14681 - Tracing Galactic Outflows to the Source: Spatially Resolved Feedback in M83 with COS

Cycle: 24, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Alessandra Aloisi (PI) (Contact)	**Space Telescope Science Institute**	**aloisi@stsci.edu**
Dr. Danielle Berg (CoI)	University of Wisconsin - Milwaukee	bergda@uwm.edu
Dr. William P. Blair (CoI)	The Johns Hopkins University	wpb@pha.jhu.edu
Dr. Claude-Andre Faucher-Giguere (CoI)	Northwestern University	cgiguere@northwestern.edu
Dr. Andrew J. Fox (CoI) (ESA Member)	Space Telescope Science Institute - ESA	afox@stsci.edu
Dr. Timothy M. Heckman (CoI)	The Johns Hopkins University	heckman@pha.jhu.edu
Dr. Bethan Lesley James (CoI) (ESA Member)	Space Telescope Science Institute - ESA	bjames@stsci.edu
Dr. Knox S. Long (CoI)	Eureka Scientific Inc.	long@stsci.edu
Dr. Evan D. Skillman (CoI)	University of Minnesota - Twin Cities	skillman@astro.umn.edu
Dr. Jason Tumlinson (CoI)	Space Telescope Science Institute	tumlinson@stsci.edu
Dr. Brad C. Whitmore (CoI)	Space Telescope Science Institute	whitmore@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) M83-CLUSTER-1	COS/FUV COS/NUV	4	10-Jul-2017 21:00:59.0	yes
02	(2) M83-CLUSTER-2	COS/FUV COS/NUV	3	10-Jul-2017 21:01:01.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
03	(3) M83-CLUSTER-3	COS/FUV COS/NUV	1	10-Jul-2017 21:01:03.0	yes
04	(4) M83-CLUSTER-4	COS/FUV COS/NUV	1	10-Jul-2017 21:01:05.0	yes
05	(5) M83-CLUSTER-5	COS/FUV COS/NUV	2	10-Jul-2017 21:01:06.0	yes
06	(6) M83-CLUSTER-6	COS/FUV COS/NUV	2	10-Jul-2017 21:01:08.0	yes
07	(7) M83-CLUSTER-7	COS/FUV COS/NUV	1	10-Jul-2017 21:01:09.0	yes
08	(8) M83-CLUSTER-8	COS/FUV COS/NUV	4	10-Jul-2017 21:01:11.0	yes
09	(9) M83-CLUSTER-9	COS/FUV COS/NUV	2	10-Jul-2017 21:01:14.0	yes
10	(10) M83-CLUSTER-10	COS/FUV COS/NUV	3	10-Jul-2017 21:01:16.0	yes
11	(11) M83-CLUSTER-11	COS/FUV COS/NUV	3	10-Jul-2017 21:01:17.0	yes
12	(12) M83-CLUSTER-12	COS/FUV COS/NUV	4	10-Jul-2017 21:01:19.0	yes
13	(13) M83-CLUSTER-13	COS/FUV COS/NUV	3	10-Jul-2017 21:01:20.0	yes
14	(14) M83-CLUSTER-14	COS/FUV COS/NUV	1	10-Jul-2017 21:01:22.0	yes
15	(15) M83-CLUSTER-15	COS/FUV COS/NUV	2	10-Jul-2017 21:01:23.0	yes
16	(16) M83-CLUSTER-16	COS/FUV COS/NUV	4	10-Jul-2017 21:01:25.0	yes

40 Total Orbits Used

ABSTRACT

Star-formation (SF) feedback plays a vital role in shaping galaxy properties, but there are many open questions about how this feedback is created, propagated, and felt by galaxies. SF-driven feedback can be observationally constrained with rest-frame UV absorption-line spectroscopy that accesses a range of powerful gas density and kinematic diagnostics. Studies at both high and low redshift show clear evidence for large-scale outflows in star-forming galaxies that scale with galaxy SF rate. However, by sampling one sightline or the galaxy as a whole, these studies are not tailored to reveal how the large-scale outflows develop from their ultimate sources at the scale of individual SF regions. We propose the first spatially-resolved COS G130M/G160M (1130-1800 A) study of the ISM in the nearby (4.6 Mpc) face-on spiral starburst M83 using individual young star clusters as background sources. This is the first "down-the-barrel" study where blueshifted absorptions can be identified directly with outflowing gas in a spatially resolved fashion. The kpc-scale flows sampled by the COS pointings will be anchored to the properties of the large-scale (10-100 kpc) flows thanks to the wealth of multi-wavelength observations of M83 from X-ray to radio. A comparison of COS data with mock spectra from constrained simulations of spiral galaxies with FIRE (Feedback In Realistic Environments; a code with unprecedented 1-100 pc spatial resolution and self-consistent treatments of stellar feedback) will provide an important validation of these simulations and will supply the community with a powerful and well-tested tool for galaxy formation predictions applicable to all redshifts.

OBSERVING DESCRIPTION

We propose COS FUV spectroscopy of a complete magnitude-limited (m_F336W < 17 mag) sample of 16 young star clusters in the famous nearby (D = 4.6 Mpc) face-on grand-spiral starburst galaxy M83 to improve our understanding of the relationship between local SF processes on sub-galactic scales and feedback on large (galactic) scales. We will infer the chemistry, physical conditions, and kinematics of the multi-phase ISM in the halo of M83 at ~ 1 kpc spatial resolution. We will compare the observed COS absorption-line spectra to mock spectra of a set of spiral galaxies obtained by performing cosmological simulations with FIRE in order to test the effects of different SF feedback mechanisms on small galactic scales.

Abundances of the neutral ISM will be compared to abundances of the nebular gas along the same COS sightlines as inferred by our group with ground-based LBT optical spectra. The G130M grating at 1291 A and the G160 M grating at 1623 A will be used to cover the 1130-1800 A range at R ~ 20, 000. We prefer COS in the FUV over STIS due to the much higher (a factor > 10-100) sensitivity.

The COS targets were selected from HST/WFC3 multi-band photometry of M83 (HST Cycles 17 and 19 GO programs 11359, PI: O'Connell, and

12513, PI: Blair). The data cover the whole bright optical disk of M83 in the following WFC3/UVIS and WFC3/IR filters spanning the whole NUV-IR wavelength range: F336W (U), F438W (B), F555W or F547M (V), F657N (Ha), F814W (I), F110W (J), and F160W (H). The WFC3 images have been crucial to guide our COS pointings compared, e.g., to the GALEX FUV and NUV images, since the COS aperture (2.5" in diameter) is much smaller that the GALEX spatial resolution of ~ 5".

COS is optimized for point sources, thus extended sources suffer from degraded resolution. From our past experience with FUSE and COS (e.g., HST program 11579, PI: Aloisi), a spectral resolution up to ~ 60 km/s, corresponding to a spatial extent of ~ 1", is still well suited for the kind of ISM analysis here proposed (Aloisi et al. 2003; James et al. 2014). This type of resolution is similar to or higher than the ~ 100-400 km/s resolution of star-forming galaxies studies at z ~ 0.5-3 (e.g., Steidel et al. 2010; Martin et al. 2012; Kornei et al. 2012).

Phase 1 exposure times were calculated as follows. WFC3 photometry of each cluster was used to infer their brightness in the U and the average spectral type from their (U-B) colors. A foreground reddening E(B-V)=0.07 towards M83 from NED was also considered, while no intrinsic extinction was assumed, consistently with what found and already published for the UV brightest (and most massive) clusters (Whitmore et al. 2011). Exposure times were calculated to reach a S/N ~ 8 around 1300 A for G130M and 1600 A for G160M. This is a minimum requirement to detect the weakest lines (e.g., SII 1250, 1253 A, or MgII 1239, 1240) and measure their kinematics. For the calculation of the total number of orbits, we considered an HST orbit lasting 54 minutes minus overheads: guide star (re-)acquisition (5-6 min), target acquisition (10 min), and exposure overheads (2-5 min). This amounts to a total of 40 orbits in COS/FUV G130M@1291 A and G160M@1623 A for the magnitude-limited sample of star clusters in M83.

A sanity check on the exposure times was performed with GALEX. Except for a few clusters blended together at the GALEX resolution of ~5" in the center of M83, all clusters of the sample are associated to a GALEX source within a few arcsecs. GALEX FUV magnitudes of ~ 14.5-17.5 mag give exposure times of ~ 200-2,500 sec in G130M and ~ 1,000-5,000 sec in G160M, consistent with what we calculated from the WFC3 photometry. However, these GALEX estimates were not adopted in the end due to the poorer spatial resolution of GALEX and the lack of this information for some of the clusters.

The ETC reported no warnings for violations of the local and/or global bright object limits, so we expect the targets to be safe to observe. The spectroscopic exposures in each pointing will be executed with FP-split to mitigate flat-fielding uncertainties and improve the S/N. Since the targets of each pointing will be faint point-like sources, we will perform a standard peak-up target acquisition (TA) in NUV imaging mode.

Where possible, the spectroscopic data will be analyzed using a multi-component fitting technique which fits individual absorption lines with Voigt profiles taking into account constraints from atomic physics and the spectral resolution of the data. For an accurate analysis we will thus need to know the actually achieved resolution and line-spread function (LSF). We will calibrate this similarly to what already done for the COS spectra of Cycle 17 GO program 11579, where TA images were used to estimate the intrinsic UV extension of each source to convolve with the LSF of the COS/FUV spectroscopic observations (see James et al. 2014).

This study has not been possible with any other previous space-based mission or instrument. The unique capabilities of COS on HST, coupled with the ground-based LBT capabilities that will constrain the optical properties of the COS targets and the nebular gas surrounding them, will now finally provide the opportunity to probe this subject with a completely new approach. If this study is not completed while COS is operational onboard HST, many of the key questions related to galactic-scale star formation feedback and its connection to the sub-galactic scale of the stellar processes will continue to remain unanswered for at least another decade.

Visit

Proposal 14681, M83_cluster_1 (01), scheduled Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-FP1-M83-cluster-1 (01.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

(G130M-FP2-M83-cluster-1 (01.004)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

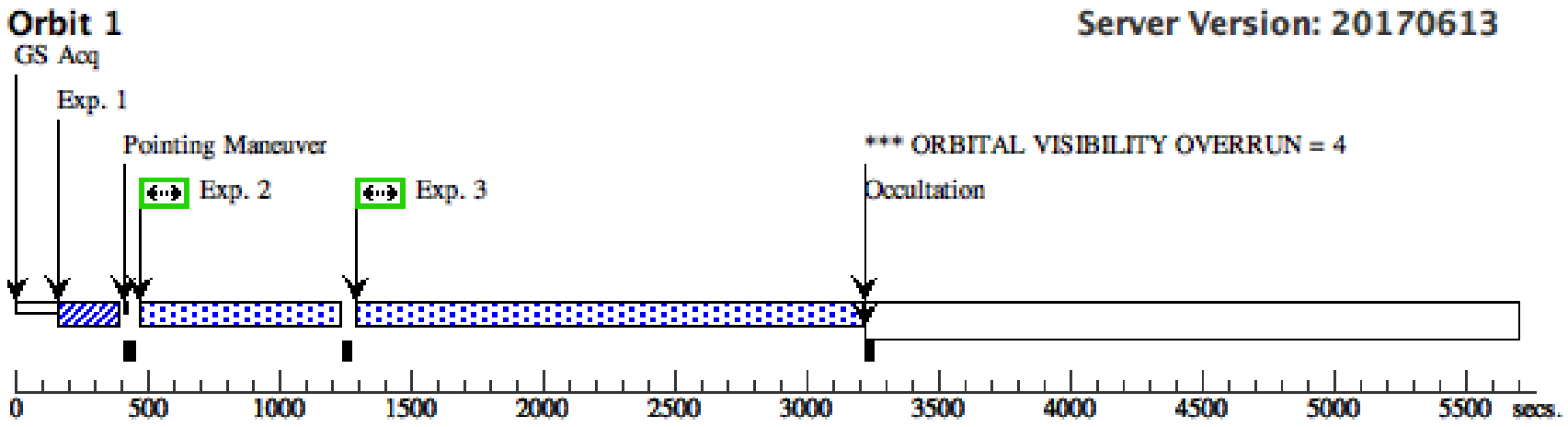
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M83-CLUSTER-1	RA: 13 37 0.6620 (204.2527583d) Dec: -29 52 26.08 (-29.87391d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.7+/-0.1	Reference Frame: ICRS

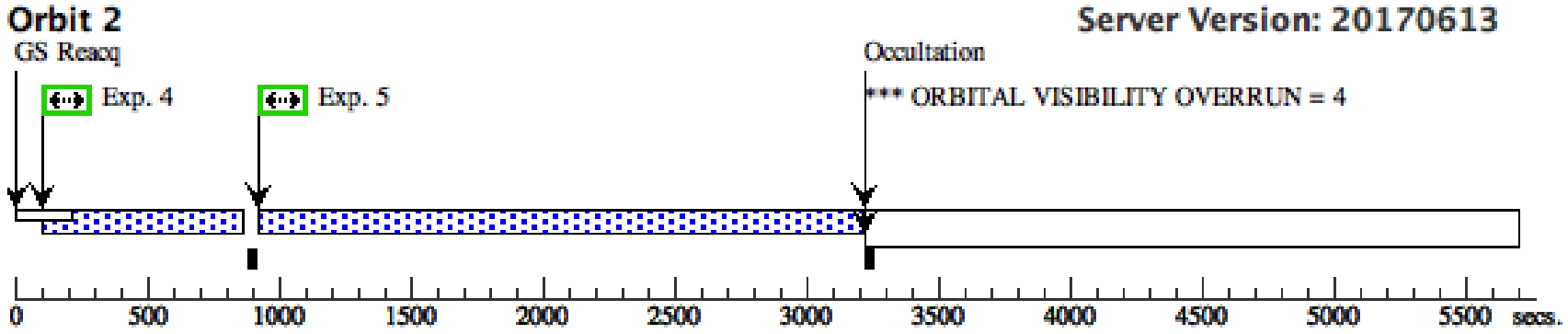
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

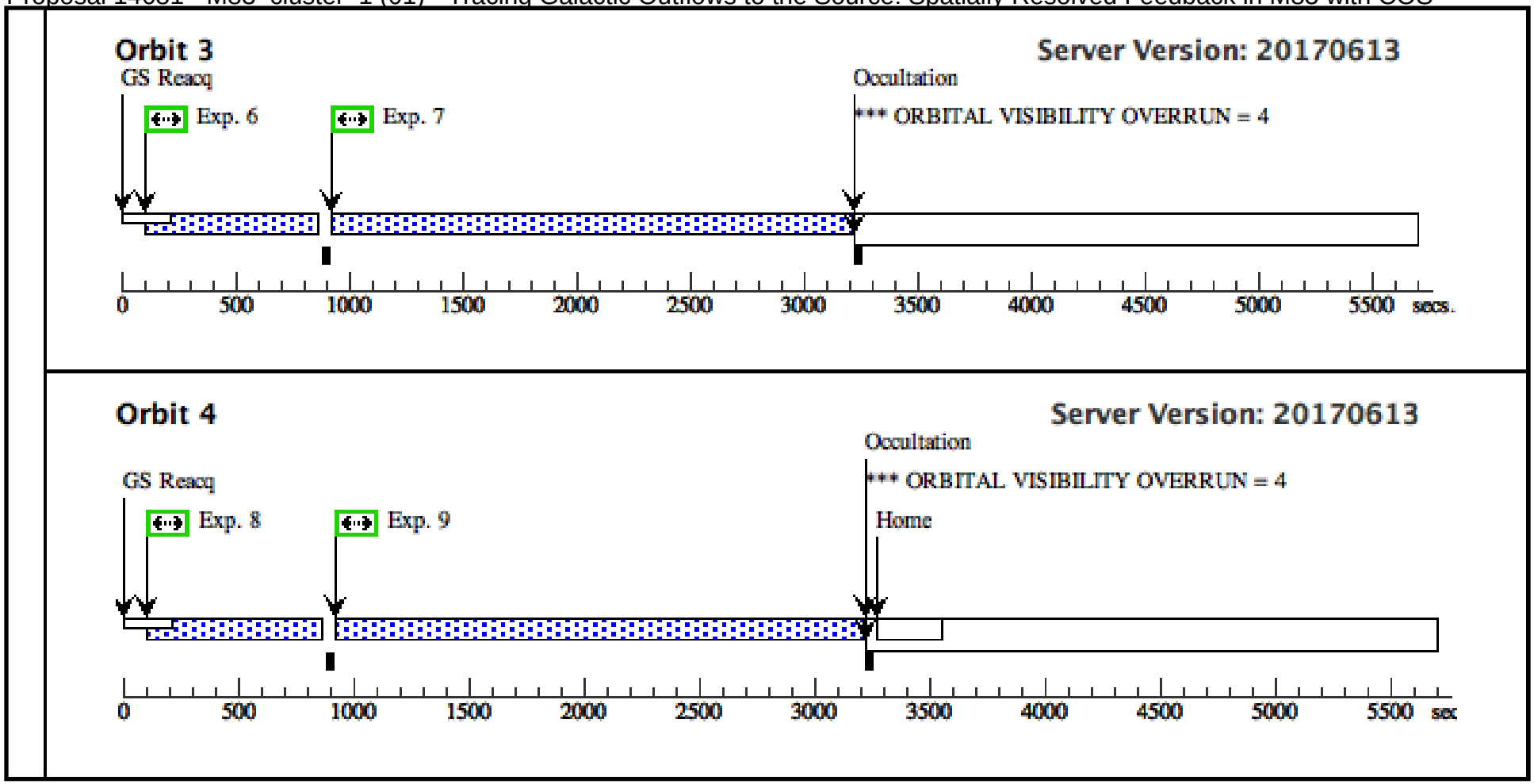
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-1 (COS.ta.909353)	(1) M83-CLUSTER-1	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6 Secs (6 Secs) *[==>]*	***[1]***
2	G130M-FP1-M83-cluster-1 (COS.sp.915825)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=3710			592 Secs (592 Secs) *[==>]*	***[1]***
3	G160M-FP1-M83-cluster-1 (COS.sp.915847)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=13900			1754 Secs (1754 Secs) *[==>]*	***[1]***
4	G130M-FP2-M83-cluster-1 (COS.sp.915825)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=3710			592 Secs (592 Secs) *[==>]*	***[2]***
5	G160M-FP2-M83-cluster-1 (COS.sp.915847)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=13900			2120 Secs (2120 Secs) *[==>]*	***[2]***
6	G130M-FP3-M83-cluster-1 (COS.sp.915825)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=3710			592 Secs (592 Secs) *[==>]*	***[3]***
7	G160M-FP3-M83-cluster-1 (COS.sp.915847)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=13900			2120 Secs (2120 Secs) *[==>]*	***[3]***
8	G130M-FP4-M83-cluster-1 (COS.sp.915825)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=3710			592 Secs (592 Secs) *[==>]*	***[4]***
9	G160M-FP4-M83-cluster-1 (COS.sp.915847)	(1) M83-CLUSTER-1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=13900			2120 Secs (2120 Secs) *[==>]*	***[4]***

Orbit Structure






Orbit 3
Server Version: 20170613
GS Reacq
Exp. 6
Exp. 7
Occultation
*** ORBITAL VISIBILITY OVERRUN = 4
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 4
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 8
Exp. 9
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_2 (02), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-2 (02.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

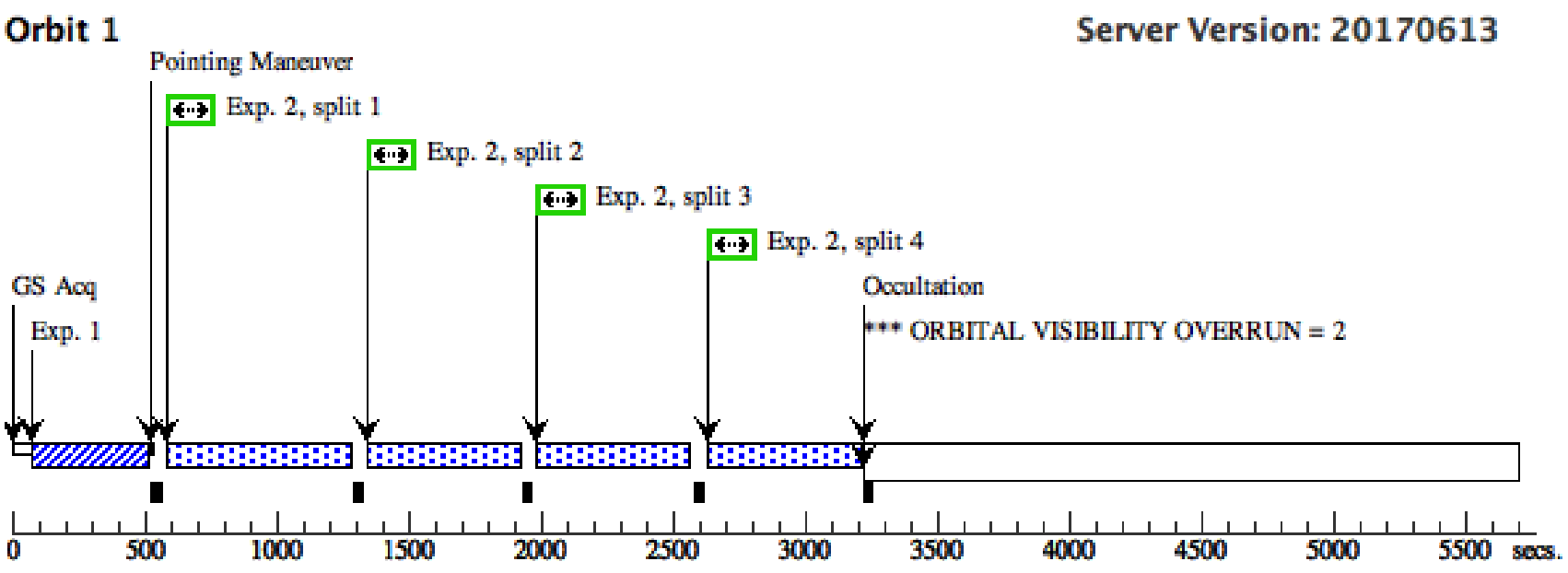
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	M83-CLUSTER-2	RA: 13 37 1.8430 (204.2576792d) Dec: -29 52 13.38 (-29.87038d) Equinox: J2000	Radial Velocity: 513 km/sec	V=17.3+/-0.1	Reference Frame: ICRS

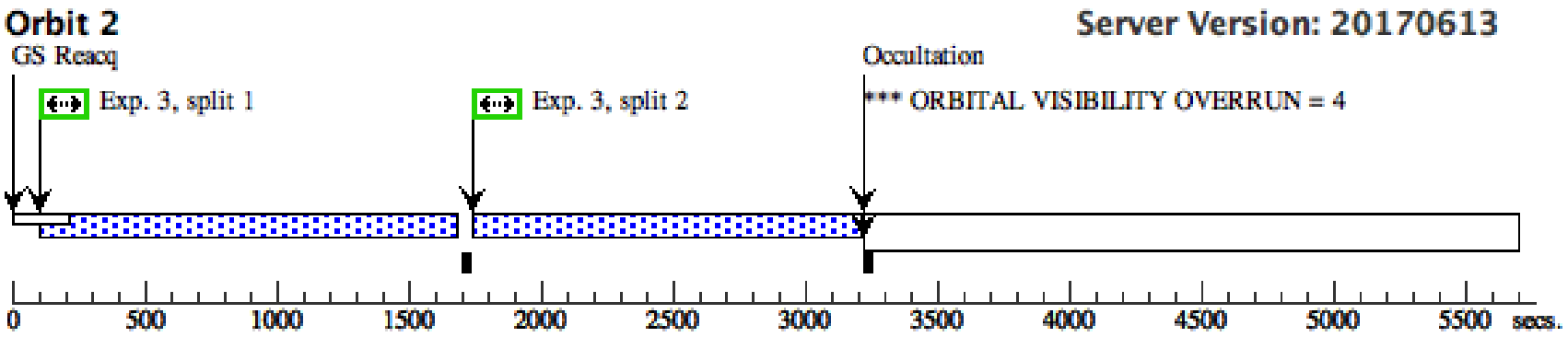
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

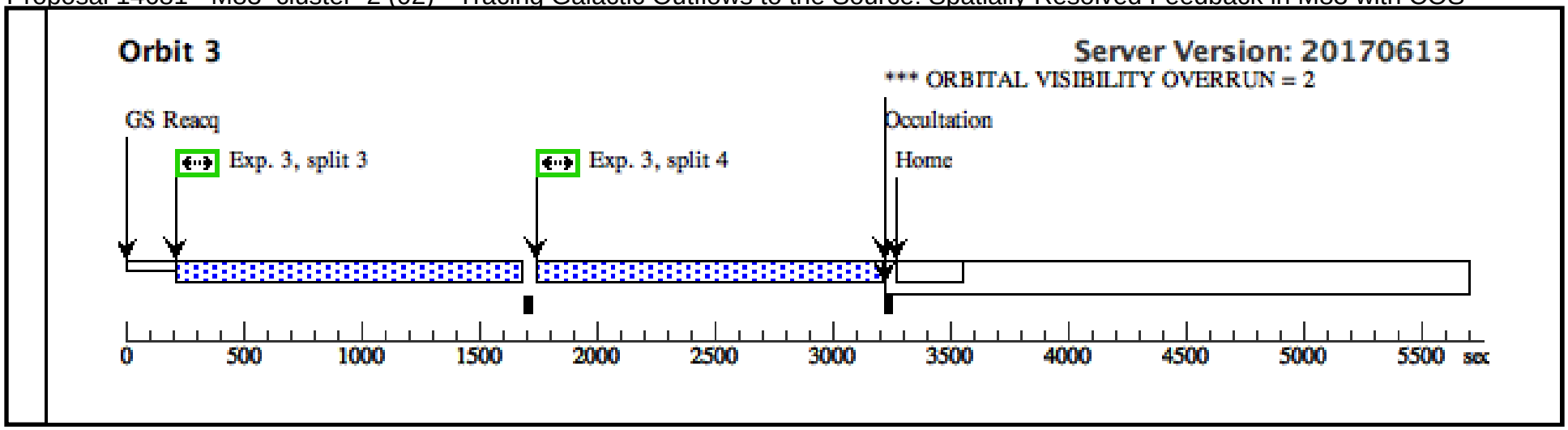
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-2 (COS.ta.909379)	(2) M83-CLUSTER-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60 Secs (60 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-2 (COS.sp.915810)	(2) M83-CLUSTER-2	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=3350			530 Secs (2120 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-2 (COS.sp.915838)	(2) M83-CLUSTER-2	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=10750			1413 Secs (5652 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]* *[3]*

Orbit Structure






Orbit 3
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 2
GS Reacq
Exp. 3, split 3
Exp. 3, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_3 (03), implementation Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_3 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-3 (03.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

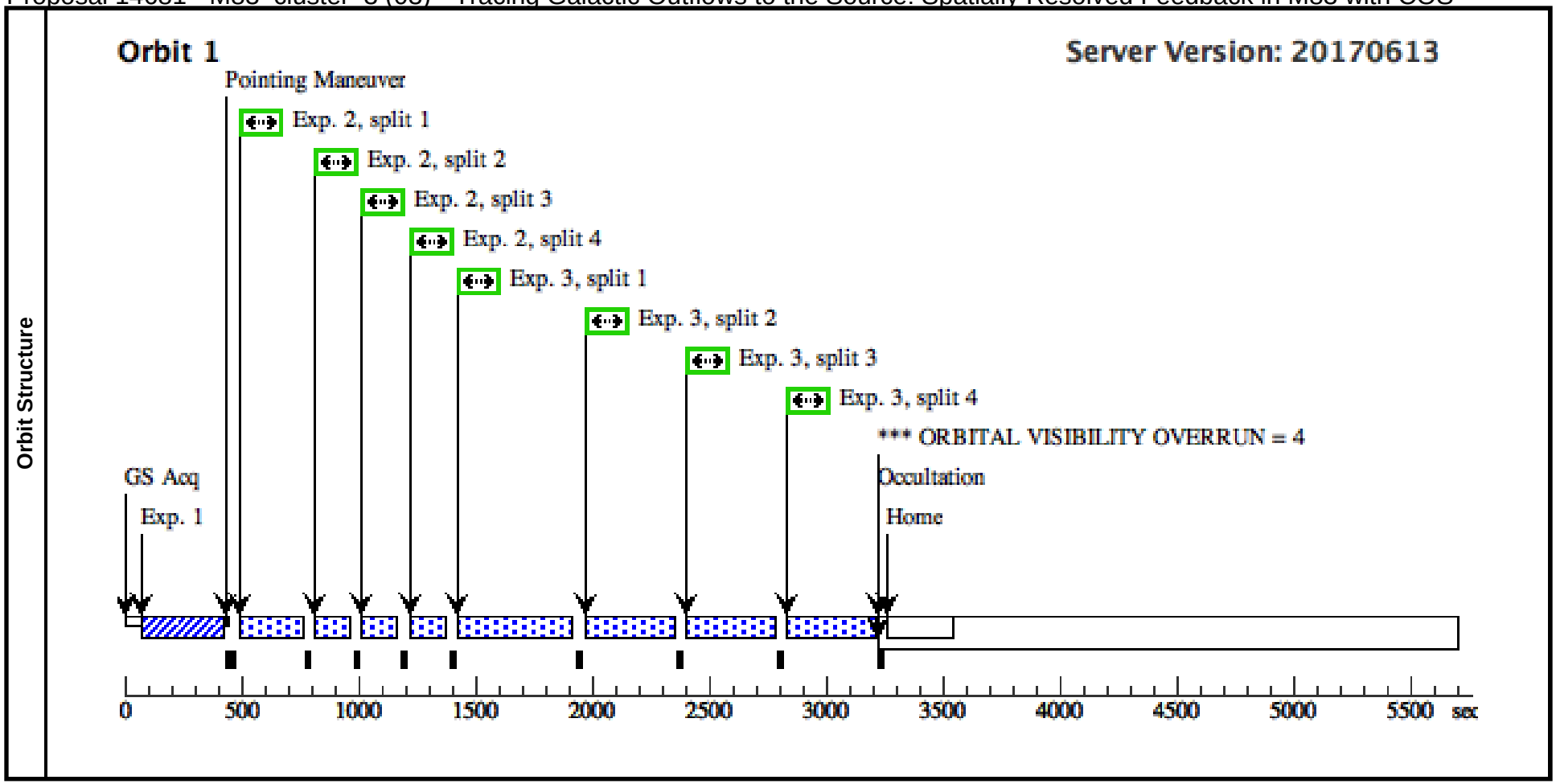
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	M83-CLUSTER-3	RA: 13 37 0.4170 (204.2517375d) Dec: -29 51 59.84 (-29.86662d) Equinox: J2000	Radial Velocity: 513 km/sec	V=16.8+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-3 (COS.ta.909364)	(3) M83-CLUSTER-3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				17 Secs (17 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-3 (COS.sp.915826)	(3) M83-CLUSTER-3	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=1365			100 Secs (400 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-3 (COS.sp.915848)	(3) M83-CLUSTER-3	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=4210			326 Secs (1304 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
*** ORBITAL VISIBILITY OVERRUN = 4
GS Acq
Exp. 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_4 (04), implementation Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_4 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-4 (04.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

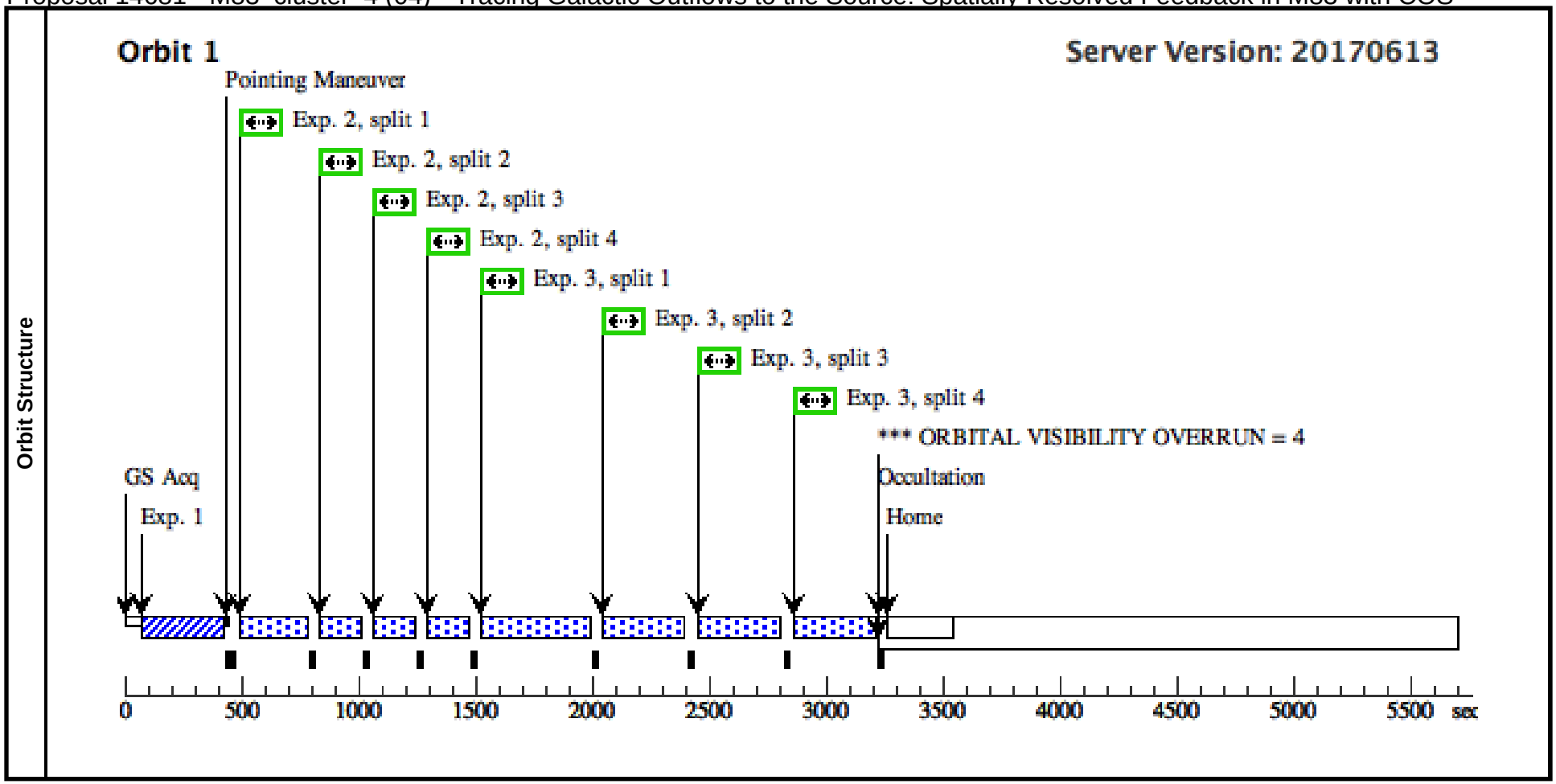
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	M83-CLUSTER-4	RA: 13 37 0.3440 (204.2514333d) Dec: -29 51 58.34 (-29.86621d) Equinox: J2000	Radial Velocity: 513 km/sec	V=15.6+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-4 (COS.ta.909380)	(4) M83-CLUSTER-4	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				15 Secs (15 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-4 (COS.sp.915816)	(4) M83-CLUSTER-4	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=1255			125 Secs (500 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-4 (COS.sp.915839)	(4) M83-CLUSTER-4	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=3180			302 Secs (1208 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
*** ORBITAL VISIBILITY OVERRUN = 4
GS Acq
Exp. 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_5 (05), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_5 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_5 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-5 (05.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

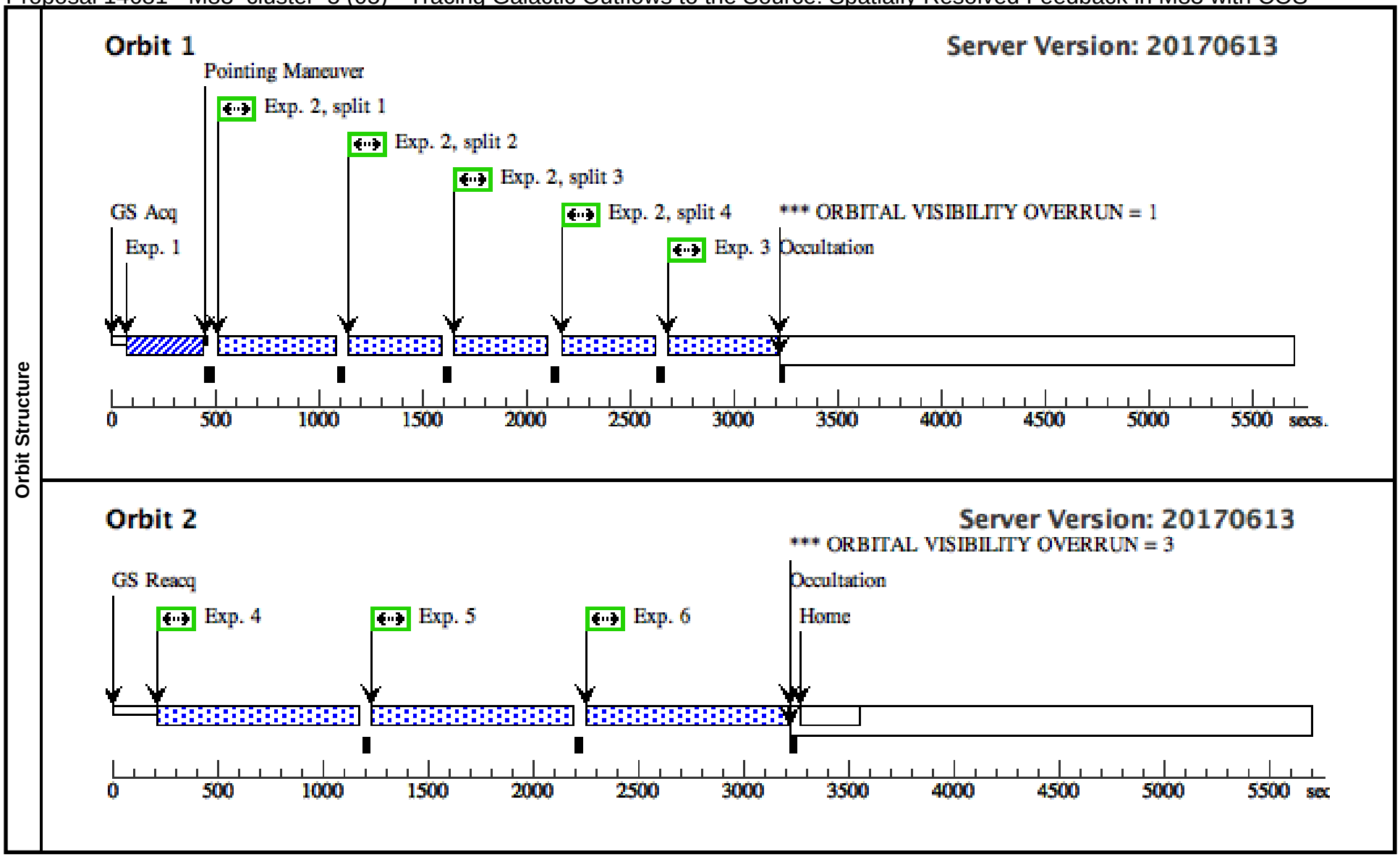
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	M83-CLUSTER-5	RA: 13 37 0.1080 (204.2504500d) Dec: -29 51 51.30 (-29.86425d) Equinox: J2000	Radial Velocity: 513 km/sec	V=15.5+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-5 (COS.ta.909367)	(5) M83-CLUSTER-5	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs) *[==>]*	***[1]***
2	G130M-M83-cluster-5 (COS.sp.915836)	(5) M83-CLUSTER-5	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=2340			400 Secs (1600 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
3	G160M-FP1-M83-cluster-5 (COS.sp.915837)	(5) M83-CLUSTER-5	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=5475			360 Secs (360 Secs) *[==>]*	***[1]***
4	G160M-FP2-M83-cluster-5 (COS.sp.915837)	(5) M83-CLUSTER-5	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=5475			904 Secs (904 Secs) *[==>]*	***[2]***
5	G160M-FP3-M83-cluster-5 (COS.sp.915837)	(5) M83-CLUSTER-5	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=5475			904 Secs (904 Secs) *[==>]*	***[2]***
6	G160M-FP4-M83-cluster-5 (COS.sp.915837)	(5) M83-CLUSTER-5	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=5475			904 Secs (904 Secs) *[==>]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3
GS Acq
Exp. 1
*** ORBITAL VISIBILITY OVERRUN = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 3
GS Reacq
Exp. 4
Exp. 5
Exp. 6
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_6 (06), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_6 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_6 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-6 (06.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

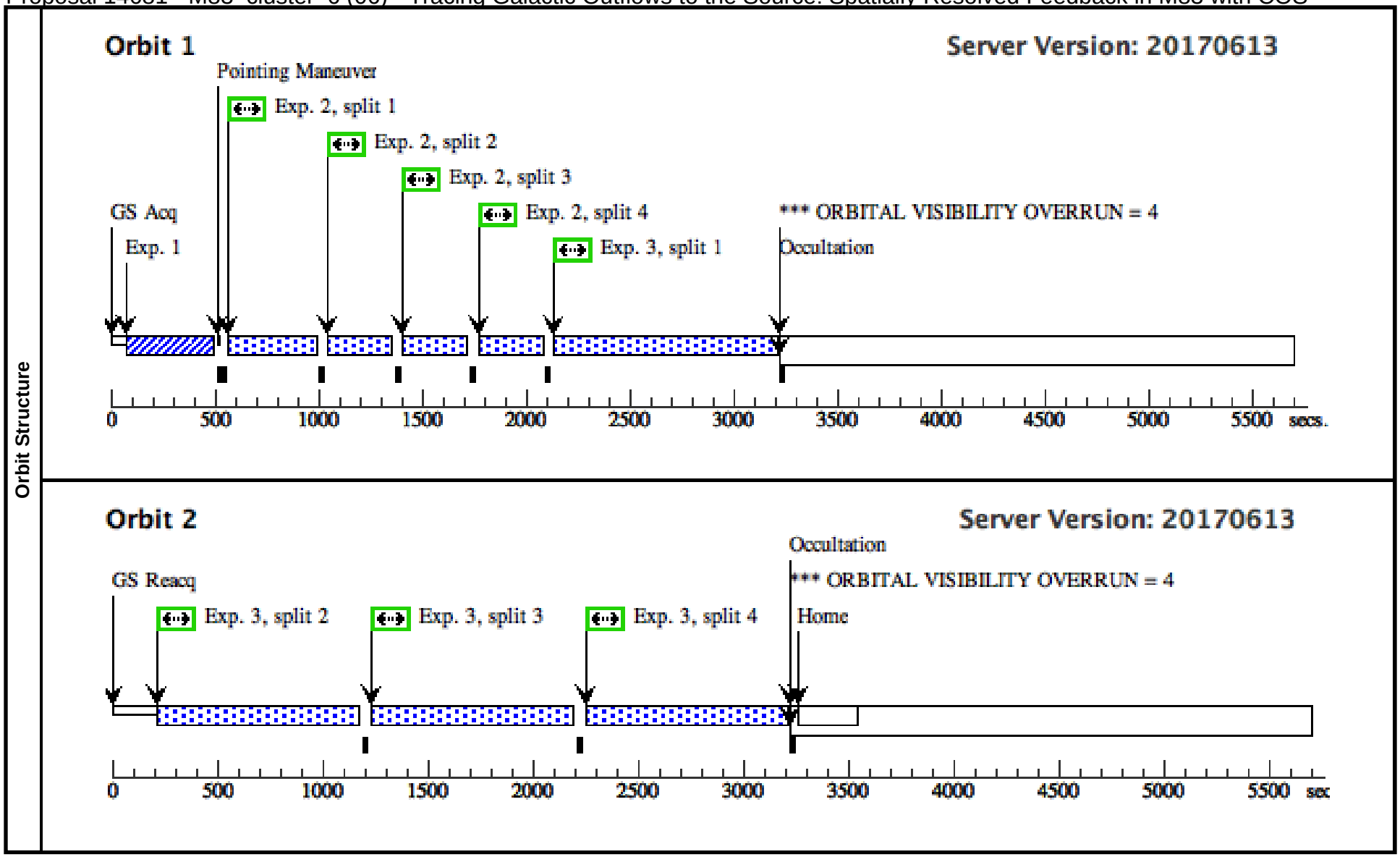
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	M83-CLUSTER-6	RA: 13 37 9.4950 (204.2895625d) Dec: -29 51 31.71 (-29.85881d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.4+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-6 (COS.ta.909350)	(6) M83-CLUSTER-6	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				53 Secs (53 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-6 (COS.sp.915834)	(6) M83-CLUSTER-6	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=2750			259 Secs (1036 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-6 (COS.sp.915868)	(6) M83-CLUSTER-6	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=9320			911 Secs (3644 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]* *[2]*


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
GS Acq
Exp. 1
*** ORBITAL VISIBILITY OVERRUN = 4
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20170613
Occultation
*** ORBITAL VISIBILITY OVERRUN = 4
GS Reacq
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_7 (07), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_7 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-7 (07.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

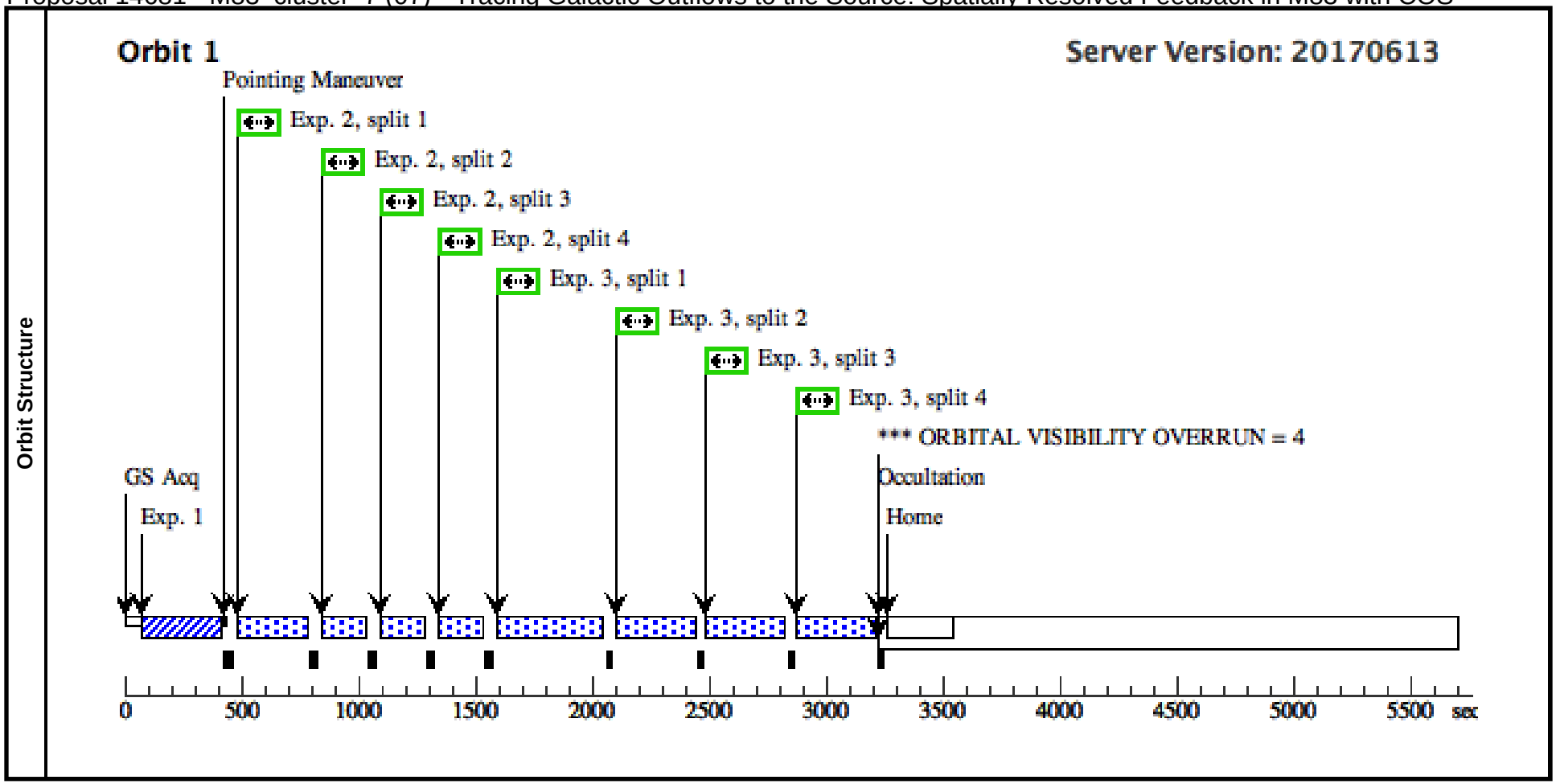
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	M83-CLUSTER-7	RA: 13 37 4.6240 (204.2692667d) Dec: -29 50 58.53 (-29.84959d) Equinox: J2000	Radial Velocity: 513 km/sec	V=16.7+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-7 (COS.ta.909351)	(7) M83-CLUSTER-7	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				11 Secs (11 Secs) *[==>]*	***[1]***
2	G130M-M83-cluster-7 (COS.sp.915833)	(7) M83-CLUSTER-7	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=935			135 Secs (540 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
3	G160M-M83-cluster-7 (COS.sp.915864)	(7) M83-CLUSTER-7	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=2725			284 Secs (1136 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
*** ORBITAL VISIBILITY OVERRUN = 4
GS Acq
Exp. 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_8 (08), implementation Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_8 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_8 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_8 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_8 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-FP1-M83-cluster-8 (08.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

(G130M-FP2-M83-cluster-8 (08.004)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

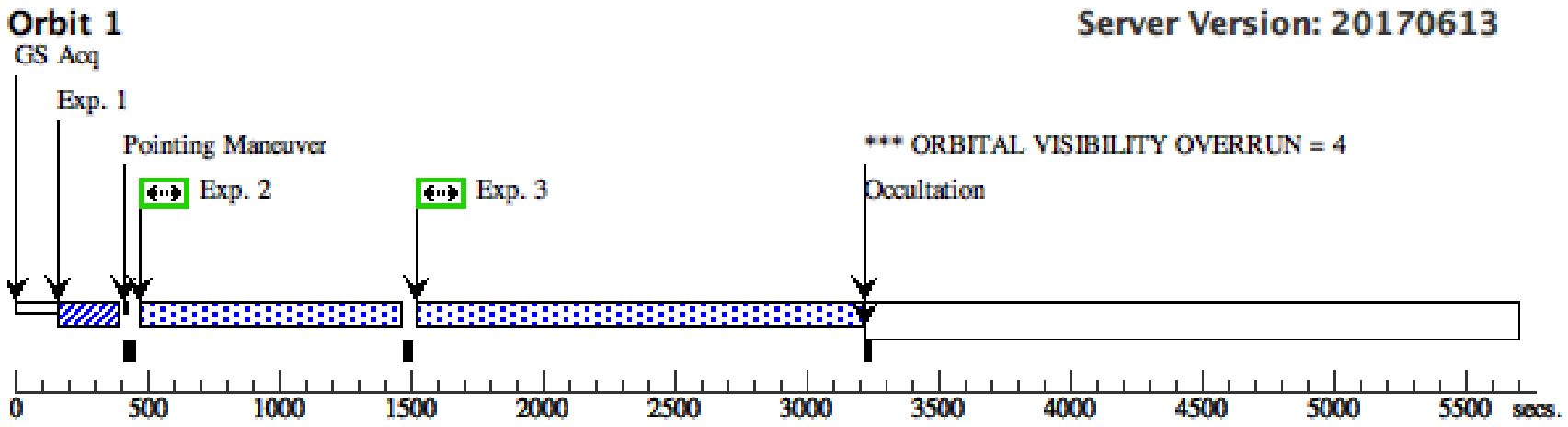
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	M83-CLUSTER-8	RA: 13 37 4.5280 (204.2688667d) Dec: -29 49 28.58 (-29.82461d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.1+/-0.1	Reference Frame: ICRS

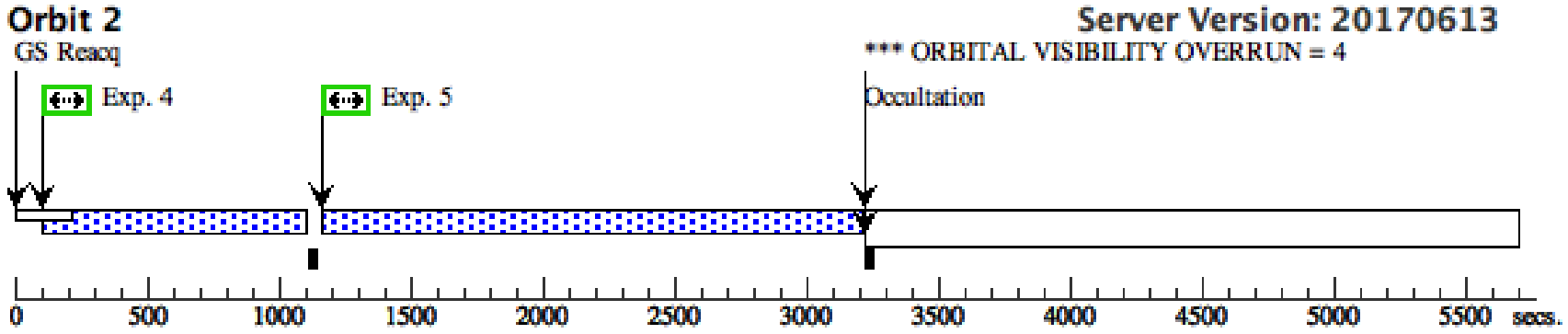
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

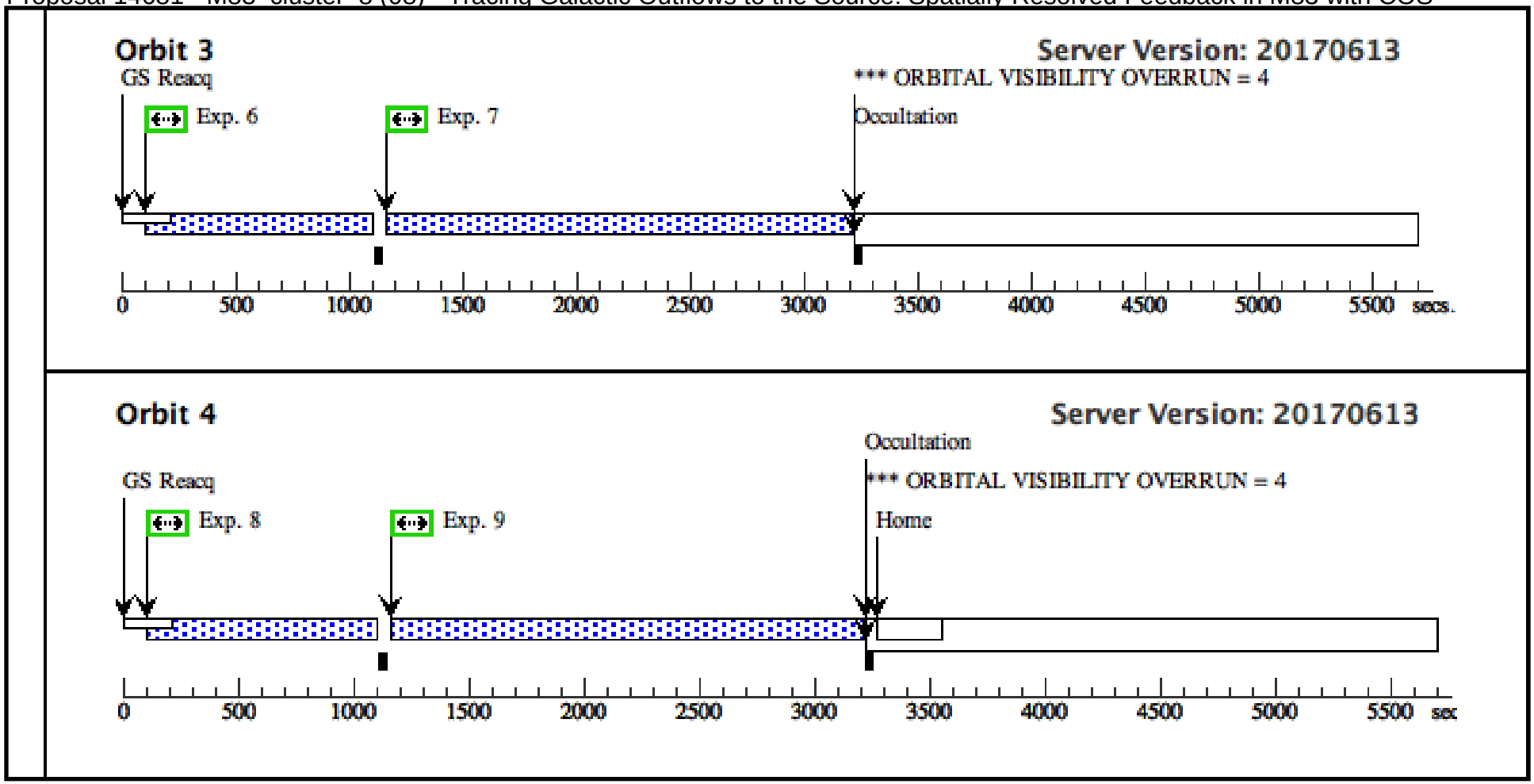
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-8 (COS.ta.909373)	(8) M83-CLUSTER-8	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6 Secs (6 Secs) *[==>]*	***[1]***
2	G130M-FP1-M83-cluster-8 (COS.sp.915817)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=4110			825 Secs (825 Secs) *[==>]*	***[1]***
3	G160M-FP1-M83-cluster-8 (COS.sp.915841)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=14565			1521 Secs (1521 Secs) *[==>]*	***[1]***
4	G130M-FP2-M83-cluster-8 (COS.sp.915817)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=4110			825 Secs (825 Secs) *[==>]*	***[2]***
5	G160M-FP2-M83-cluster-8 (COS.sp.915841)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=14565			1887 Secs (1887 Secs) *[==>]*	***[2]***
6	G130M-FP3-M83-cluster-8 (COS.sp.915817)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=4110			825 Secs (825 Secs) *[==>]*	***[3]***
7	G160M-FP3-M83-cluster-8 (COS.sp.915841)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=14565			1887 Secs (1887 Secs) *[==>]*	***[3]***
8	G130M-FP4-M83-cluster-8 (COS.sp.915817)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=4110			825 Secs (825 Secs) *[==>]*	***[4]***
9	G160M-FP4-M83-cluster-8 (COS.sp.915841)	(8) M83-CLUSTER-8	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=14565			1887 Secs (1887 Secs) *[==>]*	***[4]***

Orbit Structure






Orbit 3
Server Version: 20170613
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 6
Exp. 7
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 4
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 8
Exp. 9
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_9 (09), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_9 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_9 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-9 (09.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

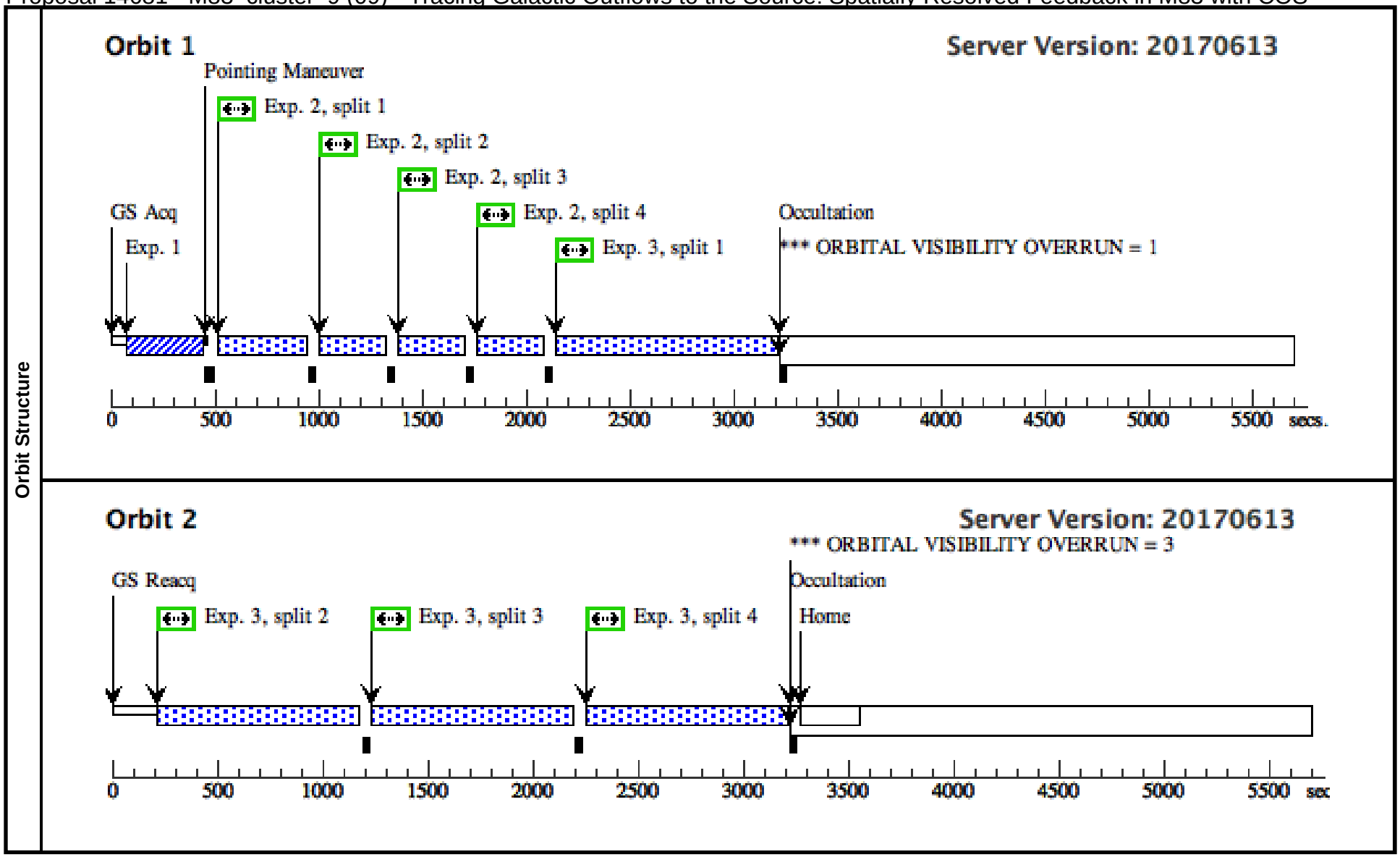
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	M83-CLUSTER-9	RA: 13 37 9.6980 (204.2904083d) Dec: -29 49 7.62 (-29.81878d) Equinox: J2000	Radial Velocity: 513 km/sec	V=17.7+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-9 (COS.ta.909352)	(9) M83-CLUSTER-9	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-9 (COS.sp.915832)	(9) M83-CLUSTER-9	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=1730			264 Secs (1056 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-9 (COS.sp.915861)	(9) M83-CLUSTER-9	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=5385			904 Secs (3616 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]* *[2]*


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
GS Acq
Exp. 1
Occultation
*** ORBITAL VISIBILITY OVERRUN = 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 3
GS Reacq
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_10 (10), implementation Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_10 (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_10 (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_10 (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-FP1-M83-cluster-10 (10.004)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

(G130M-FP2-M83-cluster-10 (10.005)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

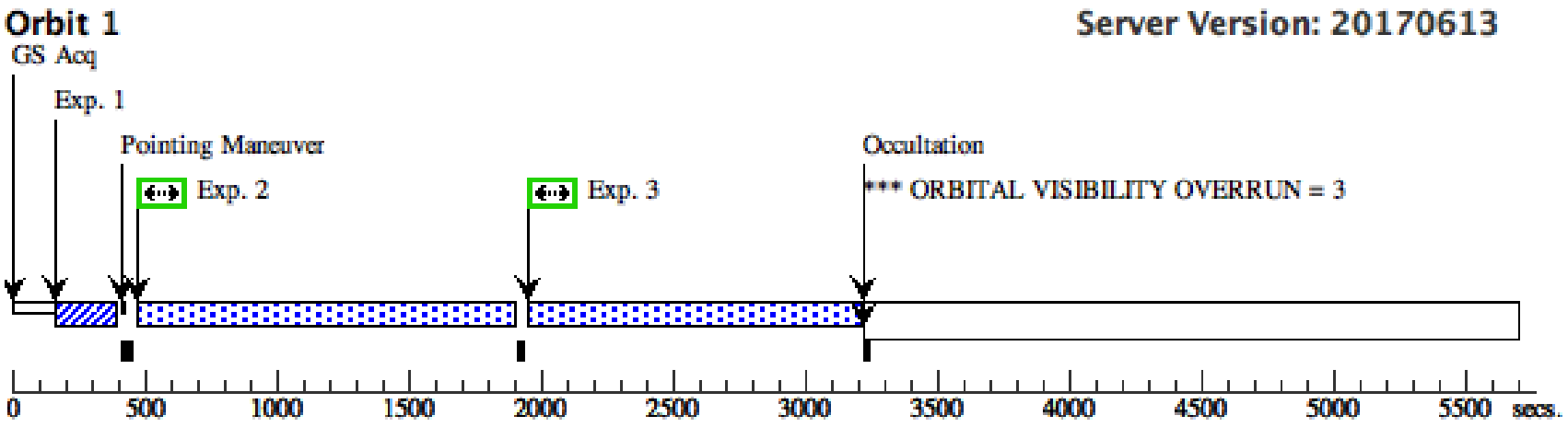
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	M83-CLUSTER-10	RA: 13 37 5.9040 (204.2746000d) Dec: -29 53 45.26 (-29.89591d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.8+/-0.1	Reference Frame: ICRS

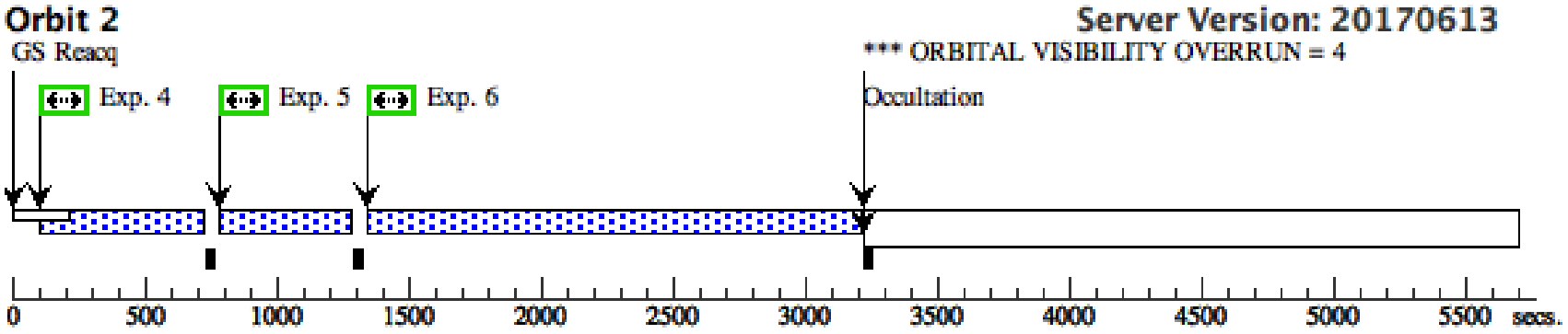
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

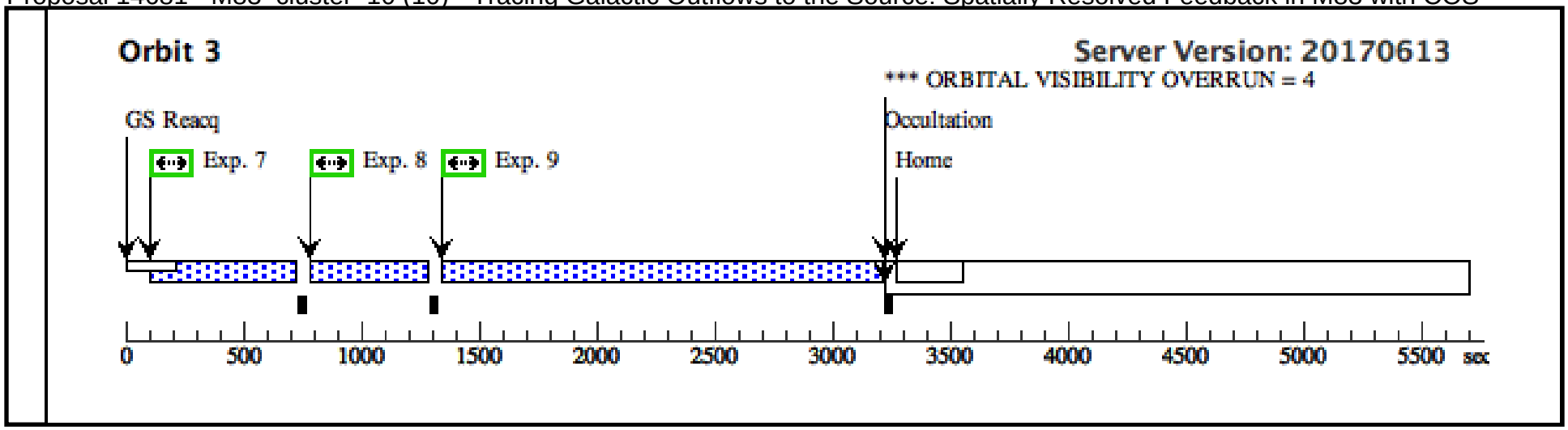
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-10 (COS.ta.909354)	(10) M83-CLUSTER-10	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6 Secs (6 Secs) *[==>]*	 ***[1]***
2	G160M-FP1-M83-cluster-10 (COS.sp.915850)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=13520			1210 Secs (1210 Secs) *[==>]*	 ***[1]***
3	G160M-FP3-M83-cluster-10 (COS.sp.915850)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=13520			1210 Secs (1210 Secs) *[==>]*	 ***[1]***
4	G130M-FP1-M83-cluster-10 (COS.sp.915827)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=3630			445 Secs (445 Secs) *[==>]*	 ***[2]***
5	G130M-FP2-M83-cluster-10 (COS.sp.915827)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=3630			445 Secs (445 Secs) *[==>]*	 ***[2]***
6	G160M-FP2-M83-cluster-10 (COS.sp.915850)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=13520			1707 Secs (1707 Secs) *[==>]*	 ***[2]***
7	G130M-FP3-M83-cluster-10 (COS.sp.915827)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=3630			445 Secs (445 Secs) *[==>]*	 ***[3]***
8	G130M-FP4-M83-cluster-10 (COS.sp.915827)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=3630			445 Secs (445 Secs) *[==>]*	 ***[3]***
9	G160M-FP4-M83-cluster-10 (COS.sp.915850)	(10) M83-CLUSTER-10	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=13520			1707 Secs (1707 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 4
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_11 (11), completed Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_11 (11)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_11 (11)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_11 (11)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-11 (11.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

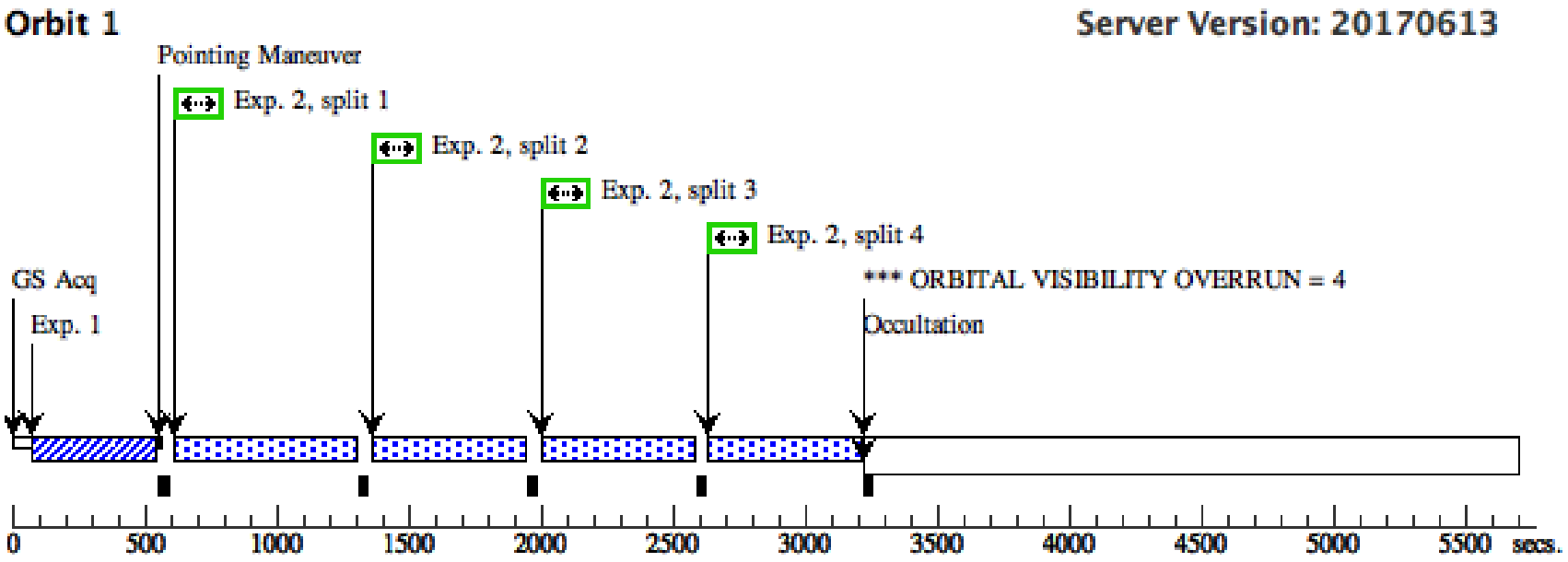
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	M83-CLUSTER-11	RA: 13 36 52.3170 (204.2179875d) Dec: -29 51 20.66 (-29.85574d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.3+/-0.1	Reference Frame: ICRS

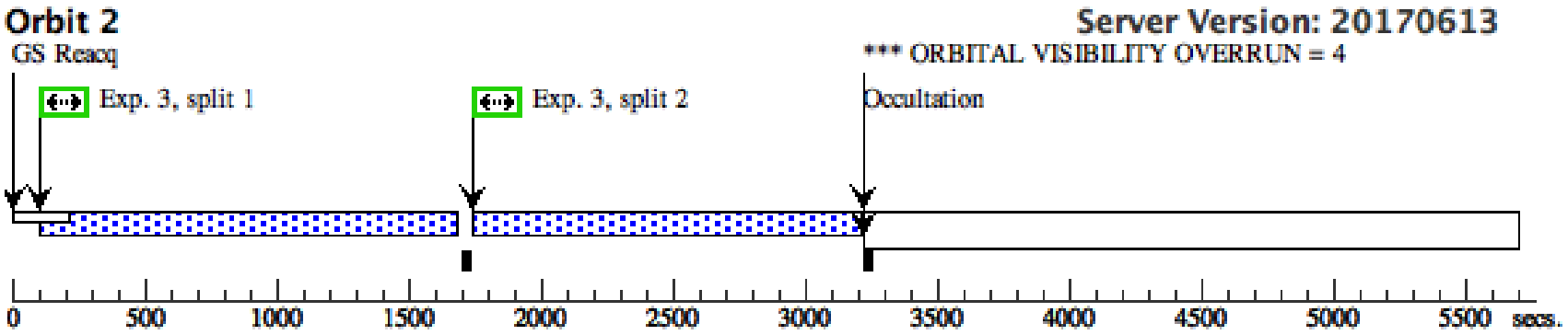
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

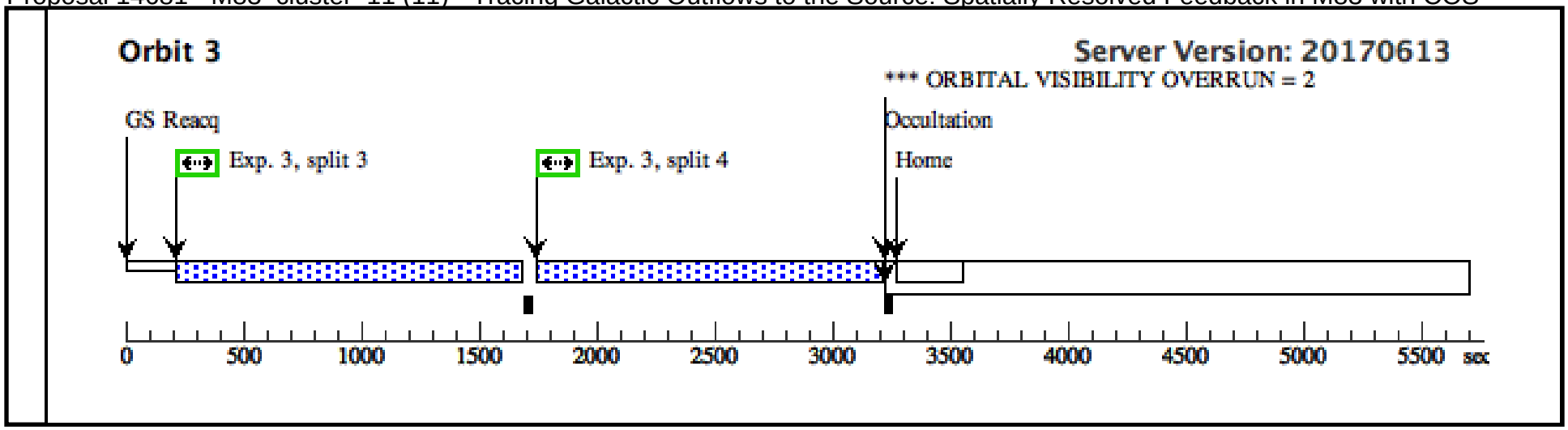
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-11 (COS.ta.909358)	(11) M83-CLUSTER-11	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				75 Secs (75 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-11 (COS.sp.915828)	(11) M83-CLUSTER-11	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=3260			523 Secs (2092 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-11 (COS.sp.915854)	(11) M83-CLUSTER-11	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=11740			1413 Secs (5652 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[2]*
								[==>(Split 3)] *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 2
GS Reacq
Exp. 3, split 3
Exp. 3, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_12 (12), implementation Tue Jul 11 01:01:27 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_12 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_12 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_12 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_12 (12)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-FP1-M83-cluster-12 (12.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

(G130M-FP2-M83-cluster-12 (12.004)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

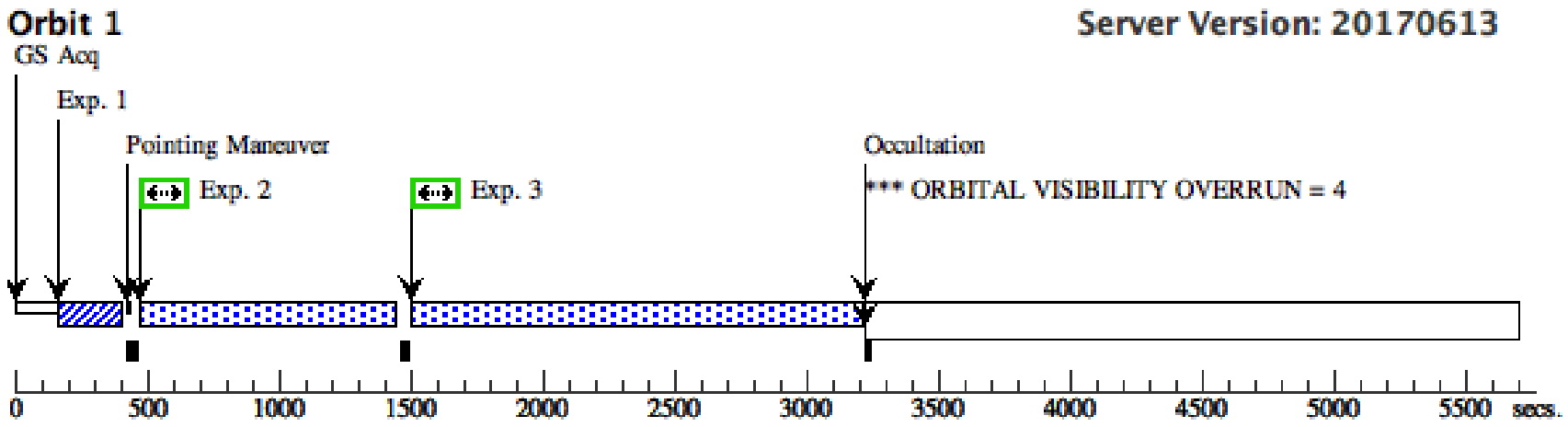
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	M83-CLUSTER-12	RA: 13 36 52.1070 (204.2171125d) Dec: -29 52 35.08 (-29.87641d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.3+/-0.1	Reference Frame: ICRS

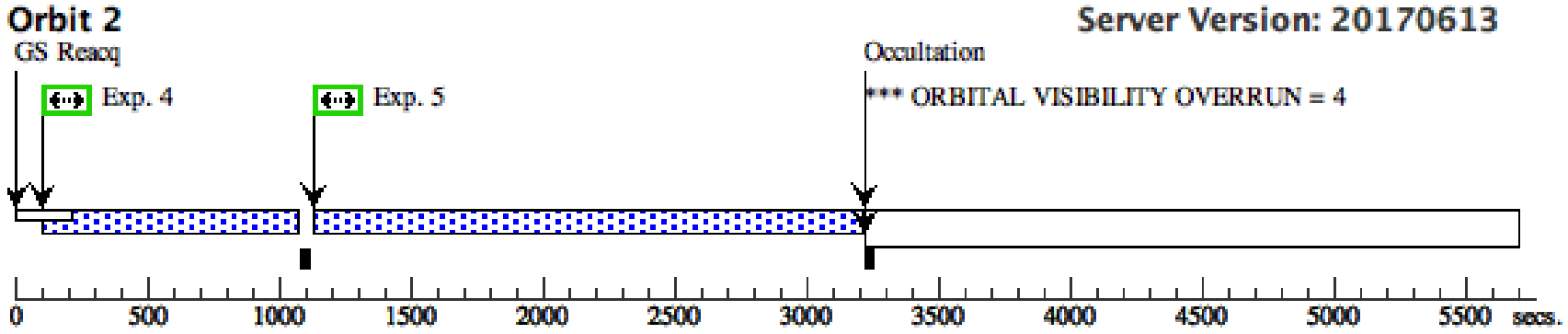
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

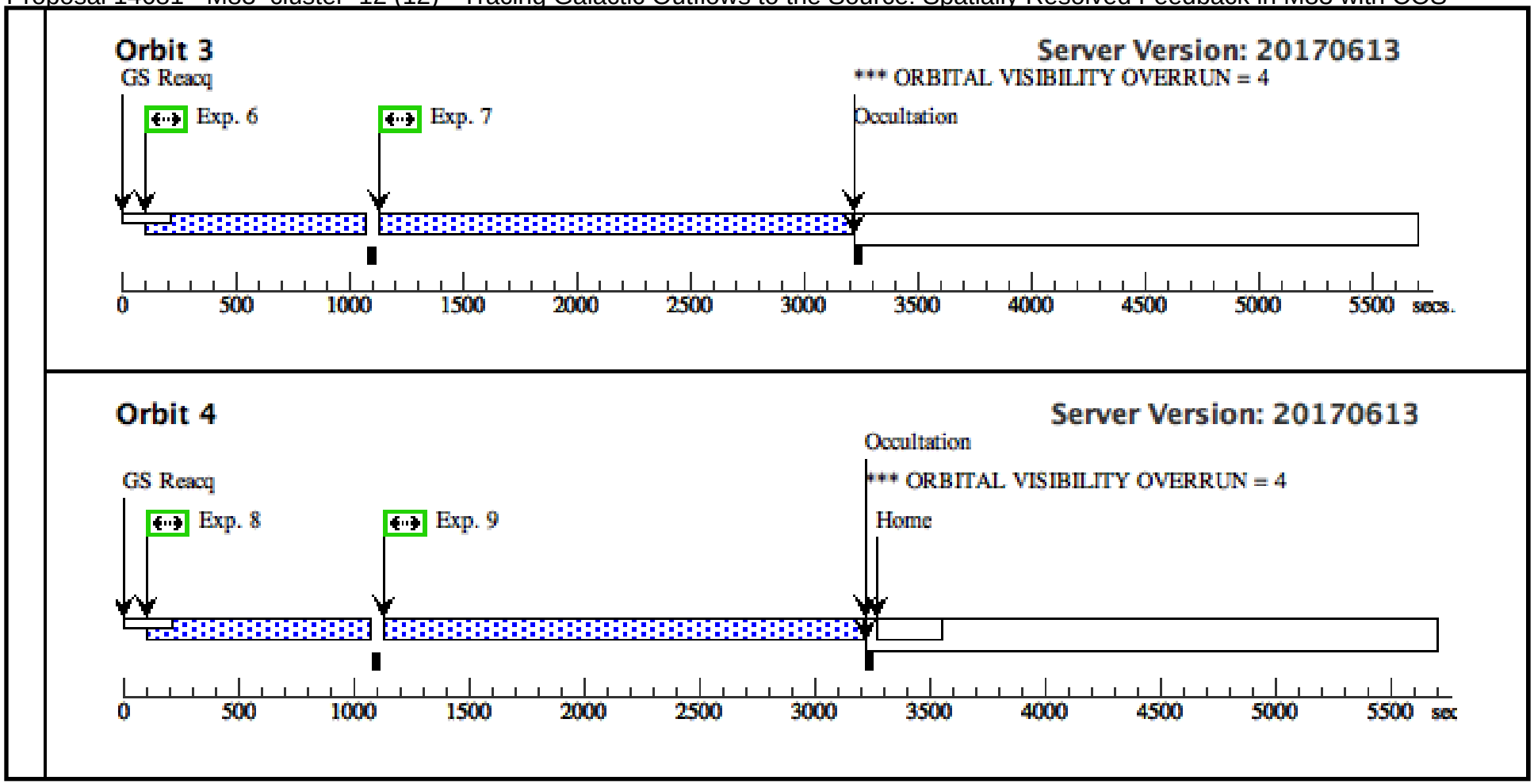
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-12 (COS.ta.909374)	(12) M83-CLUSTER-12	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				9 Secs (9 Secs) *[==>]*	***[1]***
2	G130M-FP1-M83-cluster-12 (COS.sp.915821)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=4195			800 Secs (800 Secs) *[==>]*	***[1]***
3	G160M-FP1-M83-cluster-12 (COS.sp.915842)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=15050			1540 Secs (1540 Secs) *[==>]*	***[1]***
4	G130M-FP2-M83-cluster-12 (COS.sp.915821)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=4195			800 Secs (800 Secs) *[==>]*	***[2]***
5	G160M-FP2-M83-cluster-12 (COS.sp.915842)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=15050			1912 Secs (1912 Secs) *[==>]*	***[2]***
6	G130M-FP3-M83-cluster-12 (COS.sp.915821)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=4195			800 Secs (800 Secs) *[==>]*	***[3]***
7	G160M-FP3-M83-cluster-12 (COS.sp.915842)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=15050			1912 Secs (1912 Secs) *[==>]*	***[3]***
8	G130M-FP4-M83-cluster-12 (COS.sp.915821)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=4195			800 Secs (800 Secs) *[==>]*	***[4]***
9	G160M-FP4-M83-cluster-12 (COS.sp.915842)	(12) M83-CLUSTER-12	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=15050			1912 Secs (1912 Secs) *[==>]*	***[4]***

Orbit Structure






Orbit 3
Server Version: 20170613
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 6
Exp. 7
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 4
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 8
Exp. 9
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_13 (13), implementation Tue Jul 11 01:01:28 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_13 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_13 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_13 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-13 (13.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

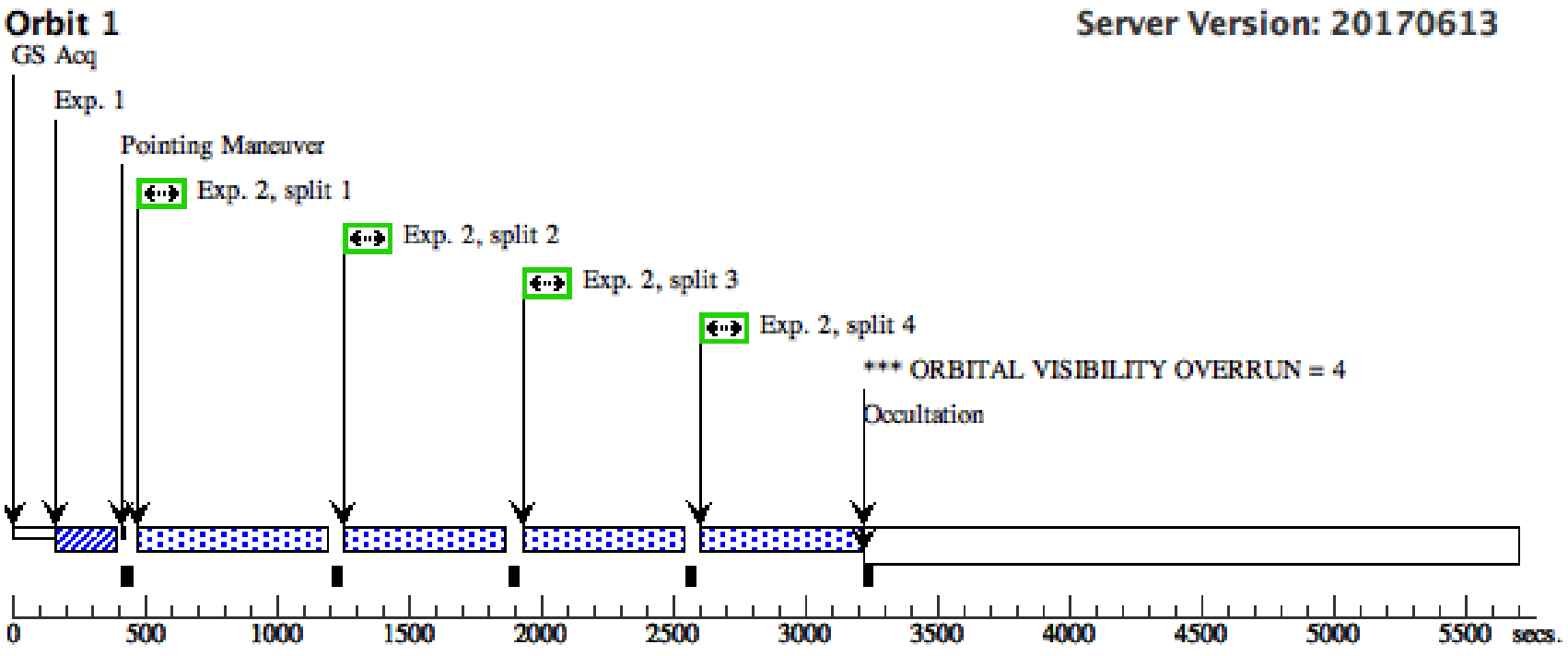
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	M83-CLUSTER-13	RA: 13 36 51.0530 (204.2127208d) Dec: -29 50 40.07 (-29.84446d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.3+/-0.1	Reference Frame: ICRS

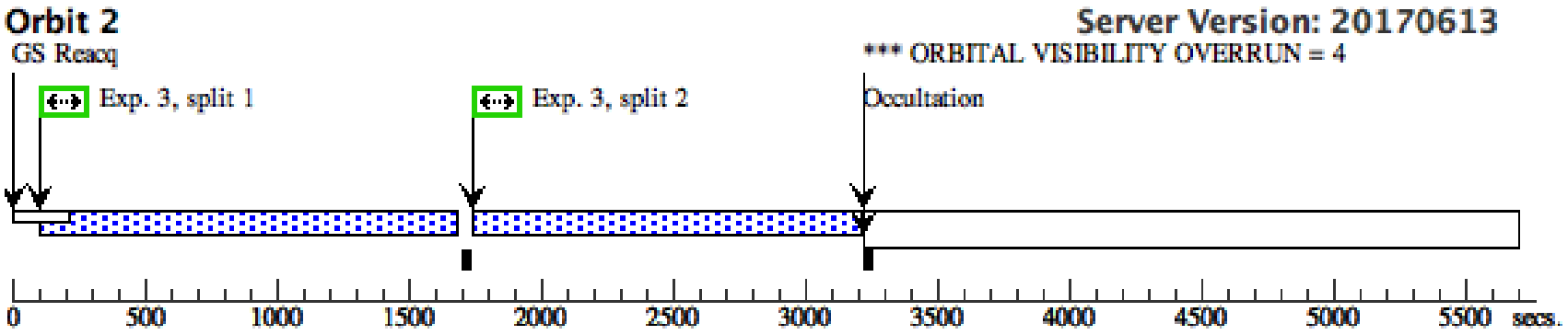
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

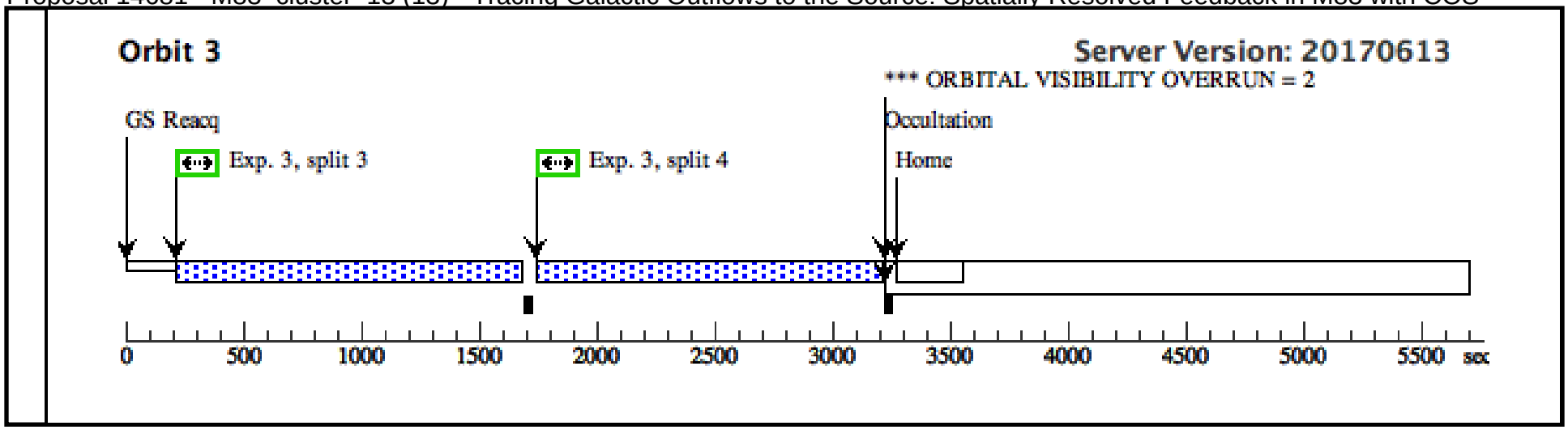
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-13 (COS.ta.909355)	(13) M83-CLUSTER-13	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-13 (COS.sp.915829)	(13) M83-CLUSTER-13	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=3410			558 Secs (2232 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-13 (COS.sp.915857)	(13) M83-CLUSTER-13	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=12460			1413 Secs (5652 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]* *[3]*

Orbit Structure






Orbit 3
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 2
GS Reacq
Exp. 3, split 3
Exp. 3, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_14 (14), completed Tue Jul 11 01:01:28 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_14 (14)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-14 (14.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

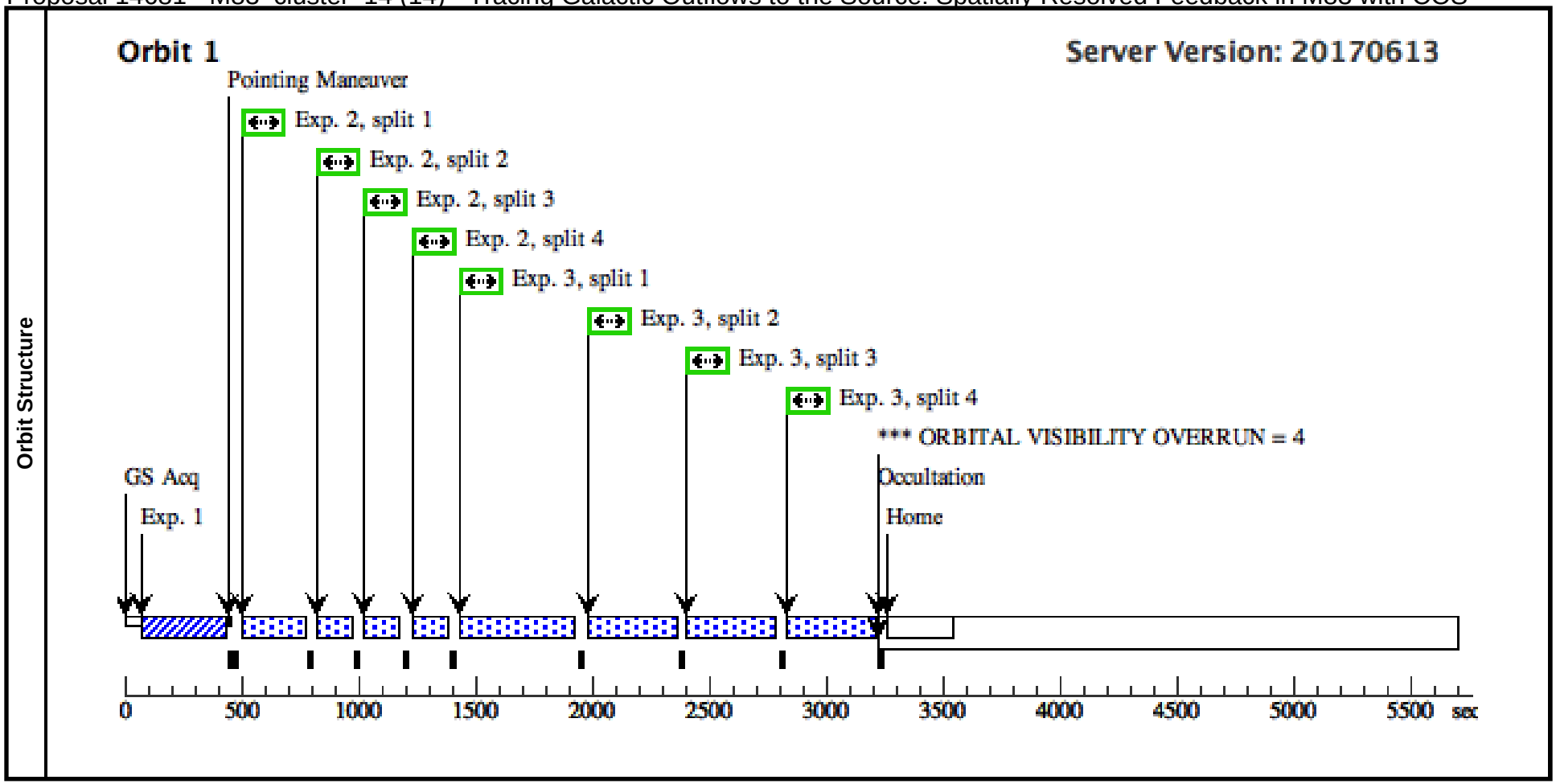
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	M83-CLUSTER-14	RA: 13 36 53.5340 (204.2230583d) Dec: -29 53 10.95 (-29.88637d) Equinox: J2000	Radial Velocity: 513 km/sec	V=16.9+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-14 (COS.ta.909360)	(14) M83-CLUSTER-14	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				21 Secs (21 Secs) *[==>]*	*[1]*
2	G130M-M83-cluster-14 (COS.sp.915830)	(14) M83-CLUSTER-14	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=1570			100 Secs (400 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	G160M-M83-cluster-14 (COS.sp.915859)	(14) M83-CLUSTER-14	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=4910			324 Secs (1296 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
*** ORBITAL VISIBILITY OVERRUN = 4
GS Acq
Exp. 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_15 (15), completed Tue Jul 11 01:01:28 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(M83_cluster_15 (15)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(M83_cluster_15 (15)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(G130M-M83-cluster-15 (15.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

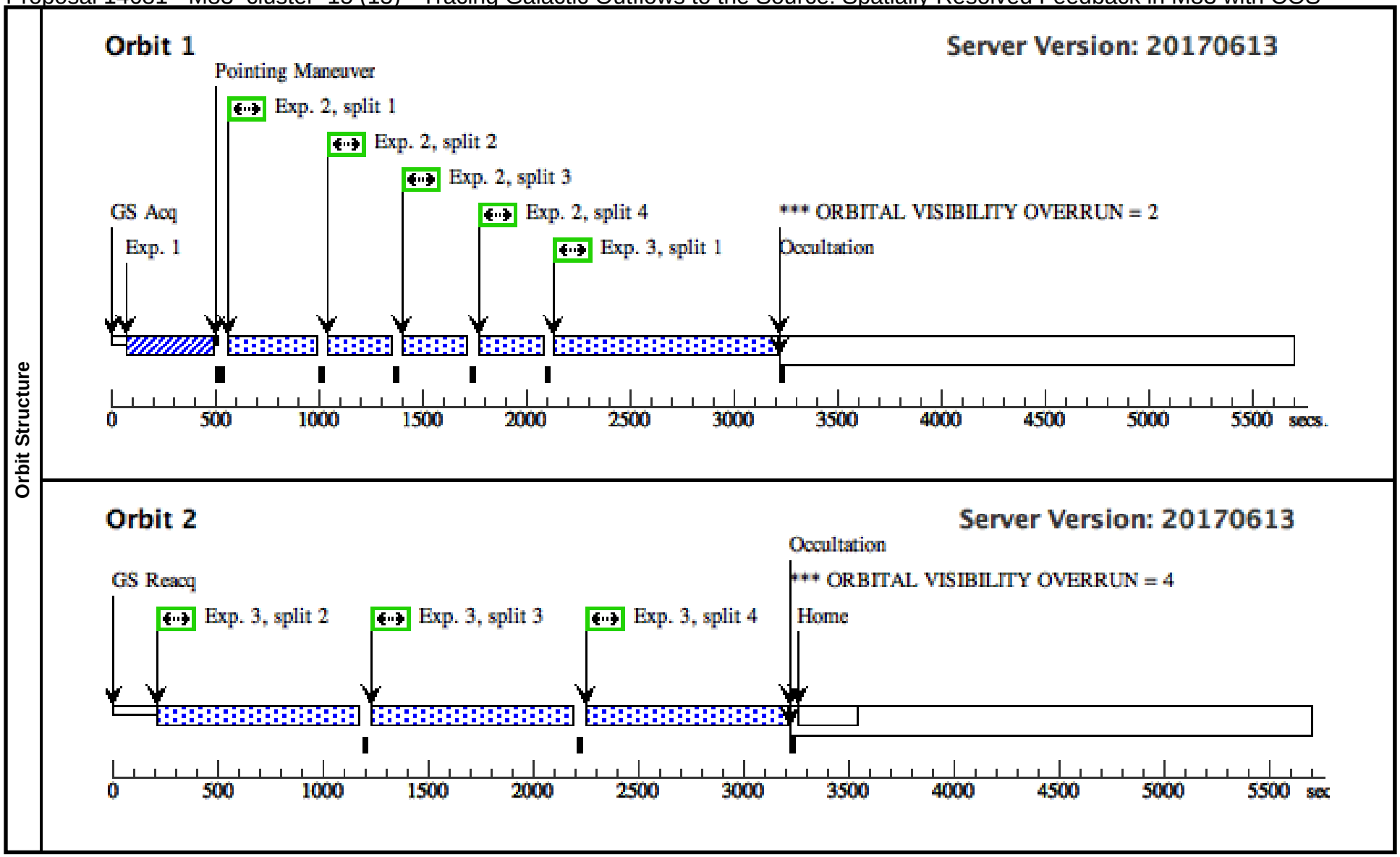
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	M83-CLUSTER-15	RA: 13 36 59.1770 (204.2465708d) Dec: -29 54 27.08 (-29.90752d) Equinox: J2000	Radial Velocity: 513 km/sec	V=17.9+/-0.1	Reference Frame: ICRS

Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-15 (COS.ta.909362)	(15) M83-CLUSTER-15	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) *[==>]*	 ***[1]***
2	G130M-M83-cluster-15 (COS.sp.915831)	(15) M83-CLUSTER-15	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=ALL; BUFFER-TIME=2710			260 Secs (1040 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
3	G160M-M83-cluster-15 (COS.sp.915860)	(15) M83-CLUSTER-15	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=ALL; BUFFER-TIME=9315			911 Secs (3644 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]*** ***[2]***


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Exp. 2, split 3
Exp. 2, split 4
Exp. 3, split 1
GS Acq
Exp. 1
*** ORBITAL VISIBILITY OVERRUN = 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20170613
Occultation
*** ORBITAL VISIBILITY OVERRUN = 4
GS Reacq
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14681, M83_cluster_16 (16), implementation Tue Jul 11 01:01:28 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(G130M-FP1-M83-cluster-16 (16.002)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

(G130M-FP2-M83-cluster-16 (16.004)) Warning (Form): Defaults for SEGMENT have changed in APT25.2 for use of LP4 with G130M. See full description for details.

Fixed Targets

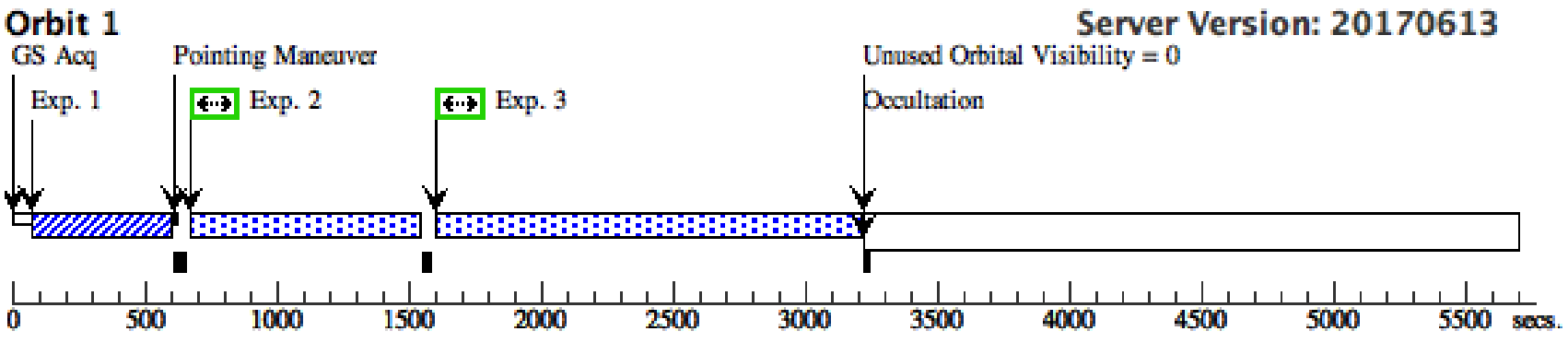
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	M83-CLUSTER-16	RA: 13 36 52.9160 (204.2204833d) Dec: -29 53 19.49 (-29.88875d) Equinox: J2000	Radial Velocity: 513 km/sec	V=18.3+/-0.1	Reference Frame: ICRS

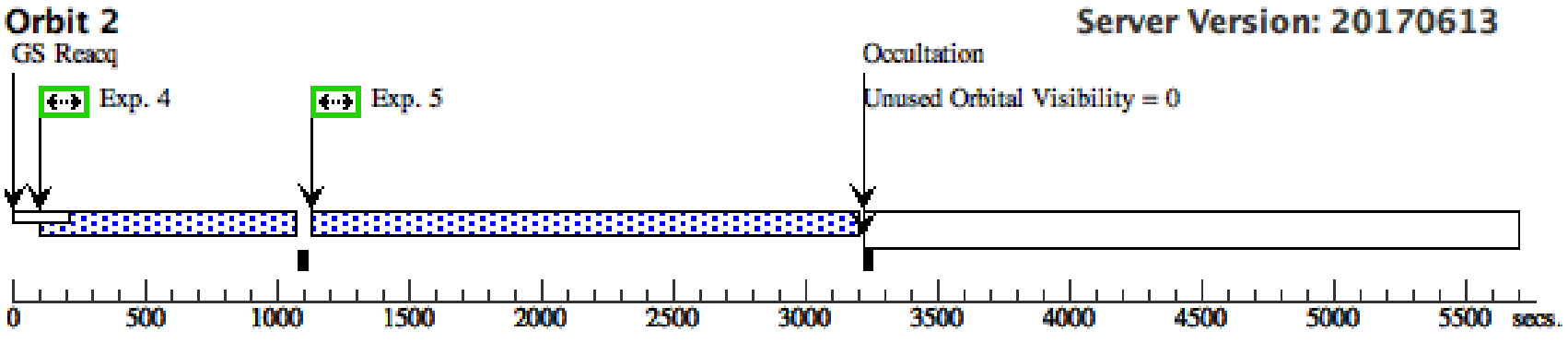
Comments: This object was selected based on WFC3 images from HST Cycle 17 and Cycle 19 GO programs 11360 and 12513. Better pointing accuracy (< 0.05 Arcsec) was achieved by cross-correlating the WFC3 coordinates with HSC (< 0.01 arcsec) and GAIA (< 0.05 arcsec). No ACQ/SEARCH is needed as the uncertainty of the target coordinates is << 0.4 arcsec.
Extended=NO

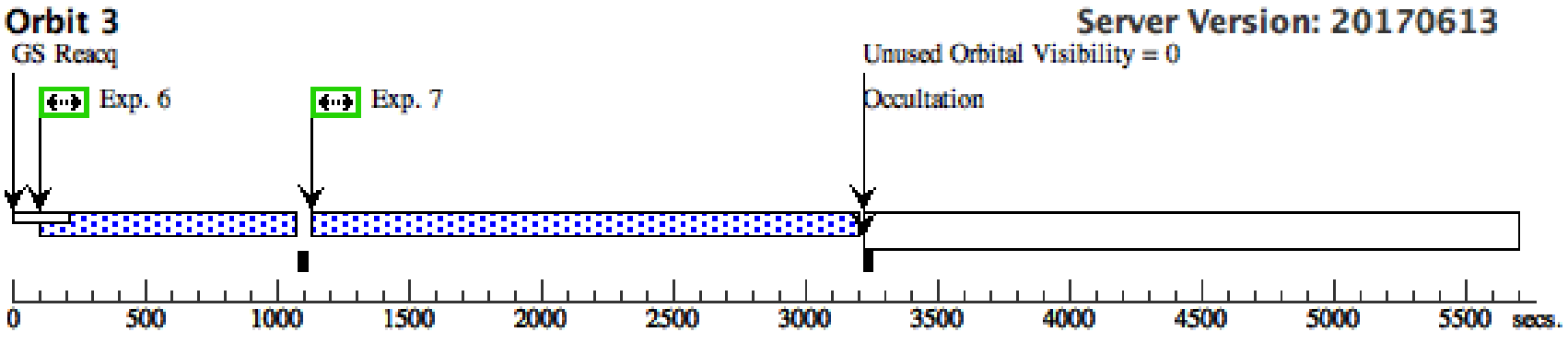
Exposures

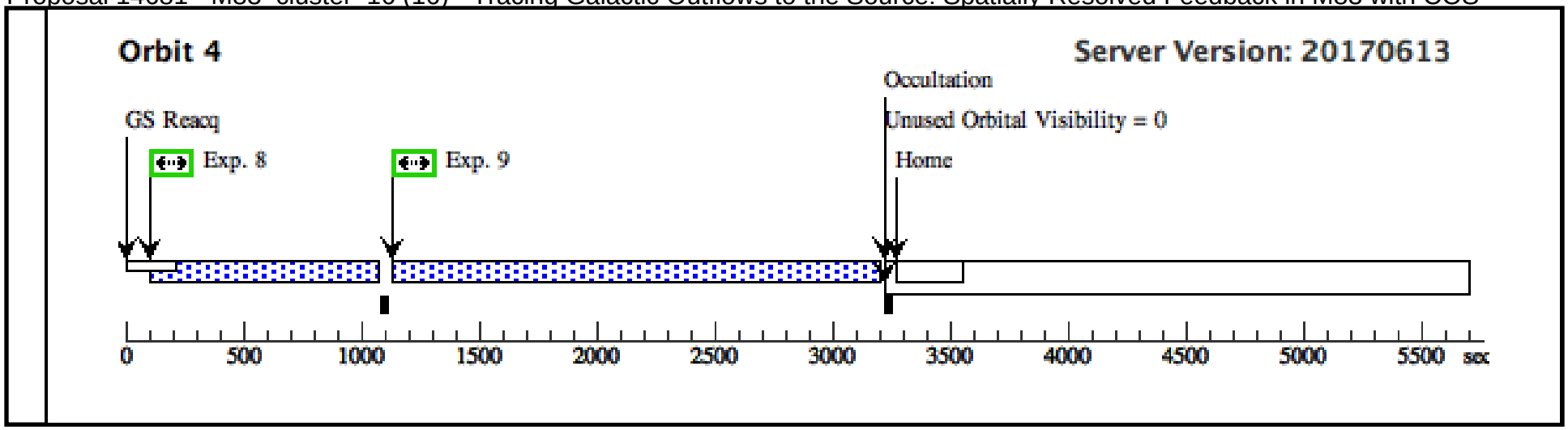
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-M83-cluster-16 (COS.ta.909375)	(16) M83-CLUSTER-16	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				105 Secs (105 Secs) *[==>]*	***[1]***
2	G130M-FP1-M83-cluster-16 (COS.sp.915822)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=1; BUFFER-TIME=4145			700 Secs (700 Secs) *[==>]*	***[1]***
3	G160M-FP1-M83-cluster-16 (COS.sp.915845)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=14770			1444 Secs (1444 Secs) *[==>]*	***[1]***
4	G130M-FP2-M83-cluster-16 (COS.sp.915822)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=2; BUFFER-TIME=4145			800 Secs (800 Secs) *[==>]*	***[2]***
5	G160M-FP2-M83-cluster-16 (COS.sp.915845)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=14770			1908 Secs (1908 Secs) *[==>]*	***[2]***
6	G130M-FP3-M83-cluster-16 (COS.sp.915822)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=4145			800 Secs (800 Secs) *[==>]*	***[3]***
7	G160M-FP3-M83-cluster-16 (COS.sp.915845)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=14770			1908 Secs (1908 Secs) *[==>]*	***[3]***
8	G130M-FP4-M83-cluster-16 (COS.sp.915822)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=4145			800 Secs (800 Secs) *[==>]*	***[4]***
9	G160M-FP4-M83-cluster-16 (COS.sp.915845)	(16) M83-CLUSTER-16	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=4; BUFFER-TIME=14770			1908 Secs (1908 Secs) *[==>]*	***[4]***

Orbit Structure








Orbit 4
Server Version: 20170613
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 8
Exp. 9
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec