord. Corrections</th> <th style="width: 15%;">Fluxes</th> <th style="width: 15%;">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td data-bbox="136 414 199 446">(2)</td> <td data-bbox="241 414 451 446">J144625.07+035503.6</td> <td data-bbox="483 414 798 446">RA: 14 46 25.0723 (221.6044679d)</td> <td data-bbox="913 414 1144 446"></td> <td data-bbox="1323 414 1407 446">V=18.21</td> <td data-bbox="1617 414 1827 446">Reference Frame: ICRS</td> </tr> <tr> <td></td> <td></td> <td data-bbox="483 446 735 479">Dec: +03 55 3.63 (3.91768d)</td> <td></td> <td data-bbox="1323 446 1596 479">GALEX FUV=19.17 GALEX</td> <td></td> </tr> <tr> <td></td> <td></td> <td data-bbox="483 479 630 511">Equinox: J2000</td> <td></td> <td data-bbox="1323 479 1428 511">NUV=18.5</td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	J144625.07+035503.6	RA: 14 46 25.0723 (221.6044679d)		V=18.21	Reference Frame: ICRS			Dec: +03 55 3.63 (3.91768d)		GALEX FUV=19.17 GALEX				Equinox: J2000		NUV=18.5				
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																							
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		Equinox: J2000		NUV=18.5																									

Proposal 13473 - Visit 02 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Target Acquisition (515193)	(2) J144625.07+035 503.6	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			213 Secs (213 Secs) [==>]	[1]
	2	Spectrum for Ne VIII - 1/2 (513044)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=1996; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		2104 Secs (2104 Secs) [==>]	[1]
	3	Spectrum for Ne VIII - 2/2 (513044)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=1395; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		1505 Secs (1505 Secs) [==>]	[2]
	4	Spectrum for Ne VIII - 2/2 (513044)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1223; FP-POS=4; FLASH=YES; EXTENDED=NO; SEGMENT=BOTH		1333 Secs (1333 Secs) [==>]	[2]
	5	Spectrum for O VI - 1/3 (513053)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1692; FLASH=YES; EXTENDED=NO; FP-POS=1; SEGMENT=BOTH		1802 Secs (1802 Secs) [==>]	[3]
	6	Spectrum for O VI - 1/3 (513053)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=924; FLASH=YES; EXTENDED=NO; FP-POS=2; SEGMENT=BOTH		1034 Secs (1034 Secs) [==>]	[3]
	7	Spectrum for O VI - 2/3 (513053)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=716; FLASH=YES; EXTENDED=NO; FP-POS=2; SEGMENT=BOTH		826 Secs (826 Secs) [==>]	[4]
	8	Spectrum for O VI - 2/3 (513053)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1892; FLASH=YES; EXTENDED=NO; FP-POS=3; SEGMENT=BOTH		2002 Secs (2002 Secs) [==>]	[4]

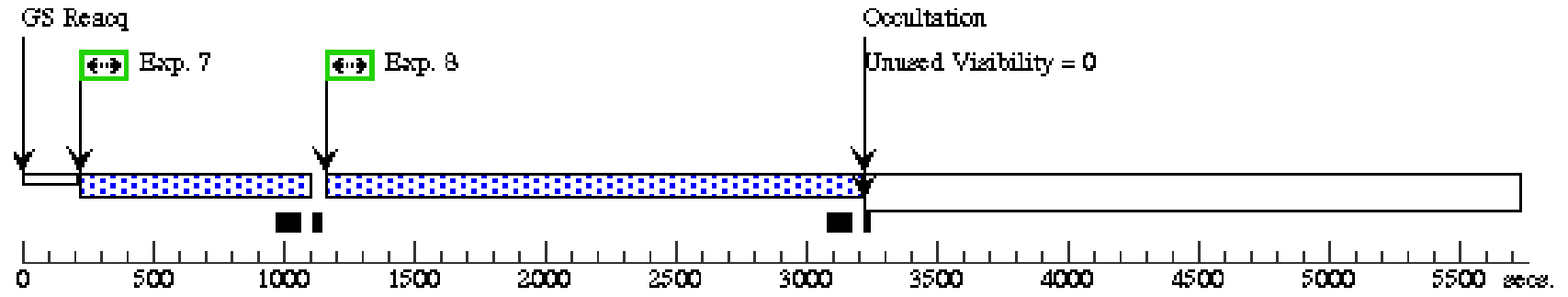
Proposal 13473 - Visit 02 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

9	Spectrum fo r O VI - 3/3 (513053)	(2) J144625.07+035 503.6	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=28 33; FLASH=YES; EXTENDED=NO; FP-POS=4; SEGMENT=BOTH	2943 Secs (2943 Secs) [==>]	[5]
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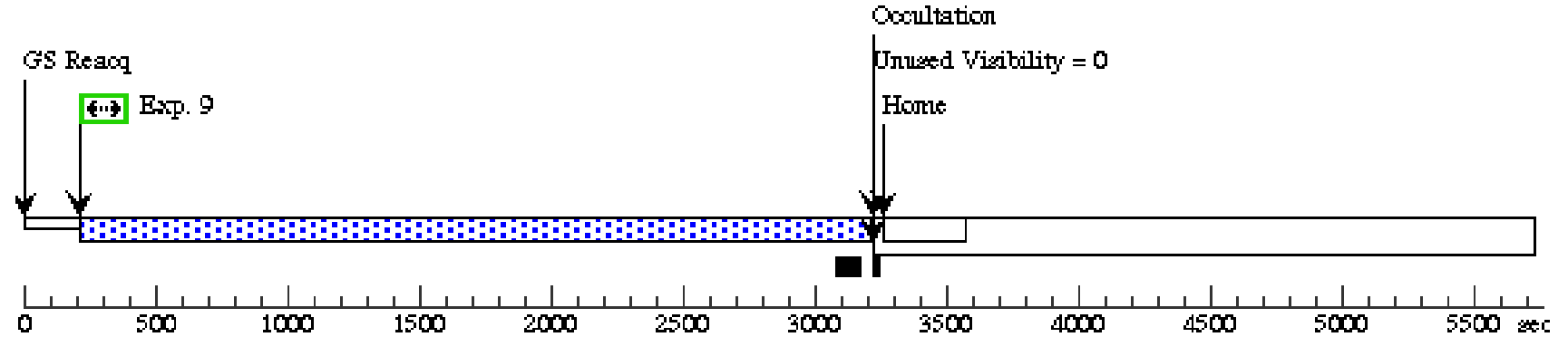
Orbit 4

Server Version: 20131031



Orbit 5

Server Version: 20131031

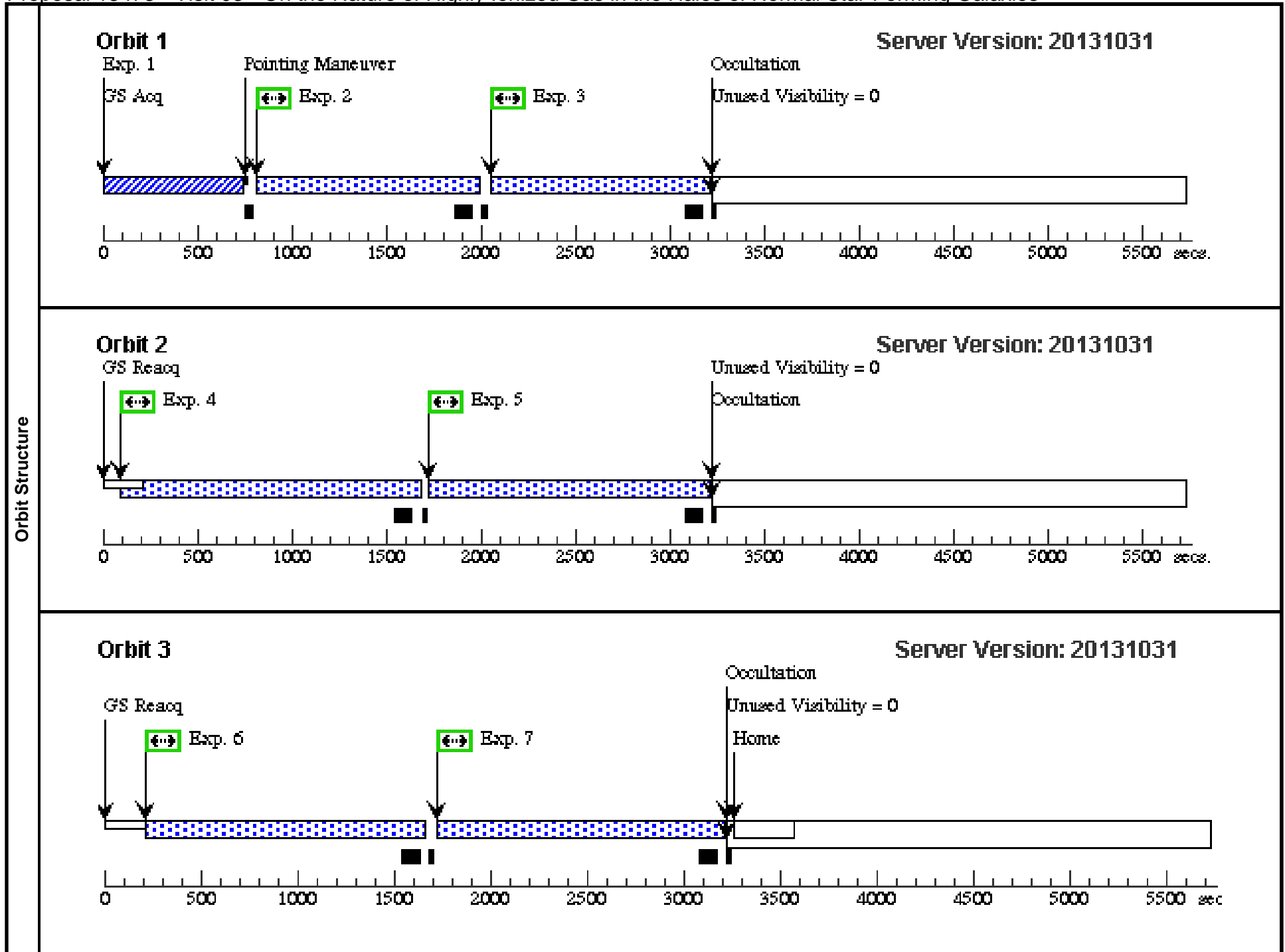


Proposal 13473 - Visit 03 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

Visit	Proposal 13473, Visit 03, implementation Wed Dec 04 02:05:52 GMT 2013 Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)																
	(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.																
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(3)</td> <td>J103748.36+040242.1</td> <td>RA: 10 37 48.3672 (159.4515300d) Dec: +04 02 42.18 (4.04505d) Equinox: J2000</td> <td></td> <td>V=17.99 GALEC FUV=18.81 GALEX NUV=18.2</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(3)	J103748.36+040242.1	RA: 10 37 48.3672 (159.4515300d) Dec: +04 02 42.18 (4.04505d) Equinox: J2000		V=17.99 GALEC FUV=18.81 GALEX NUV=18.2	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(3)	J103748.36+040242.1	RA: 10 37 48.3672 (159.4515300d) Dec: +04 02 42.18 (4.04505d) Equinox: J2000		V=17.99 GALEC FUV=18.81 GALEX NUV=18.2	Reference Frame: ICRS												

Proposal 13473 - Visit 03 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Target Acquisition (515192)	(3) J103748.36+040 242.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			154 Secs (154 Secs) [==>]	[1]
	2	Spectrum for Ne VIII (513051)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=2; BUFFER-TIME=890; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		1000 Secs (1000 Secs) [==>]	[1]
	3	Spectrum for Ne VIII (513051)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G130M 1309 A	FP-POS=3; BUFFER-TIME=997; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		1107 Secs (1107 Secs) [==>]	[1]
	4	Spectrum for O VI - 1/2 (513052)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1292; FLASH=YES; EXTENDED=NO; FP-POS=1; SEGMENT=BOTH		1402 Secs (1402 Secs) [==>]	[2]
	5	Spectrum for O VI - 1/2 (513052)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1324; FLASH=YES; EXTENDED=NO; FP-POS=2; SEGMENT=BOTH		1434 Secs (1434 Secs) [==>]	[2]
	6	Spectrum for O VI - 2/2 (513052)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1292; FLASH=YES; EXTENDED=NO; FP-POS=3; SEGMENT=BOTH		1402 Secs (1402 Secs) [==>]	[3]
	7	Spectrum for O VI - 2/2 (513052)	(3) J103748.36+040 242.1	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1326; FLASH=YES; EXTENDED=NO; FP-POS=4; SEGMENT=BOTH		1436 Secs (1436 Secs) [==>]	[3]



Proposal 13473 - Visit 04 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

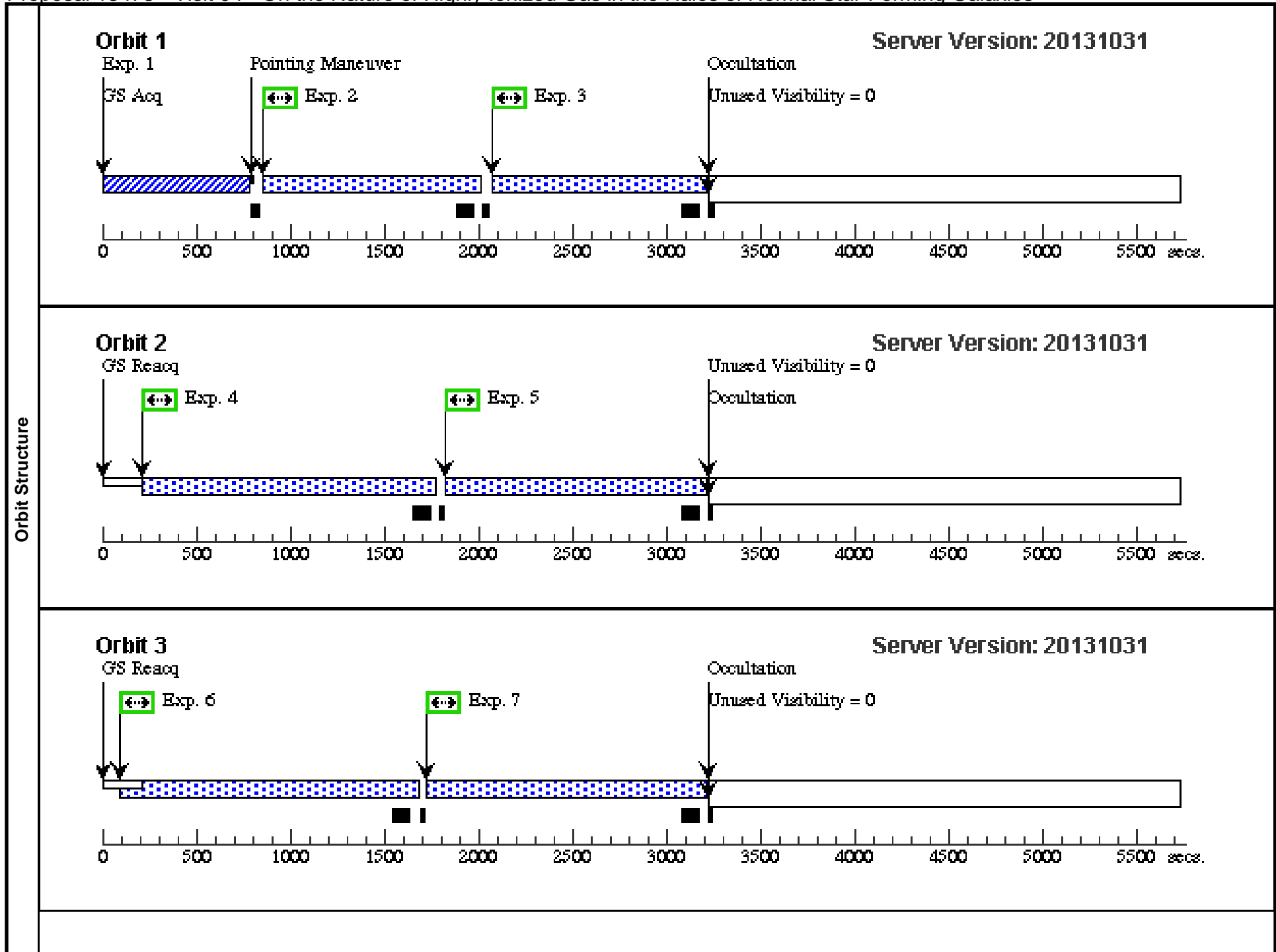
Visit	Proposal 13473, Visit 04, implementation Wed Dec 04 02:05:54 GMT 2013 Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(4)		J104923.24+021806.0	RA: 10 49 23.2401 (162.3468337d) Dec: +02 18 6.06 (2.30168d) Equinox: J2000		V=18.74 GALEX FUV=19.14 GALEX NUV=18.3	Reference Frame: ICRS

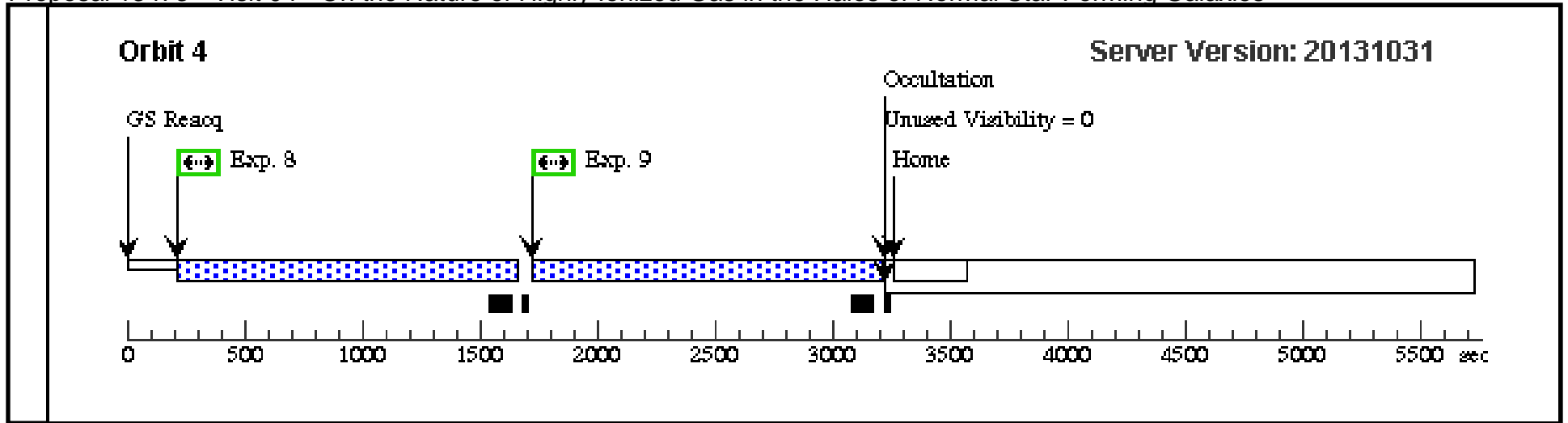
Proposal 13473 - Visit 04 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Target Acquisition (515191)	(4) J104923.24+021 806.0	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			175 Secs (175 Secs) [==>]	[1]
	2	Spectrum for Ne VIII - 1/2 (513056)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=865; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		975 Secs (975 Secs) [==>]	[1]
	3	Spectrum for Ne VIII - 1/2 (513056)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=980; FLASH=YES; EXTENDED=NO; SEGMENT=BOTH		1090 Secs (1090 Secs) [==>]	[1]
	4	Spectrum for Ne VIII - 2/2 (513056)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=1395; EXTENDED=NO; FLASH=YES; SEGMENT=BOTH		1505 Secs (1505 Secs) [==>]	[2]
	5	Spectrum for Ne VIII - 2/2 (513056)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1223; FP-POS=4; FLASH=YES; EXTENDED=NO; SEGMENT=BOTH		1333 Secs (1333 Secs) [==>]	[2]
	6	Spectrum for O VI - 1/2 (513057)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1292; FLASH=YES; EXTENDED=NO; FP-POS=1; SEGMENT=BOTH		1402 Secs (1402 Secs) [==>]	[3]
	7	Spectrum for O VI - 1/2 (513057)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1324; FLASH=YES; EXTENDED=NO; FP-POS=2; SEGMENT=BOTH		1434 Secs (1434 Secs) [==>]	[3]
	8	Spectrum for O VI - 2/2 (513057)	(4) J104923.24+021 806.0	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1292; FLASH=YES; EXTENDED=NO; FP-POS=3; SEGMENT=BOTH		1402 Secs (1402 Secs) [==>]	[4]

Proposal 13473 - Visit 04 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

9	Spectrum for (4) J104923.24+021 r O VI -2/2 806.0 (513057)	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=13 26; FLASH=YES; EXTENDED=NO; FP-POS=4; SEGMENT=BOTH	1436 Secs (1436 Secs) [==>]	[4]
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Proposal 13473 - Visit 05 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

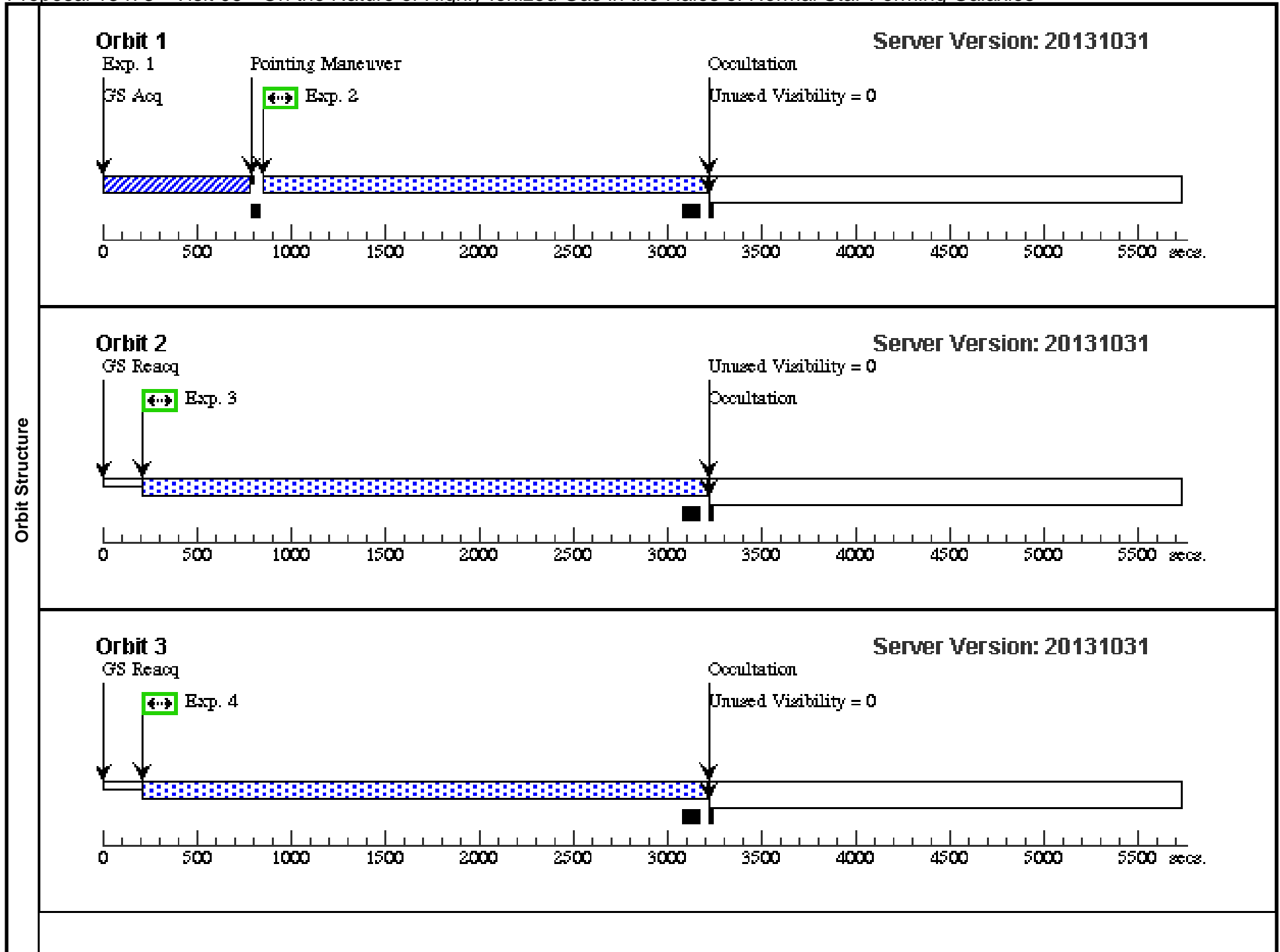
Visit	Proposal 13473, Visit 05, implementation Wed Dec 04 02:05:55 GMT 2013 Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV, COS/FUV Special Requirements: (none)					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(5)		J142614.79+004159.4	RA: 14 26 14.7988 (216.5616617d) Dec: +00 41 59.46 (.69985d) Equinox: J2000		V=17.98 GALEX FUV=19.46 GALEX NUV=18.3	Reference Frame: ICRS

Proposal 13473 - Visit 05 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Target Acquisition (513059)	(5) J142614.79+004 159.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			175 Secs (175 Secs) [==>]	[1]
	2	Spectrum for Ne VIII - 1/4 (513061)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=20 70; FP-POS=1; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2180 Secs (2180 Secs) [==>]	[1]
	3	Spectrum for Ne VIII - 2/4 (513061)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=28 33; FP-POS=2; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2943 Secs (2943 Secs) [==>]	[2]
	4	Spectrum for Ne VIII - 3/4 (513061)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=28 33; FP-POS=3; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2943 Secs (2943 Secs) [==>]	[3]
	5	Spectrum for Ne VIII - 4/4 (513061)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=28 33; FP-POS=4; EXTENDED=NO; SEGMENT=BOTH; FLASH=YES		2943 Secs (2943 Secs) [==>]	[4]
	6	Spectrum for O VI - 1/2 (513062)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=12 92; FLASH=YES; EXTENDED=NO; FP-POS=1; SEGMENT=BOTH		1400 Secs (1400 Secs) [==>]	[5]
	7	Spectrum for O VI - 1/2 (513062)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=13 26; FLASH=YES; EXTENDED=NO; FP-POS=2; SEGMENT=BOTH		1436 Secs (1436 Secs) [==>]	[5]
	8	Spectrum for O VI - 2/2 (513062)	(5) J142614.79+004 159.4	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=12 92; FLASH=YES; EXTENDED=NO; FP-POS=3; SEGMENT=BOTH		1402 Secs (1402 Secs) [==>]	[6]

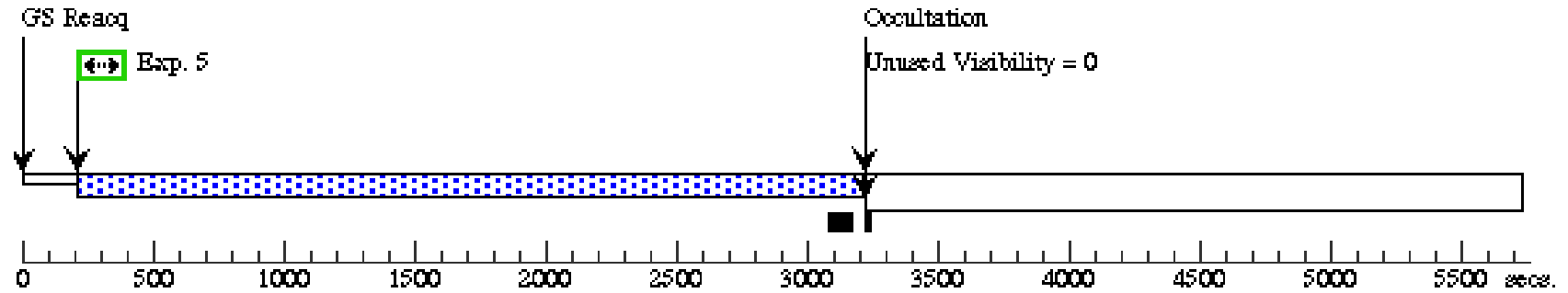
Proposal 13473 - Visit 05 - On the Nature of Highly Ionized Gas in the Halos of Normal Star-Forming Galaxies

9	Spectrum for O VI -2/2 (513062)	(5) J142614.79+004 COS/FUV, TIME-TAG, PSA 159.4	G160M 1577 A	BUFFER-TIME=13 26; FLASH=YES; EXTENDED=NO; FP-POS=4; SEGMENT=BOTH	1436 Secs (1436 Secs) [==>]	[6]
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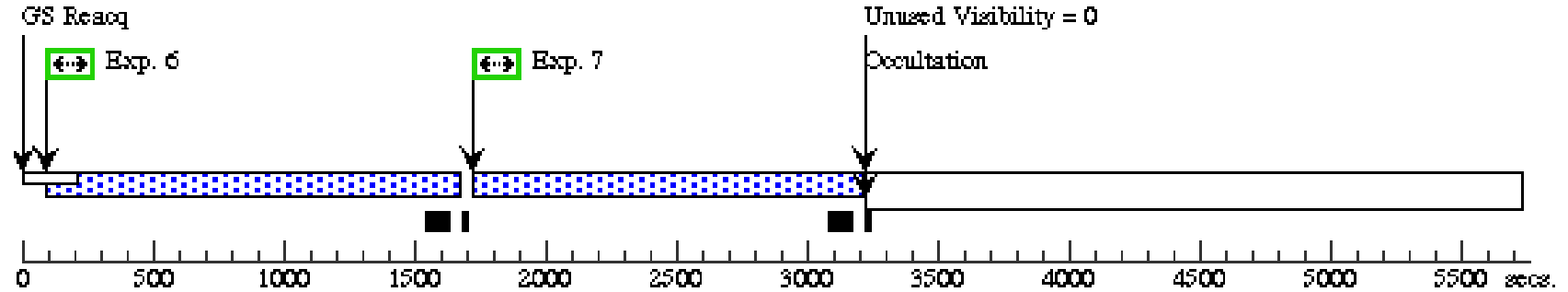
Orbit 4

Server Version: 20131031



Orbit 5

Server Version: 20131031



Orbit 6

Server Version: 20131031

