14235 - Globular Cluster Orbits from HST Proper Motions: Constraining the Formation and Mass of the Milky Way Halo

Cycle: 23, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NGC6101 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:00:56.0	yes
02	(2) NGC6934 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:01.0	yes
03	(3) NGC6426 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:03.0	yes
04	(4) IC4499 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:05.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(5) NGC2298 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:07.0	yes
06	(6) PAL12 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:09.0	yes
07	(7) TERZAN7 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:13.0	yes
08	(8) NGC5466 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:15.0	yes
09	(9) NGC5053 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:17.0	yes
10	(10) NGC1261 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:20.0	yes
11	(11) NGC5024 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:22.0	yes
12	(12) RUP106 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:24.0	yes
13	(13) TERZAN8 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:26.0	yes
14	(14) NGC4147 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:28.0	yes
15	(15) ARP2 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:31.0	yes
16	(16) PAL13 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:33.0	yes
17	(17) PAL15 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:35.0	yes
18	(18) NGC7006 ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:37.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
19	(19) PYXIS ANY	ACS/WFC WFC3/UVIS	2	27-Feb-2017 21:01:39.0	yes
20	(20) NGC2419 ANY	ACS/WFC WFC3/UVIS	4	27-Feb-2017 21:01:42.0	yes

42 Total Orbits Used

ABSTRACT

The globular cluster (GC) system of the Milky Way (MW) provides important information on the MW's present structure and past evolution. GCs in the halo are particularly useful tracers; because of their long dynamical timescales, their orbits retain imprints of their origin or accretion history. Full 3D motions are required to calculate past orbits. While most GCs have known line of sight velocities, accurate proper motion (PM) measurements are available for only a few halo GCs. We will create the first high-quality PM database for halo GCs. We have identified suitable 1st-epoch data in the HST Archive for 20 halo GCs at 10-100 kpc from the Galactic Center. We propose to obtain the necessary 2nd-epoch data to determine absolute PMs, using distant background galaxies as stationary reference sources. We will use the same advanced astrometric techniques that allowed us to measure the PMs of M31 and Leo I. Previous studies of the halo GC system based on e.g., stellar populations, metallicities, RR Lyrae properties, and structural properties have revealed a dichotomy between old and young halo GCs. This may reflect distinct formation scenarios (in situ vs. accreted). Orbit calculations based on our PMs will directly test this. The PMs will also yield the best handle yet on the velocity anisotropy profile of any tracer population in the halo. This will resolve the mass-anisotropy degeneracy to provide an improved estimate of the MW mass, which is at present poorly known. In summary, our proposed project will deliver the first accurate PMs for halo GCs, and will significantly increase our understanding of the formation, evolution, and mass of the MW.

OBSERVING DESCRIPTION

To measure absolute proper motions of our 20 target globular clusters (GCs), we will use compact background galaxies in the field of views (FOVs) as stationary reference sources. We will measure the average motion of stars in each target GC between epochs 1 and 2 with respect to these reference sources. Our analysis techniques and expected accuracies are described in the Phase I proposal. First epoch data are available in the HST archive as part of several previous programs. The present project will obtain the second epoch data.

With the exception of NGC 2419 (Visit 20), the first epoch data were obtained in two filters (F606W and F814W) to make color magnitude diagrams

that reach well below the main sequence turn-off of our target GCs. The available broand-band colors and depth are sufficient for separating GC stars, foreground stars, and background galaxies to first order. For the second epoch, it is therefore sufficient to take data in only one of the two filters. We will observe the target GCs using the F606W filter (F814W filter for Pal 13) using the same pointing and orientation used for the first epoch data. For the NGC 2419 field, only F814W data exist in the archive, so we will also obtain F606W images just deep enough to provide photometry accurate to 3-10% level for the giant stars. These F606W exposures will be short and will be taken within the same orbits as for astrometry. Individal exposures will be sub-pixel dithered (via POS-TARG) using customized dither patterns to maximize the pixel phase coverage. For all but Pal 15, we will use our deeper second-epoch data to build high signal-to-noise and high resolution templates for the background galaxies. Therefore, the individual exposures of our second-epoch observations are typically longer than those of the first-epoch observations.

During our second epoch observations, the WFC3/UVIS (ACS/WFC for Pal 13) camera will be pointed ~6 arcmin away in the outer halo of each target GC. We will observe these parallel fields in F606W and F814W to construct color-magnitude diagrams and luminosity functions for the outer parts of the GCs. These data will be used to study mass segregations in our target GCs.

Visit

Proposal 14235, NGC6101 (01), completed Tue Feb 28 02:01:43 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 1.9122D TO 1.9122 D

Comments: This visit is for NGC 6101. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Diagnostics

(NGC6101 (01)) Warning (Orbit Planner): PARALLELS SIGNIFICANTLY EXTEND ALIGNMENT TIME

Fixed Targets

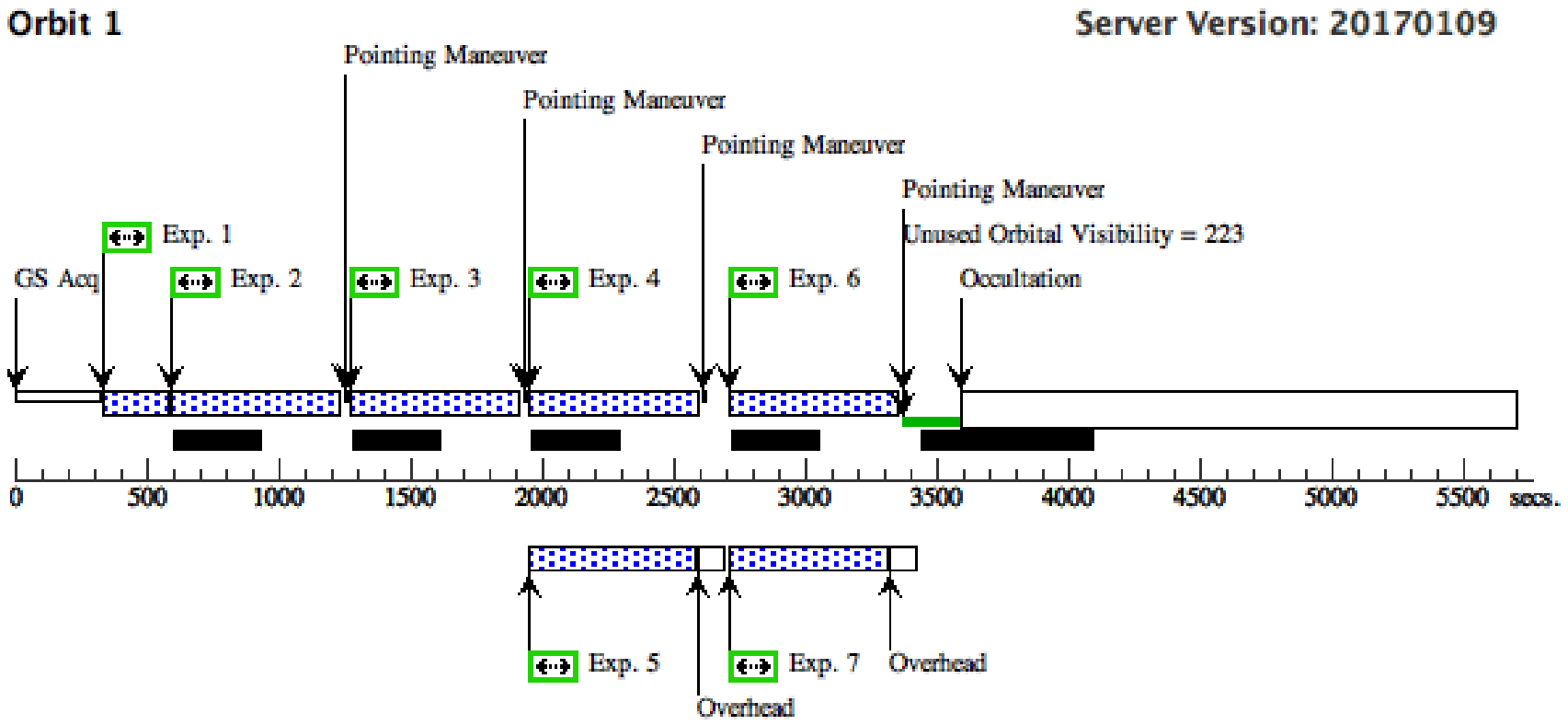
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC6101	RA: 16 25 50.6123 (246.4608846d) Dec: -72 11 56.43 (-72.19901d) Equinox: J2000		V=9.16	Reference Frame: ICRS

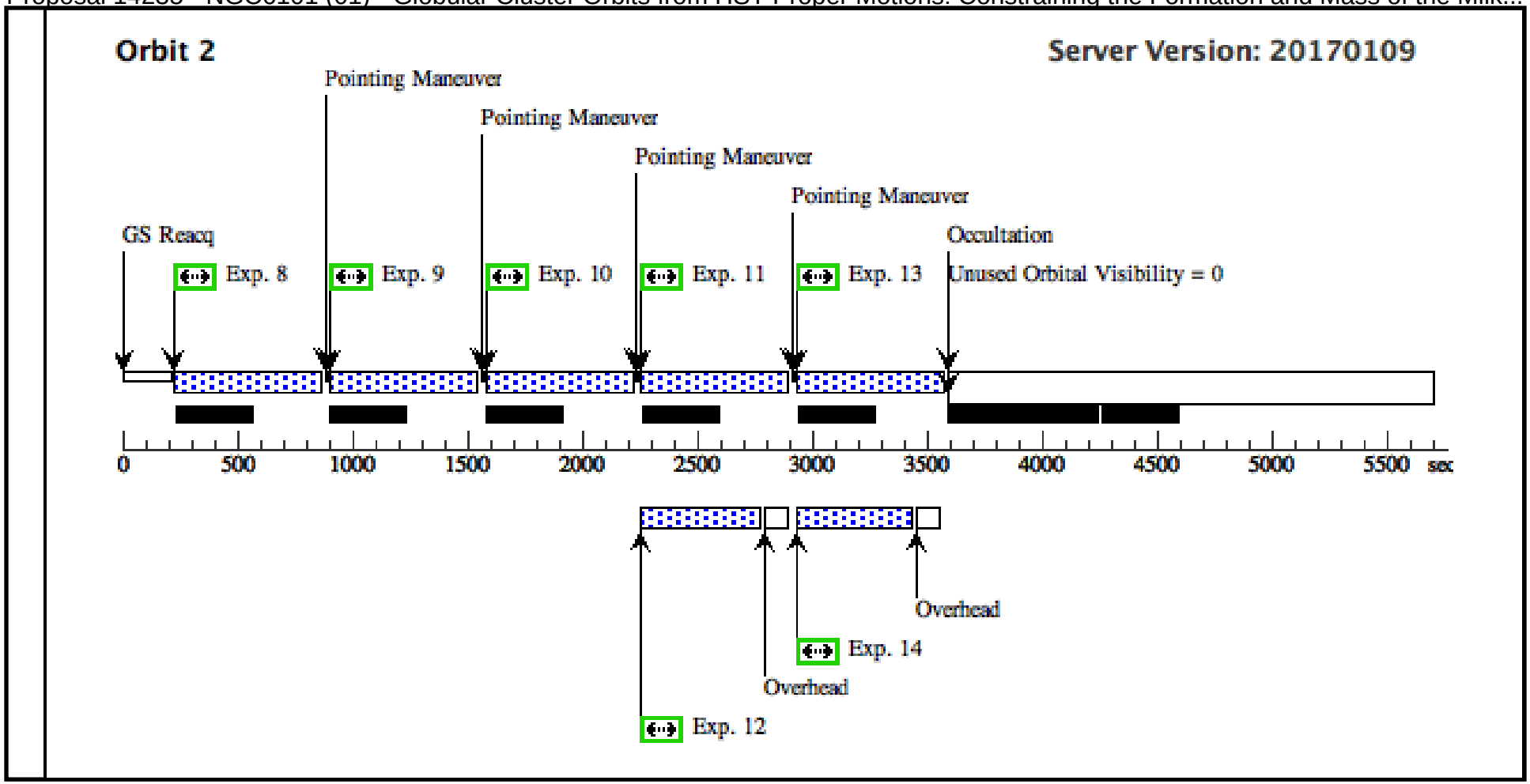
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-7 Non-In t in NGC6101 (01)	40 Secs (40 Secs) *[==>]*	*[1]*
2		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-7 Non-In t in NGC6101 (01)	520 Secs (520 Secs) *[==>]*	*[1]*
3		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2141,0 .0161	Sequence 1-7 Non-In t in NGC6101 (01)	520 Secs (520 Secs) *[==>]*	*[1]*
4		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4281,0 .0322	Sequence 1-7 Non-In t in NGC6101 (01) Prime + Parallel Gro up 4-5 in Sequence 1 -7 Non-Int in NGC6 101 (01)	520 Secs (520 Secs) *[==>]*	*[1]*
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 1-7 Non-In t in NGC6101 (01) Prime + Parallel Gro up 4-5 in Sequence 1 -7 Non-Int in NGC6 101 (01)	600 Secs (600 Secs) *[==>]*	*[1]*
6		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0504,0 .2183	Sequence 1-7 Non-In t in NGC6101 (01) Prime + Parallel Gro up 6-7 in Sequence 1 -7 Non-Int in NGC6 101 (01)	520 Secs (520 Secs) *[==>]*	*[1]*
7		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 1-7 Non-In t in NGC6101 (01) Prime + Parallel Gro up 6-7 in Sequence 1 -7 Non-Int in NGC6 101 (01)	600 Secs (600 Secs) *[==>]*	*[1]*
8		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2644,0 .2344	Sequence 8-14 Non-I nt in NGC6101 (01)	521 Secs (521 Secs) *[==>]*	*[2]*
9		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4784,0 .2505	Sequence 8-14 Non-I nt in NGC6101 (01)	521 Secs (521 Secs) *[==>]*	*[2]*
10		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1008,0 .4366	Sequence 8-14 Non-I nt in NGC6101 (01)	521 Secs (521 Secs) *[==>]*	*[2]*
11		(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3148,0 .4527	Sequence 8-14 Non-I nt in NGC6101 (01) Prime + Parallel Gro up 11-12 in Sequenc e 8-14 Non-Int in N GC6101 (01)	521 Secs (521 Secs) *[==>]*	*[2]*
12		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 8-14 Non-I nt in NGC6101 (01) Prime + Parallel Gro up 11-12 in Sequenc e 8-14 Non-Int in N GC6101 (01)	500 Secs (500 Secs) *[==>]*	*[2]*

	13	(1) NGC6101	ACS/WFC, ACCUM, WFCENTER	F606W	POS TARG 0.5288,0 .4688	Sequence 8-14 Non-Int in NGC6101 (01) Prime + Parallel Group 13-14 in Sequence 8-14 Non-Int in NGC6101 (01)	520 Secs (520 Secs) *[==>]*	***[2]***
	14	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W		Sequence 8-14 Non-Int in NGC6101 (01) Prime + Parallel Group 13-14 in Sequence 8-14 Non-Int in NGC6101 (01)	500 Secs (500 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Occultation
Exp. 8
Exp. 9
Exp. 10
Exp. 11
Exp. 13
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Overhead
Exp. 14
Overhead
Exp. 12

Visit

Proposal 14235, NGC6934 (02), completed Tue Feb 28 02:01:43 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 269.6105D TO 269.6105 D

Comments: This visit is for NGC 6934. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

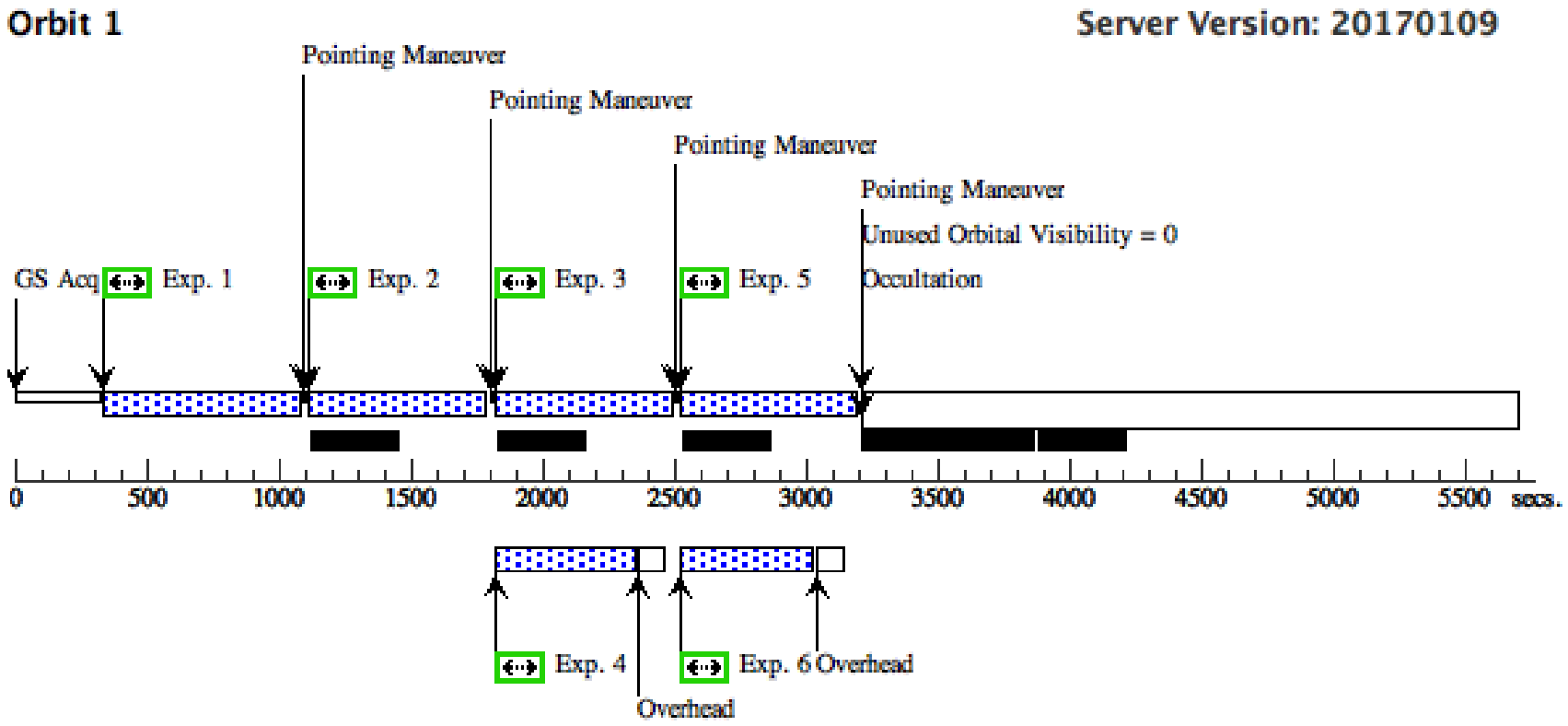
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC6934	RA: 20 34 12.1639 (308.5506829d) Dec: +07 24 7.41 (7.40206d) Equinox: J2000		V=8.83	Reference Frame: ICRS

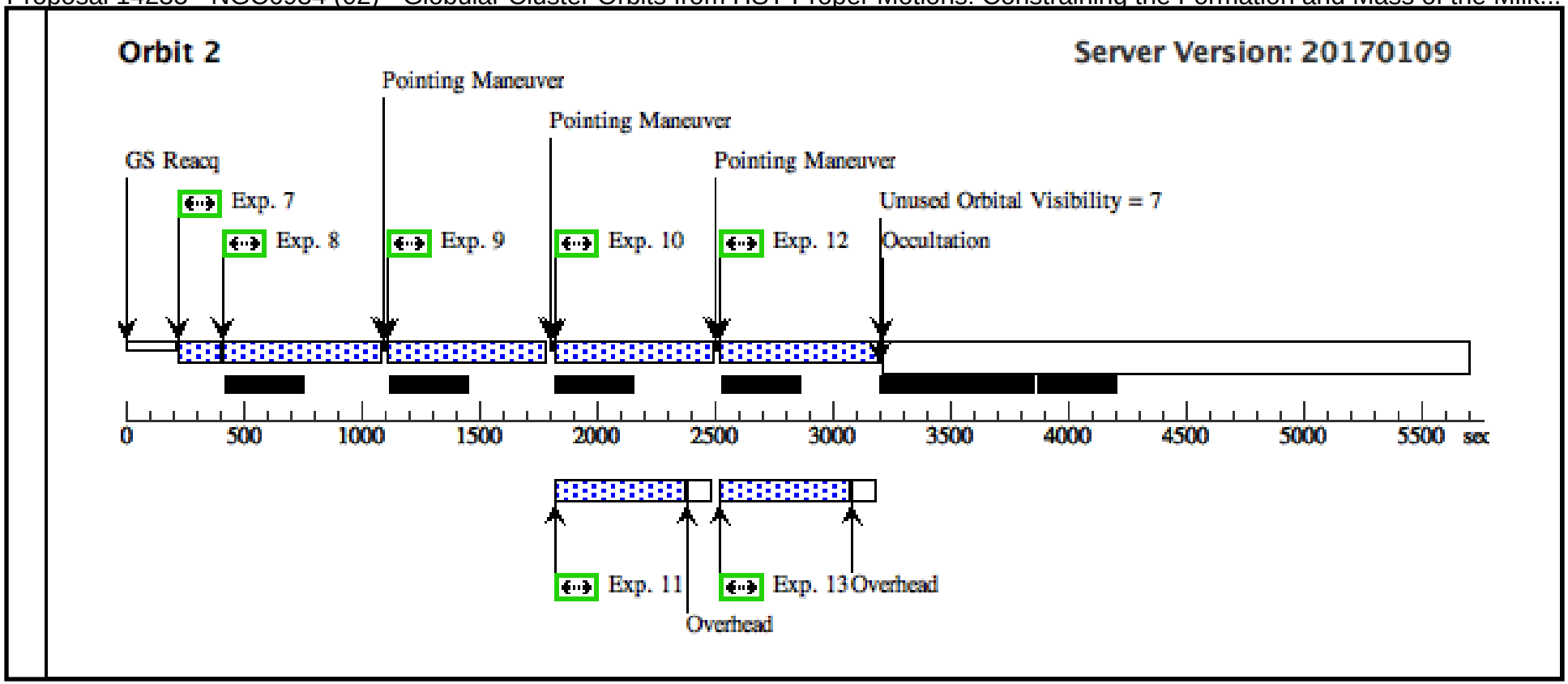
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC6934 (02)	546 Secs (546 Secs) *[==>]*	 ***[1]***
2		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC6934 (02)	546 Secs (546 Secs) *[==>]*	 ***[1]***
3		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC6934 (02) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC6 934 (02)	547 Secs (547 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 1-6 Non-In t in NGC6934 (02) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC6 934 (02)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC6934 (02) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC6 934 (02)	547 Secs (547 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 1-6 Non-In t in NGC6934 (02) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC6 934 (02)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC6934 (02)	50 Secs (50 Secs) *[==>]*	 ***[2]***
8		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC6934 (02)	545 Secs (545 Secs) *[==>]*	 ***[2]***
9		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC6934 (02)	545 Secs (545 Secs) *[==>]*	 ***[2]***
10		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC6934 (02) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC6934 (02)	545 Secs (545 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC6934 (02) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC6934 (02)	550 Secs (550 Secs) *[==>]*	 ***[2]***
12		(2) NGC6934	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC6934 (02) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC6934 (02)	545 Secs (545 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC6934 (02) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC6934 (02)	550 Secs (550 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 7
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, NGC6426 (03), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 114.6724D TO 114.6724 D

Comments: This visit is for NGC 6426. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11586. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

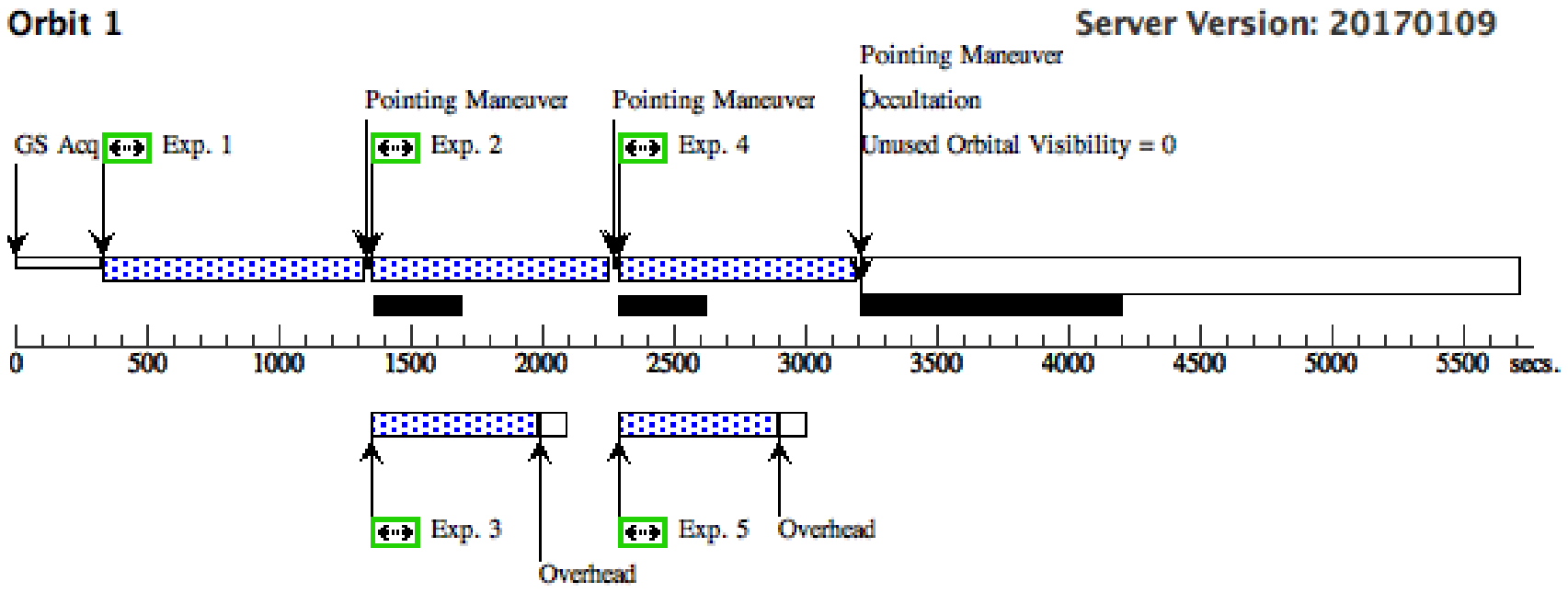
Fixed Targets

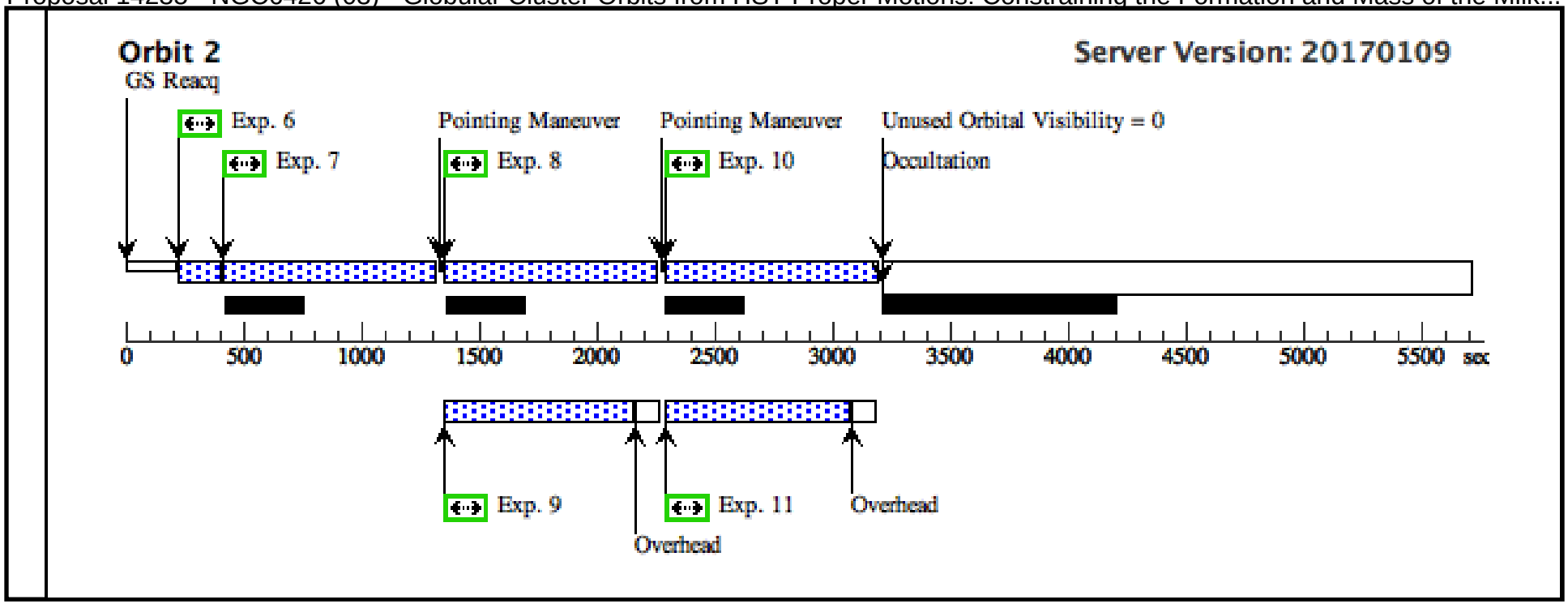
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	NGC6426	RA: 17 44 54.8464 (266.2285267d) Dec: +03 10 7.79 (3.16883d) Equinox: J2000		V=11.01	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in NGC6426 (03)	780 Secs (780 Secs) *[==>]*	 ***[1]***
2		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in NGC6426 (03) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC6426 (03)	780 Secs (780 Secs) *[==>]*	 ***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in NGC6426 (03) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC6426 (03)	600 Secs (600 Secs) *[==>]*	 ***[1]***
4		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in NGC6426 (03) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC6426 (03)	781 Secs (781 Secs) *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in NGC6426 (03) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC6426 (03)	600 Secs (600 Secs) *[==>]*	 ***[1]***
6		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in NGC6426 (03)	50 Secs (50 Secs) *[==>]*	 ***[2]***
7		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in NGC6426 (03)	780 Secs (780 Secs) *[==>]*	 ***[2]***
8		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2393,0.1418	Sequence 6-11 Non-Int in NGC6426 (03) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in NGC6426 (03)	781 Secs (781 Secs) *[==>]*	 ***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in NGC6426 (03) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in NGC6426 (03)	780 Secs (780 Secs) *[==>]*	 ***[2]***
10		(3) NGC6426	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4039,0.1541	Sequence 6-11 Non-Int in NGC6426 (03) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in NGC6426 (03)	781 Secs (781 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in NGC6426 (03) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in NGC6426 (03)	780 Secs (780 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
GS Reacq
Exp. 6
Exp. 7
Pointing Maneuver
Exp. 8
Pointing Maneuver
Exp. 10
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 9
Overhead
Exp. 11
Overhead

Visit

Proposal 14235, IC4499 (04), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 55.9624D TO 55.9624 D

Comments: This visit is for IC 4499. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

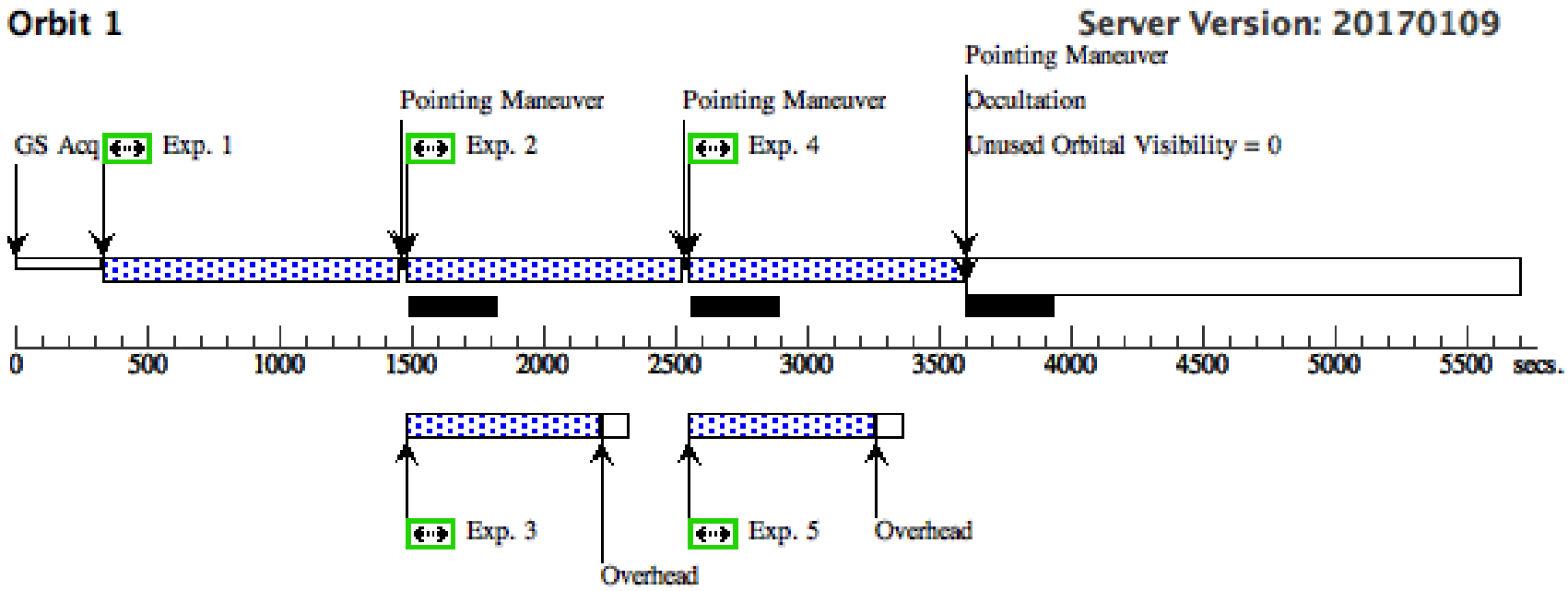
Fixed Targets

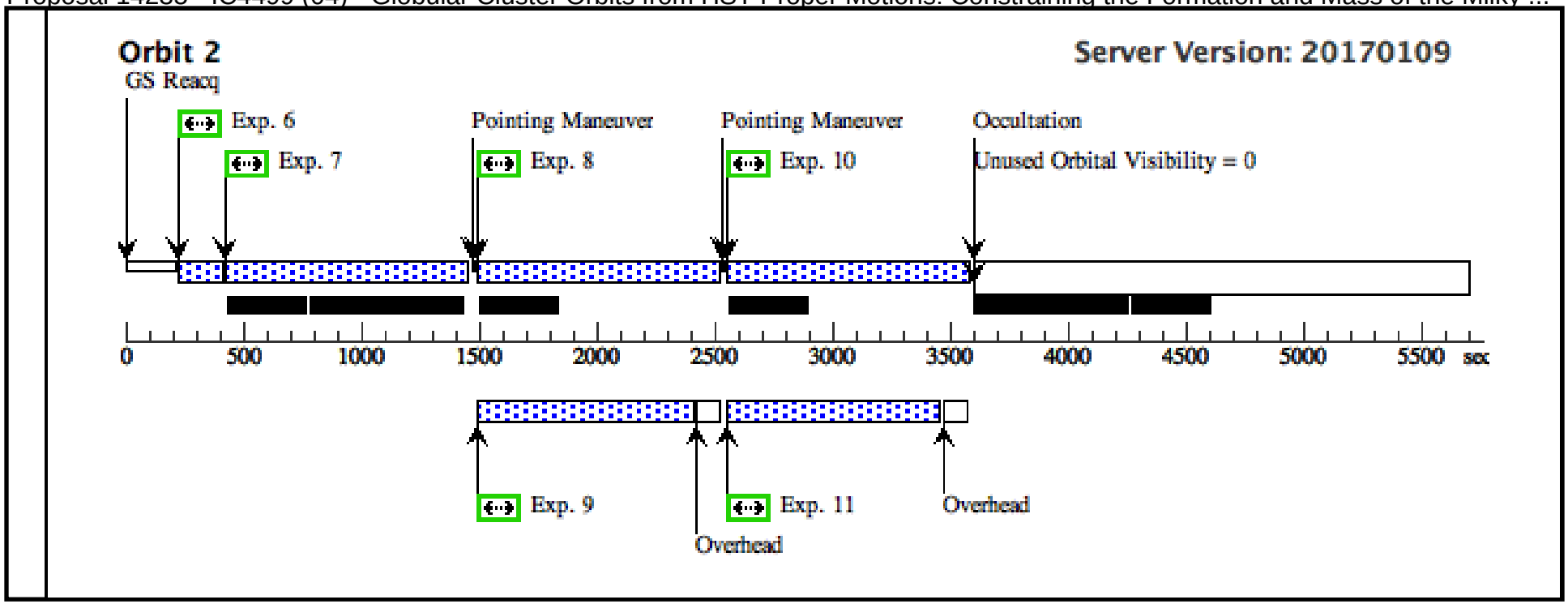
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	IC4499	RA: 15 00 13.3269 (225.0555288d) Dec: -82 12 50.10 (-82.21392d) Equinox: J2000		V=9.76	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in IC4499 (04)	911 Secs (911 Secs) *[==>]*	 ***[1]***
2		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in IC4499 (04) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in IC4499 (04)	912 Secs (912 Secs) *[==>]*	 ***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in IC4499 (04) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in IC4499 (04)	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in IC4499 (04) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in IC4499 (04)	912 Secs (912 Secs) *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in IC4499 (04) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in IC4499 (04)	700 Secs (700 Secs) *[==>]*	 ***[1]***
6		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in IC4499 (04)	65 Secs (65 Secs) *[==>]*	 ***[2]***
7		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in IC4499 (04)	907 Secs (907 Secs) *[==>]*	 ***[2]***
8		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2393,0.1418	Sequence 6-11 Non-Int in IC4499 (04) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in IC4499 (04)	907 Secs (907 Secs) *[==>]*	 ***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in IC4499 (04) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in IC4499 (04)	900 Secs (900 Secs) *[==>]*	 ***[2]***
10		(4) IC4499	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4039,0.1541	Sequence 6-11 Non-Int in IC4499 (04) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in IC4499 (04)	907 Secs (907 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in IC4499 (04) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in IC4499 (04)	900 Secs (900 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
GS Reacq
Exp. 6
Exp. 7
Pointing Maneuver
Exp. 8
Pointing Maneuver
Exp. 10
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 9
Overhead
Exp. 11
Overhead

Visit

Proposal 14235, NGC2298 (05), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 157.8720D TO 157.8720 D

Comments: This visit is for NGC 2298. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

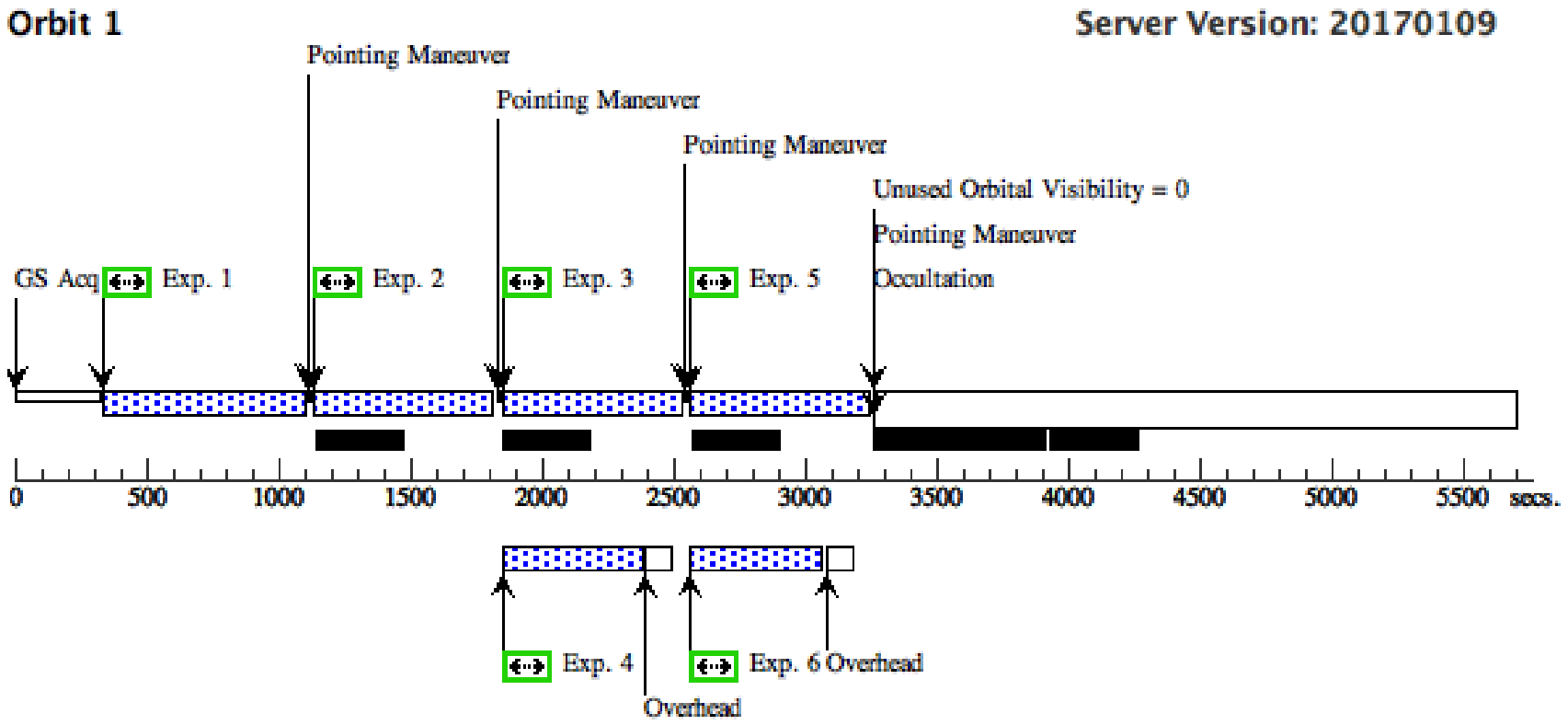
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC2298	RA: 06 48 58.7286 (102.2447025d) Dec: -36 00 27.49 (-36.00764d) Equinox: J2000		V=9.29	Reference Frame: ICRS

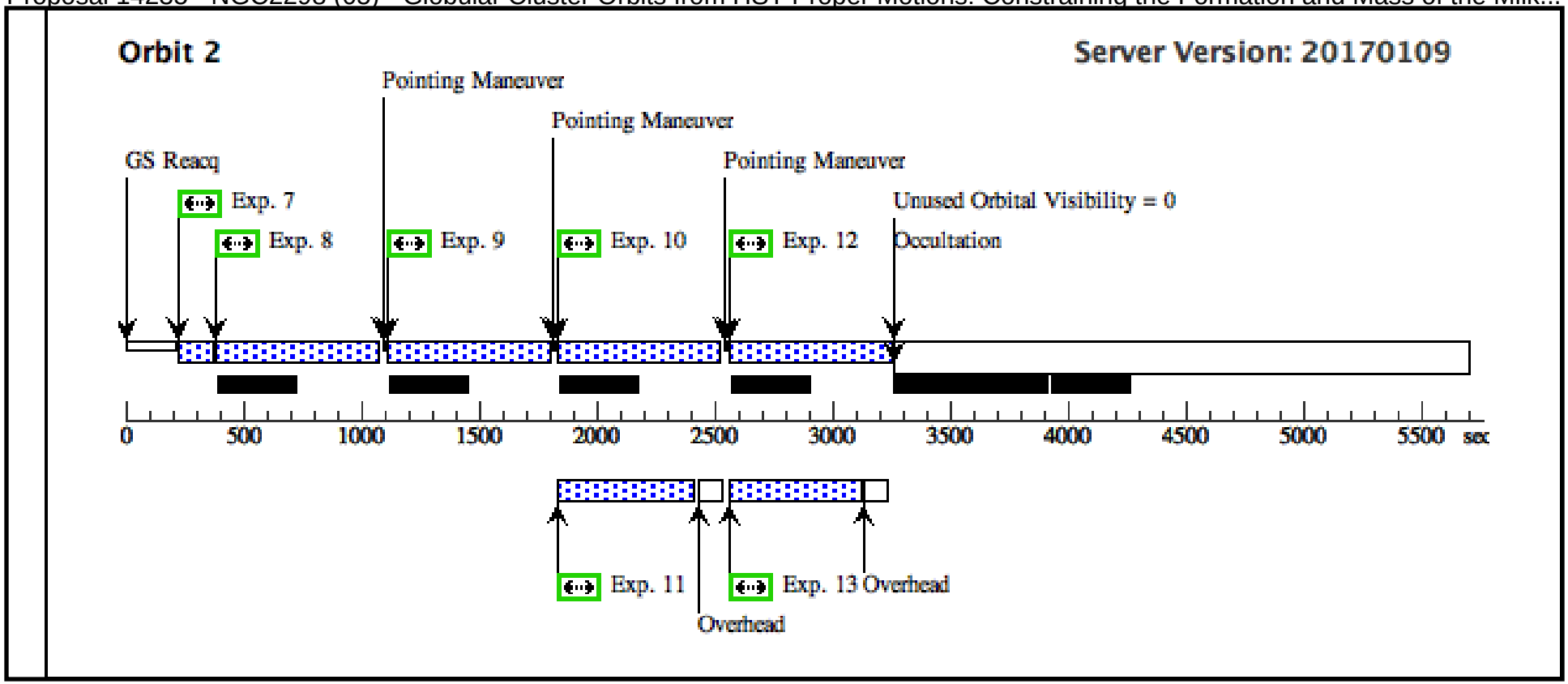
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC2298 (05)	560 Secs (560 Secs) *[==>]*	 ***[1]***
2		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC2298 (05)	560 Secs (560 Secs) *[==>]*	 ***[1]***
3		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC2298 (05) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC2 298 (05)	560 Secs (560 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC2298 (05) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC2 298 (05)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC2298 (05) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC2 298 (05)	560 Secs (560 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC2298 (05) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC2 298 (05)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC2298 (05)	25 Secs (25 Secs) *[==>]*	 ***[2]***
8		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC2298 (05)	566 Secs (566 Secs) *[==>]*	 ***[2]***
9		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC2298 (05)	566 Secs (566 Secs) *[==>]*	 ***[2]***
10		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC2298 (05) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC2298 (05)	567 Secs (567 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC2298 (05) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC2298 (05)	560 Secs (560 Secs) *[==>]*	 ***[2]***
12		(5) NGC2298	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC2298 (05) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC2298 (05)	567 Secs (567 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC2298 (05) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC2298 (05)	560 Secs (560 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, PAL12 (06), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 243.6991D TO 243.6991 D

Comments: This visit is for Pal 12. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

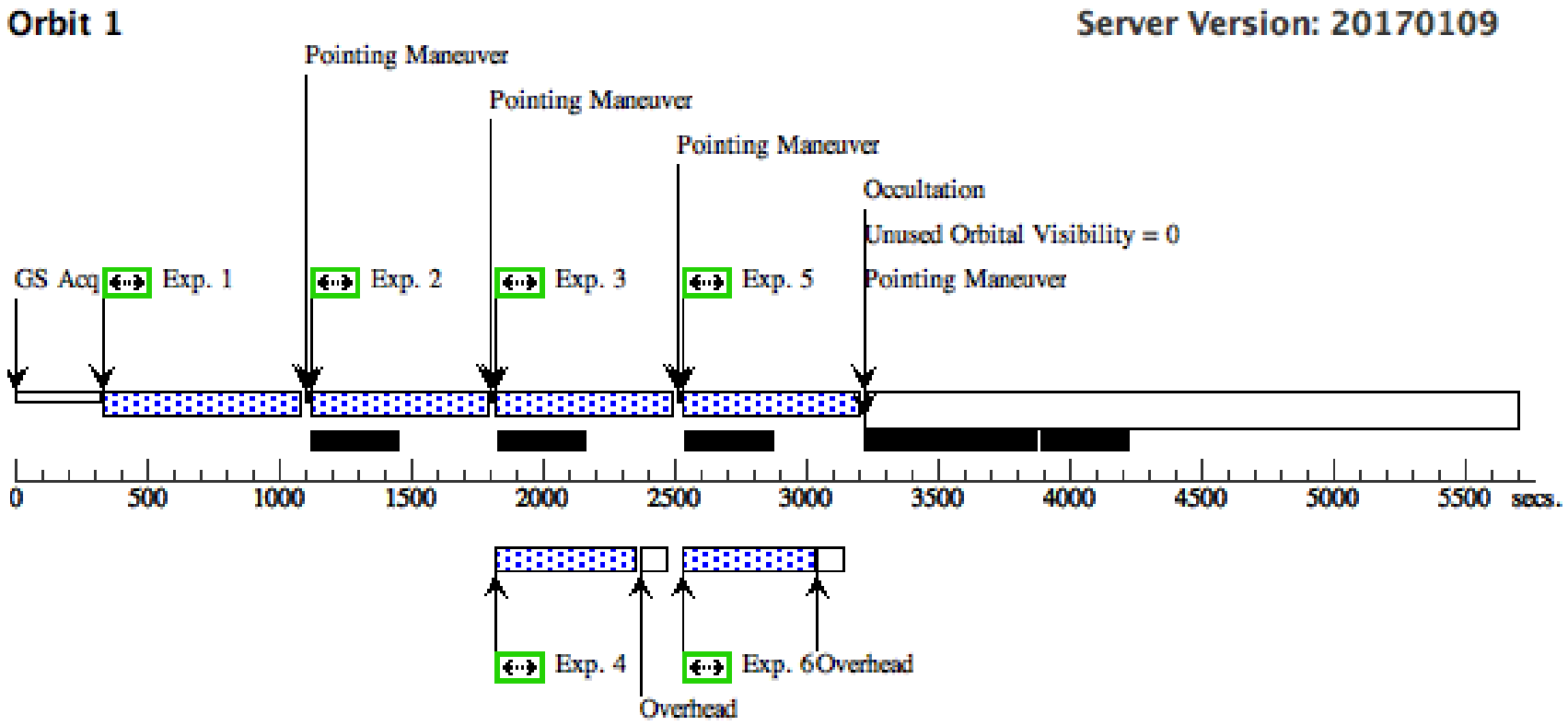
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	PAL12	RA: 21 46 39.1925 (326.6633021d) Dec: -21 14 58.96 (-21.24971d) Equinox: J2000		V=11.99	Reference Frame: ICRS

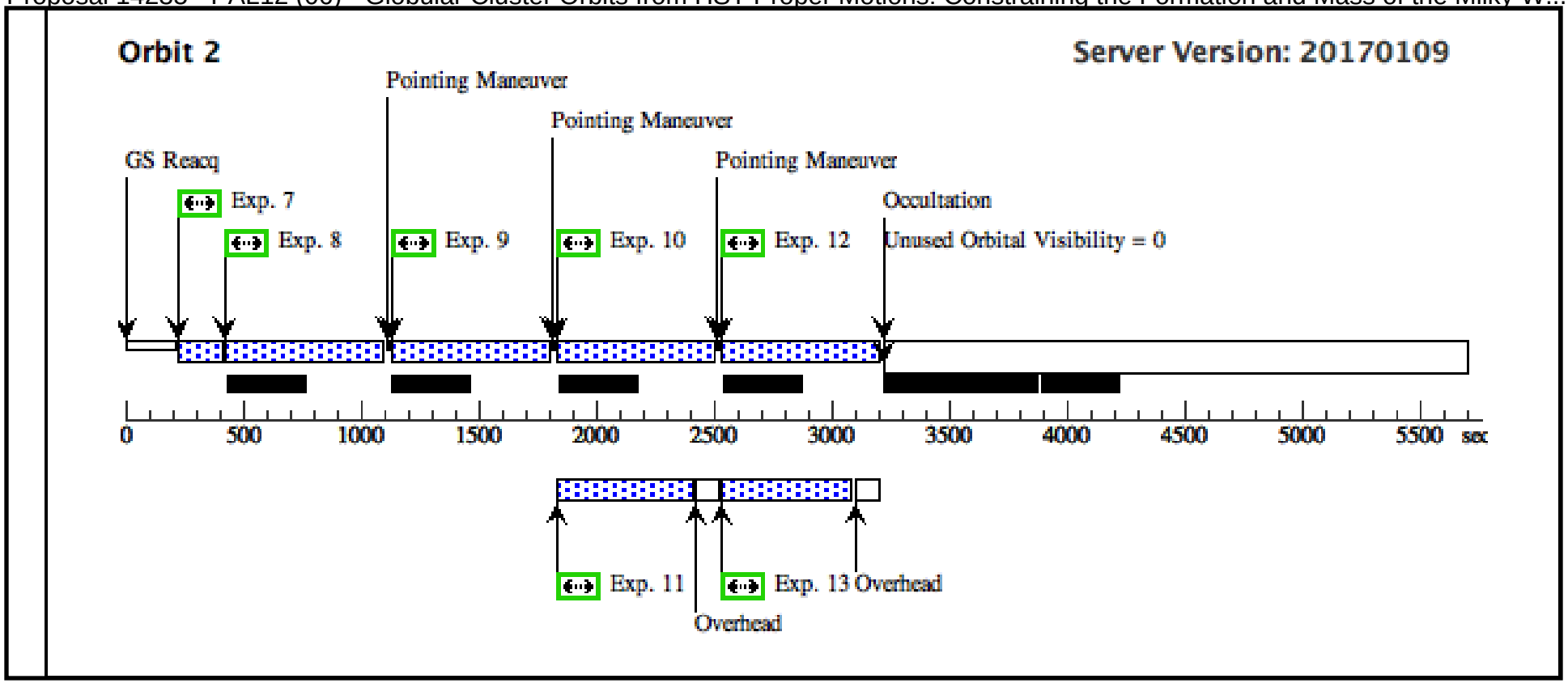
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-Int in PAL12 (06)	548 Secs (548 Secs) *[==>]*	 ***[1]***
2		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-Int in PAL12 (06)	549 Secs (549 Secs) *[==>]*	 ***[1]***
3		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-Int in PAL12 (06) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in PAL12 (06)	549 Secs (549 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-Int in PAL12 (06) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in PAL12 (06)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-Int in PAL12 (06) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in PAL12 (06)	549 Secs (549 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-Int in PAL12 (06) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in PAL12 (06)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-Int in PAL12 (06)	65 Secs (65 Secs) *[==>]*	 ***[2]***
8		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-Int in PAL12 (06)	544 Secs (544 Secs) *[==>]*	 ***[2]***
9		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-Int in PAL12 (06)	544 Secs (544 Secs) *[==>]*	 ***[2]***
10		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-Int in PAL12 (06) Prime + Parallel Group 10-11 in Sequence 7-13 Non-Int in PAL12 (06)	545 Secs (545 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-Int in PAL12 (06) Prime + Parallel Group 10-11 in Sequence 7-13 Non-Int in PAL12 (06)	555 Secs (555 Secs) *[==>]*	 ***[2]***
12		(6) PAL12	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-Int in PAL12 (06) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in PAL12 (06)	545 Secs (545 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in PAL12 (06) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in PAL12 (06)	555 Secs (555 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, TERZAN7 (07), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 279.9055D TO 279.9055 D

Comments: This visit is for Terzan 7. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

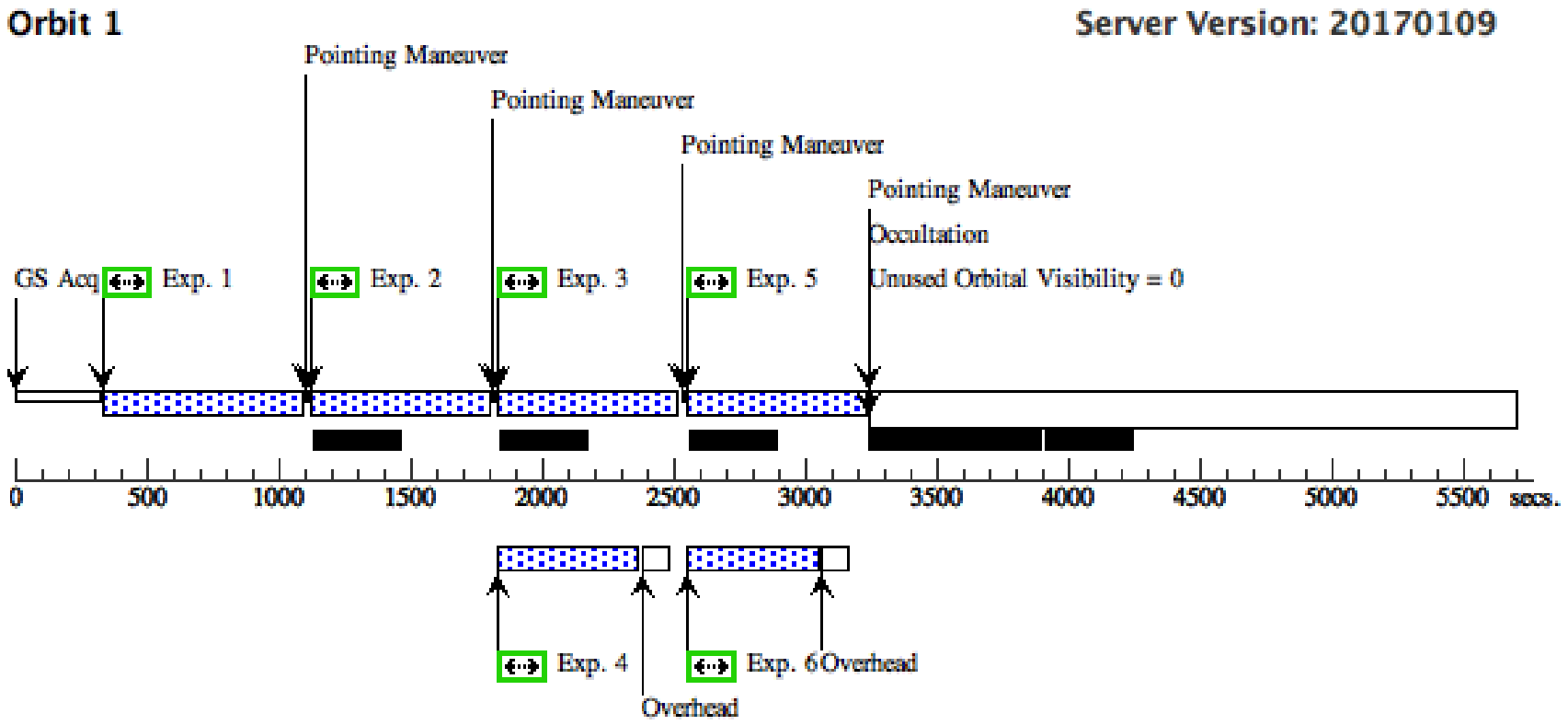
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	TERZAN7	RA: 19 17 43.4960 (289.4312333d) Dec: -34 39 21.98 (-34.65611d) Equinox: J2000		V=12.00	Reference Frame: ICRS

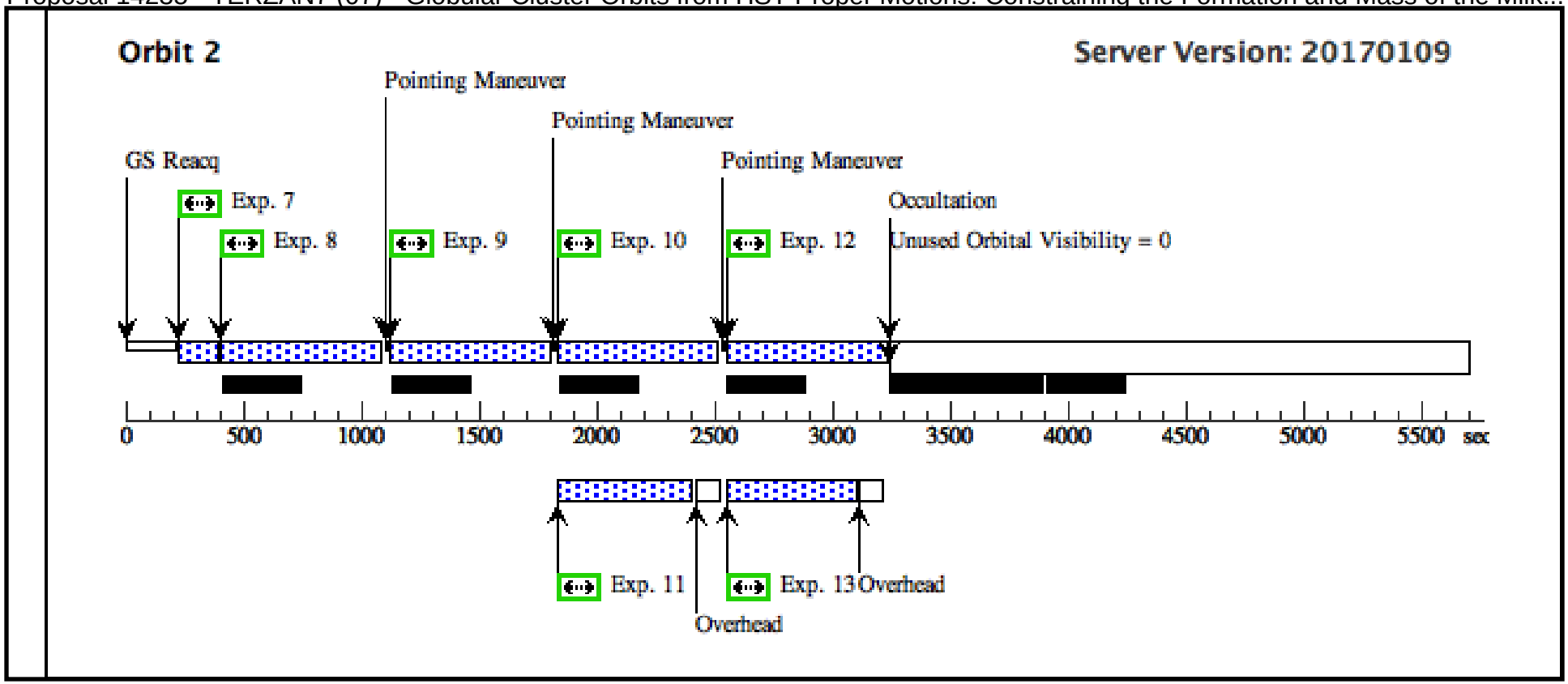
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in TERZAN7 (07)	554 Secs (554 Secs) *[==>]*	 ***[1]***
2		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in TERZAN7 (07)	554 Secs (554 Secs) *[==>]*	 ***[1]***
3		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in TERZAN7 (07) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in TERZ AN7 (07)	555 Secs (555 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in TERZAN7 (07) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in TERZ AN7 (07)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in TERZAN7 (07) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in TERZ AN7 (07)	555 Secs (555 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in TERZAN7 (07) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in TERZ AN7 (07)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in TERZAN7 (07)	45 Secs (45 Secs) *[==>]*	 ***[2]***
8		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in TERZAN7 (07)	556 Secs (556 Secs) *[==>]*	 ***[2]***
9		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in TERZAN7 (07)	556 Secs (556 Secs) *[==>]*	 ***[2]***
10		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in TERZAN7 (07) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in TE RZAN7 (07)	556 Secs (556 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in TERZAN7 (07) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in TE RZAN7 (07)	550 Secs (550 Secs) *[==>]*	 ***[2]***
12		(7) TERZAN7	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in TERZAN7 (07) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in TE RZAN7 (07)	556 Secs (556 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in TERZAN7 (07) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in TERZAN7 (07)	550 Secs (550 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 13
Overhead
Overhead

Visit

Proposal 14235, NGC5466 (08), scheduling Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: SCHED 50%; ORIENT 200.0690D TO 200.0690 D

Comments: This visit is for NGC 5466. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

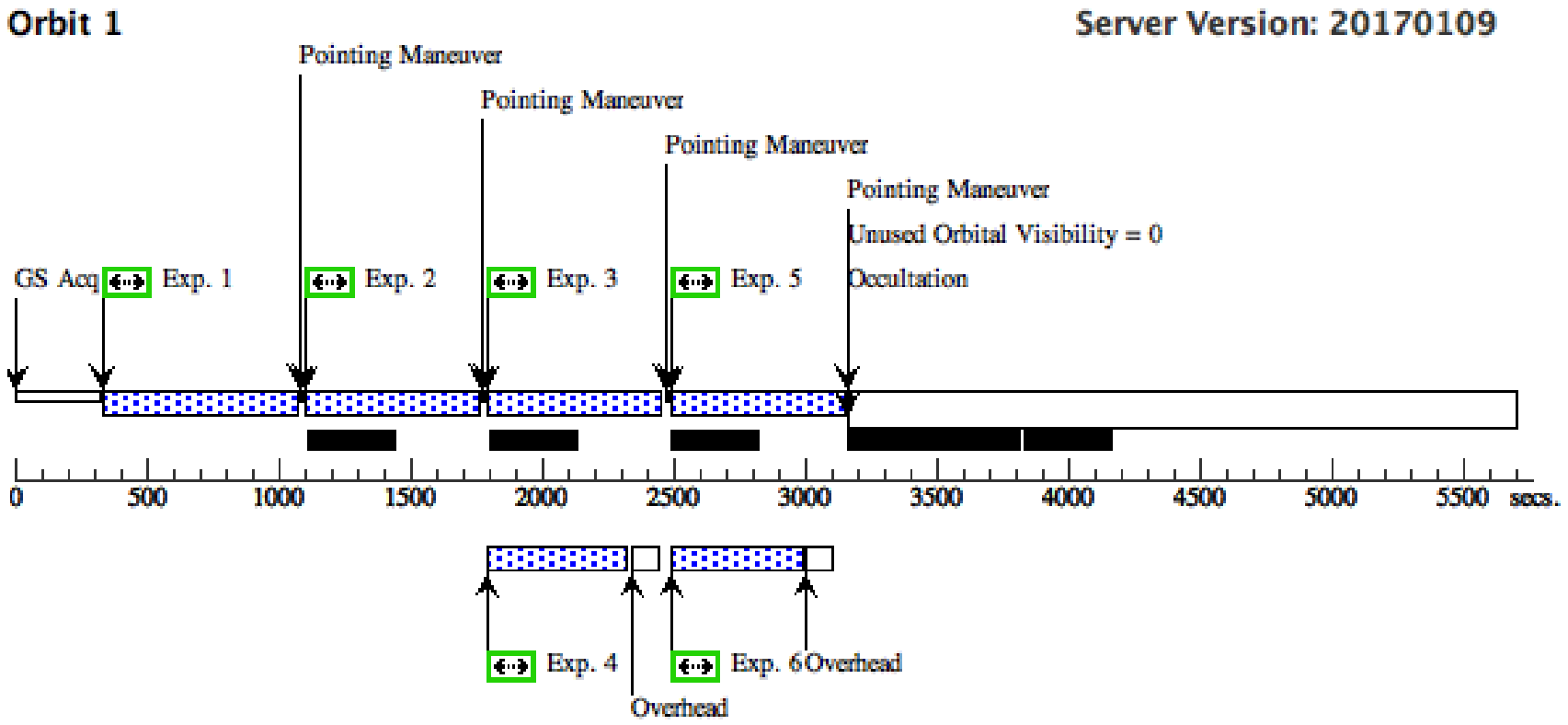
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	NGC5466	RA: 14 05 26.5748 (211.3607283d) Dec: +28 31 58.20 (28.53283d) Equinox: J2000		V=9.04	Reference Frame: ICRS

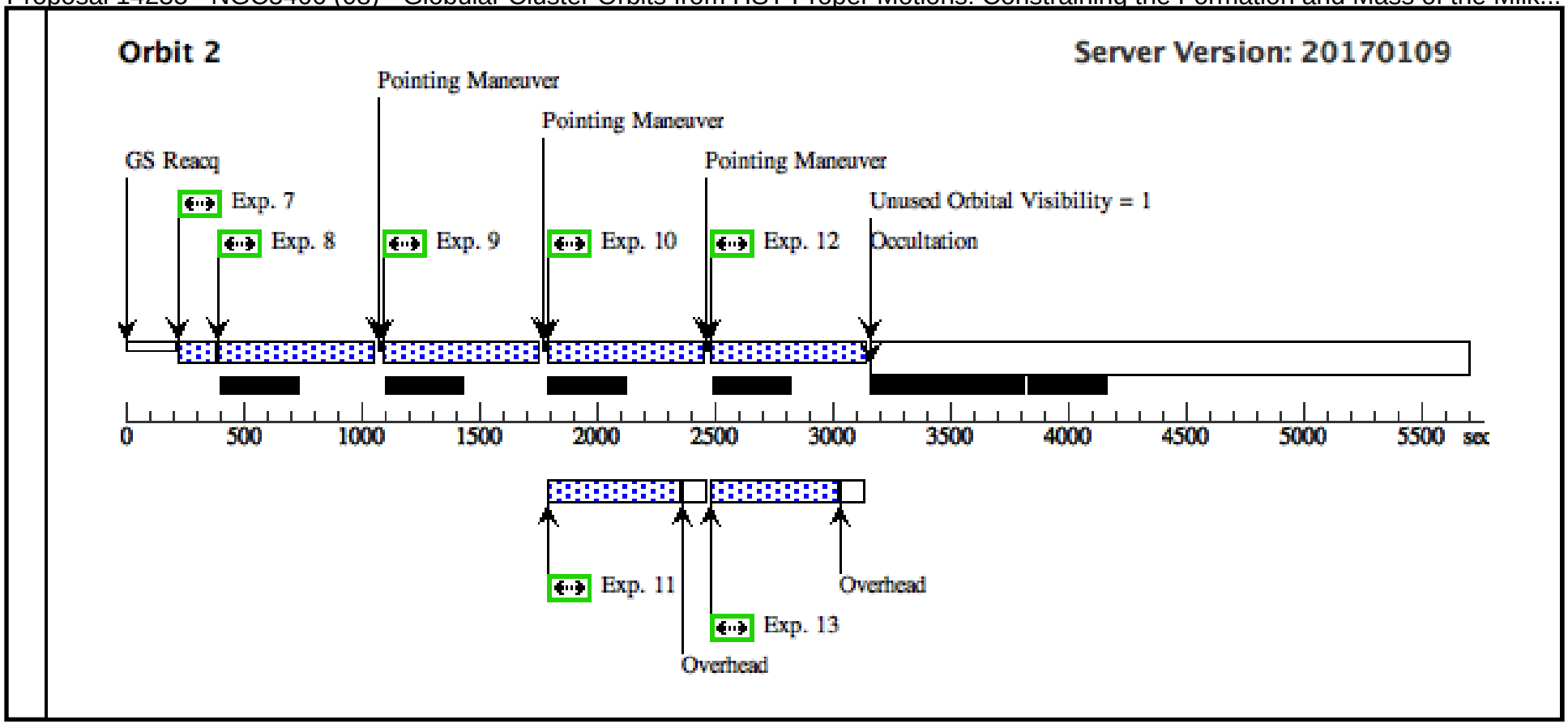
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC5466 (08)	534 Secs (534 Secs) *[==>]*	 ***[1]***
2		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC5466 (08)	534 Secs (534 Secs) *[==>]*	 ***[1]***
3		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC5466 (08) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 466 (08)	534 Secs (534 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5466 (08) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 466 (08)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC5466 (08) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 466 (08)	535 Secs (535 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5466 (08) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 466 (08)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5466 (08)	35 Secs (35 Secs) *[==>]*	 ***[2]***
8		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5466 (08)	538 Secs (538 Secs) *[==>]*	 ***[2]***
9		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC5466 (08)	538 Secs (538 Secs) *[==>]*	 ***[2]***
10		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC5466 (08) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5466 (08)	538 Secs (538 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC5466 (08) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5466 (08)	540 Secs (540 Secs) *[==>]*	 ***[2]***
12		(8) NGC5466	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC5466 (08) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC5466 (08)	538 Secs (538 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC5466 (08) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC5466 (08)	540 Secs (540 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, NGC5053 (09) Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 253.4090D TO 253.4090 D

Comments: This visit is for NGC 5053. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

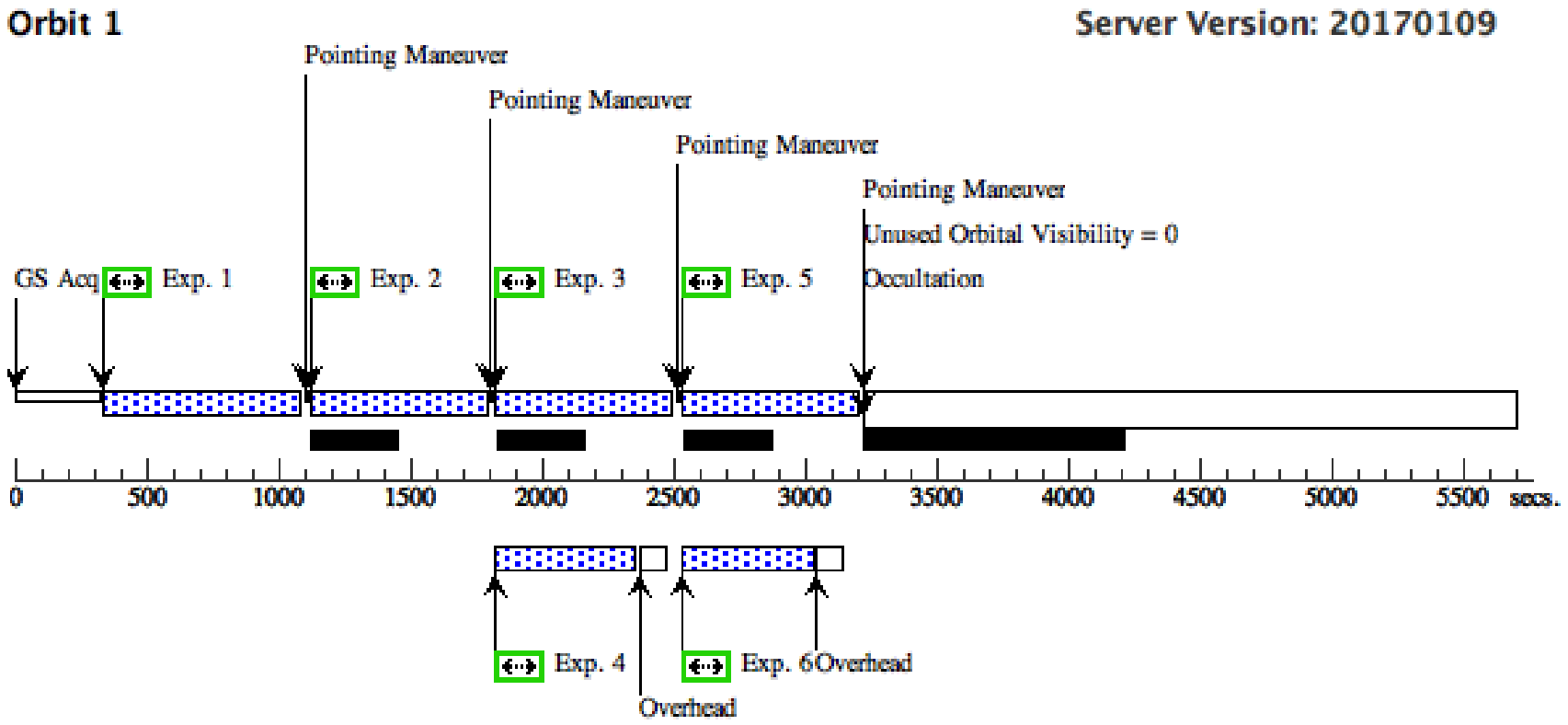
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	NGC5053	RA: 13 16 27.3585 (199.1139937d) Dec: +17 41 41.95 (17.69499d) Equinox: J2000		V=9.47	Reference Frame: ICRS

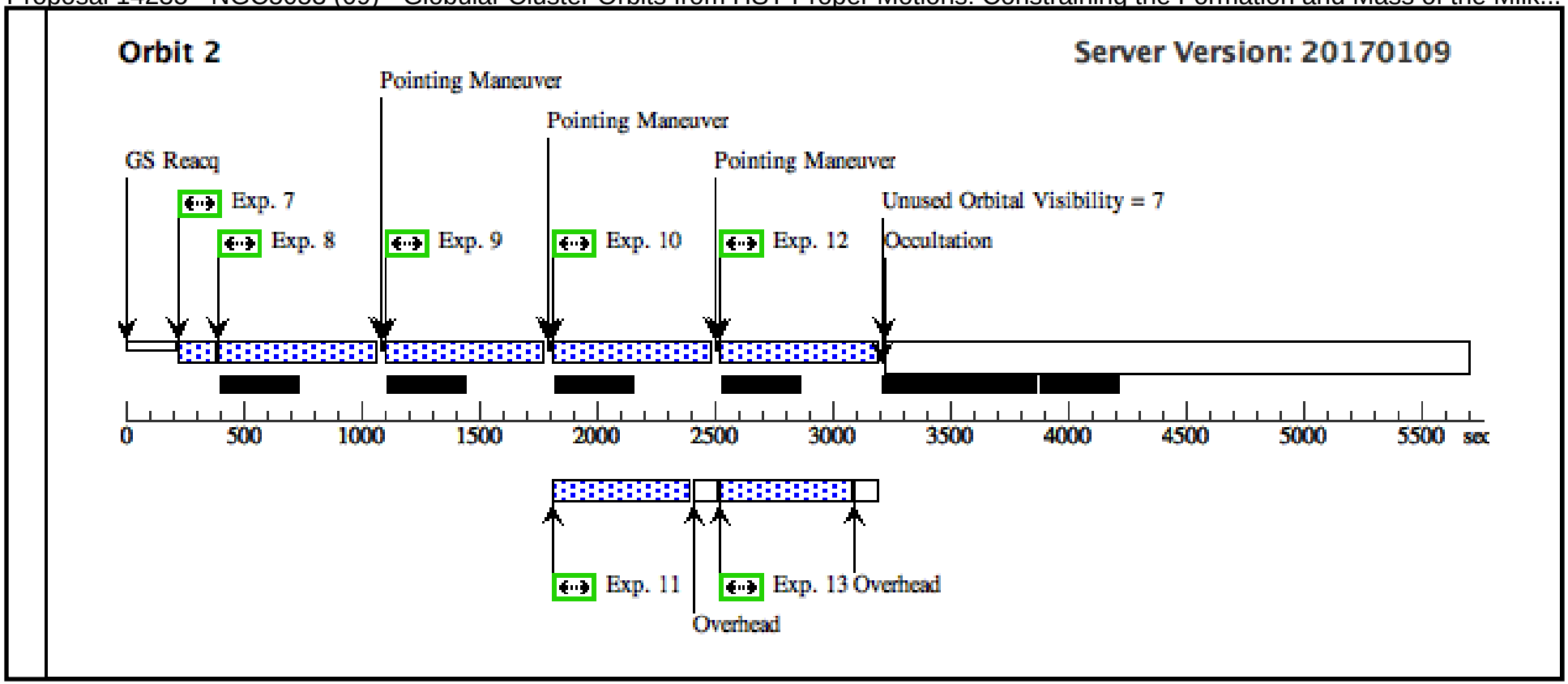
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC5053 (09)	548 Secs (548 Secs) *[==>]*	 ***[1]***
2		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC5053 (09)	548 Secs (548 Secs) *[==>]*	 ***[1]***
3		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC5053 (09) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 053 (09)	549 Secs (549 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5053 (09) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 053 (09)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC5053 (09) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 053 (09)	549 Secs (549 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5053 (09) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 053 (09)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5053 (09)	35 Secs (35 Secs) *[==>]*	 ***[2]***
8		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5053 (09)	550 Secs (550 Secs) *[==>]*	 ***[2]***
9		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC5053 (09)	550 Secs (550 Secs) *[==>]*	 ***[2]***
10		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC5053 (09) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5053 (09)	550 Secs (550 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC5053 (09) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5053 (09)	560 Secs (560 Secs) *[==>]*	 ***[2]***
12		(9) NGC5053	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC5053 (09) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC5053 (09)	550 Secs (550 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC5053 (09) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC5053 (09)	560 Secs (560 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 7
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, NGC1261 (10), scheduled Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 121.8D TO 121.9 D

Comments: This visit is for NGC 1261. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

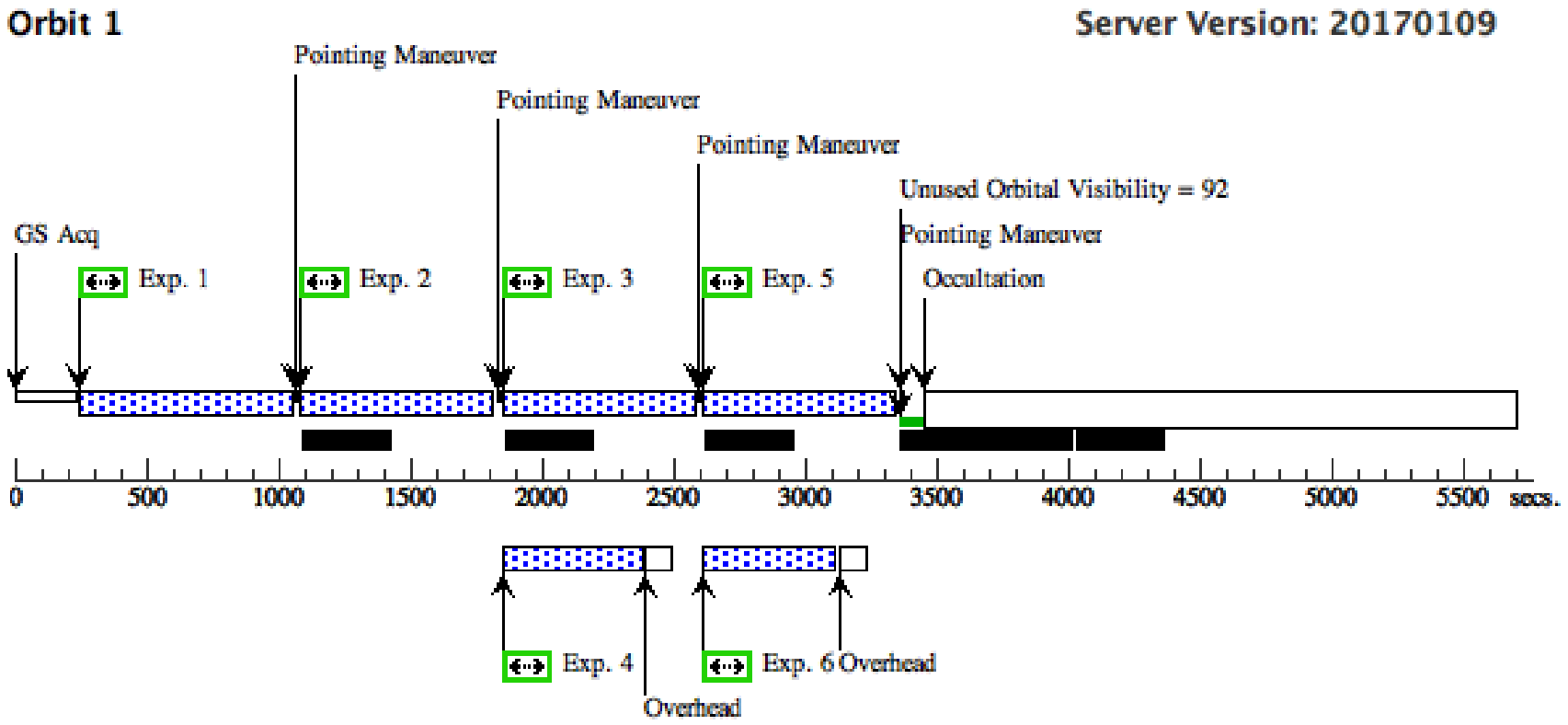
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	NGC1261	RA: 03 12 14.6201 (48.0609171d) Dec: -55 12 51.78 (-55.21438d) Equinox: J2000		V=8.29	Reference Frame: ICRS

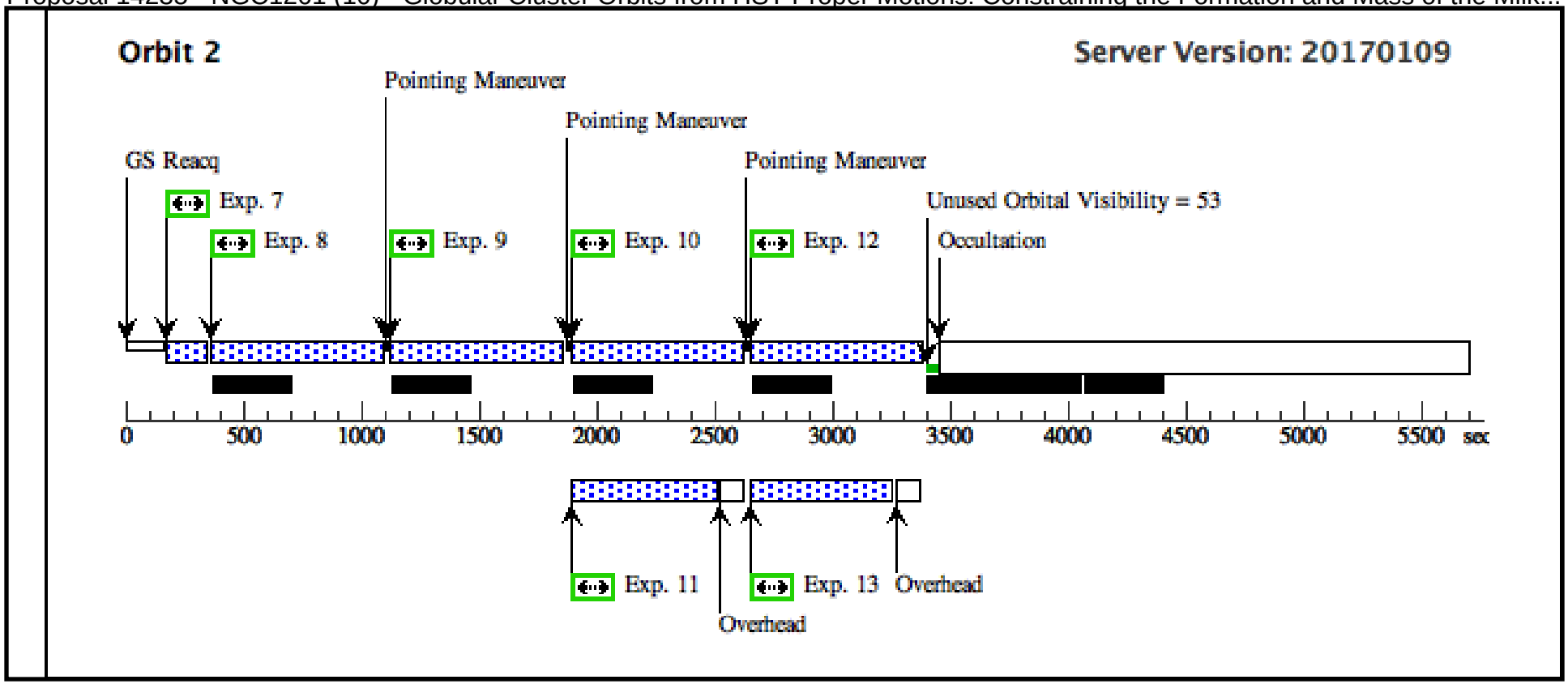
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000; GS ACQ SCENARIO SINGLE	Sequence 1-6 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[1]***
2		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0.2350	Sequence 1-6 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[1]***
3		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0.1235	Sequence 1-6 Non-Int in NGC1261 (10) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-Int in NGC1261 (10) Prime + Parallel Group 3-4 in Sequence 1-6 Non-Int in NGC1261 (10)	500 Secs (500 Secs) *[==>]*	***[1]***
5		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0.3305	Sequence 1-6 Non-Int in NGC1261 (10) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in NGC1261 (10)	608 Secs (608 Secs) *[==>]*	***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-Int in NGC1261 (10) Prime + Parallel Group 5-6 in Sequence 1-6 Non-Int in NGC1261 (10)	500 Secs (500 Secs) *[==>]*	***[1]***
7		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0.0505	Sequence 7-13 Non-Int in NGC1261 (10)	45 Secs (45 Secs) *[==>]*	***[2]***
8		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0.0505	Sequence 7-13 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[2]***
9		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0.2855	Sequence 7-13 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[2]***
10		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0.1735	Sequence 7-13 Non-Int in NGC1261 (10) Prime + Parallel Group 10-11 in Sequence 7-13 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-Int in NGC1261 (10) Prime + Parallel Group 10-11 in Sequence 7-13 Non-Int in NGC1261 (10)	600 Secs (600 Secs) *[==>]*	***[2]***
12		(10) NGC1261	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0.3810	Sequence 7-13 Non-Int in NGC1261 (10) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC1261 (10)	607 Secs (607 Secs) *[==>]*	***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC1261 (10) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC1261 (10)	600 Secs (600 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 53
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Overhead
Exp. 13
Overhead

Visit

Proposal 14235, NGC5024 (11), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 257.4668D TO 257.4668 D

Comments: This visit is for NGC 5024. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

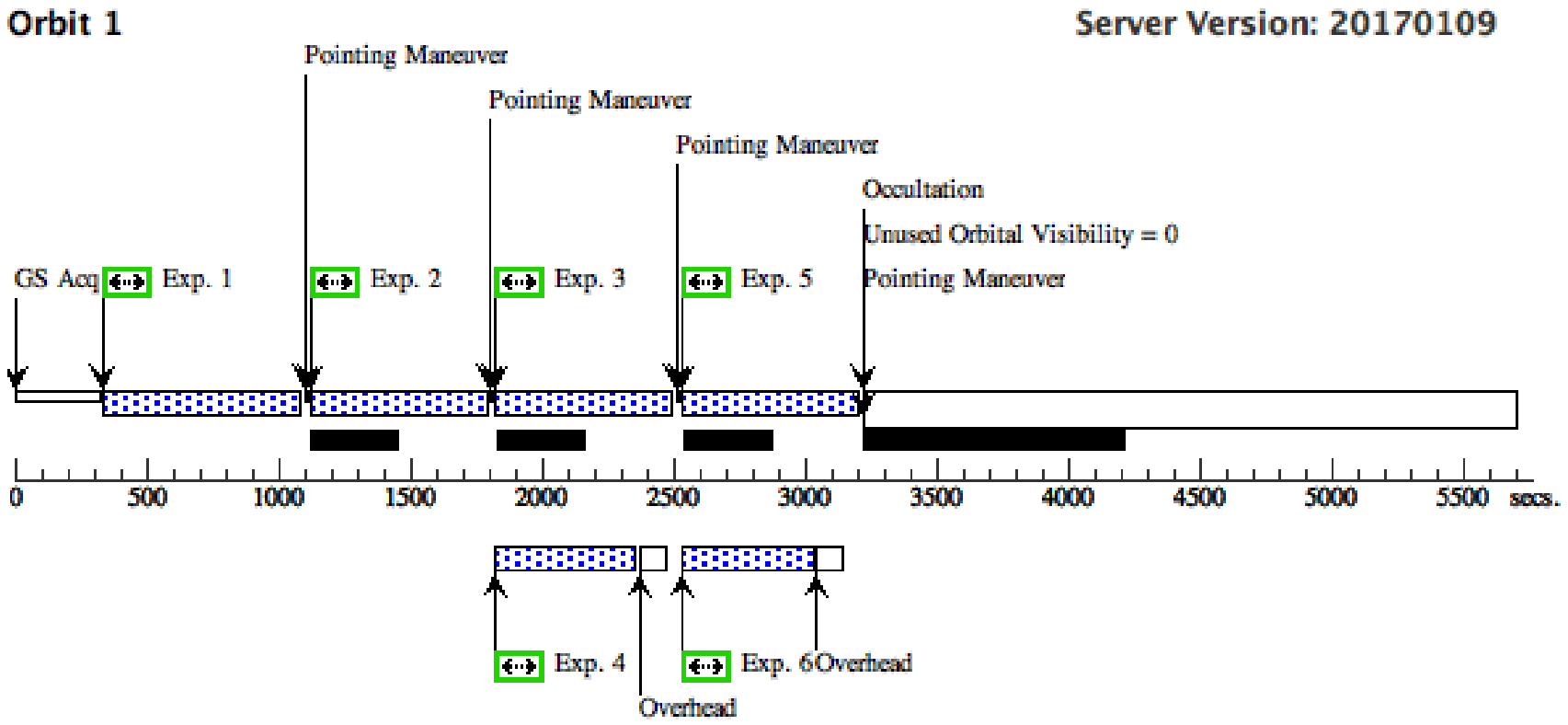
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	NGC5024	RA: 13 12 54.5161 (198.2271504d) Dec: +18 10 15.90 (18.17108d) Equinox: J2000		V=7.61	Reference Frame: ICRS

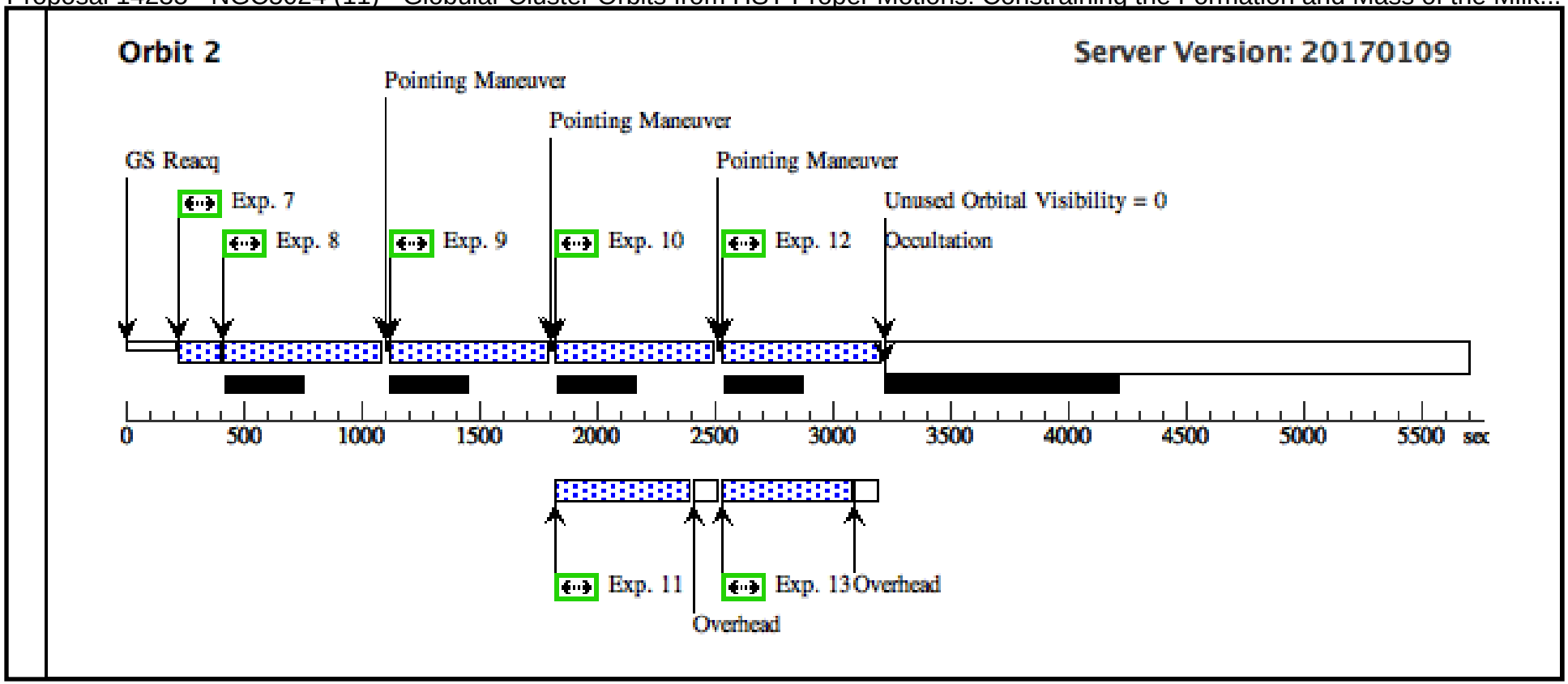
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC5024 (11)	548 Secs (548 Secs) *[==>]*	 ***[1]***
2		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC5024 (11)	548 Secs (548 Secs) *[==>]*	 ***[1]***
3		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC5024 (11) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 024 (11)	549 Secs (549 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5024 (11) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC5 024 (11)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC5024 (11) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 024 (11)	549 Secs (549 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC5024 (11) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC5 024 (11)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5024 (11)	50 Secs (50 Secs) *[==>]*	 ***[2]***
8		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC5024 (11)	548 Secs (548 Secs) *[==>]*	 ***[2]***
9		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC5024 (11)	549 Secs (549 Secs) *[==>]*	 ***[2]***
10		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC5024 (11) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5024 (11)	549 Secs (549 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC5024 (11) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC5024 (11)	550 Secs (550 Secs) *[==>]*	 ***[2]***
12		(11) NGC5024	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC5024 (11) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC5024 (11)	549 Secs (549 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC5024 (11) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC5024 (11)	550 Secs (550 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 13
Overhead
Overhead

Visit

Proposal 14235, RUP106 (12), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 107.3398D TO 107.3398 D

Comments: This visit is for Rup 106. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11586. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

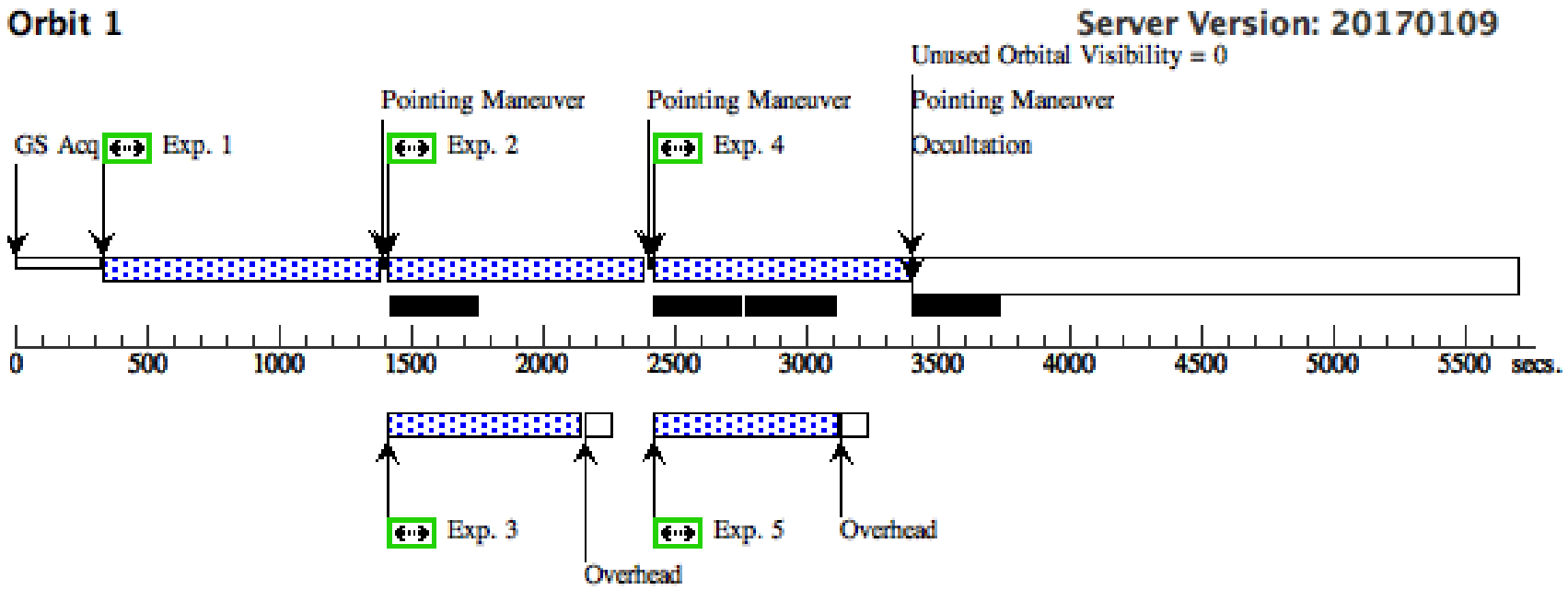
Fixed Targets

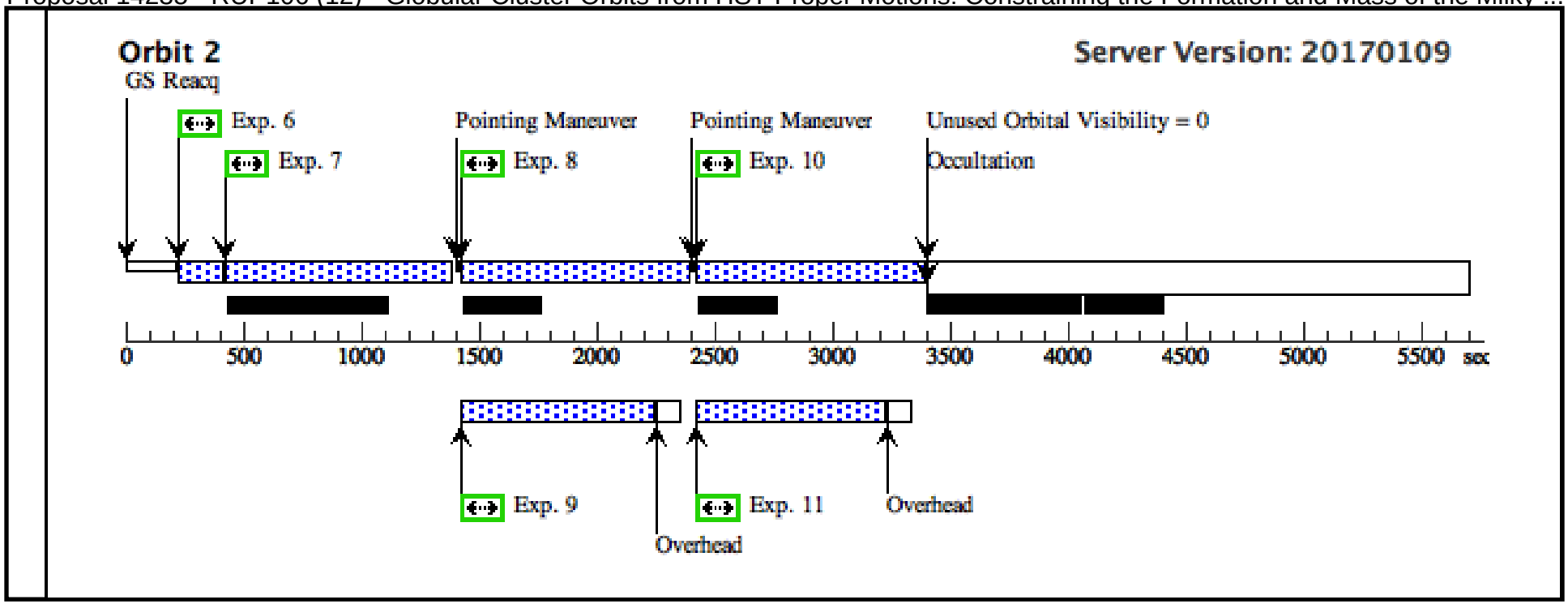
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	RUP106	RA: 12 38 39.5872 (189.6649467d) Dec: -51 08 51.95 (-51.14776d) Equinox: J2000		V=10.90	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in RUP106 (12)	844 Secs (844 Secs) *[==>]*	 ***[1]***
2		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in RUP106 (12) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in RUP106 (12)	845 Secs (845 Secs) *[==>]*	 ***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in RUP106 (12) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in RUP106 (12)	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in RUP106 (12) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in RUP106 (12)	845 Secs (845 Secs) *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in RUP106 (12) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in RUP106 (12)	700 Secs (700 Secs) *[==>]*	 ***[1]***
6		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in RUP106 (12)	60 Secs (60 Secs) *[==>]*	 ***[2]***
7		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in RUP106 (12)	841 Secs (841 Secs) *[==>]*	 ***[2]***
8		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2393,0.1418	Sequence 6-11 Non-Int in RUP106 (12) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in RUP106 (12)	842 Secs (842 Secs) *[==>]*	 ***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in RUP106 (12) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in RUP106 (12)	800 Secs (800 Secs) *[==>]*	 ***[2]***
10		(12) RUP106	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4039,0.1541	Sequence 6-11 Non-Int in RUP106 (12) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in RUP106 (12)	842 Secs (842 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in RUP106 (12) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in RUP106 (12)	800 Secs (800 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
GS Reacq
Exp. 6
Exp. 7
Pointing Maneuver
Exp. 8
Pointing Maneuver
Exp. 10
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 9
Overhead
Exp. 11
Overhead

Visit

Proposal 14235, TERZAN8 (13), completed Tue Feb 28 02:01:44 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 275.0120D TO 275.0120 D

Comments: This visit is for Terzan 8. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

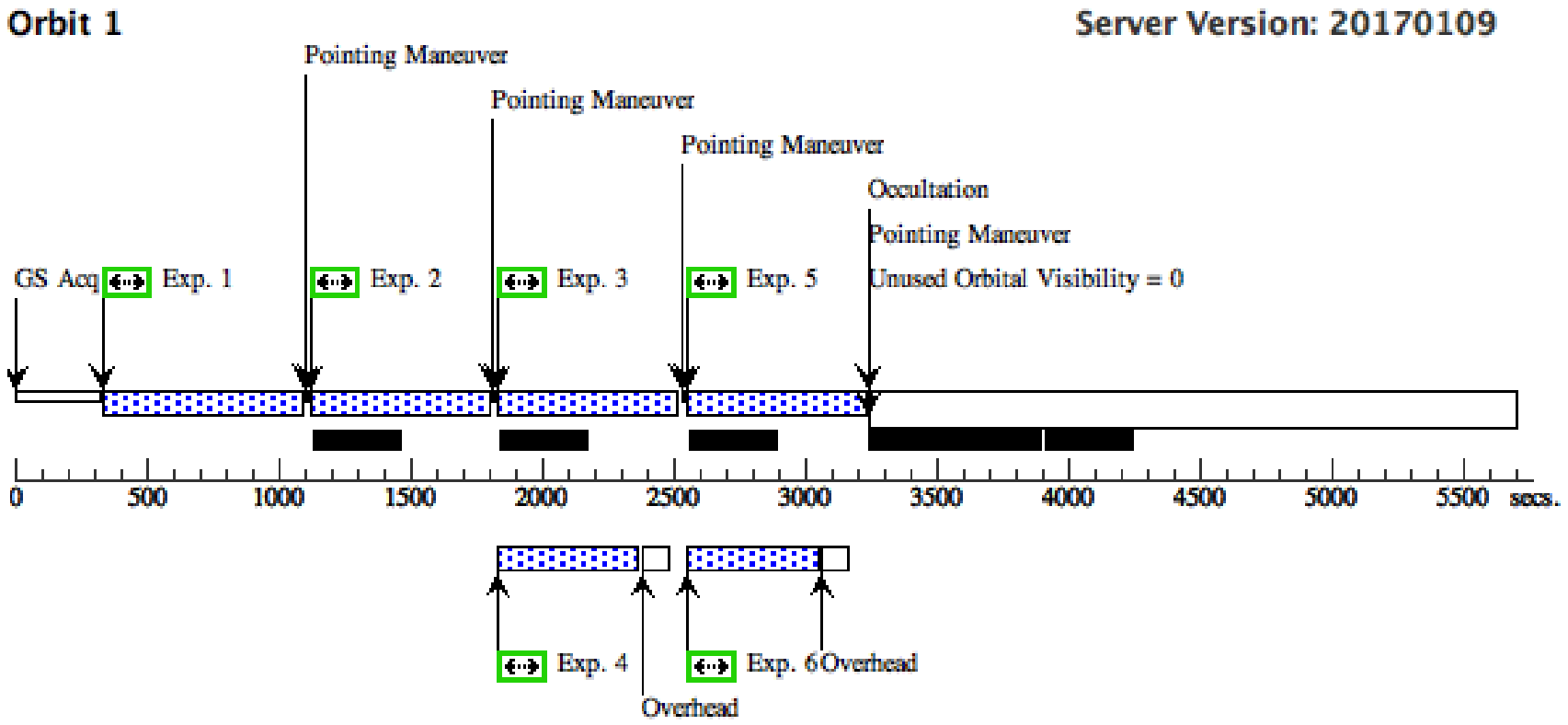
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	TERZAN8	RA: 19 41 44.4657 (295.4352738d) Dec: -33 59 50.98 (-33.99749d) Equinox: J2000		V=12.40	Reference Frame: ICRS

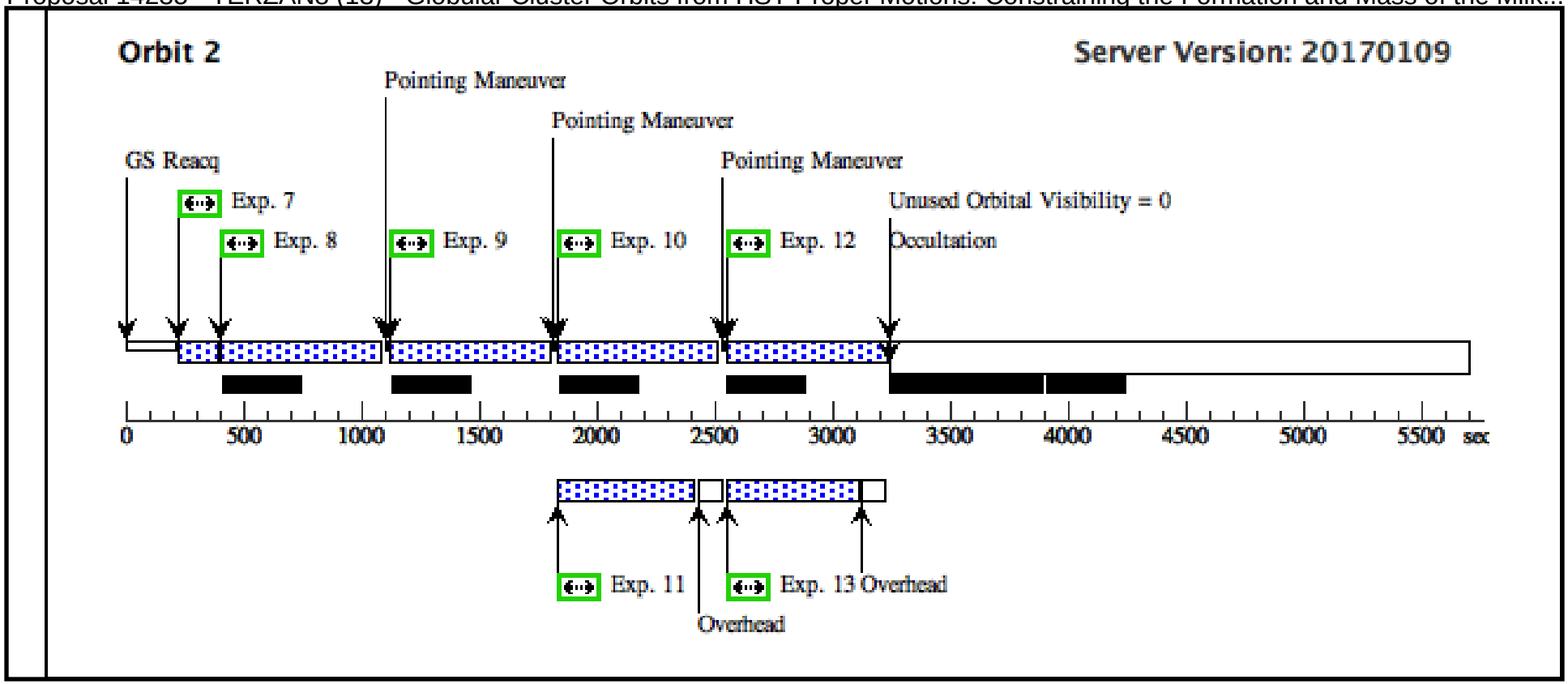
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in TERZAN8 (13)	554 Secs (554 Secs) *[==>]*	 ***[1]***
2		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in TERZAN8 (13)	554 Secs (554 Secs) *[==>]*	 ***[1]***
3		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in TERZAN8 (13) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in TERZ AN8 (13)	555 Secs (555 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in TERZAN8 (13) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in TERZ AN8 (13)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in TERZAN8 (13) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in TERZ AN8 (13)	555 Secs (555 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in TERZAN8 (13) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in TERZ AN8 (13)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in TERZAN8 (13)	45 Secs (45 Secs) *[==>]*	 ***[2]***
8		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in TERZAN8 (13)	556 Secs (556 Secs) *[==>]*	 ***[2]***
9		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in TERZAN8 (13)	556 Secs (556 Secs) *[==>]*	 ***[2]***
10		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in TERZAN8 (13) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in TE RZAN8 (13)	556 Secs (556 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in TERZAN8 (13) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in TE RZAN8 (13)	560 Secs (560 Secs) *[==>]*	 ***[2]***
12		(13) TERZAN8	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in TERZAN8 (13) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in TE RZAN8 (13)	556 Secs (556 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in TERZAN8 (13) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in TERZAN8 (13)	560 Secs (560 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 13
Overhead
Overhead

Visit

Proposal 14235, NGC4147 (14), implementation Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 162.9837D TO 162.9837 D

Comments: This visit is for NGC 4147. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

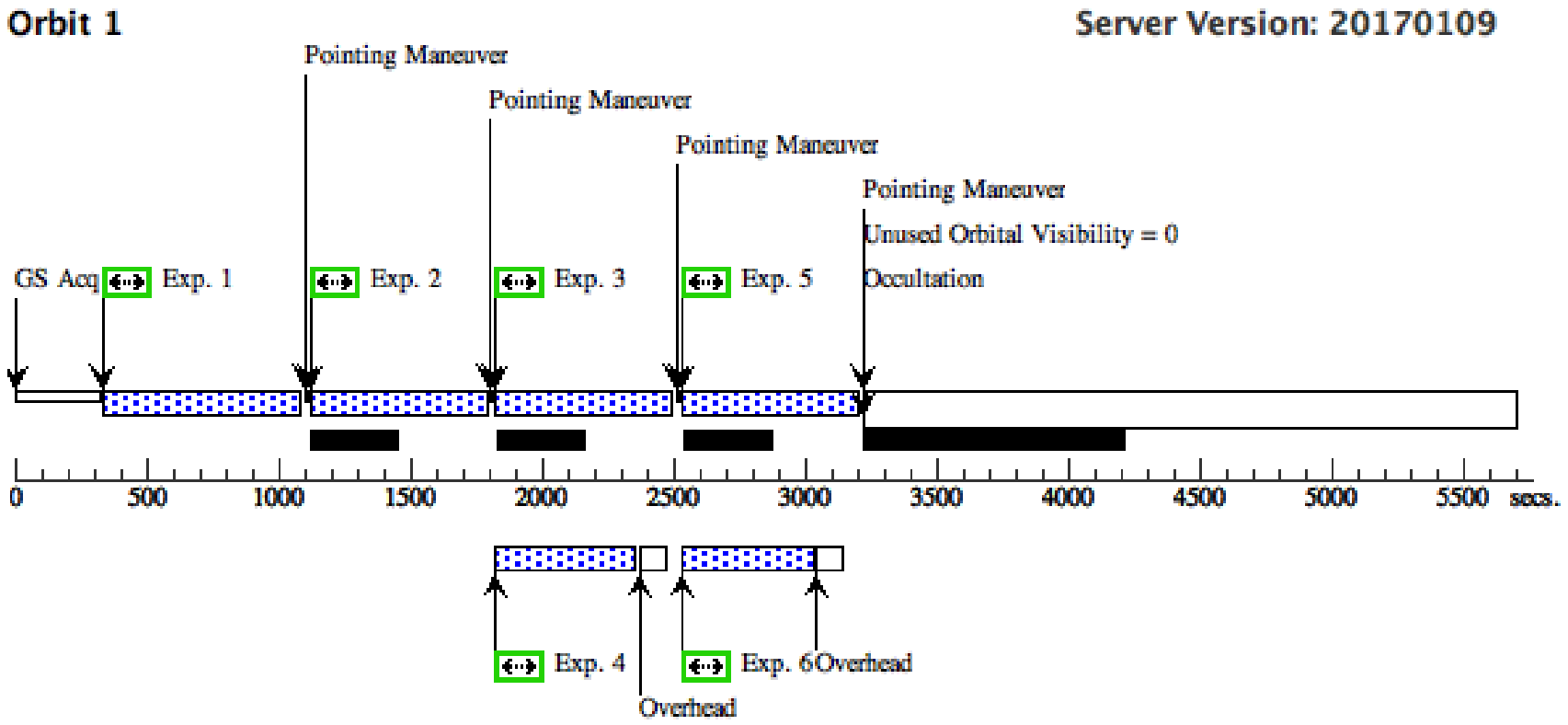
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	NGC4147	RA: 12 10 5.9551 (182.5248129d) Dec: +18 32 26.43 (18.54068d) Equinox: J2000		V=10.32	Reference Frame: ICRS

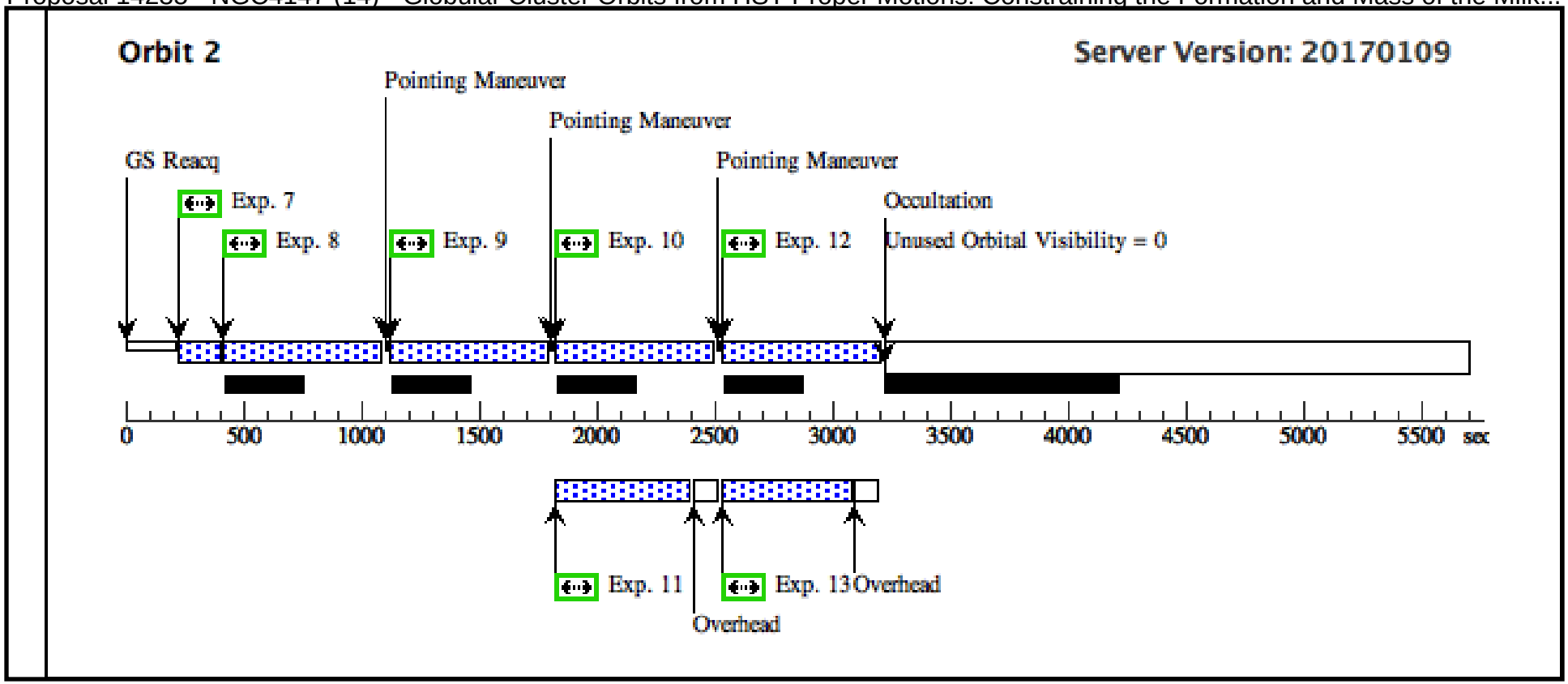
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in NGC4147 (14)	548 Secs (548 Secs) *[==>]*	 ***[1]***
2		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in NGC4147 (14)	548 Secs (548 Secs) *[==>]*	 ***[1]***
3		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in NGC4147 (14) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC4 147 (14)	549 Secs (549 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC4147 (14) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in NGC4 147 (14)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in NGC4147 (14) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC4 147 (14)	549 Secs (549 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in NGC4147 (14) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in NGC4 147 (14)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC4147 (14)	55 Secs (55 Secs) *[==>]*	 ***[2]***
8		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in NGC4147 (14)	547 Secs (547 Secs) *[==>]*	 ***[2]***
9		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in NGC4147 (14)	547 Secs (547 Secs) *[==>]*	 ***[2]***
10		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in NGC4147 (14) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC4147 (14)	548 Secs (548 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in NGC4147 (14) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in N GC4147 (14)	550 Secs (550 Secs) *[==>]*	 ***[2]***
12		(14) NGC4147	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in NGC4147 (14) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in N GC4147 (14)	548 Secs (548 Secs) *[==>]*	 ***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in NGC4147 (14) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in NGC4147 (14)	550 Secs (550 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 13
Overhead
Overhead

Visit

Proposal 14235, ARP2 (15), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 263.2411D TO 263.2411 D

Comments: This visit is for Arp 2. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10775. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

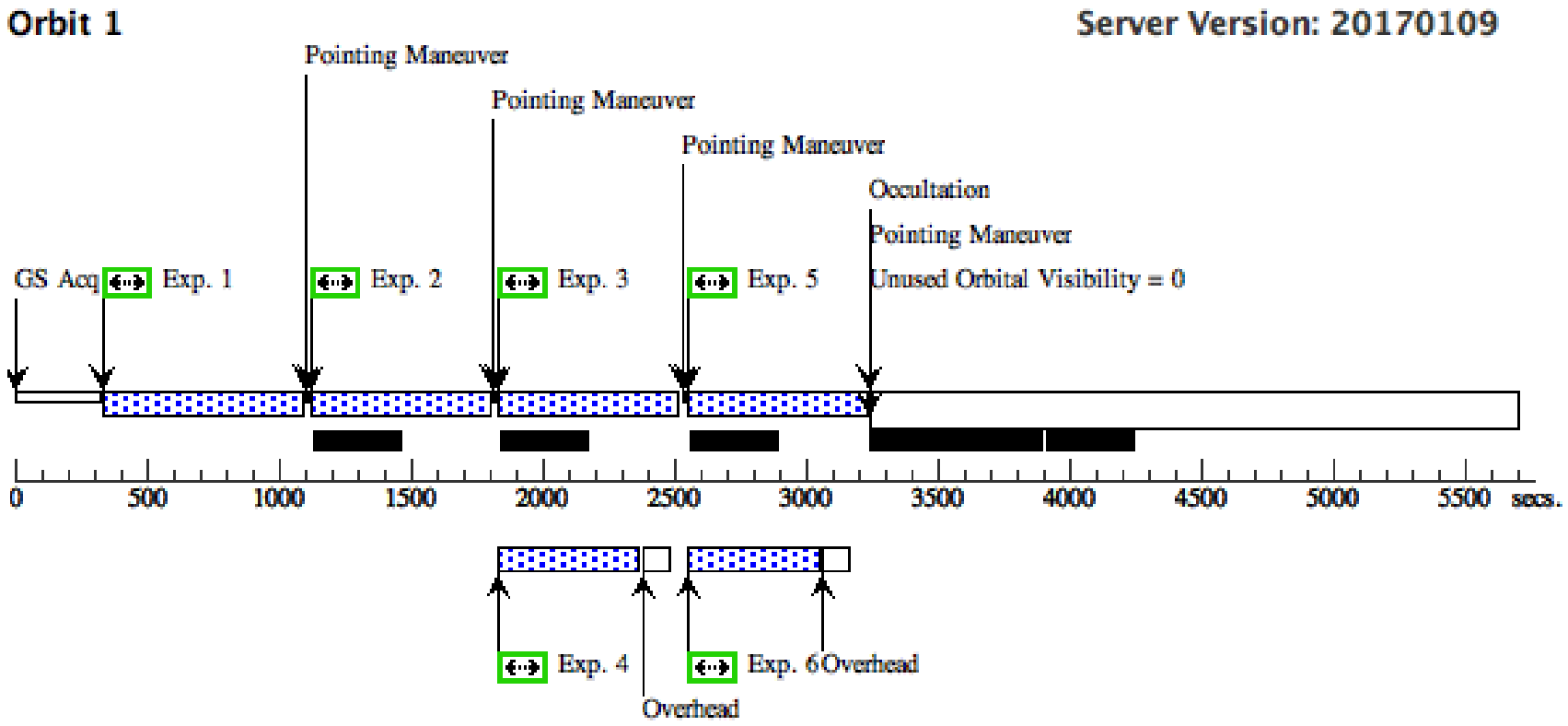
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	ARP2	RA: 19 28 44.0991 (292.1837462d) Dec: -30 21 14.00 (-30.35389d) Equinox: J2000		V=12.30	Reference Frame: ICRS

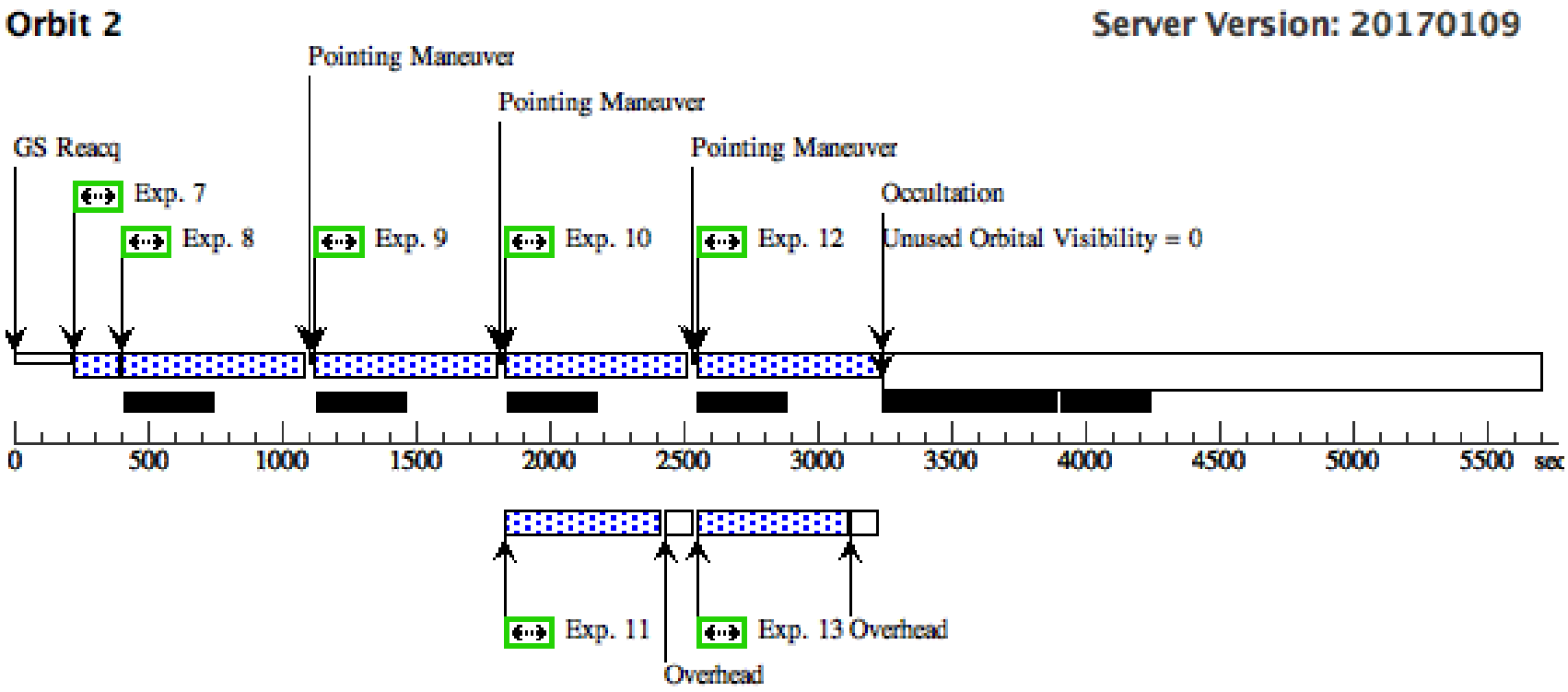
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in ARP2 (15)	554 Secs (554 Secs)	
								[==>]	***[1]***
2		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in ARP2 (15)	554 Secs (554 Secs)	
								[==>]	***[1]***
3		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in ARP2 (15) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in ARP2 (15)	555 Secs (555 Secs) *[==>]*	***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in ARP2 (15) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in ARP2 (15)	500 Secs (500 Secs) *[==>]*	***[1]***
5		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in ARP2 (15) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in ARP2 (15)	555 Secs (555 Secs) *[==>]*	***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in ARP2 (15) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in ARP2 (15)	500 Secs (500 Secs) *[==>]*	***[1]***
7		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in ARP2 (15)	45 Secs (45 Secs)	
								[==>]	***[2]***
8		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.5075,0 .0505	Sequence 7-13 Non-I nt in ARP2 (15)	556 Secs (556 Secs)	
								[==>]	***[2]***
9		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6815,0 .2855	Sequence 7-13 Non-I nt in ARP2 (15)	556 Secs (556 Secs)	
								[==>]	***[2]***
10		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-13 Non-I nt in ARP2 (15) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in AR P2 (15)	556 Secs (556 Secs) *[==>]*	***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-13 Non-I nt in ARP2 (15) Prime + Parallel Gro up 10-11 in Sequenc e 7-13 Non-Int in AR P2 (15)	560 Secs (560 Secs) *[==>]*	***[2]***
12		(15) ARP2	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.6080,0 .3810	Sequence 7-13 Non-I nt in ARP2 (15) Prime + Parallel Gro up 12-13 in Sequenc e 7-13 Non-Int in AR P2 (15)	556 Secs (556 Secs) *[==>]*	***[2]***

	13	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-13 Non-Int in ARP2 (15) Prime + Parallel Group 12-13 in Sequence 7-13 Non-Int in ARP2 (15)	560 Secs (560 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Exp. 12
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 13
Overhead
Overhead

Visit

Proposal 14235, PAL13 (16), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 238.2323D TO 238.2323 D

Comments: This visit is for Pal 13. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11680. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

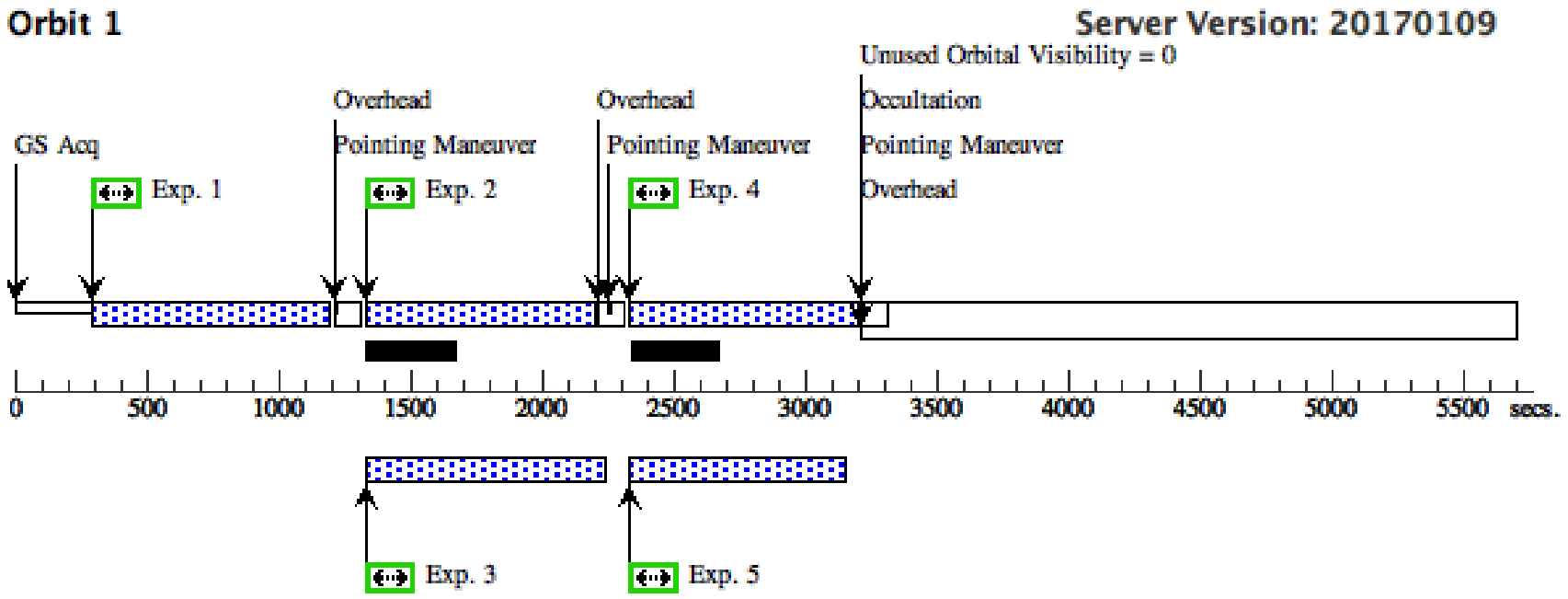
Fixed Targets

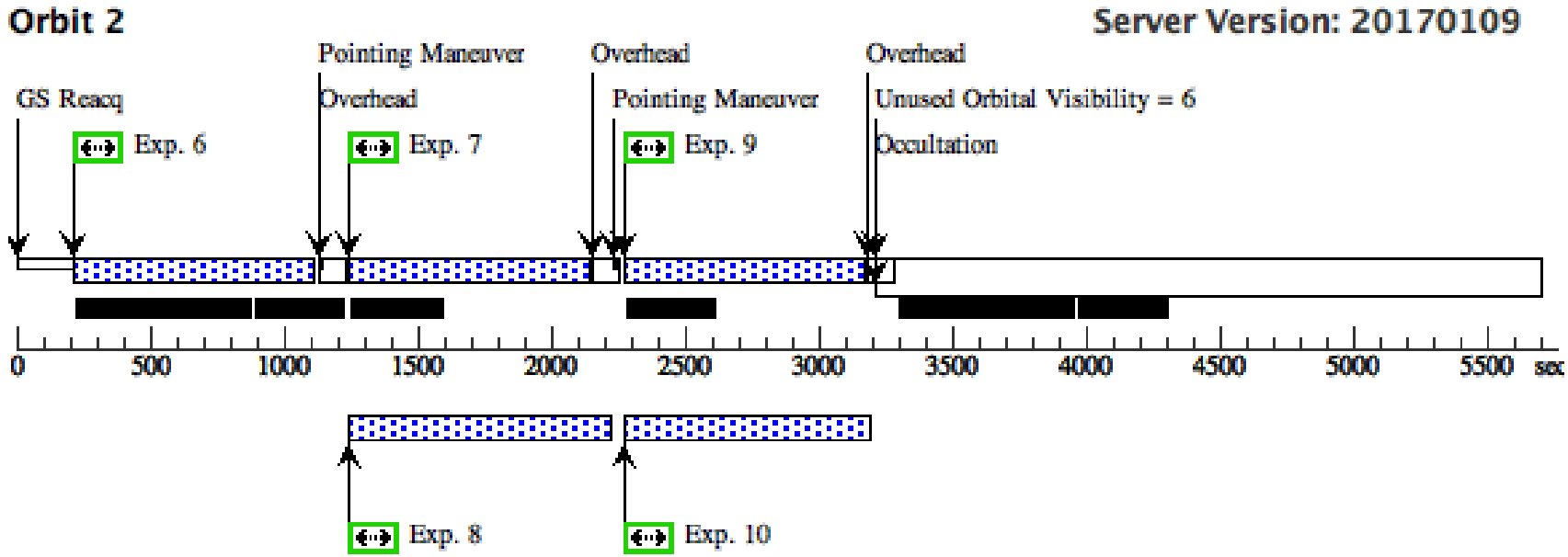
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	PAL13	RA: 23 06 44.3994 (346.6849975d) Dec: +12 46 19.00 (12.77194d) Equinox: J2000		V=13.47	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in PAL13 (16)	873 Secs (873 Secs) *[==>]*	*[1]*
2		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in PAL13 (16) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in PAL13 (16)	874 Secs (874 Secs) *[==>]*	*[1]*
3		ANY	ACS/WFC, ACCUM, WFC	F606W			Sequence 1-5 Non-Int in PAL13 (16) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in PAL13 (16)	700 Secs (700 Secs) *[==>]*	*[1]*
4		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in PAL13 (16) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in PAL13 (16)	874 Secs (874 Secs) *[==>]*	*[1]*
5		ANY	ACS/WFC, ACCUM, WFC	F606W			Sequence 1-5 Non-Int in PAL13 (16) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in PAL13 (16)	700 Secs (700 Secs) *[==>]*	*[1]*
6		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.0747,0.1294	Sequence 6-10 Non-Int in PAL13 (16)	900 Secs (900 Secs) *[==>]*	*[2]*
7		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.2393,0.1418	Sequence 6-10 Non-Int in PAL13 (16) Prime + Parallel Group 7-8 in Sequence 6-10 Non-Int in PAL13 (16)	900 Secs (900 Secs) *[==>]*	*[2]*
8		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 6-10 Non-Int in PAL13 (16) Prime + Parallel Group 7-8 in Sequence 6-10 Non-Int in PAL13 (16)	800 Secs (800 Secs) *[==>]*	*[2]*
9		(16) PAL13	WFC3/UVIS, ACCUM, UVIS	F606W		POS TARG 0.4039,0.1541	Sequence 6-10 Non-Int in PAL13 (16) Prime + Parallel Group 9-10 in Sequence 6-10 Non-Int in PAL13 (16)	900 Secs (900 Secs) *[==>]*	*[2]*
10		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 6-10 Non-Int in PAL13 (16) Prime + Parallel Group 9-10 in Sequence 6-10 Non-Int in PAL13 (16)	800 Secs (800 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14235, PAL15 (17), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 81.2542D TO 81.2542 D

Comments: This visit is for Pal 15. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11586. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

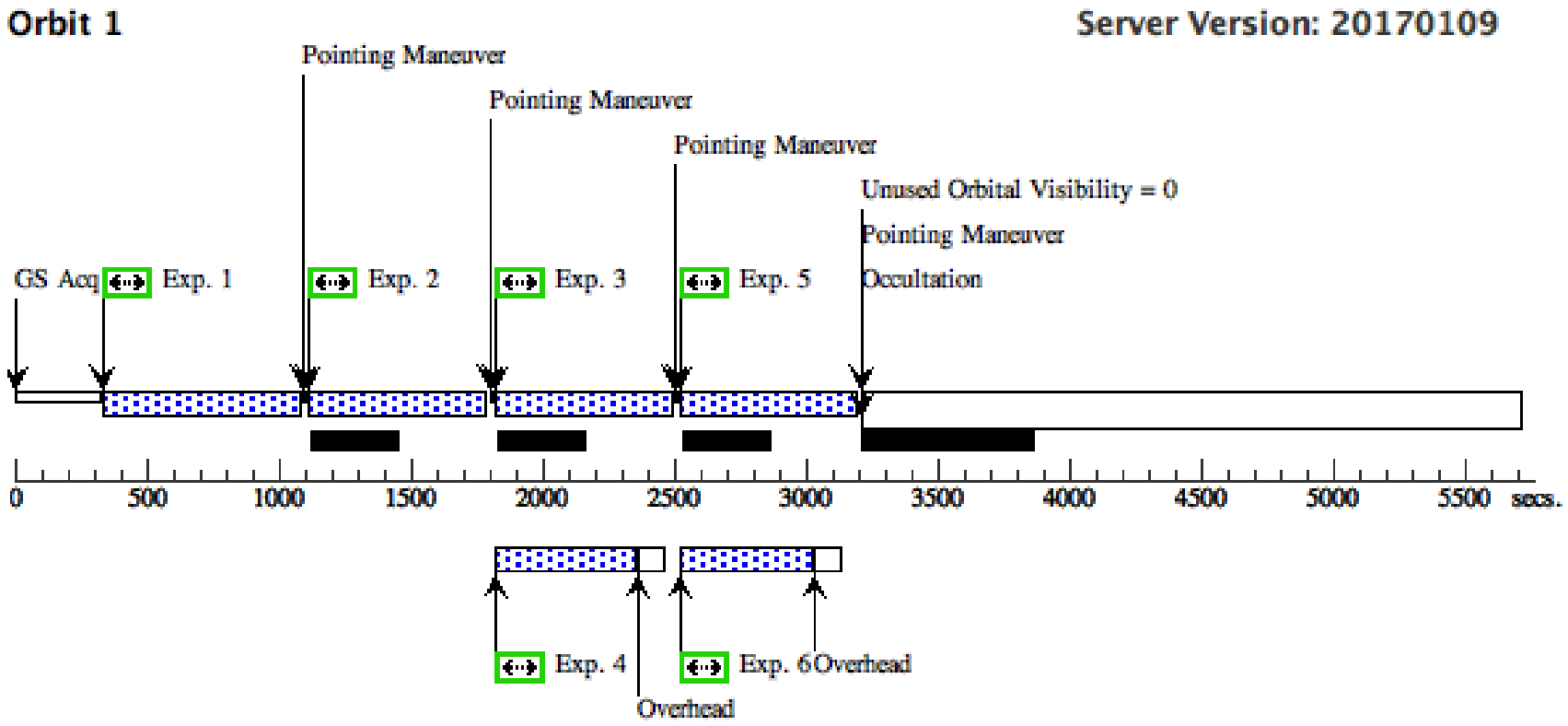
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(17)	PAL15	RA: 16 59 50.3954 (254.9599808d) Dec: -00 32 12.69 (-.53686d) Equinox: J2000		V=14.00	Reference Frame: ICRS

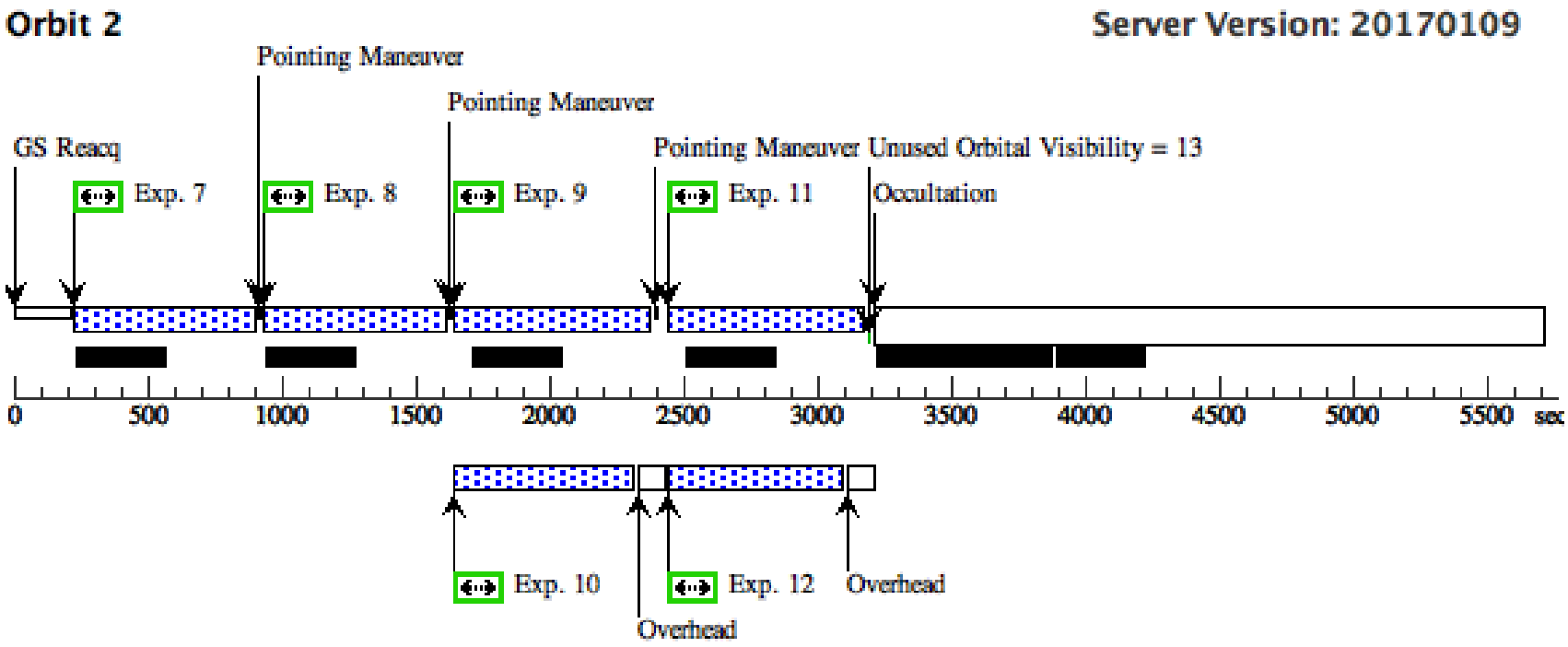
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.0000,0 .0000	Sequence 1-6 Non-In t in PAL15 (17)	545 Secs (545 Secs) *[==>]*	 ***[1]***
2		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.1740,0 .2350	Sequence 1-6 Non-In t in PAL15 (17)	546 Secs (546 Secs) *[==>]*	 ***[1]***
3		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.3232,0 .1235	Sequence 1-6 Non-In t in PAL15 (17) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in PAL15 (17)	546 Secs (546 Secs) *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in PAL15 (17) Prime + Parallel Gro up 3-4 in Sequence 1 -6 Non-Int in PAL15 (17)	500 Secs (500 Secs) *[==>]*	 ***[1]***
5		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.1005,0 .3305	Sequence 1-6 Non-In t in PAL15 (17) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in PAL15 (17)	546 Secs (546 Secs) *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-6 Non-In t in PAL15 (17) Prime + Parallel Gro up 5-6 in Sequence 1 -6 Non-Int in PAL15 (17)	500 Secs (500 Secs) *[==>]*	 ***[1]***
7		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.5075,0 .0505	Sequence 7-12 Non-I nt in PAL15 (17)	555 Secs (555 Secs) *[==>]*	 ***[2]***
8		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.6815,0 .2855	Sequence 7-12 Non-I nt in PAL15 (17)	555 Secs (555 Secs) *[==>]*	 ***[2]***
9		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.8300,0 .1735	Sequence 7-12 Non-I nt in PAL15 (17) Prime + Parallel Gro up 9-10 in Sequence 7-12 Non-Int in PAL 15 (17)	555 Secs (555 Secs) *[==>]*	 ***[2]***
10		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 7-12 Non-I nt in PAL15 (17) Prime + Parallel Gro up 9-10 in Sequence 7-12 Non-Int in PAL 15 (17)	650 Secs (650 Secs) *[==>]*	 ***[2]***
11		(17) PAL15	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG 0.6080,0 .3810	Sequence 7-12 Non-I nt in PAL15 (17) Prime + Parallel Gro up 11-12 in Sequenc e 7-12 Non-Int in PA L15 (17)	555 Secs (555 Secs) *[==>]*	 ***[2]***

	12	ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W	Sequence 7-12 Non-Int in PAL15 (17) Prime + Parallel Group 11-12 in Sequence 7-12 Non-Int in PAL15 (17)	650 Secs (650 Secs) *[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
Pointing Maneuver
Pointing Maneuver
GS Reacq
Pointing Maneuver
Unused Orbital Visibility = 13
Exp. 7
Exp. 8
Exp. 9
Exp. 11
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 10
Exp. 12
Overhead
Overhead

Visit

Proposal 14235, NGC7006 (18), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 95.0312D TO 95.0312 D

Comments: This visit is for NGC 7006. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11586. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements

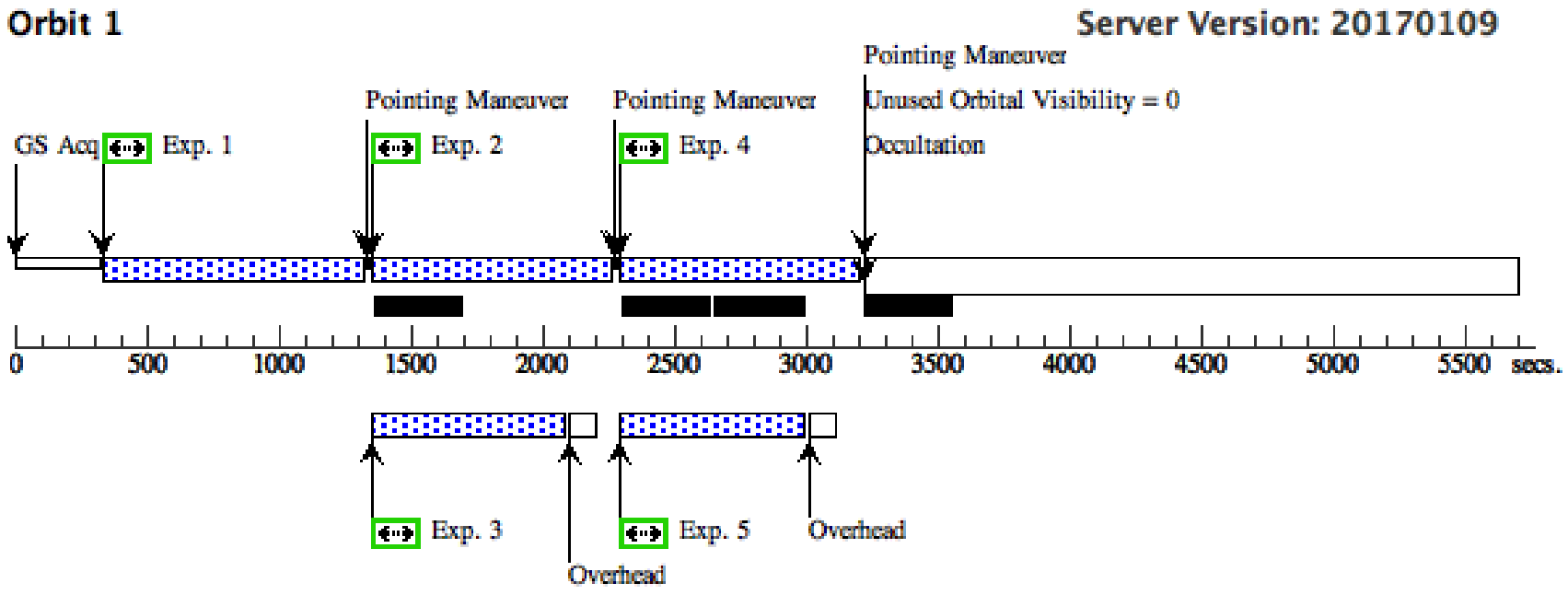
Fixed Targets

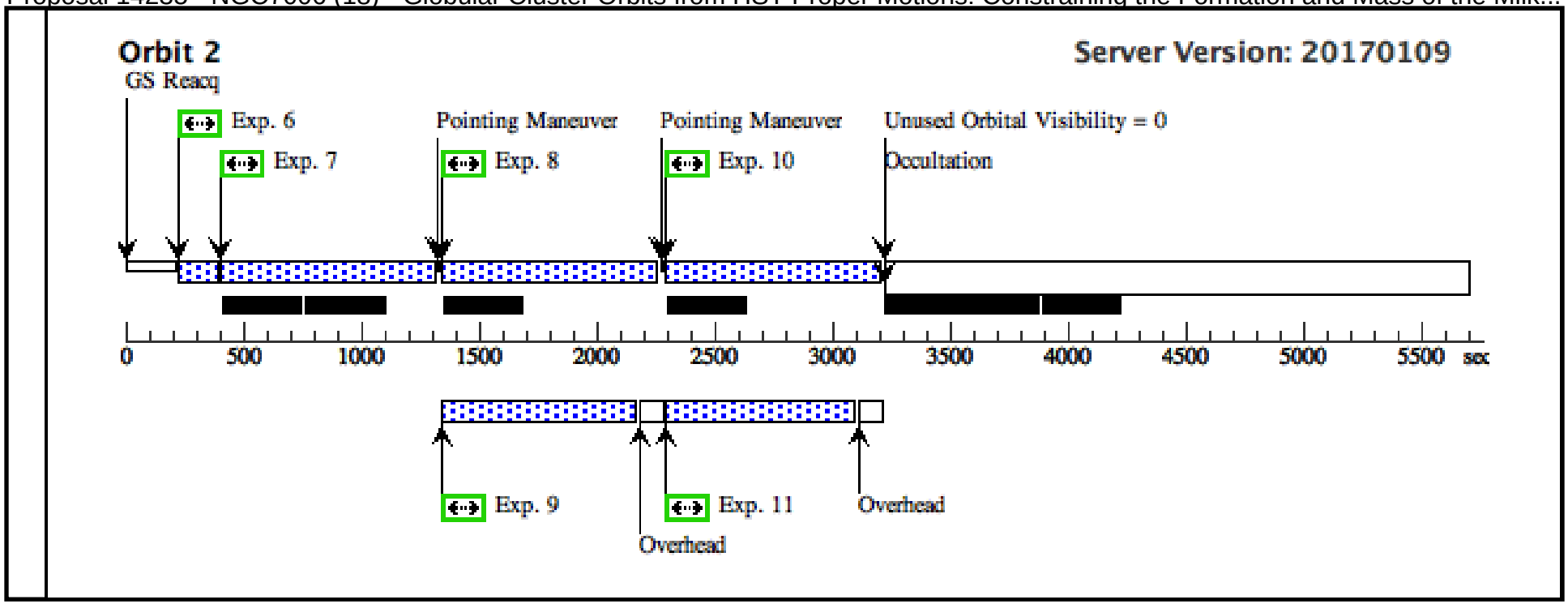
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(18)	NGC7006	RA: 21 01 29.4812 (315.3728383d) Dec: +16 11 13.55 (16.18710d) Equinox: J2000		V=10.56	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[1]***
2		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in NGC7006 (18) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in NGC7006 (18) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC7006 (18)	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in NGC7006 (18) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in NGC7006 (18) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC7006 (18)	700 Secs (700 Secs) *[==>]*	 ***[1]***
6		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in NGC7006 (18)	42 Secs (42 Secs) *[==>]*	 ***[2]***
7		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[2]***
8		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2393,0.1418	Sequence 6-11 Non-Int in NGC7006 (18) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in NGC7006 (18) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in NGC7006 (18)	800 Secs (800 Secs) *[==>]*	 ***[2]***
10		(18) NGC7006	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4039,0.1541	Sequence 6-11 Non-Int in NGC7006 (18) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in NGC7006 (18)	784 Secs (784 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in NGC7006 (18) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in NGC7006 (18)	800 Secs (800 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
GS Reacq
Exp. 6
Exp. 7
Pointing Maneuver
Exp. 8
Pointing Maneuver
Exp. 10
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 9
Overhead
Exp. 11
Overhead

Visit

Proposal 14235, PYXIS (19), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 256.8598D TO 256.8598 D

Comments: This visit is for Pyxis. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-11586. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

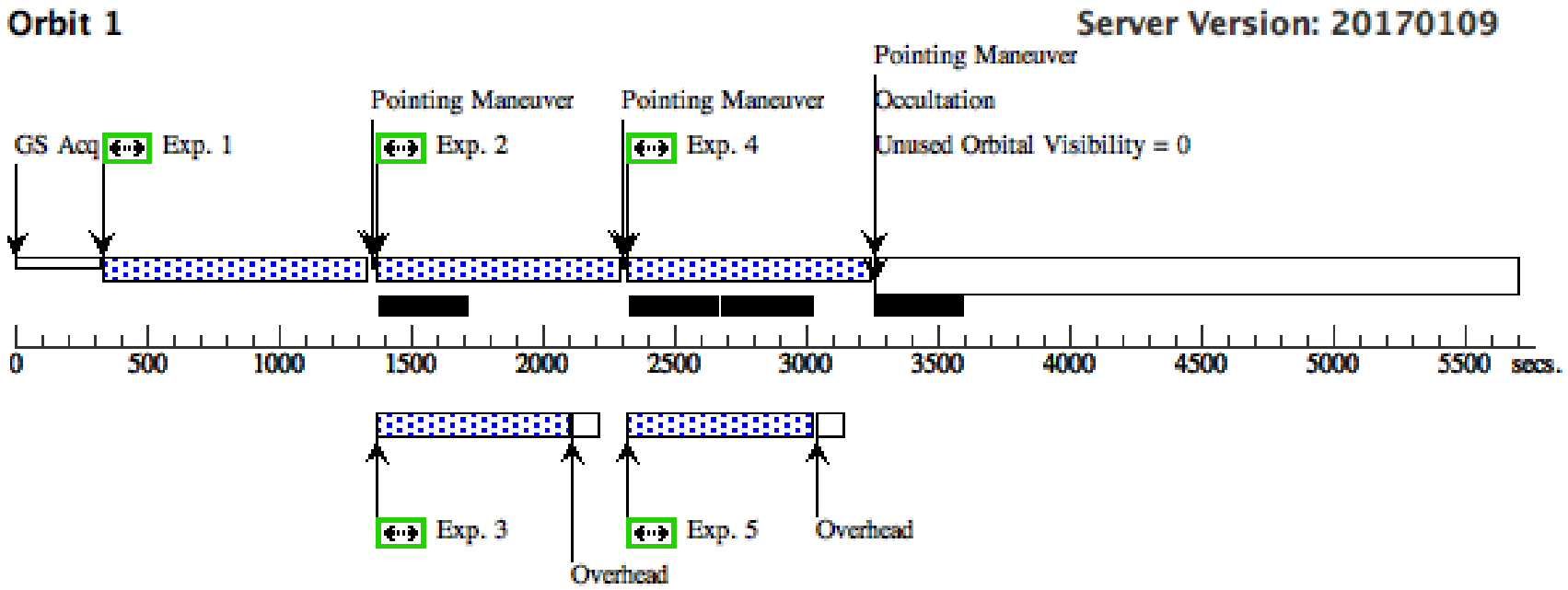
Fixed Targets

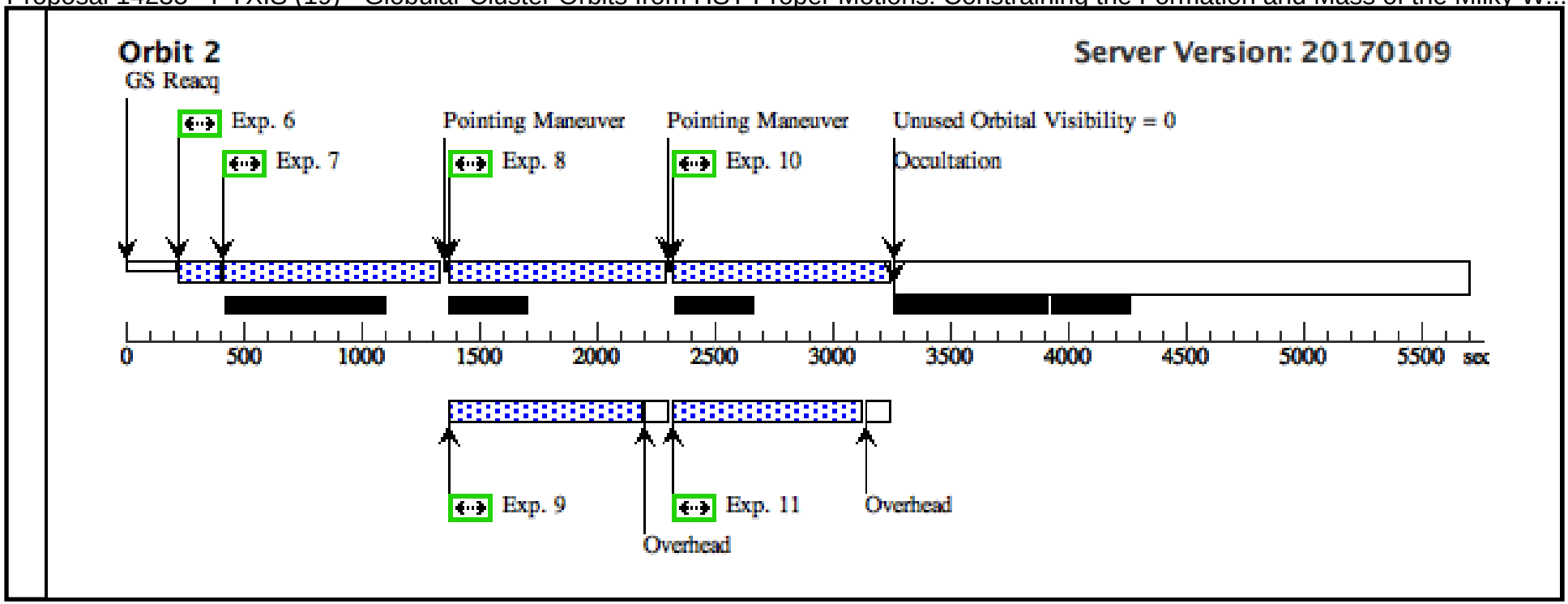
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(19)	PYXIS	RA: 09 07 58.2129 (136.9925538d) Dec: -37 13 19.76 (-37.22216d) Equinox: J2000		V=12.90	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in PYXIS (19)	799 Secs (799 Secs) *[==>]*	 ***[1]***
2		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.1647,0.0124	Sequence 1-5 Non-Int in PYXIS (19) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in PYXIS (19)	799 Secs (799 Secs) *[==>]*	 ***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in PYXIS (19) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in PYXIS (19)	700 Secs (700 Secs) *[==>]*	 ***[1]***
4		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.3293,0.0248	Sequence 1-5 Non-Int in PYXIS (19) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in PYXIS (19)	800 Secs (800 Secs) *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F606W			Sequence 1-5 Non-Int in PYXIS (19) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in PYXIS (19)	700 Secs (700 Secs) *[==>]*	 ***[1]***
6		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in PYXIS (19)	50 Secs (50 Secs) *[==>]*	 ***[2]***
7		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.0747,0.1294	Sequence 6-11 Non-Int in PYXIS (19)	799 Secs (799 Secs) *[==>]*	 ***[2]***
8		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.2393,0.1418	Sequence 6-11 Non-Int in PYXIS (19) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in PYXIS (19)	800 Secs (800 Secs) *[==>]*	 ***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in PYXIS (19) Prime + Parallel Group 8-9 in Sequence 6-11 Non-Int in PYXIS (19)	800 Secs (800 Secs) *[==>]*	 ***[2]***
10		(19) PYXIS	ACS/WFC, ACCUM, WFCENTER	F606W		POS TARG 0.4039,0.1541	Sequence 6-11 Non-Int in PYXIS (19) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in PYXIS (19)	800 Secs (800 Secs) *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Sequence 6-11 Non-Int in PYXIS (19) Prime + Parallel Group 10-11 in Sequence 6-11 Non-Int in PYXIS (19)	800 Secs (800 Secs) *[==>]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20170109
GS Reacq
Exp. 6
Exp. 7
Pointing Maneuver
Exp. 8
Pointing Maneuver
Exp. 10
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 9
Overhead
Exp. 11
Overhead

Visit

Proposal 14235, NGC2419 (20), completed Tue Feb 28 02:01:45 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS, ACS/WFC

Special Requirements: ORIENT 257.27D TO 257.27 D

Comments: This visit is for NGC 2419. Two orbits are required to complete this visit. Since our goal is to measure proper motions of GC stars with respect to compact background galaxies, our orientation is set to exactly match the first-epoch images of GO-10815. We adopt a customized dither pattern to optimally cover the pixel phase using the POS-TARG requirements.

Fixed Targets

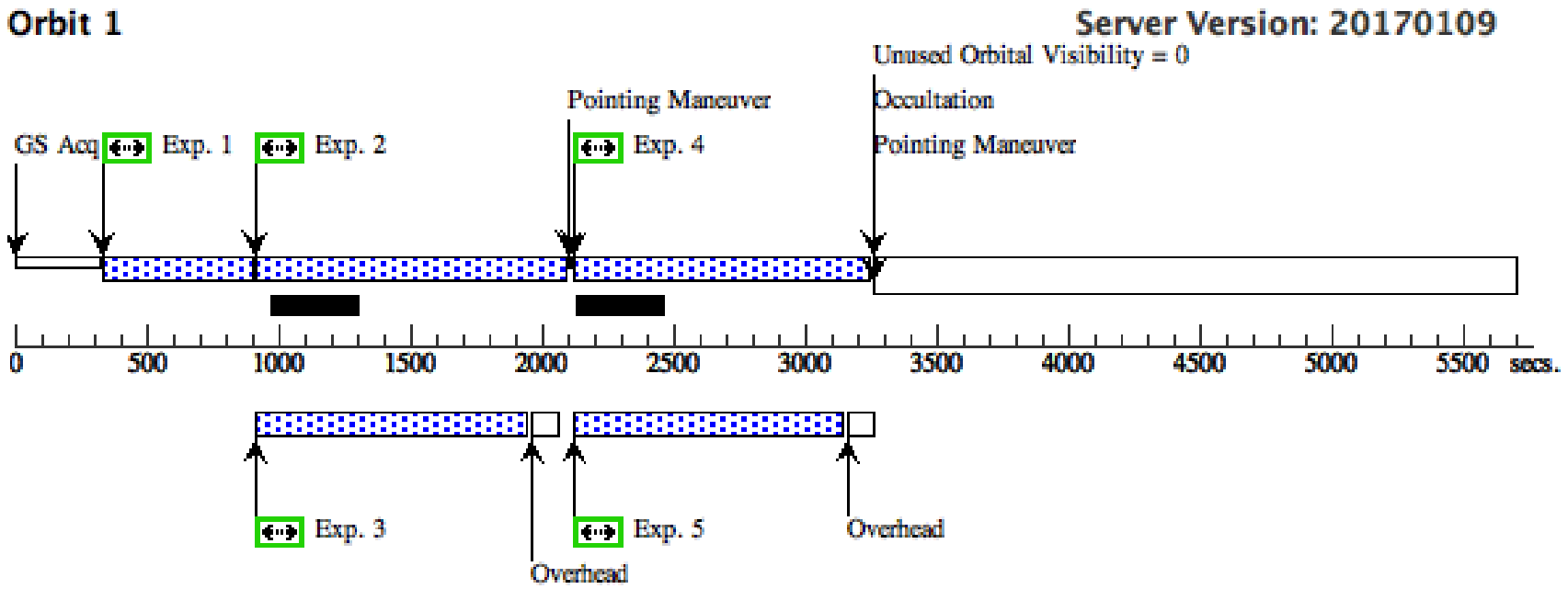
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(20)	NGC2419	RA: 07 37 49.4165 (114.4559021d) Dec: +38 51 2.86 (38.85079d) Equinox: J2000		V=10.41	Reference Frame: ICRS

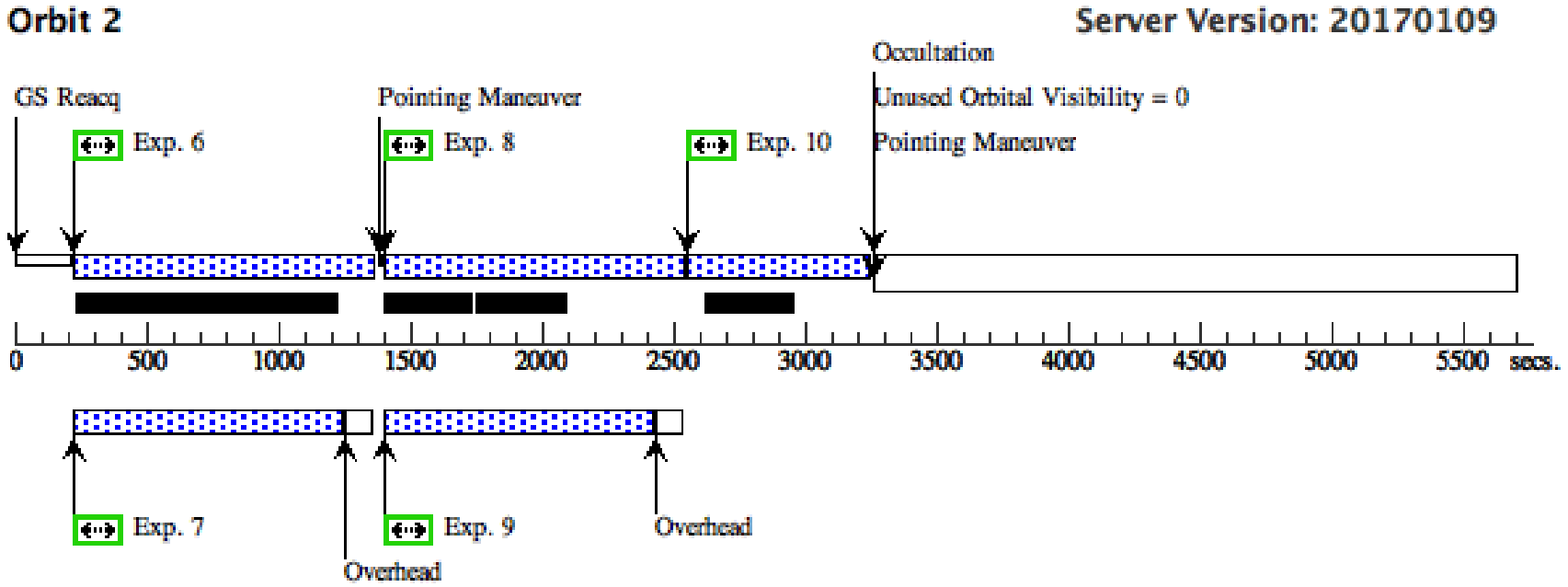
Exposures

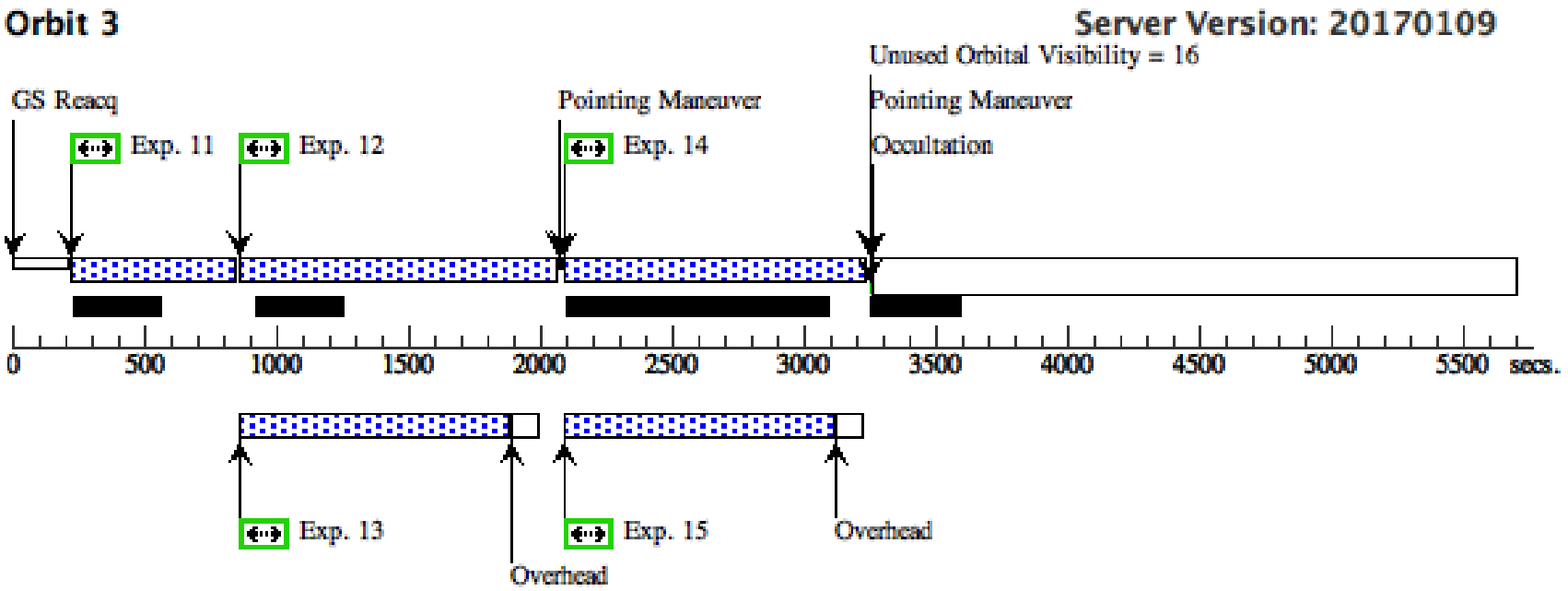
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(20) NGC2419	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in NGC2419 (20)	363 Secs (363 Secs)	
								[==>]	***[1]***
2		(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.0000,0.0000	Sequence 1-5 Non-Int in NGC2419 (20) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[1]***
3		ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 1-5 Non-Int in NGC2419 (20) Prime + Parallel Group 2-3 in Sequence 1-5 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[1]***
4		(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1740,0.2350	Sequence 1-5 Non-Int in NGC2419 (20) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 1-5 Non-Int in NGC2419 (20) Prime + Parallel Group 4-5 in Sequence 1-5 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[1]***
6		(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.3232,0.1235	Sequence 6-10 Non-Int in NGC2419 (20) Prime + Parallel Group 6-7 in Sequence 6-10 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[2]***
7		ANY	WFC3/UVIS, ACCUM, UVIS	F606W			Sequence 6-10 Non-Int in NGC2419 (20) Prime + Parallel Group 6-7 in Sequence 6-10 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[2]***
8		(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W		POS TARG 0.1005,0.3305	Sequence 6-10 Non-Int in NGC2419 (20) Prime + Parallel Group 8-9 in Sequence 6-10 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[2]***
9		ANY	WFC3/UVIS, ACCUM, UVIS	F814W			Sequence 6-10 Non-Int in NGC2419 (20) Prime + Parallel Group 8-9 in Sequence 6-10 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[2]***
10		(20) NGC2419	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.1005,0.3305	Sequence 6-10 Non-Int in NGC2419 (20)	516 Secs (516 Secs)	
								[==>]	***[2]***
11		(20) NGC2419	ACS/WFC, ACCUM, WFC	F606W		POS TARG 0.5075,0.0505	Sequence 11-15 Non-Int in NGC2419 (20)	500 Secs (500 Secs)	
								[==>]	***[3]***

	12	(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W	POS TARG 0.5075,0.0505	Sequence 11-15 Non-Int in NGC2419 (20) Prime + Parallel Group 12-13 in Sequence 11-15 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[3]***
	13	ANY	WFC3/UVIS, ACCUM, UVIS	F606W		Sequence 11-15 Non-Int in NGC2419 (20) Prime + Parallel Group 12-13 in Sequence 11-15 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[3]***
	14	(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W	POS TARG 0.6815,0.2855	Sequence 11-15 Non-Int in NGC2419 (20) Prime + Parallel Group 14-15 in Sequence 11-15 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[3]***
	15	ANY	WFC3/UVIS, ACCUM, UVIS	F814W		Sequence 11-15 Non-Int in NGC2419 (20) Prime + Parallel Group 14-15 in Sequence 11-15 Non-Int in NGC2419 (20)	1000 Secs (1000 Secs) *[==>]*	***[3]***
	16	(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W	POS TARG 0.8300,0.1735	Sequence 16-18 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[4]***
	17	(20) NGC2419	ACS/WFC, ACCUM, WFC	F814W	POS TARG 0.6080,0.3810	Sequence 16-18 Non-Int in NGC2419 (20)	1020 Secs (1020 Secs) *[==>]*	***[4]***
	18	(20) NGC2419	ACS/WFC, ACCUM, WFC	F606W	POS TARG 0.6080,0.3810	Sequence 16-18 Non-Int in NGC2419 (20)	516 Secs (516 Secs) *[==>]*	***[4]***

Orbit Structure



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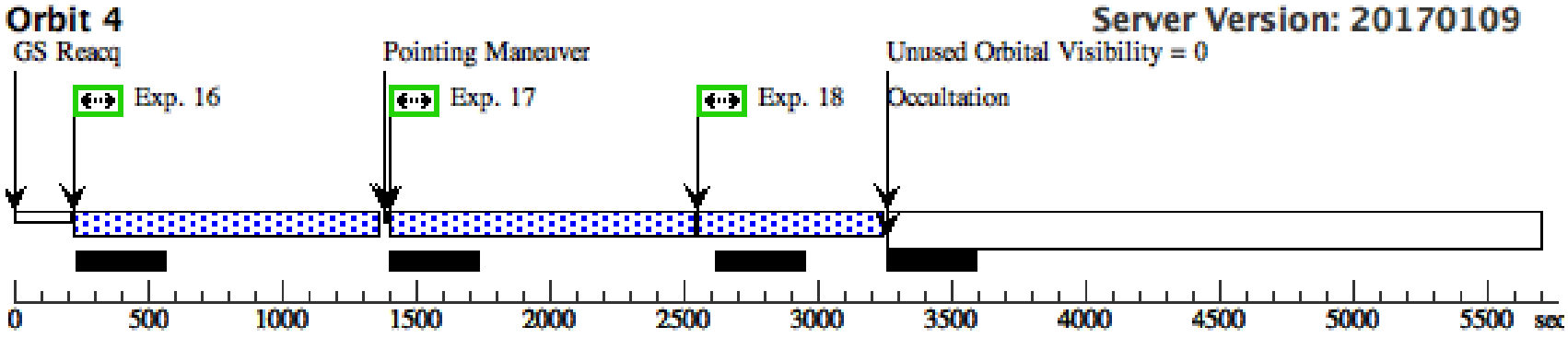
Unused Orbital Visibility = 16
GS Reacq
Exp. 11
Exp. 12
Pointing Maneuver
Exp. 14
Pointing Maneuver
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Exp. 13
Overhead
Exp. 15
Overhead


Orbit 4
Server Version: 20170109
GS Reacq
Exp. 16
Pointing Maneuver
Exp. 17
Exp. 18
Unused Orbital Visibility = 0
Occultation
0
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1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec