18080 - The High Redshift Lyman Continuum Survey

Cycle: 33, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
Prof. Claudia Scarlata (PI) (Contact)	**University of Minnesota - Twin Cities**
Prof. Matthew James Hayes (CoI) (ESA Member)	Stockholm University
Dr. Harry Teplitz (CoI)	California Institute of Technology
Dr. Vihang Mehta (CoI)	California Institute of Technology
Yu-Heng Lin (CoI)	California Institute of Technology
Dr. Annalisa Citro (CoI)	University of Minnesota - Twin Cities
Alexandra Le Reste (CoI)	University of Minnesota - Twin Cities
Dr. Alberto Saldana-Lopez (CoI) (ESA Member)	Stockholm University
Dr. Alaina L. Henry (CoI)	Space Telescope Science Institute
Dr. Alexander Beckett (CoI)	Space Telescope Science Institute
Dr. Anahita Alavi (CoI)	California Institute of Technology
Prof. Stephan Robert McCandliss (CoI)	The Johns Hopkins University
Dr. Keunho J. Kim (CoI)	California Institute of Technology
Prof. Daniel Schaerer (CoI) (ESA Member)	University of Geneva, Department of Astronomy
Dr. Marc Rafelski (CoI)	Space Telescope Science Institute
Dr. Ricardo Amorin (CoI)	Universidad de La Serena
Sara Mascia (CoI) (ESA Member)	Institute of Science and Technology Austria
Mr. Mason Huberty (CoI)	University of Minnesota - Twin Cities
Dr. Laura Pentericci (CoI) (ESA Member)	INAF - Osservatorio Astronomico di Roma
Prof. Anne Jaskot (CoI)	Williams College

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) PAR617	WFC3/UVIS	4	15-Aug-2025 17:00:46.0	yes
02	(1) PAR617	WFC3/UVIS	3	15-Aug-2025 17:00:47.0	yes
03	(2) PAR28	WFC3/UVIS	4	15-Aug-2025 17:00:47.0	yes
04	(2) PAR28	WFC3/UVIS	3	15-Aug-2025 17:00:48.0	yes
05	(3) PAR050	WFC3/UVIS	4	15-Aug-2025 17:00:48.0	yes
06	(3) PAR050	WFC3/UVIS	3	15-Aug-2025 17:00:49.0	yes
08	(4) PAR052	WFC3/UVIS	4	15-Aug-2025 17:00:49.0	yes
07	(4) PAR052	WFC3/UVIS	3	15-Aug-2025 17:00:50.0	yes
09	(5) PAR058	WFC3/UVIS	4	15-Aug-2025 17:00:50.0	yes
10	(5) PAR058	WFC3/UVIS	3	15-Aug-2025 17:00:50.0	yes
17	(5) PAR058	WFC3/UVIS	2	15-Aug-2025 17:00:51.0	yes
11	(6) PAR054	WFC3/UVIS	4	15-Aug-2025 17:00:52.0	yes
12	(6) PAR054	WFC3/UVIS	3	15-Aug-2025 17:00:52.0	yes
16	(6) PAR054	WFC3/UVIS	2	15-Aug-2025 17:00:53.0	yes
13	(7) PAR034	WFC3/UVIS	4	15-Aug-2025 17:00:53.0	yes
14	(7) PAR034	WFC3/UVIS	3	15-Aug-2025 17:00:54.0	yes

53 Total Orbits Used

ABSTRACT

The epoch of reionization (EoR) is a crucial event in the cosmic history. While the James Webb Space Telescope (JWST) is advancing our knowledge of reionization sources, a key factor in modeling reionization is the escape fraction of hydrogen-ionizing Lyman continuum (LyC) radiation (fesc). f_esc cannot be measured for galaxies at redshifts z>4.

HST observations have provided insights into fesc and its calibrators in local galaxies, but the evolution of galaxy properties over time raises

uncertainty about the application of these calibrations to EoR systems.
We propose the High redshift LyC survey (HzLCS), a program designed to measure fesc and its indirect estimators at z=3.1-3.5. With 53 orbits of HST WFC3/UVIS and 24hours of JWST NIRISS(F200W) Wide Field Slitless Spectroscopy and imaging we will measure fesc for ~140 galaxies at these redshifts. The survey will target 20 well-separated fields, providing HST deep F336W images covering LyC wavelengths, as well as two HST optical bands, and JWST spectroscopy for redshift and galaxies' physical property measurements. By minimizing systematic uncertainties, our strategy cuts the uncertainty in fesc to 15%, matching local-universe precision and unlocking evolutionary studies just 1 Gyr after reionization ended.

We make our data public immediately.

OBSERVING DESCRIPTION

This program images 7 fields with existing deep NIRISS spectroscopy with the WFC3/UVIS F336W filter to obtain rest-frame UV imaging data. Full orbit integrations are obtained in order to minimize post-flash and read-noise and maximize the total depth. Therefore 3 orbit vists are required to enable fully cleaning the cosmic rays. Exposures are post-flashed by 9e- to help mitigate the CTE, and reach 20e- backgrounds per pixel.

We utilize a combination of a 4 point box and 3 point line, which is similar to the 7 point pattern in ISR WFC3-2020-7. However, since the two visits may not be executed at the same position angle, we avoid trying to obtain the improved sub-pixel phasing from the 7 point pattern from that supplemental ISR as a slight change in orientation removes the benefits. We still will well sampled sub-pixel dithers in each visit which will combine sufficiently well together.
The dither pattern per visit is set 19 and 15 times larger than the default to help minimize the blotchy pattern observed in F336W imaging (i.e., similar to that seen in Rafelski et al. 2015, AJ, 150 31, Figure 15) and to dither over the chip gap with maximal number of exposures covering the chip gap while minimizing reduced FOV from lack of overlap at the edges.

In our phase I we requested an orient relative to the original NIRISS fields, but relax them (remove) here for easier scheduling as the larger WFC3 FOV over the NIRISS FOV still assures high overlap. However, we still require that the second visit for each field is wtihin +-10 degrees of the first visit, as non-overlap regions will not have sufficient exposures to fully clean the cosmic rays from orbit long exposures. If the second visit of any field is executed at a different orient, then the dither pattern would need to be revisited.

Our program is not significantly affected by the possibility of one gyro mode. If we were to go into one gyro mode, it may affect the schedulability of the second orientation. We could accept the same orient or 180 degree rotation instead of the 90 degree rotation we are currently using. Note: if we

did switch orients, we would need to add an offset for the second visit to maximize the dither pattern usefullness.

Visit

Proposal 18080, PAR617 4 orbit box (01), implementation Fri Aug 15 21:00:54 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

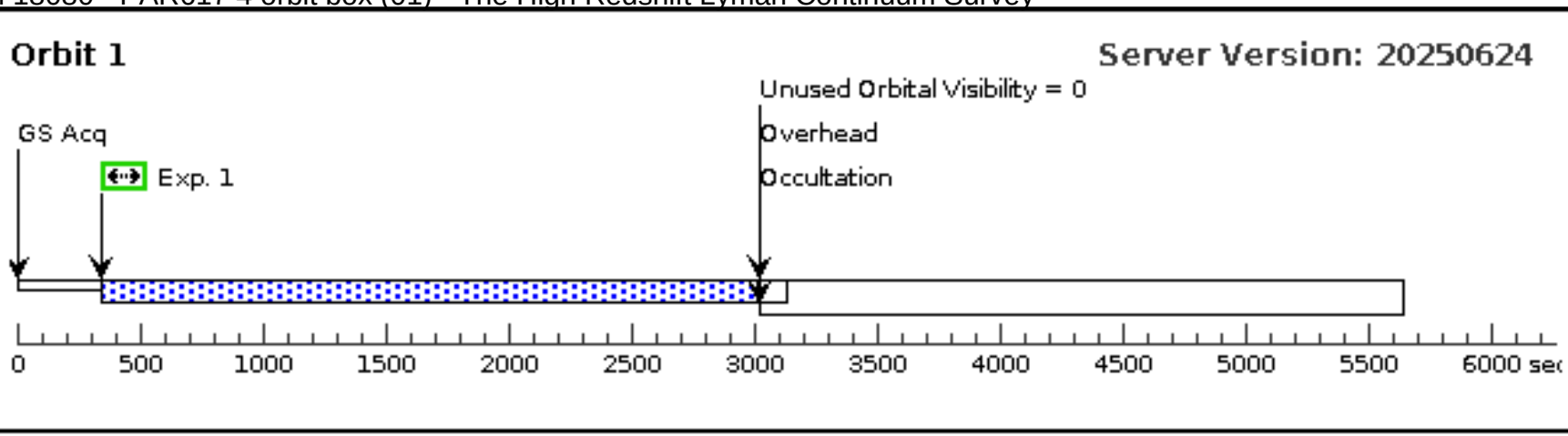
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PAR617	RA: 14 20 28.2017 (215.1175071d) Dec: +52 45 8.37 (52.75232d) Equinox: J2000		V=25	Reference Frame: ICRS

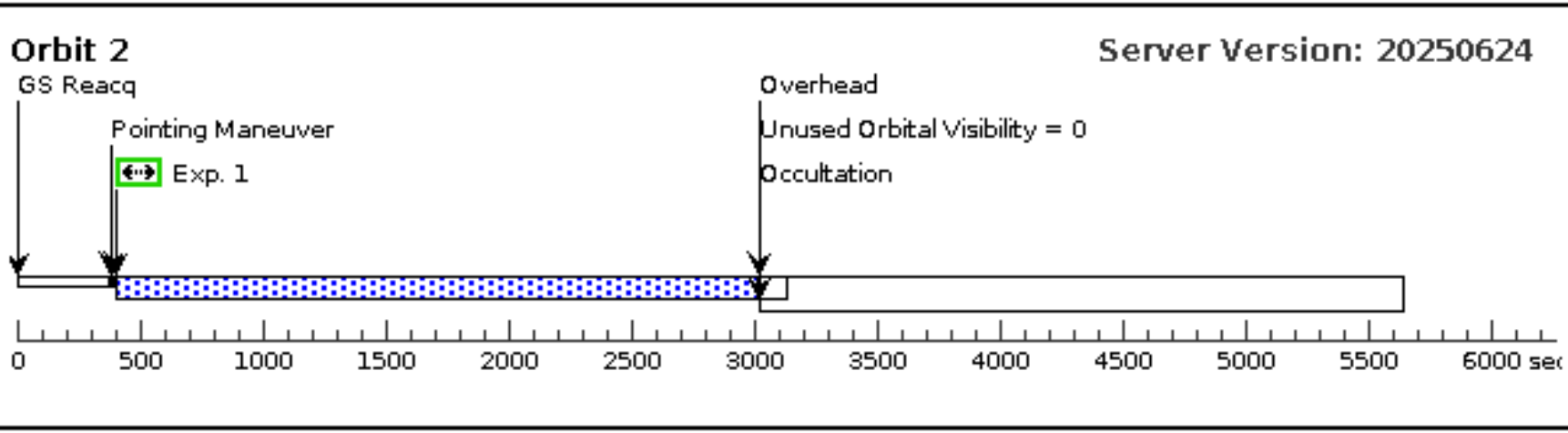
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

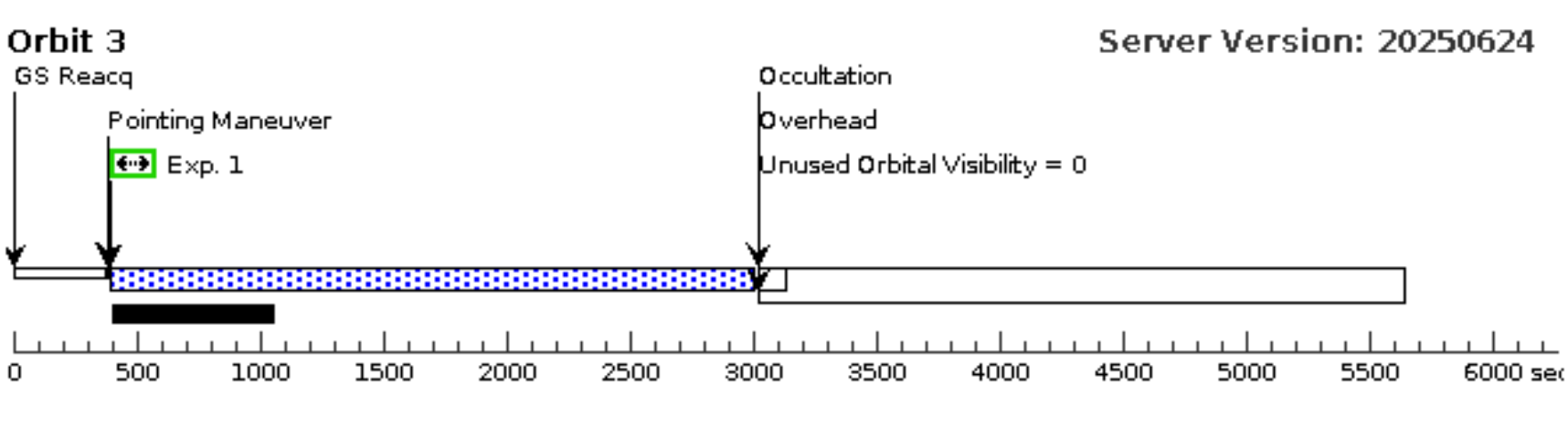
Exposures

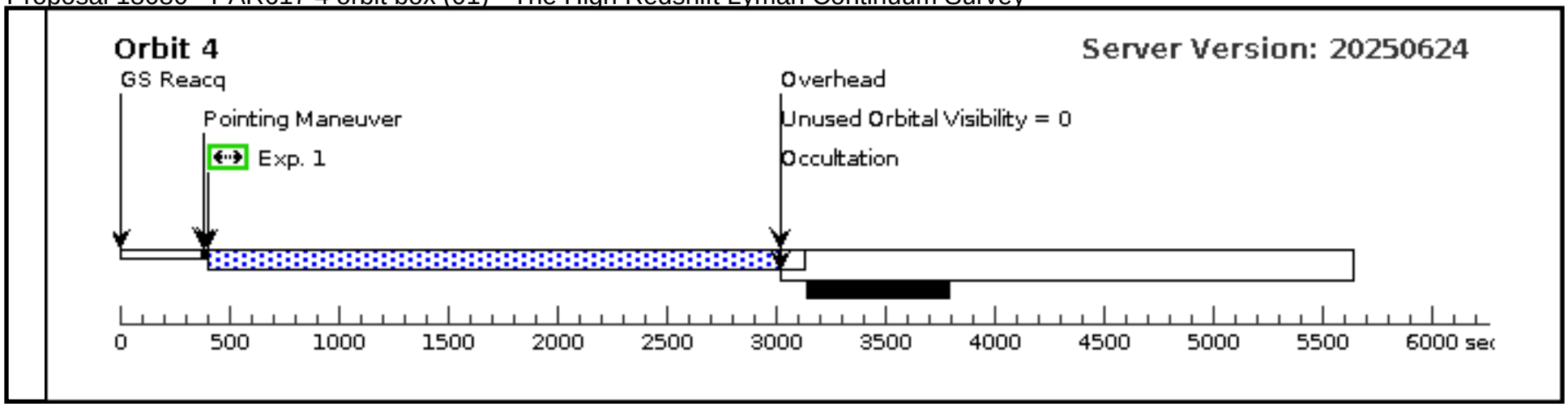
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) PAR617	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR617 4 orbit box (01) (1)	2500 Secs (10482 Secs)	
								[==>2638.0 Secs (Pattern 1)]	***[1]***
								[==>2614.0 Secs (Pattern 2)]	***[2]***
								[==>2616.0 Secs (Pattern 3)]	***[3]***
								[==>2614.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Overhead
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR617 3 orbit line (02), implementation Fri Aug 15 21:00:54 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 01

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

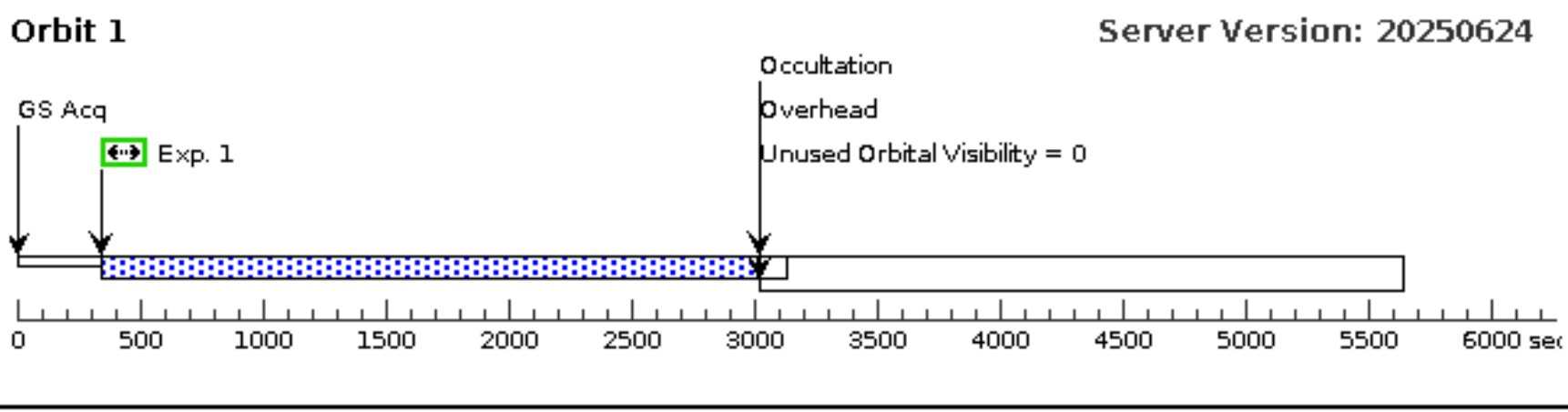
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PAR617	RA: 14 20 28.2017 (215.1175071d) Dec: +52 45 8.37 (52.75232d) Equinox: J2000		V=25	Reference Frame: ICRS

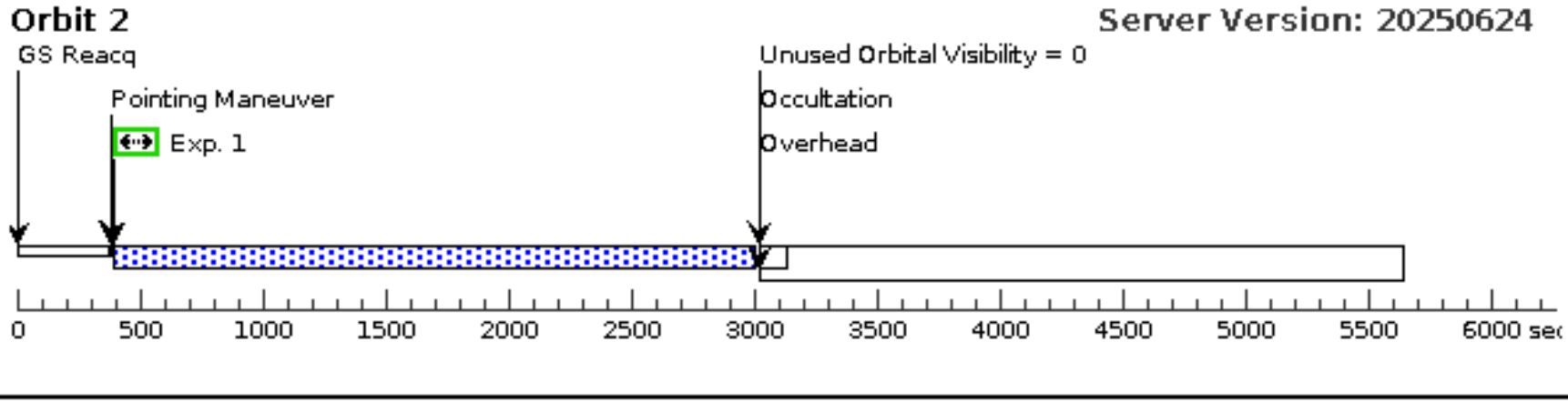
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

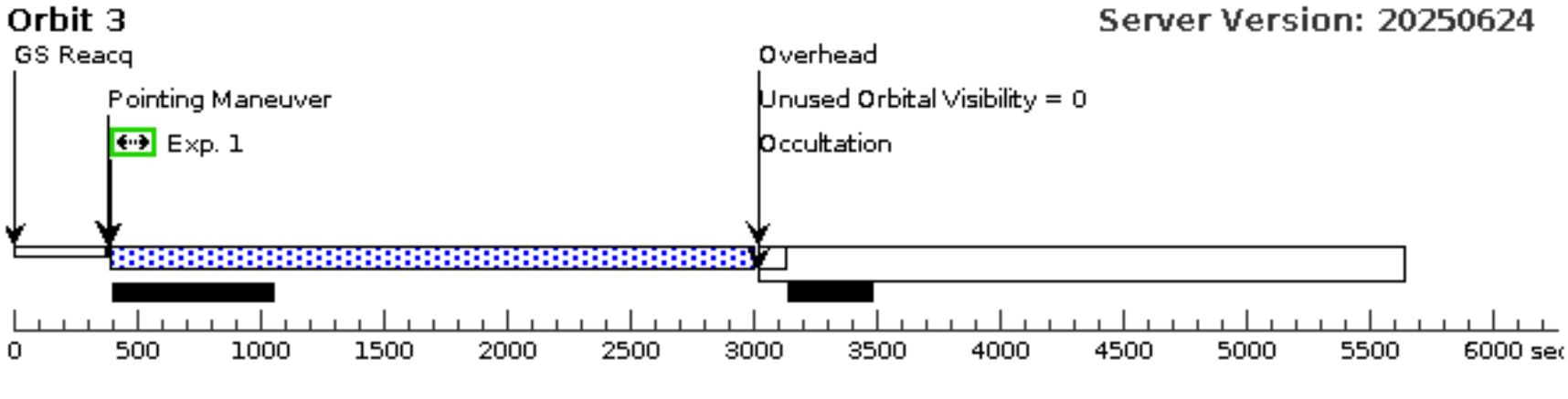
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) PAR617	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR617 3 orbit line (02) (2)	2500 Secs (7870 Secs)	
								[==>2638.0 Secs (Pattern 1)]	***[1]***
								[==>2616.0 Secs (Pattern 2)]	***[2]***
								[==>2616.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR28 4 orbit box (03), implementation Fri Aug 15 21:00:54 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

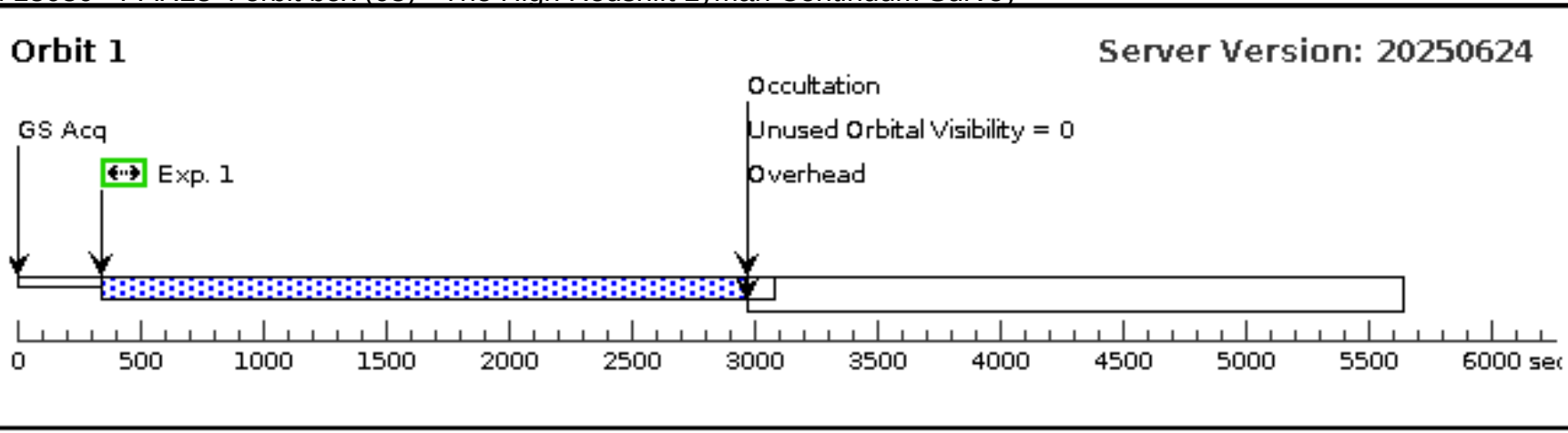
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PAR28	RA: 10 00 20.9777 (150.0874071d) Dec: +02 25 6.71 (2.41853d) Equinox: J2000		V=25	Reference Frame: ICRS

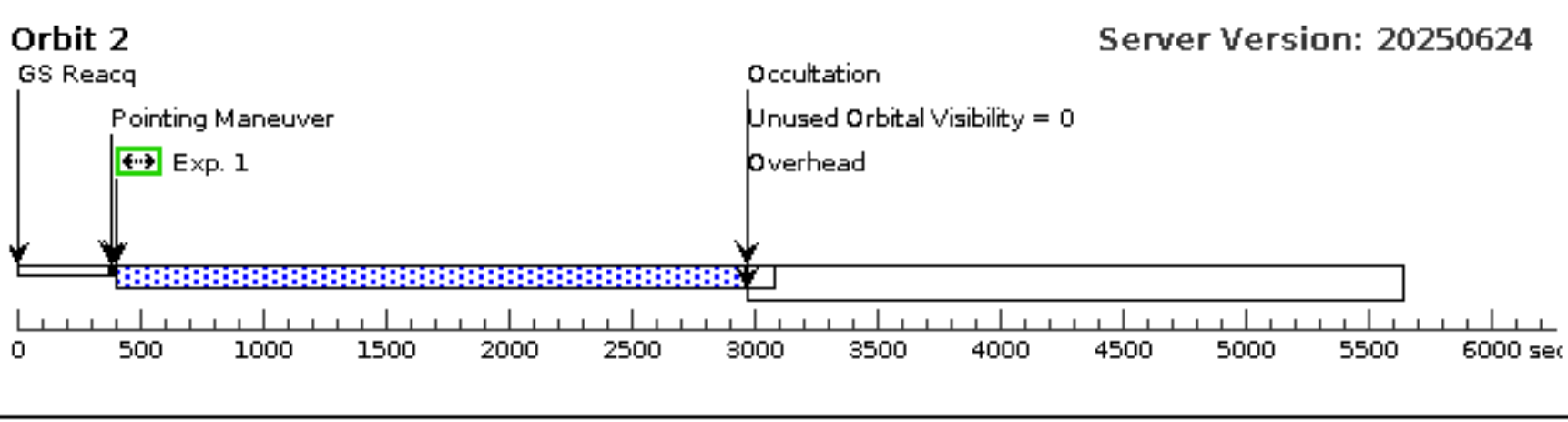
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

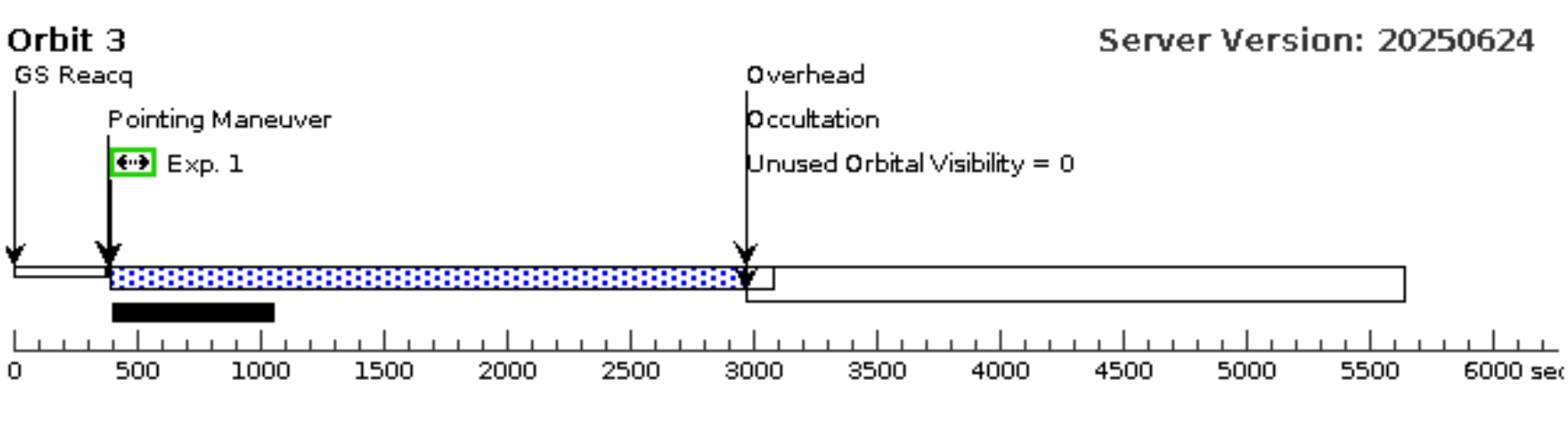
Exposures

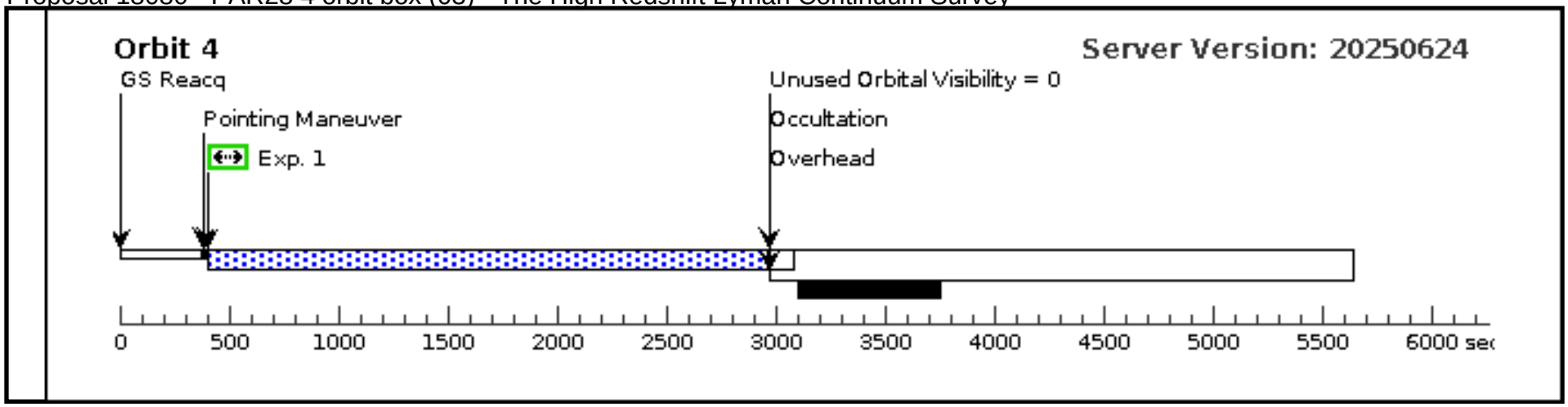
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) PAR28	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR28 4 orbit box (03) (1)	2500 Secs (10294 Secs)	
								[==>2591.0 Secs (Pattern 1)]	***[1]***
								[==>2567.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***
								[==>2567.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Unused Orbital Visibility = 0
Occultation
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR28 3 orbit line (04), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 03

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

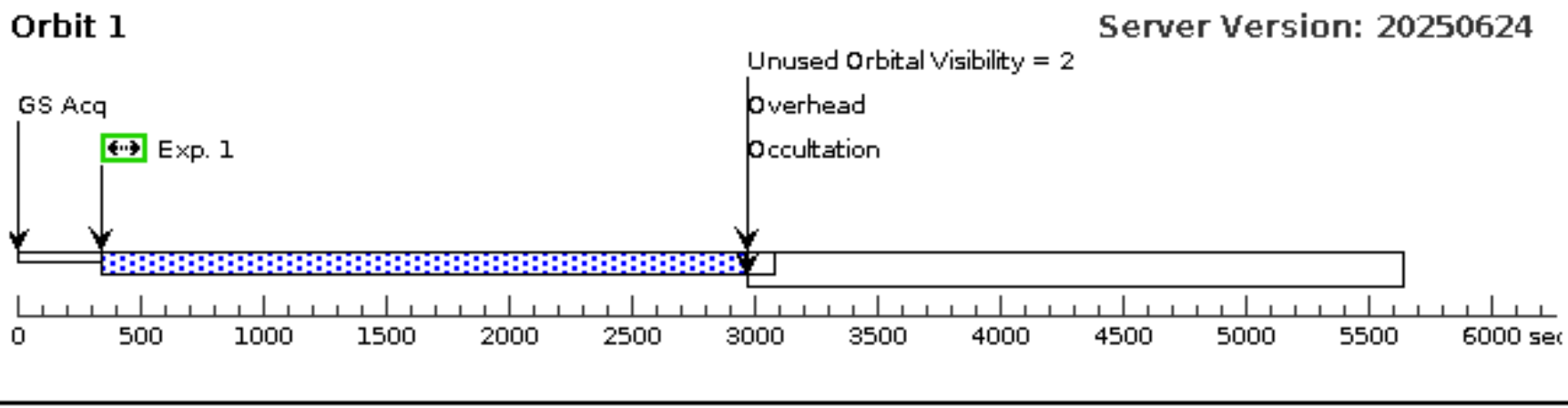
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PAR28	RA: 10 00 20.9777 (150.0874071d) Dec: +02 25 6.71 (2.41853d) Equinox: J2000		V=25	Reference Frame: ICRS

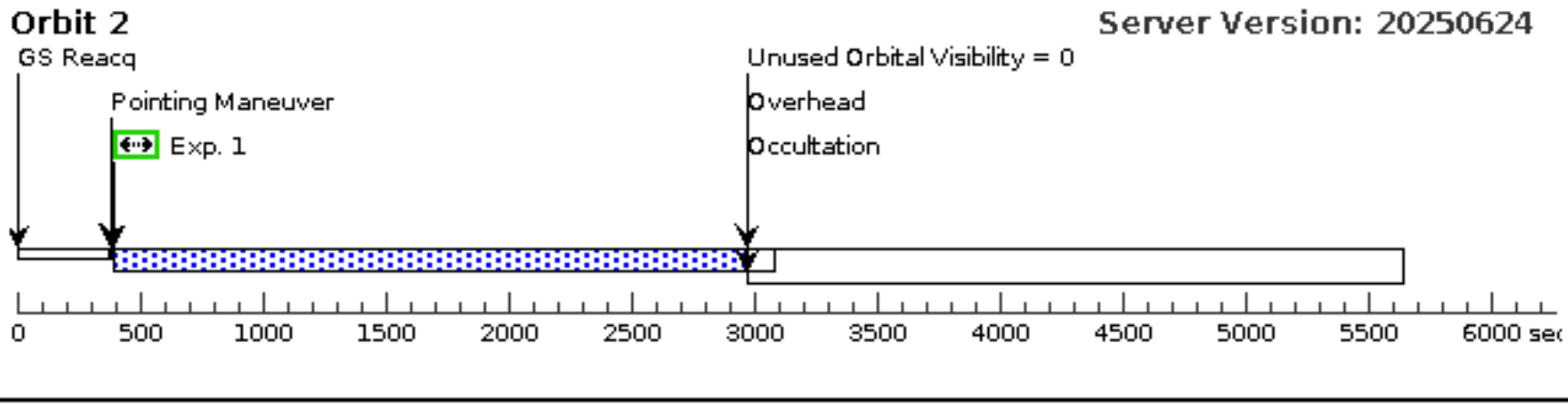
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

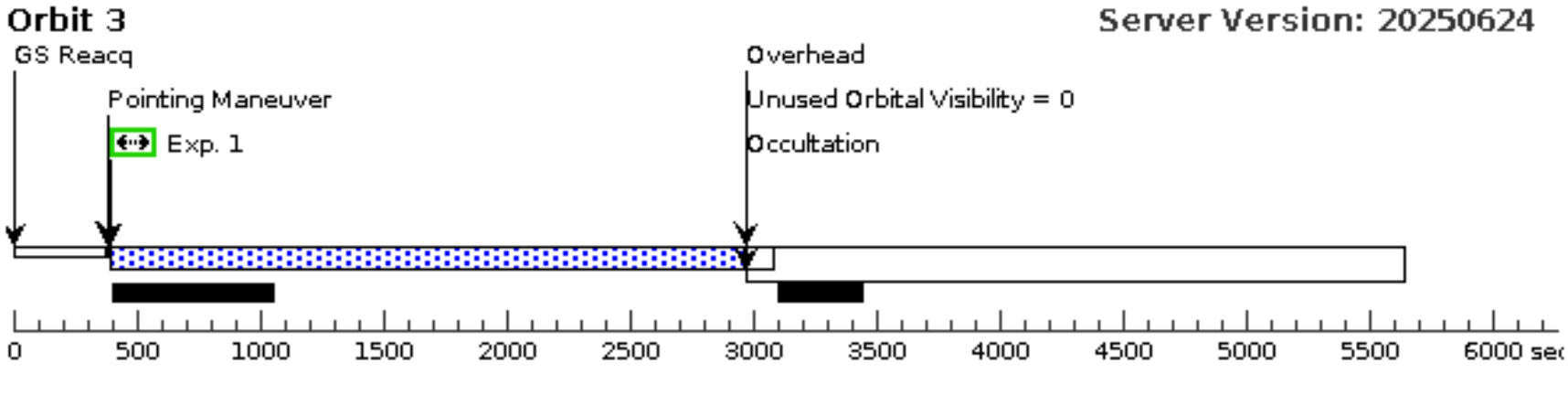
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) PAR28	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR28 3 orbit line (04) (2)	2500 Secs (7727 Secs)	
								[==>2589.0 Secs (Pattern 1)]	***[1]***
								[==>2569.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR50 4 orbit box (05), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

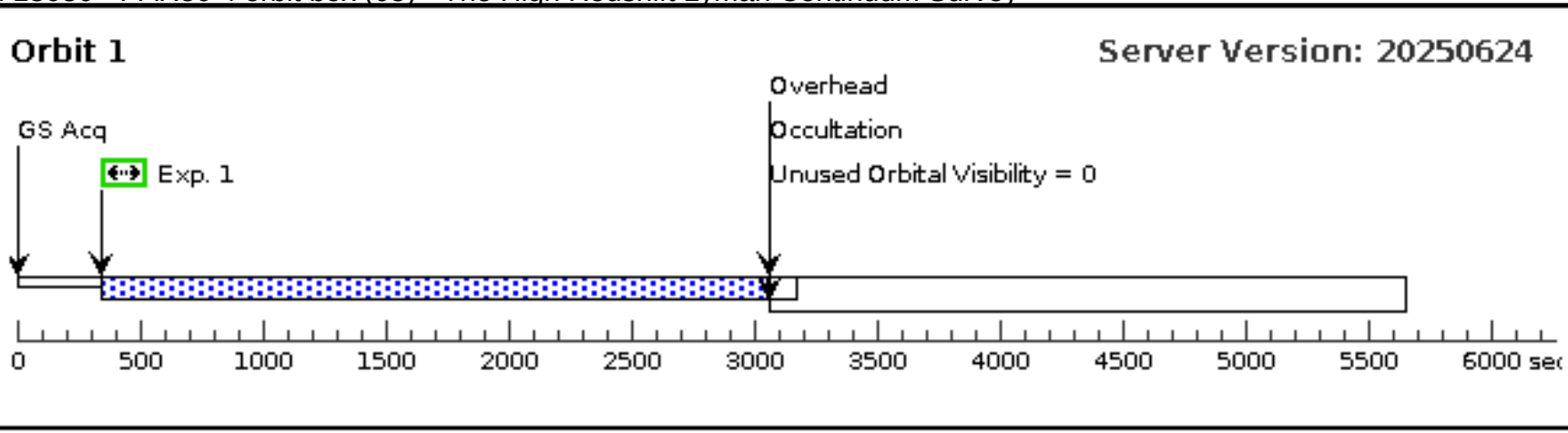
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	PAR050	RA: 12 36 43.2058 (189.1800242d) Dec: +62 03 55.50 (62.06542d) Equinox: J2000		V=25	Reference Frame: ICRS

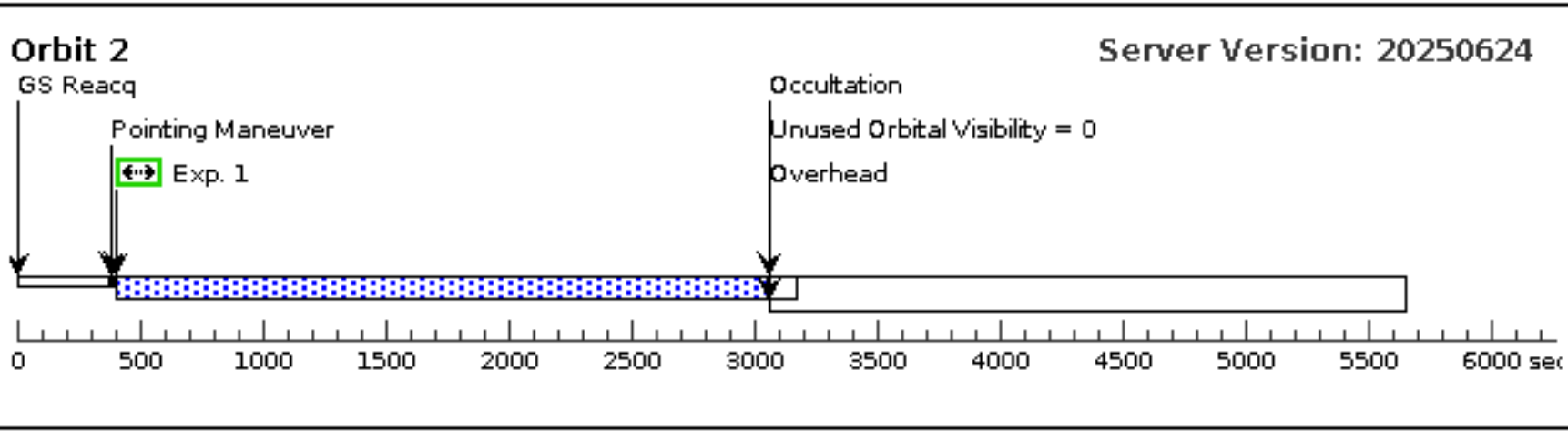
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

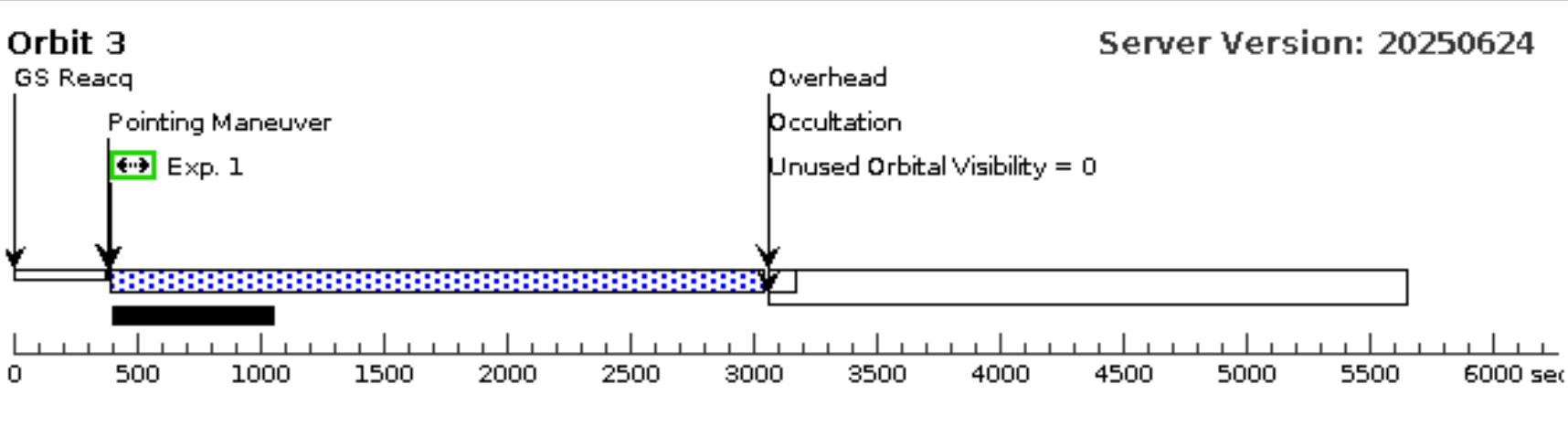
Exposures

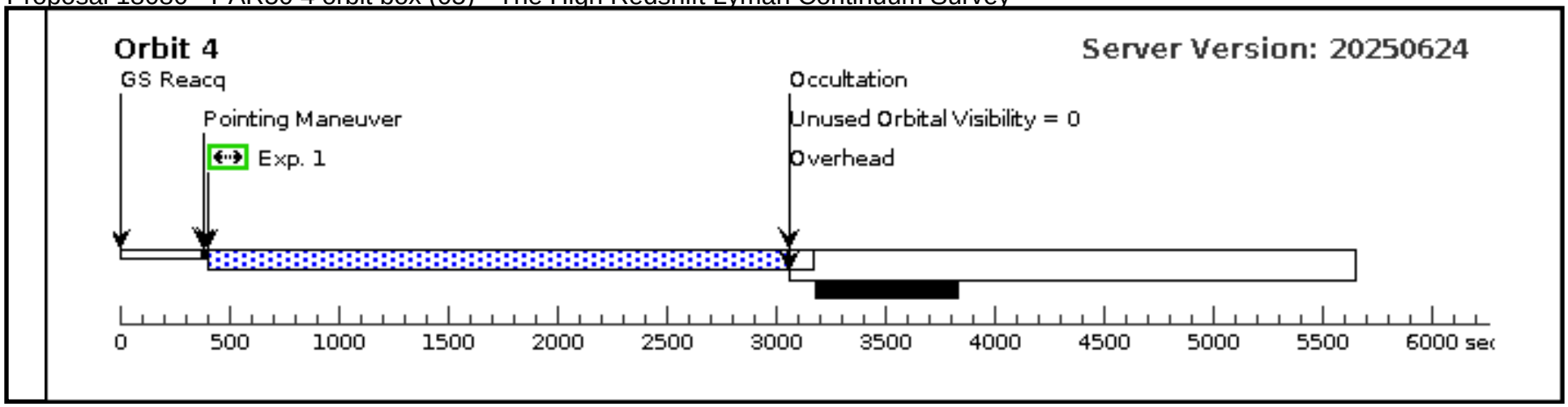
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) PAR050	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR50 4 orbit box (05) (1)	2500 Secs (10634 Secs)	
								[==>2676.0 Secs (Pattern 1)]	***[1]***
								[==>2652.0 Secs (Pattern 2)]	***[2]***
								[==>2654.0 Secs (Pattern 3)]	***[3]***
								[==>2652.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Occultation
Unused Orbital Visibility = 0
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR50 3 orbit line (06), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 05

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

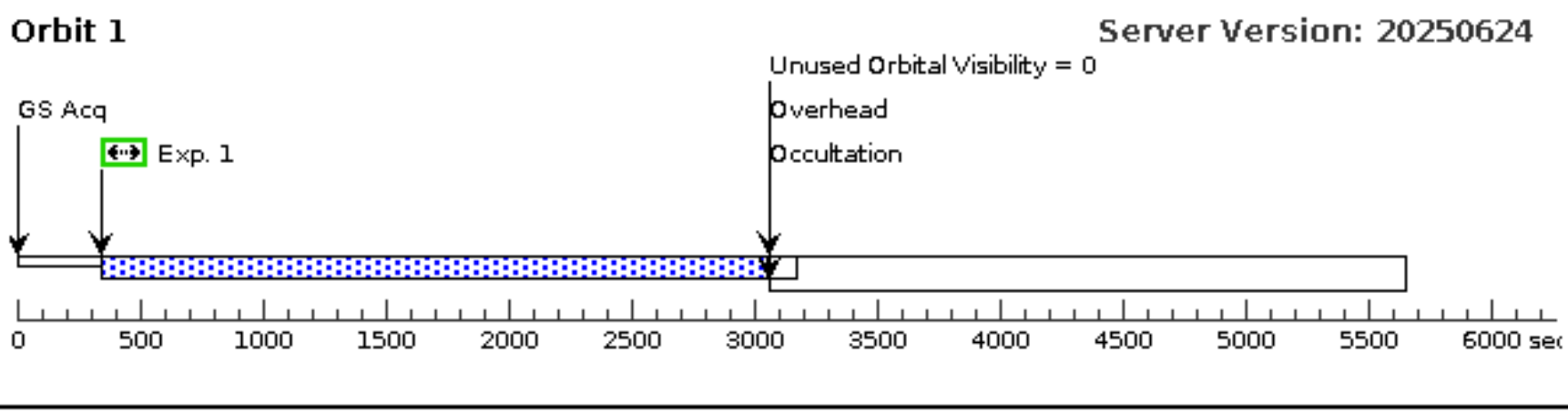
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	PAR050	RA: 12 36 43.2058 (189.1800242d) Dec: +62 03 55.50 (62.06542d) Equinox: J2000		V=25	Reference Frame: ICRS

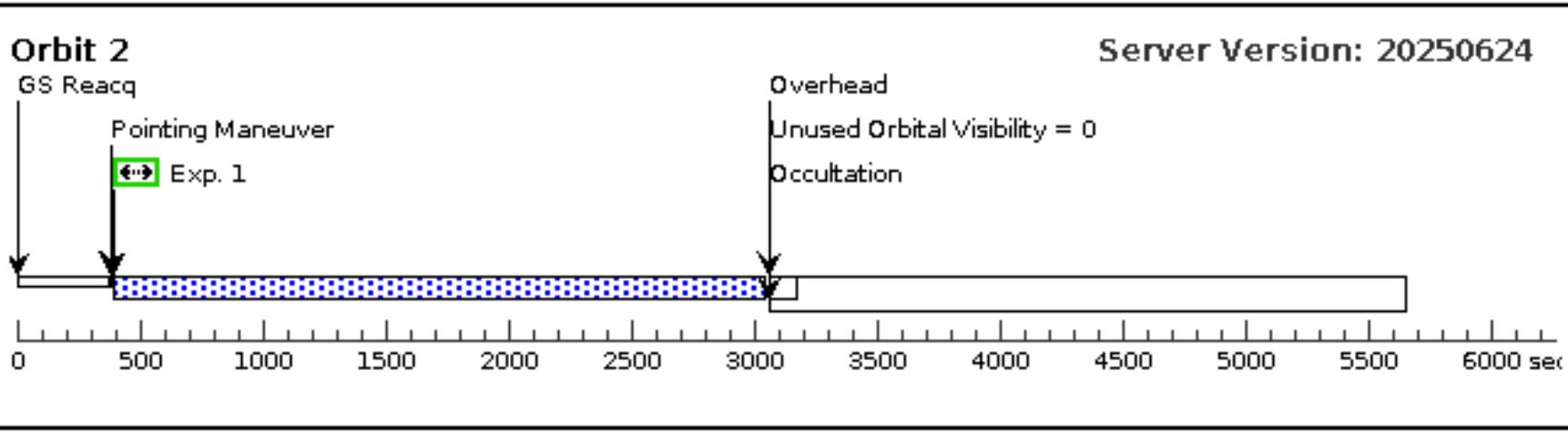
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

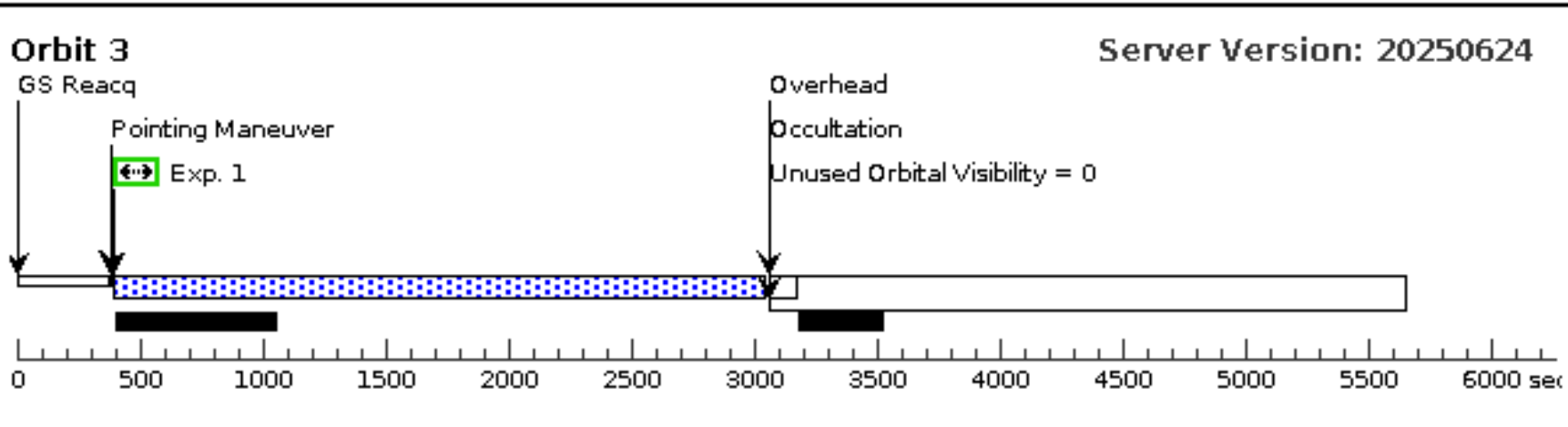
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) PAR050	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR50 3 orbit line (06) (2)	2500 Secs (7984 Secs)	
								[==>2676.0 Secs (Pattern 1)]	***[1]***
								[==>2654.0 Secs (Pattern 2)]	***[2]***
								[==>2654.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR52 4 orbit box (08), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

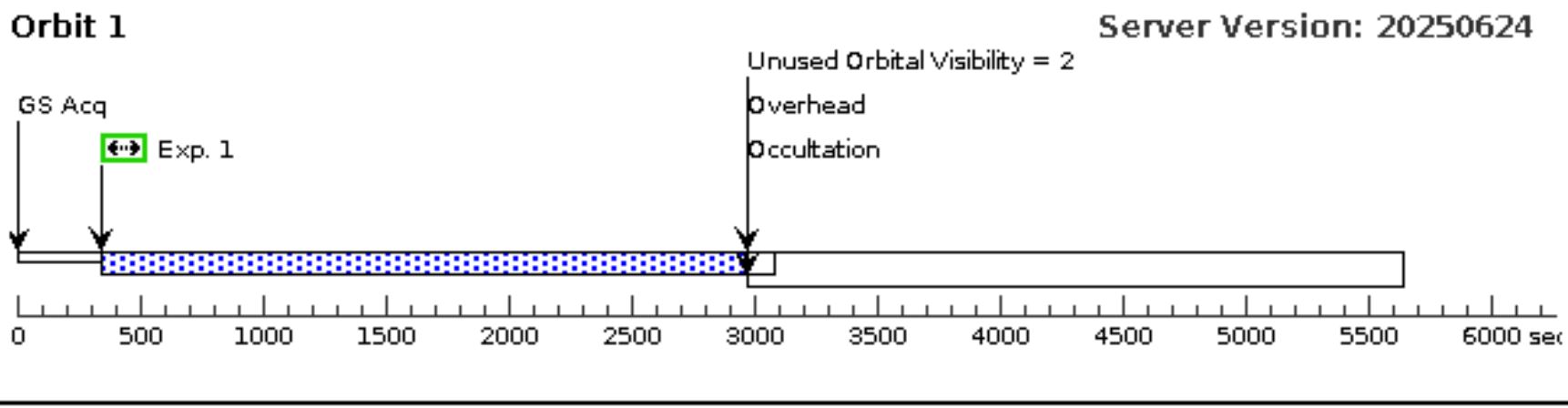
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	PAR052	RA: 10 00 37.2530 (150.1552208d) Dec: +02 02 30.62 (2.04184d) Equinox: J2000		V=25	Reference Frame: ICRS

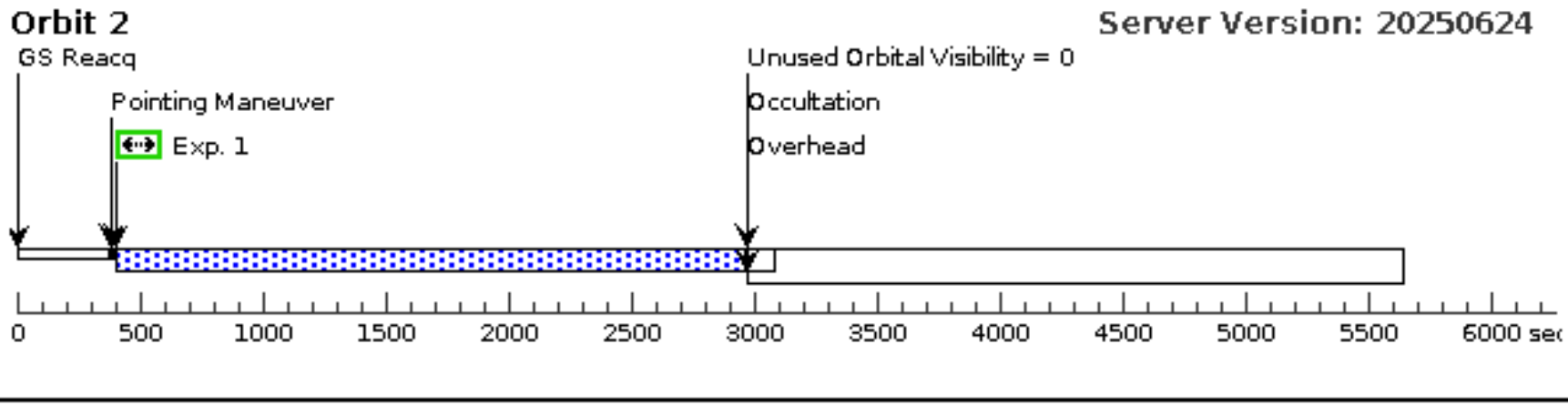
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

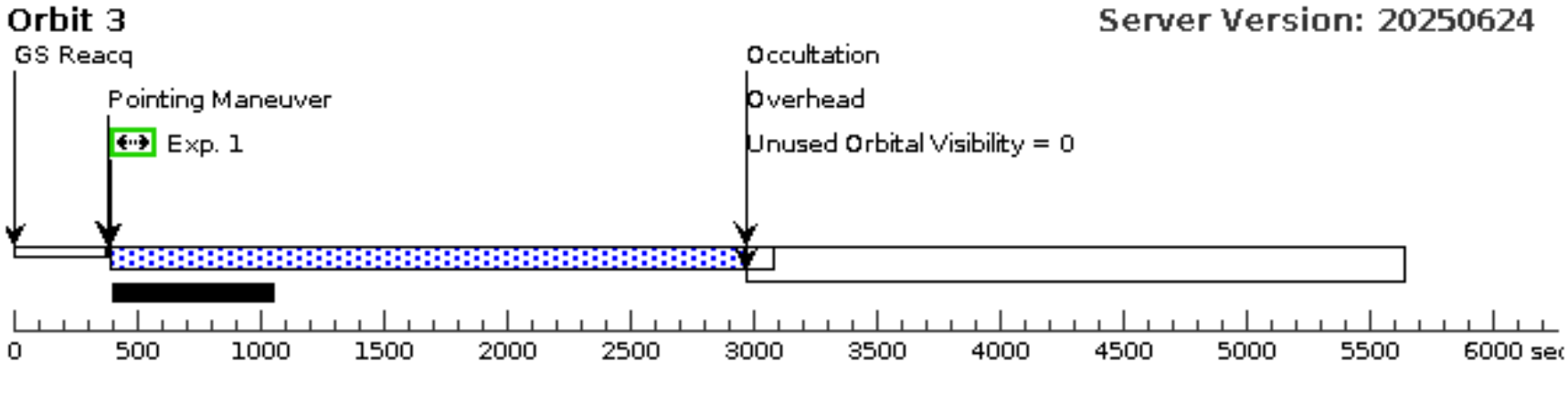
Exposures

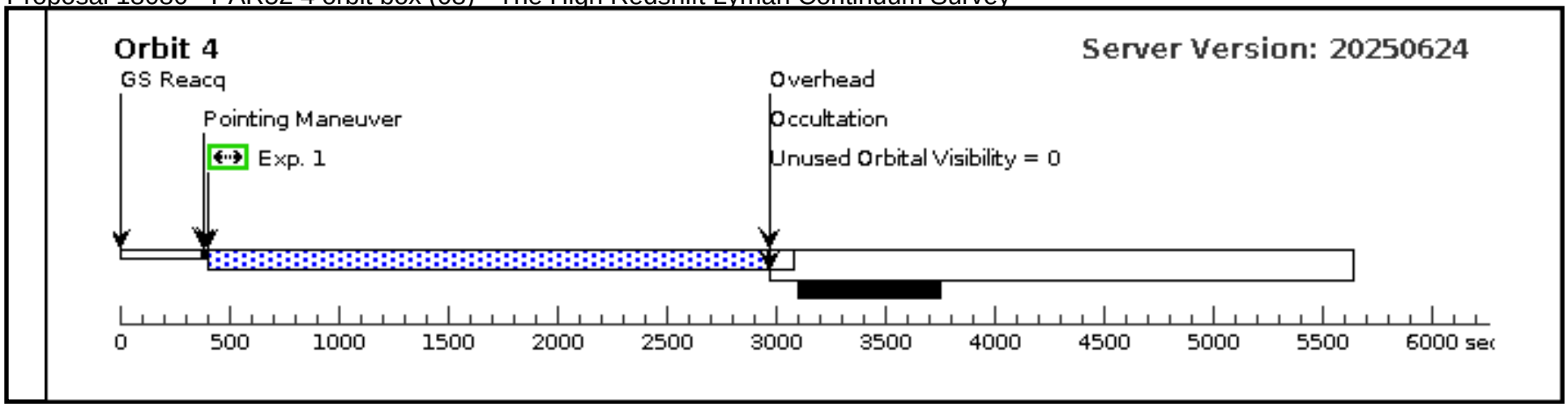
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) PAR052	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR52 4 orbit box (08) (1)	2500 Secs (10292 Secs)	
								[==>2589.0 Secs (Pattern 1)]	***[1]***
								[==>2567.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***
								[==>2567.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Overhead
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR52 3 orbit line (07), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 08

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

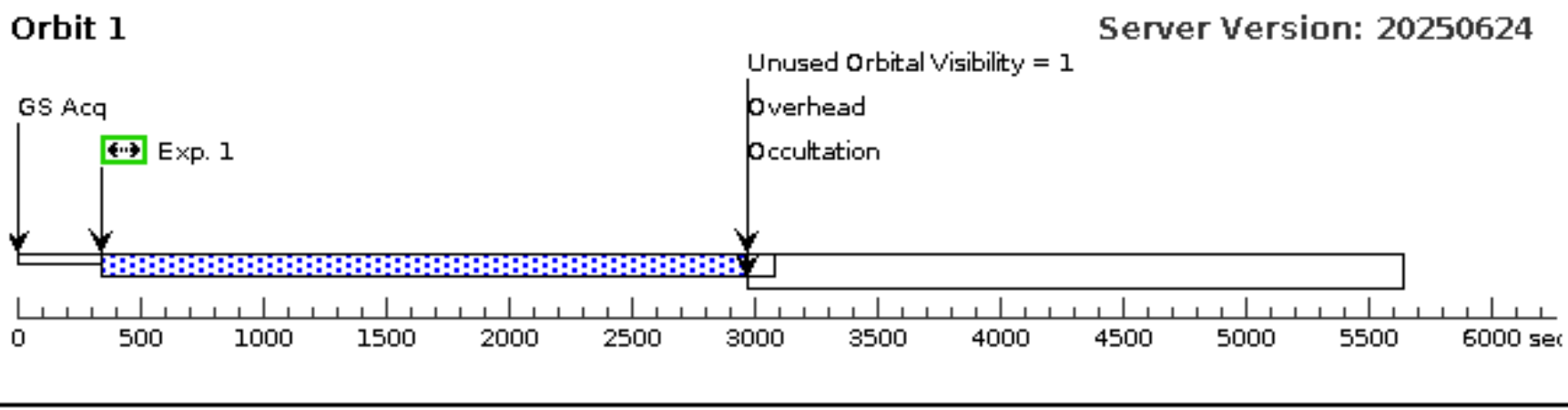
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	PAR052	RA: 10 00 37.2530 (150.1552208d) Dec: +02 02 30.62 (2.04184d) Equinox: J2000		V=25	Reference Frame: ICRS

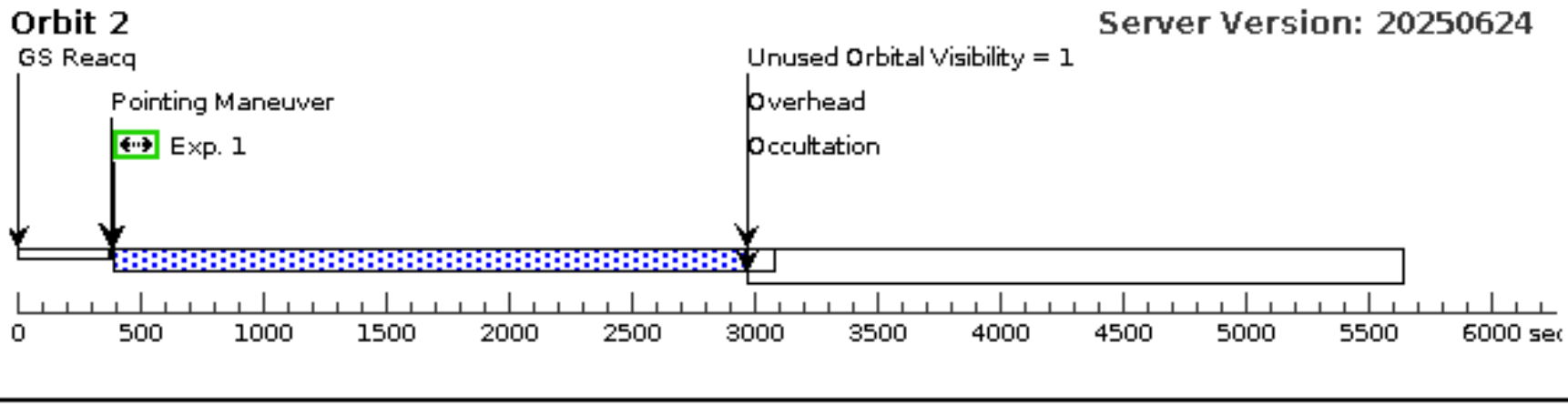
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

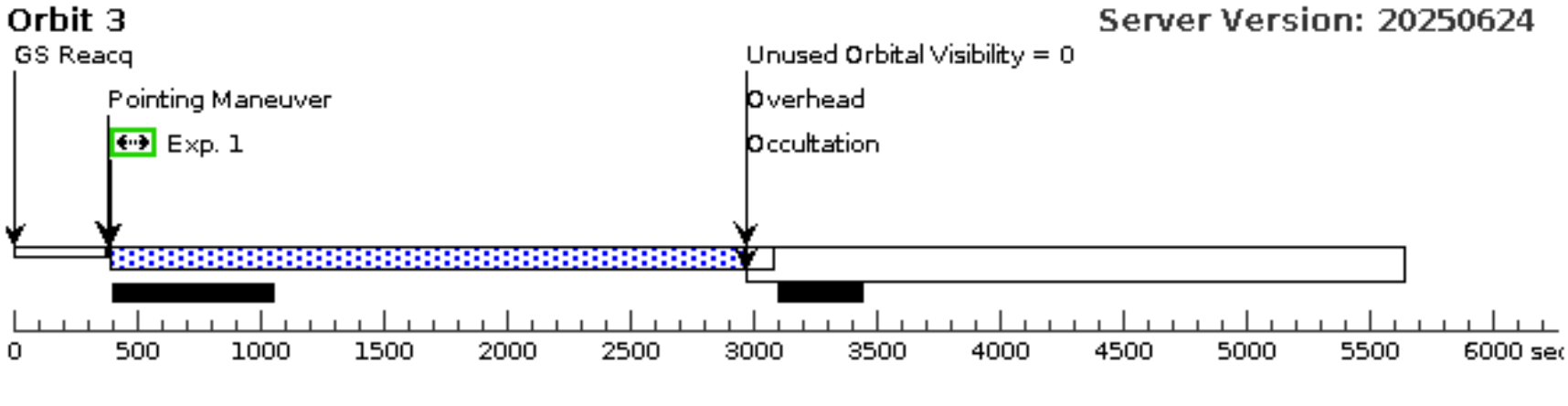
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) PAR052	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR52 3 orbit line (07) (2)	2500 Secs (7727 Secs)	
								[==>2590.0 Secs (Pattern 1)]	***[1]***
								[==>2568.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR58 4 orbit box (09), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

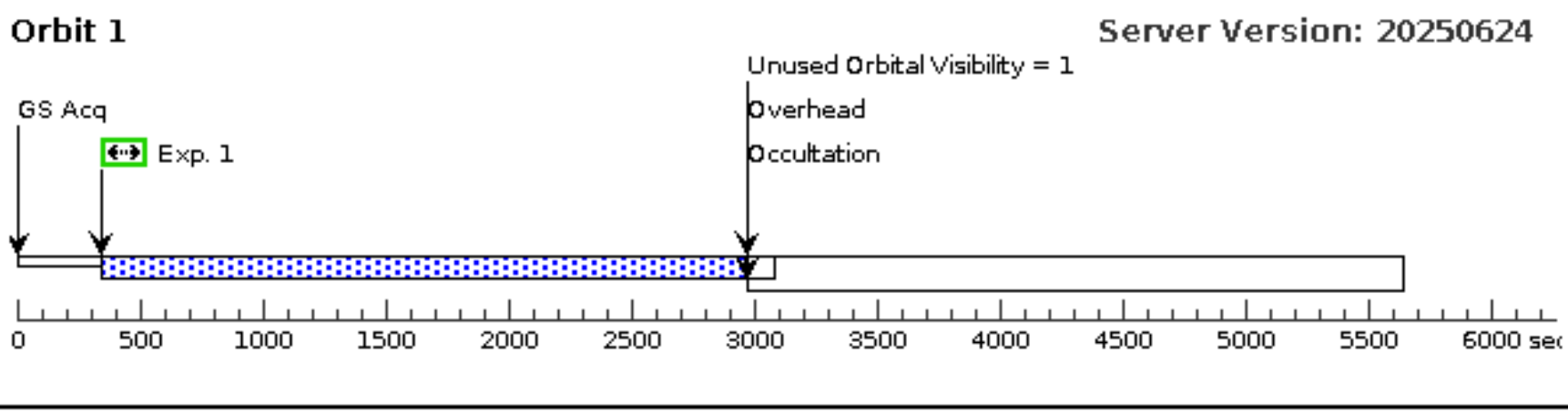
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PAR058	RA: 11 50 1.0186 (177.5042442d) Dec: +22 41 0.37 (22.68344d) Equinox: J2000		V=25	Reference Frame: ICRS

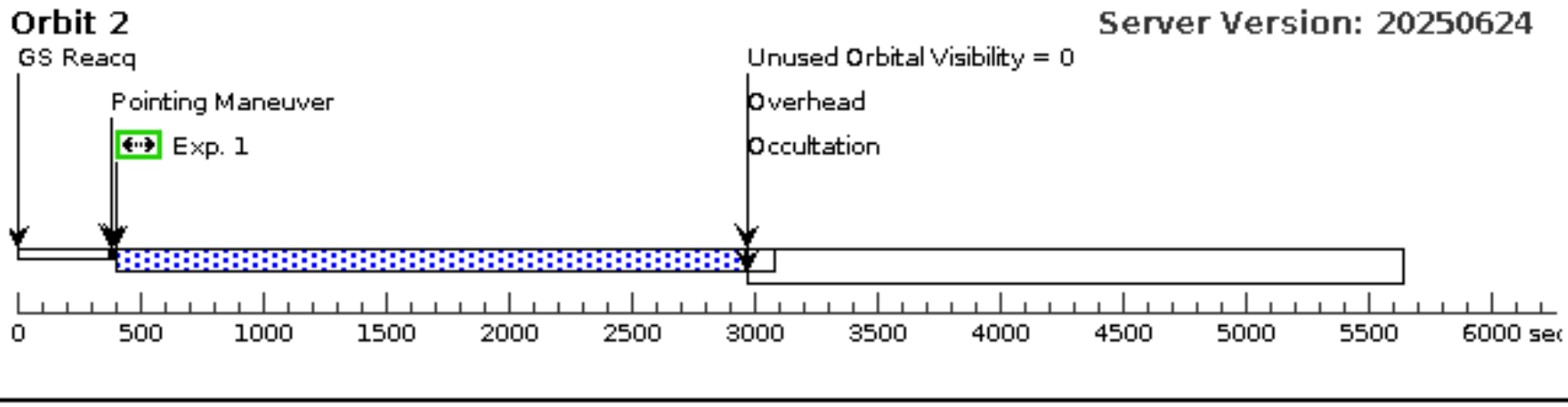
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

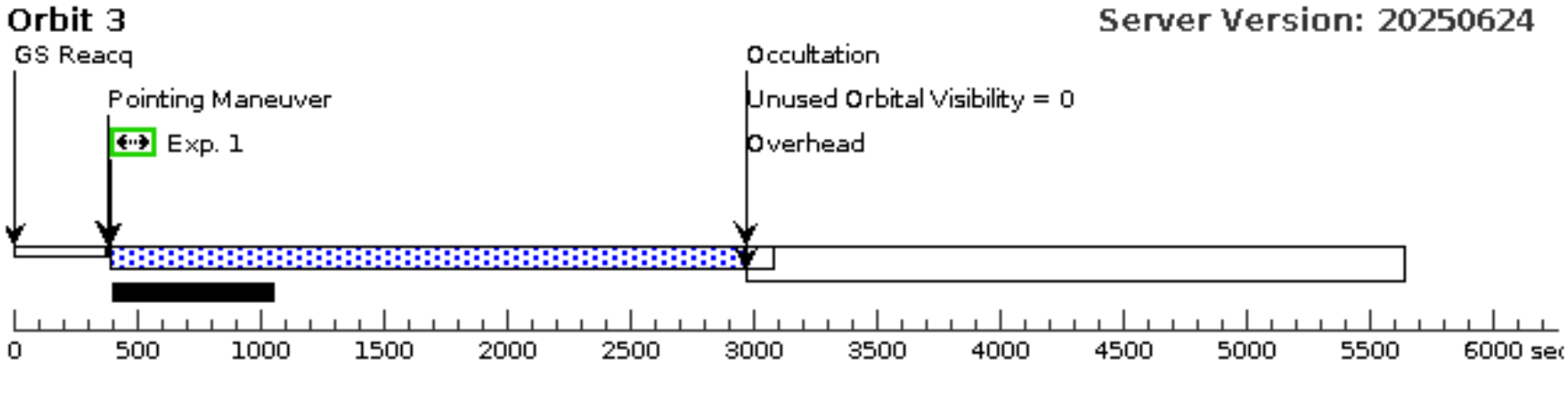
Exposures

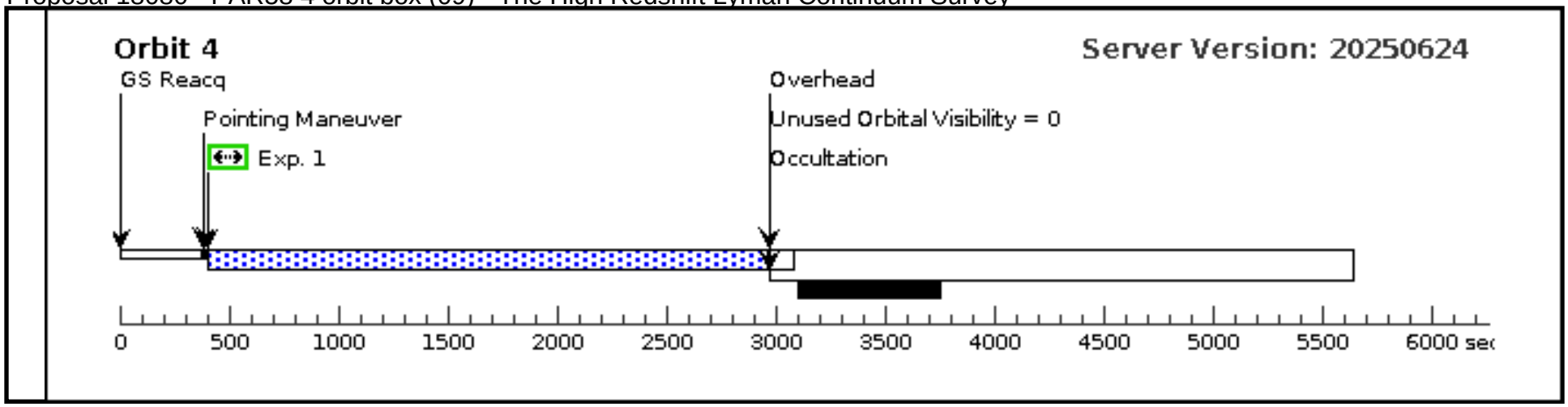
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) PAR058	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR58 4 orbit box (09) (1)	2500 Secs (10293 Secs)	
								[==>2590.0 Secs (Pattern 1)]	***[1]***
								[==>2567.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***
								[==>2567.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Overhead
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR58 3 orbit line (10), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 09

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

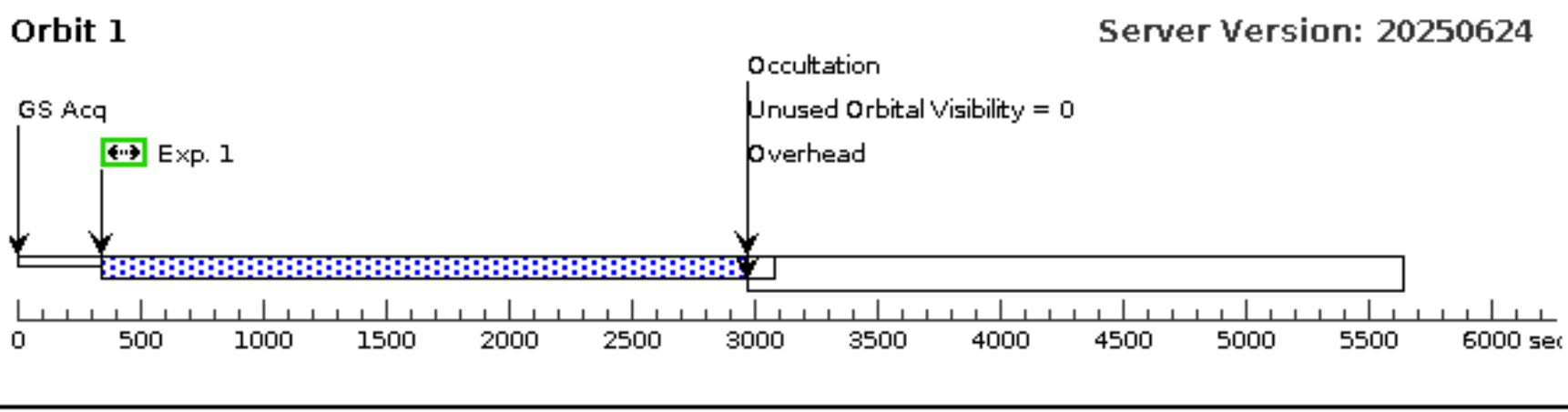
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PAR058	RA: 11 50 1.0186 (177.5042442d) Dec: +22 41 0.37 (22.68344d) Equinox: J2000		V=25	Reference Frame: ICRS

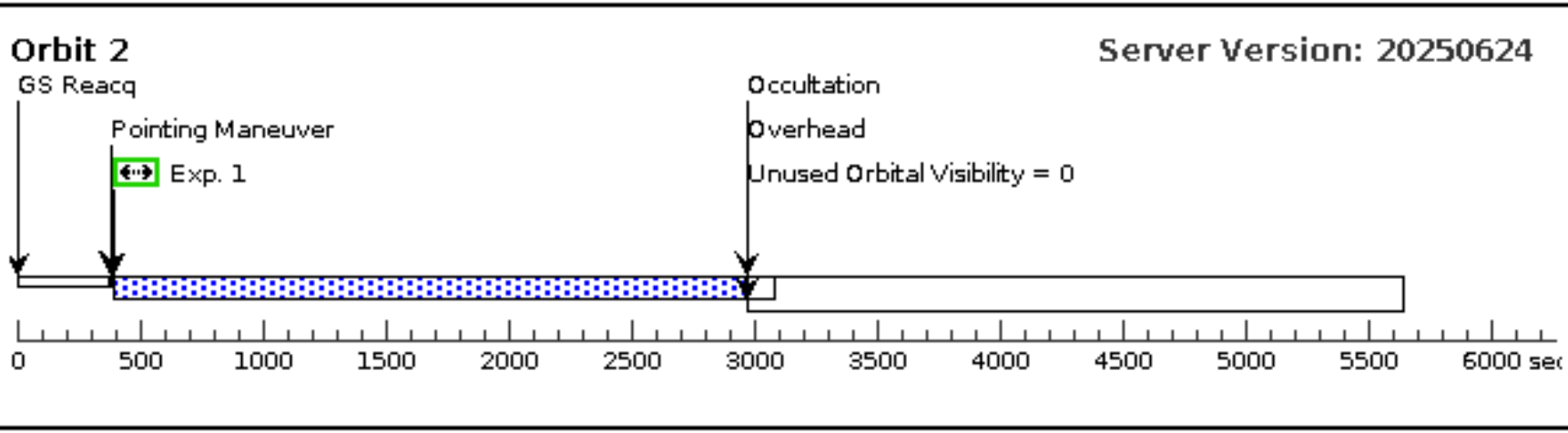
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

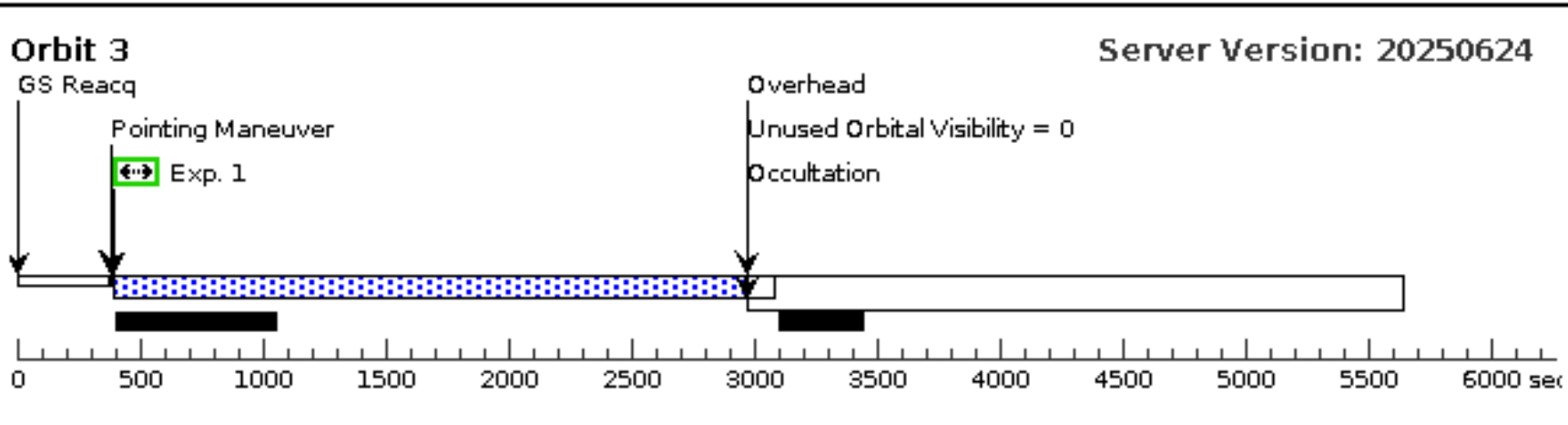
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) PAR058	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR58 3 orbit line (10) (2)	2500 Secs (7729 Secs)	
								[==>2591.0 Secs (Pattern 1)]	***[1]***
								[==>2569.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR58 optical (17), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 09

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

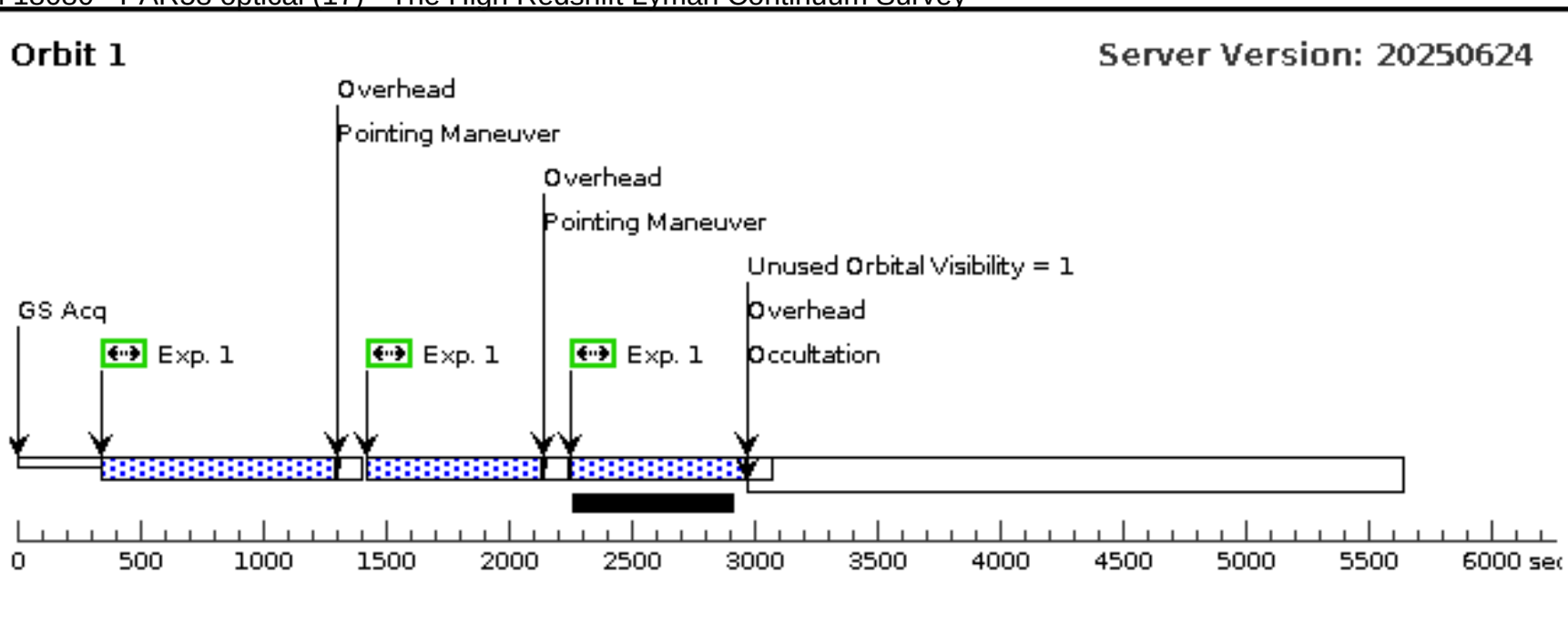
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PAR058	RA: 11 50 1.0186 (177.5042442d) Dec: +22 41 0.37 (22.68344d) Equinox: J2000		V=25	Reference Frame: ICRS

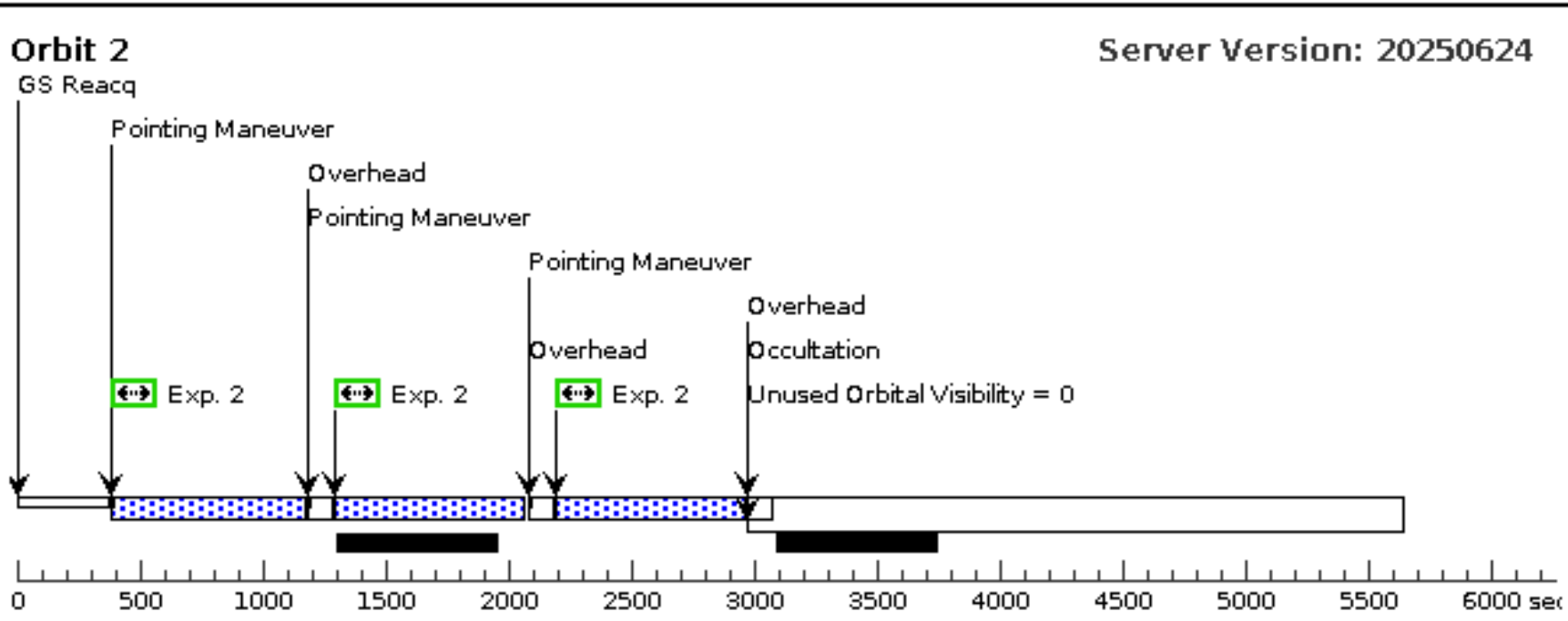
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) PAR058	WFC3/UVIS, ACCUM, UVIS-CENTER	F625W			Pattern 2, Exps 1-1 in PAR58 optical (17) (2)	720 Secs (2334 Secs) *[==>918.0 Secs (Pattern 1)]* *[==>708.0 Secs (Pattern 2)]* *[==>708.0 Secs (Pattern 3)]*	***[1]***
2		(5) PAR058	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Pattern 2, Exps 2-2 in PAR58 optical (17) (2)	782 Secs (2310 Secs) *[==>770.0 Secs (Pattern 1)]* *[==>770.0 Secs (Pattern 2)]* *[==>770.0 Secs (Pattern 3)]*	***[2]***

Orbit Structure





Visit

Proposal 18080, PAR54 4 orbit box (11), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

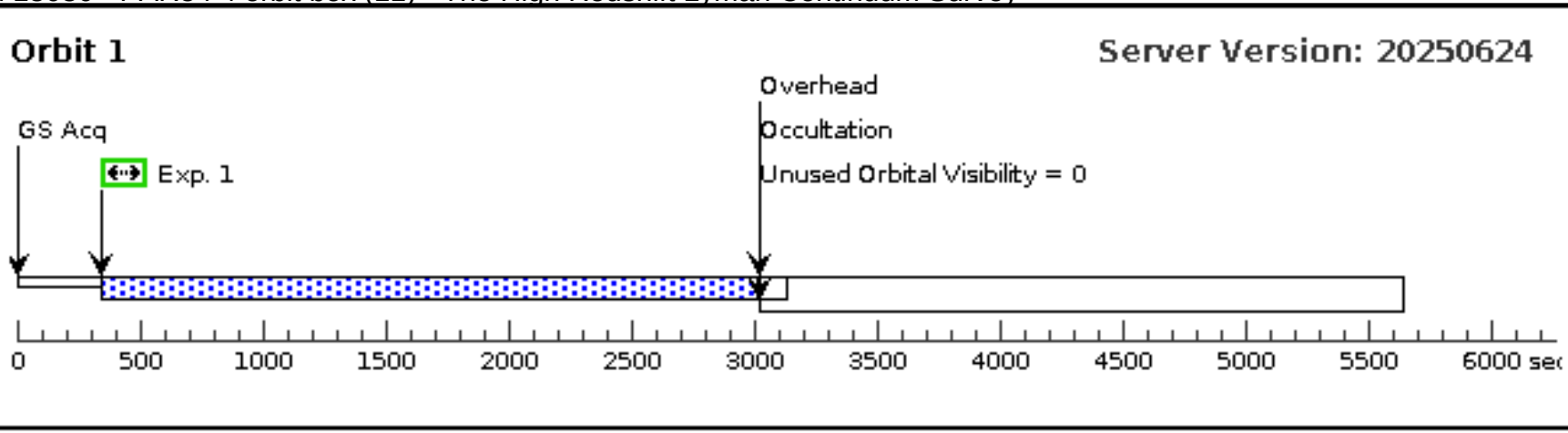
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	PAR054	RA: 14 18 18.2234 (214.5759308d) Dec: +52 16 46.86 (52.27968d) Equinox: J2000		V=25	Reference Frame: ICRS

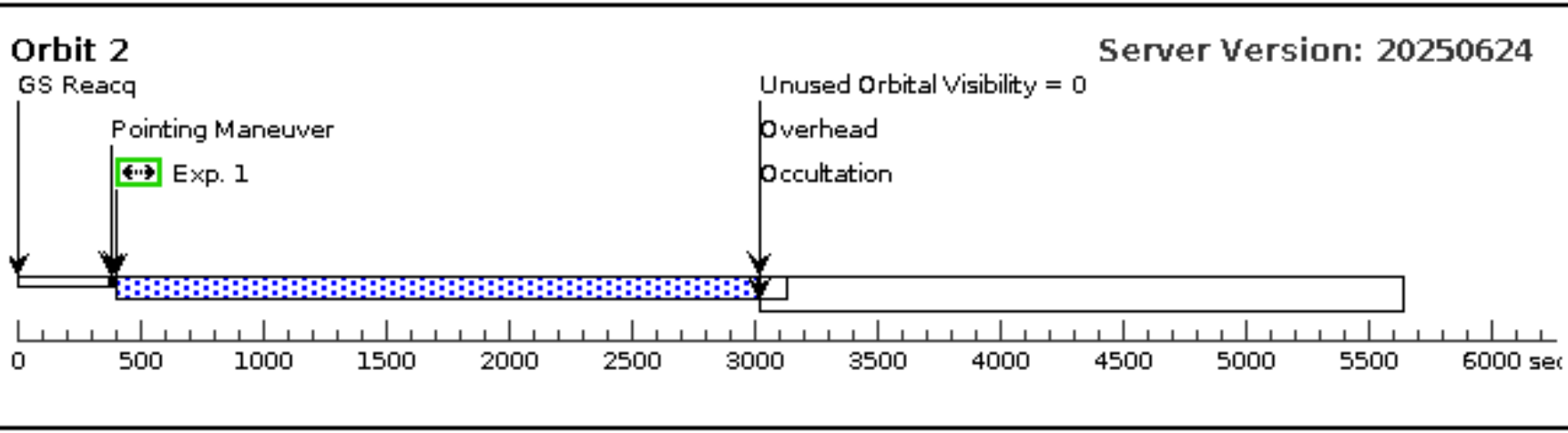
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

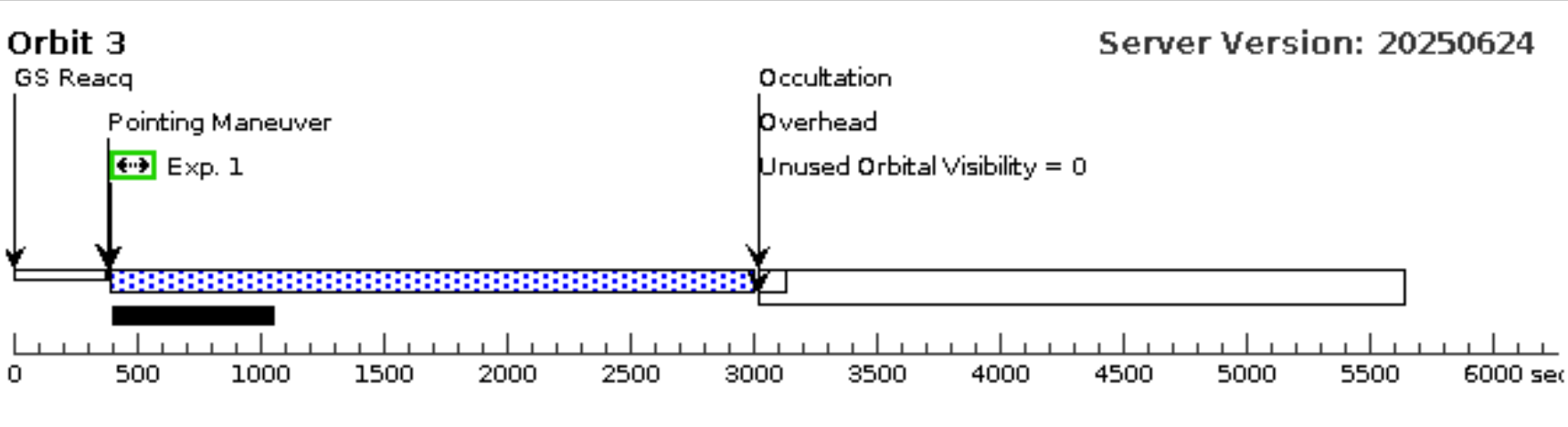
Exposures

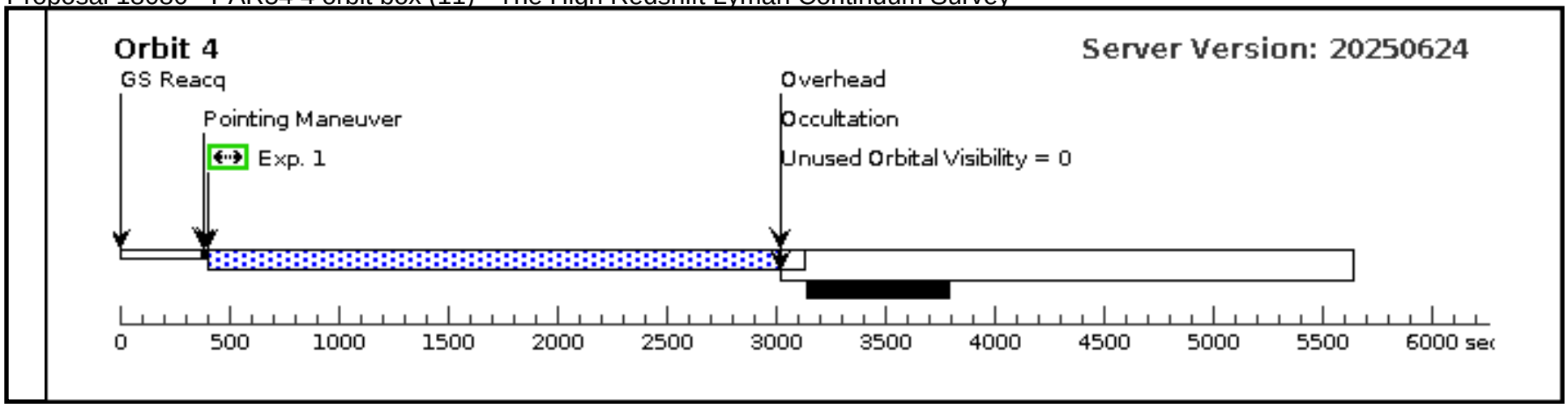
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) PAR054	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR54 4 orbit box (11) (1)	2500 Secs (10482 Secs)	
								[==>2638.0 Secs (Pattern 1)]	***[1]***
								[==>2614.0 Secs (Pattern 2)]	***[2]***
								[==>2616.0 Secs (Pattern 3)]	***[3]***
								[==>2614.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Overhead
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR54 3 orbit line (12), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 11

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

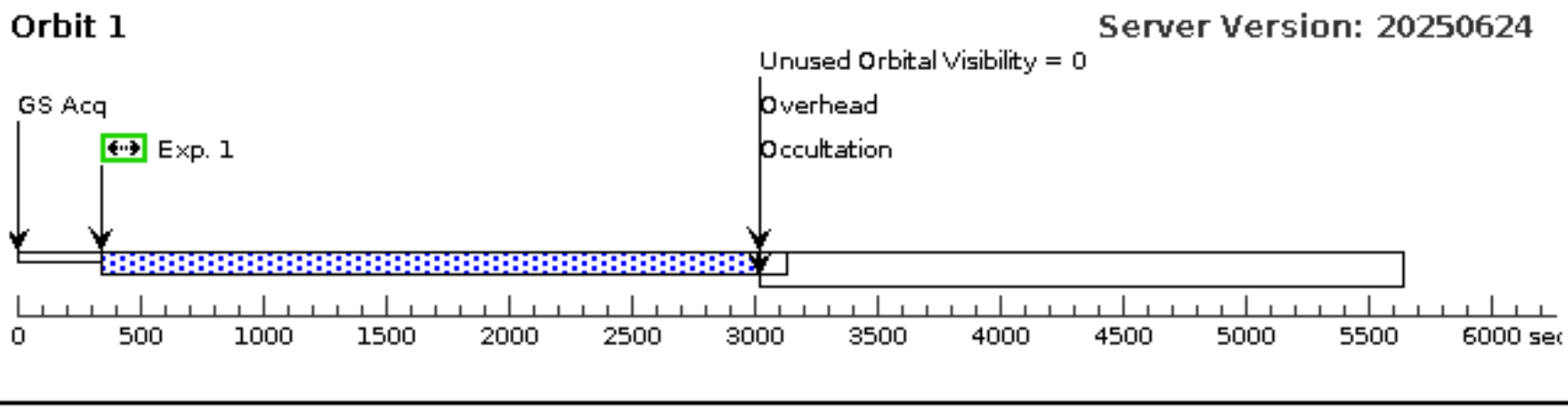
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	PAR054	RA: 14 18 18.2234 (214.5759308d) Dec: +52 16 46.86 (52.27968d) Equinox: J2000		V=25	Reference Frame: ICRS

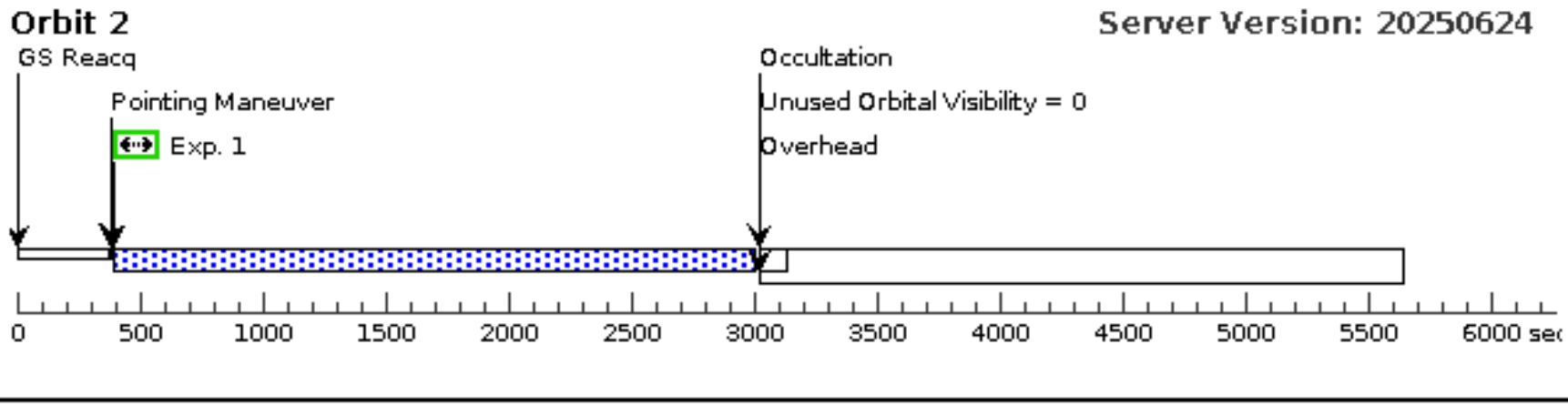
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

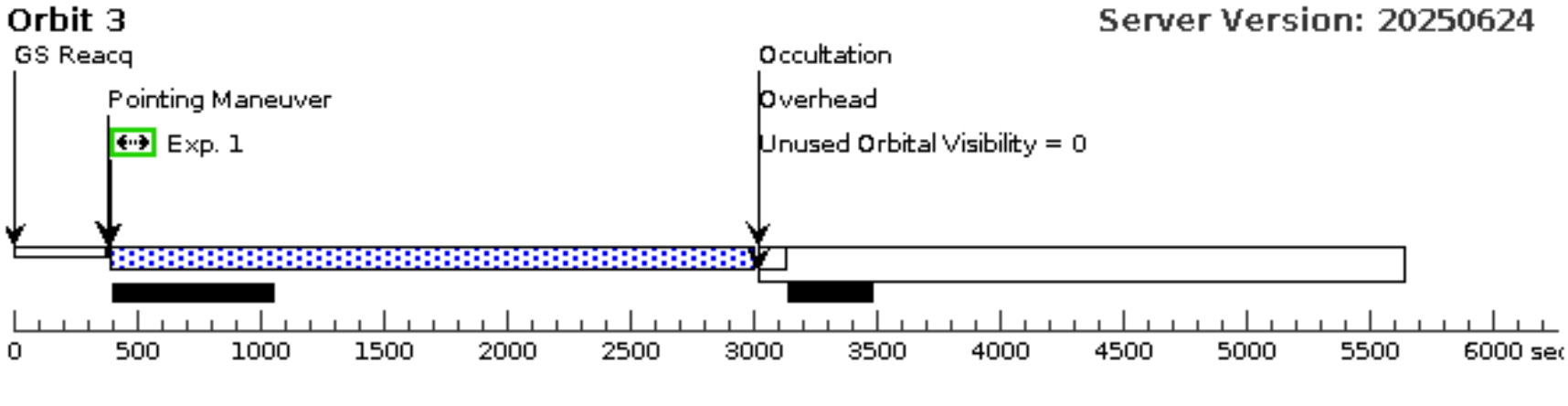
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) PAR054	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR54 3 orbit line (12) (2)	2500 Secs (7870 Secs)	
								[==>2638.0 Secs (Pattern 1)]	***[1]***
								[==>2616.0 Secs (Pattern 2)]	***[2]***
								[==>2616.0 Secs (Pattern 3)]	***[3]***

Orbit Structure







Visit

Proposal 18080, PAR54 optical (16), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 11

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

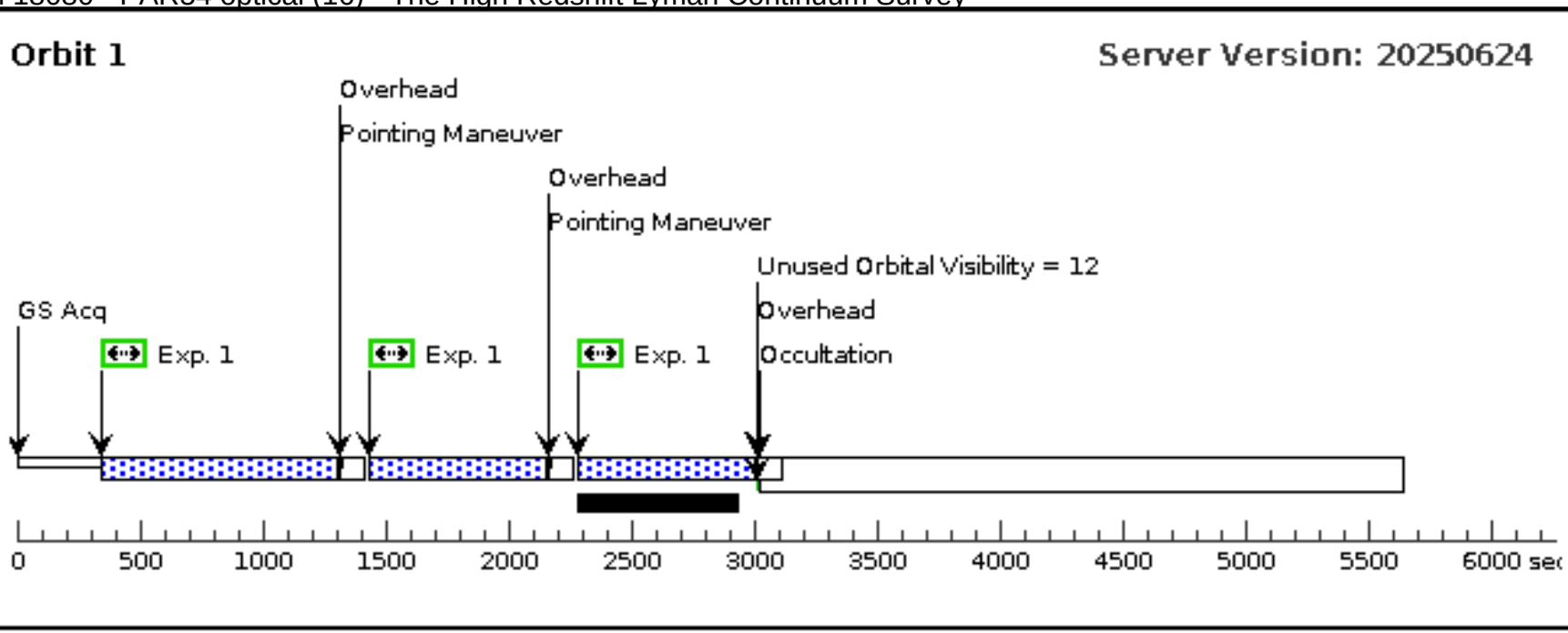
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	PAR054	RA: 14 18 18.2234 (214.5759308d) Dec: +52 16 46.86 (52.27968d) Equinox: J2000		V=25	Reference Frame: ICRS

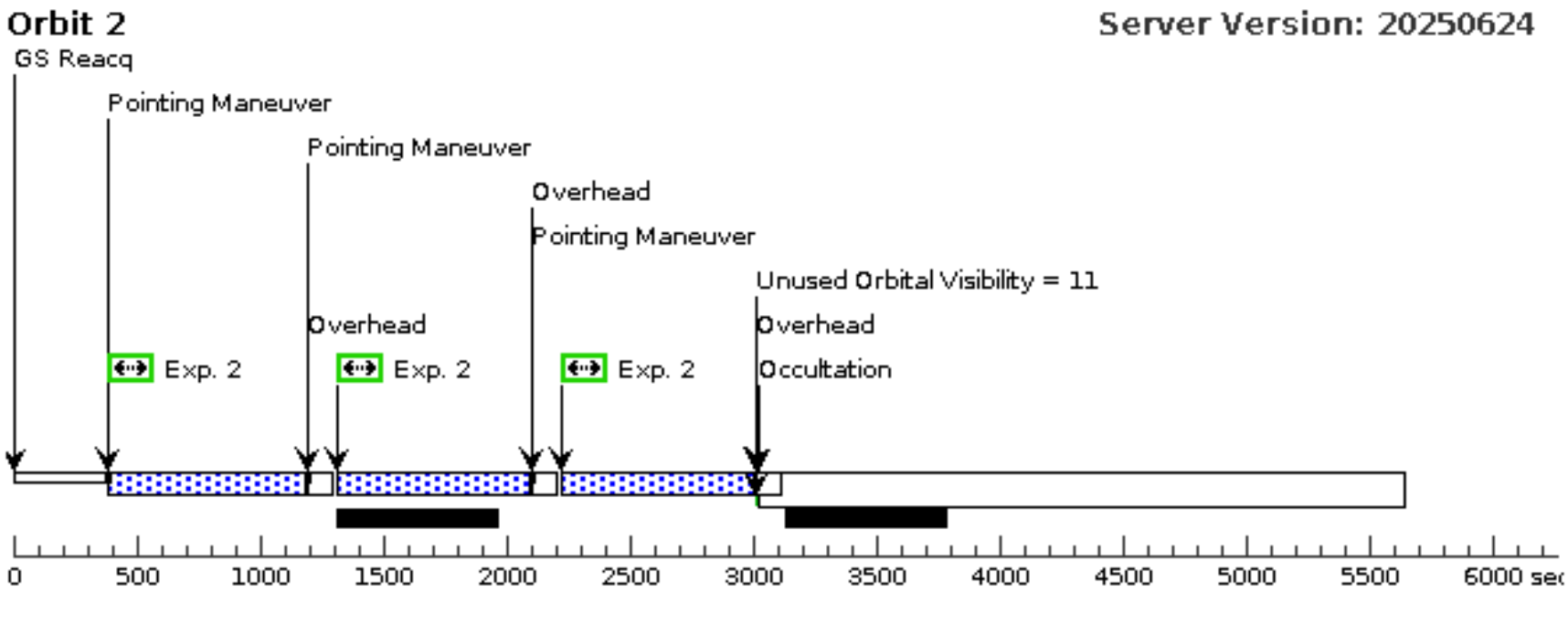
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) PAR054	WFC3/UVIS, ACCUM, UVIS-CENTER	F625W			Pattern 2, Exps 1-1 in PAR54 optical (16) (2)	720 Secs (2370 Secs) *[==>930.0 Secs (Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***
2		(6) PAR054	WFC3/UVIS, ACCUM, UVIS-CENTER	F814W			Pattern 2, Exps 2-2 in PAR54 optical (16) (2)	782 Secs (2346 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[2]***

Orbit Structure





Visit

Proposal 18080, PAR34 4 orbit box (13), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=3.287 Line Spacing=2.128	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1)

Fixed Targets

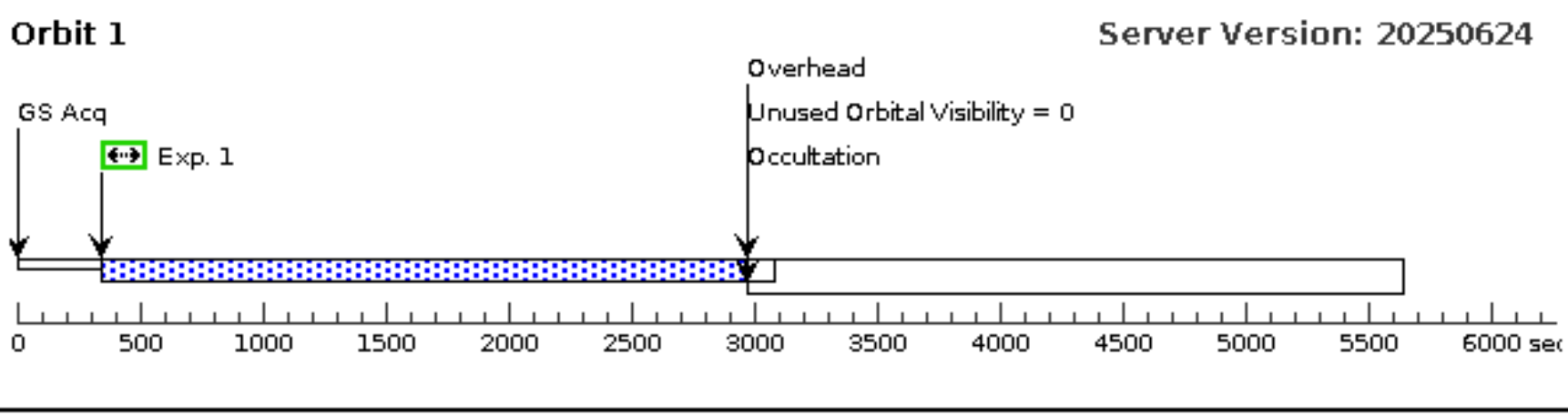
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	PAR034	RA: 12 41 36.7447 (190.4031029d) Dec: +22 29 58.34 (22.49954d) Equinox: J2000		V=25	Reference Frame: ICRS

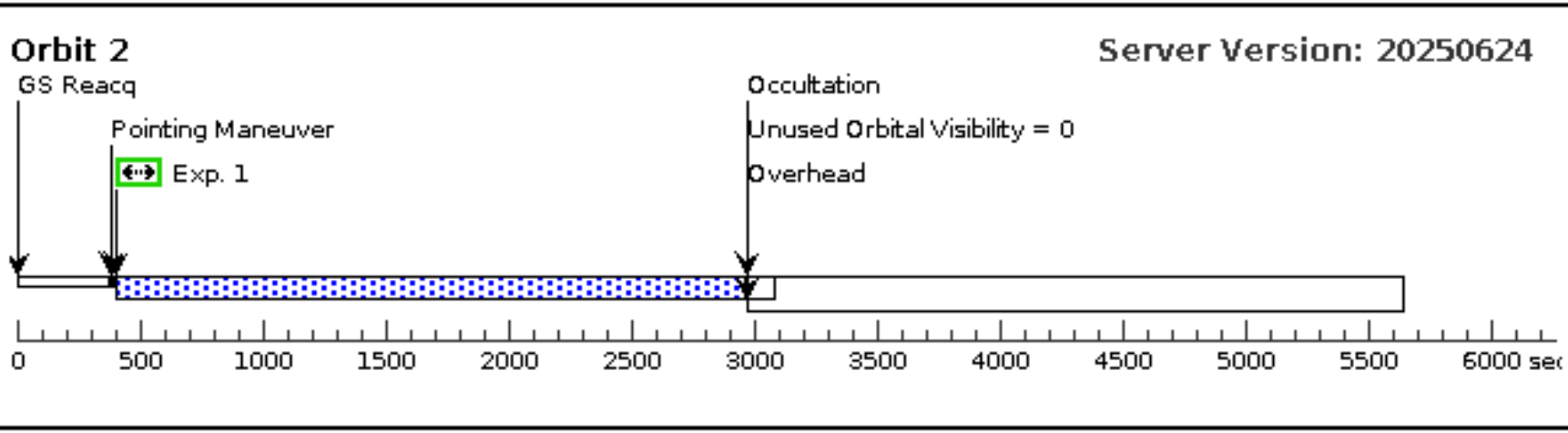
Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

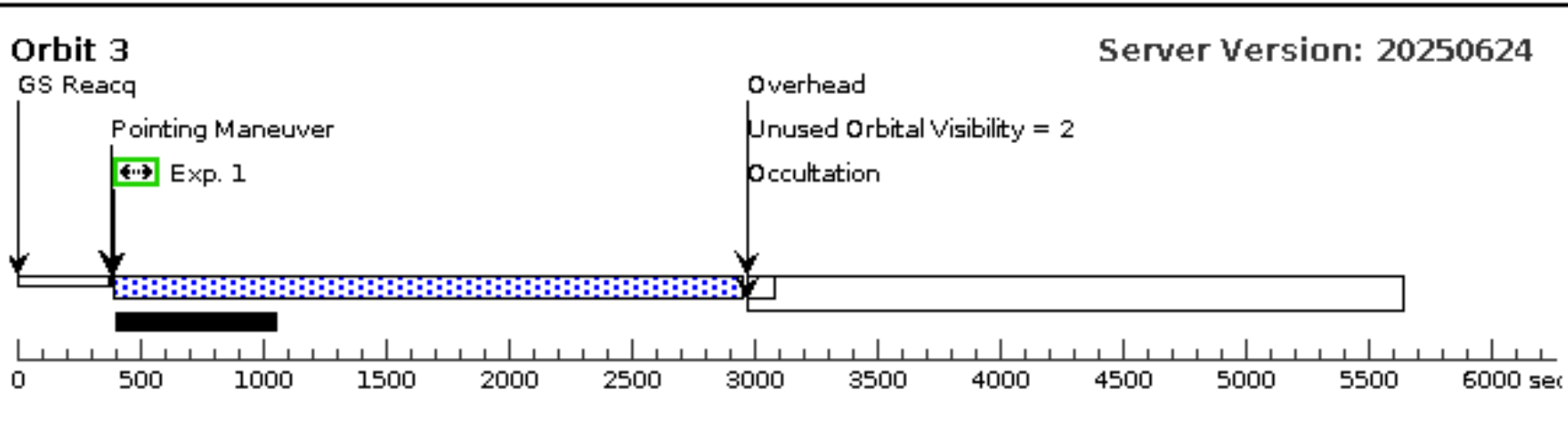
Exposures

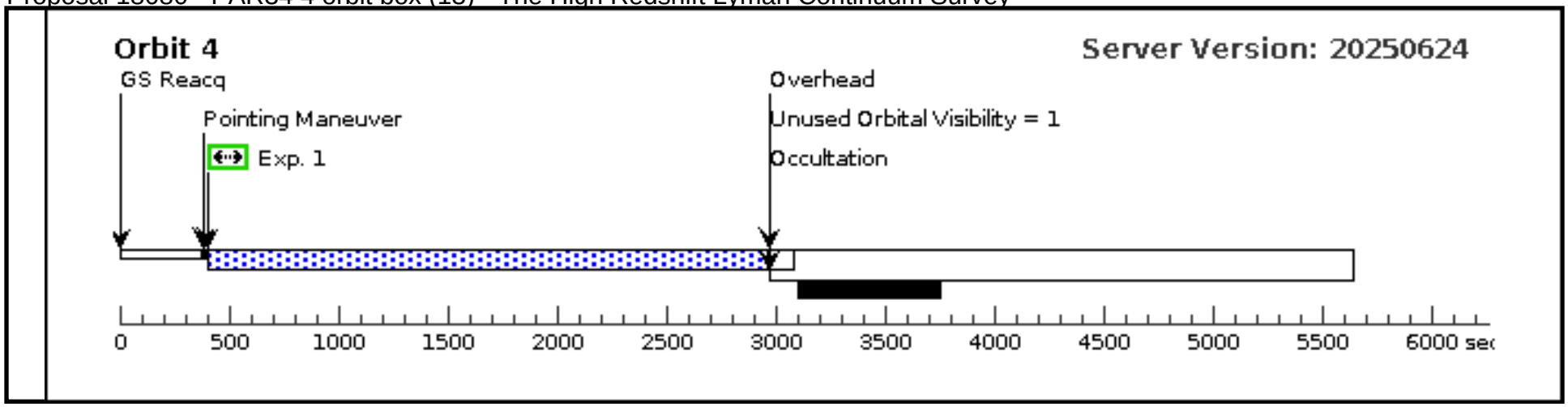
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) PAR034	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 1, Exps 1-1 in PAR34 4 orbit box (13) (1)	2500 Secs (10291 Secs)	
								[==>2591.0 Secs (Pattern 1)]	***[1]***
								[==>2567.0 Secs (Pattern 2)]	***[2]***
								[==>2567.0 Secs (Pattern 3)]	***[3]***
								[==>2566.0 Secs (Pattern 4)]	***[4]***

Orbit Structure








Orbit 4
Server Version: 20250624
GS Reacq
Pointing Maneuver
Exp. 1
Overhead
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18080, PAR34 3 orbit line (14), implementation Fri Aug 15 21:00:55 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT -10D TO 10D FROM 13

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=2.025 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	PAR034	RA: 12 41 36.7447 (190.4031029d) Dec: +22 29 58.34 (22.49954d) Equinox: J2000		V=25	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[EMISSION LINE NEBULA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) PAR034	WFC3/UVIS, ACCUM, UVIS-CENTER	F336W	FLASH=9		Pattern 2, Exps 1-1 in PAR34 3 orbit line (14) (2)	2500 Secs (7729 Secs)	
								[==>2591.0 Secs (Pattern 1)]	***[1]***
								[==>2569.0 Secs (Pattern 2)]	***[2]***
								[==>2569.0 Secs (Pattern 3)]	***[3]***

Orbit Structure