17808 - Ice giant atmospheres, rings and moons - physics of the macroscopic to the microscopic

Cycle: 32, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

Name	*Institution*
Dr. William B. Sparks (PI) (Contact)	**SETI Institute**
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Dr. Ludmilla Kolokolova (CoI)	University of Maryland
Dr. John Grunsfeld (CoI)	Endless Frontier Associates, LLC
Dr. Eileen T Meyer (CoI)	University of Maryland Baltimore County
Mr. Louis Bergeron (CoI)	Space Telescope Science Institute
Dr. Amy Simon (CoI)	NASA Goddard Space Flight Center

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) URANUS	ACS/WFC	3	25-Jul-2024 11:00:55.0	yes
02	(1) URANUS	ACS/WFC	3	25-Jul-2024 11:00:58.0	yes
03	(2) NEPTUNE	ACS/WFC	3	25-Jul-2024 11:01:01.0	yes
04	(2) NEPTUNE	ACS/WFC	3	25-Jul-2024 11:01:03.0	yes

12 Total Orbits Used

ABSTRACT

Uranus is the highest priority destination for a future NASA flagship mission in the Origins, Worlds and Life planetary science decadal survey. With Neptune, these two are the solar system ice giant siblings, representative of a multitude of kindred exoplanets. We propose to obtain imaging polarimetry of Uranus and Neptune at unprecedented spatial resolution with ACS in order to advance our knowledge of the macroscopic and microphysical character of the scattering atmospheres of these two worlds. With HST resolution, we can separate polar hazes, storms and bands, revealing the global scattering properties in unprecedented detail while identifying for the first time the scattering properties of features impossible to determine from the ground. The polarization depends on the altitude of the scatterers, their chemical composition, and microscopic shape and size. Given the plethora of ice giant exoplanets, high quality empirical measurements and modeling of the polarization distribution of these local archetypes and their varied hydrocarbon hazes will facilitate extrapolation to one of the most commonly found exoplanet populations. We will also obtain polarization measurements of the rings of Uranus and moons of both Uranus and Neptune. This is particularly critical to the top priority Uranus Orbiter and Probe flagship mission, as further knowledge is needed to enable safe passage through the upper atmosphere and dusty ring environment.

OBSERVING DESCRIPTION

We propose to acquire nine images per orbit, three for each polarizer using three filters (F435W, F606W and F775W) selected to span the visible spectrum without significant filter-to-filter overlap, and three orbits per visit to accumulate the appropriate number of photons for both Neptune and Uranus, two visits each.

Visit

Proposal 17808, Uranus low (01), implementation Thu Jul 25 15:01:04 GMT 2024

Diagnostic Status: Informational

Scientific Instruments: ACS/WFC

Special Requirements: BETWEEN 27-OCT-2024:00:00:00 AND 08-DEC-2024:00:00:00

Diagnostics

(Uranus low (01)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.17 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false		(1-3), (4-6)
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.149 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=34.25 Angle Between Sides= Center Pattern=false		(7-9)

Solar System Targets

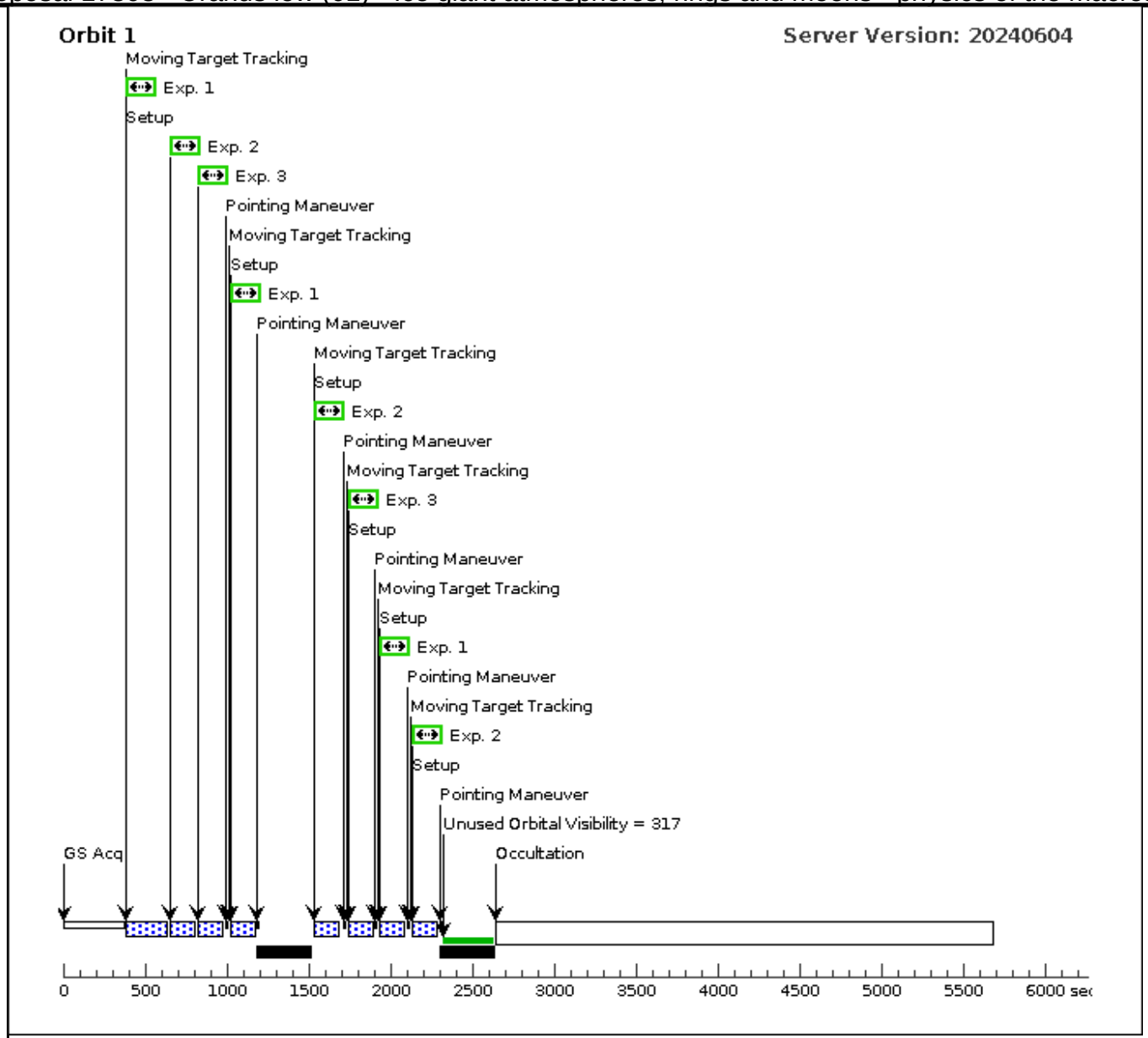
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	URANUS	STD=URANUS				EARTH

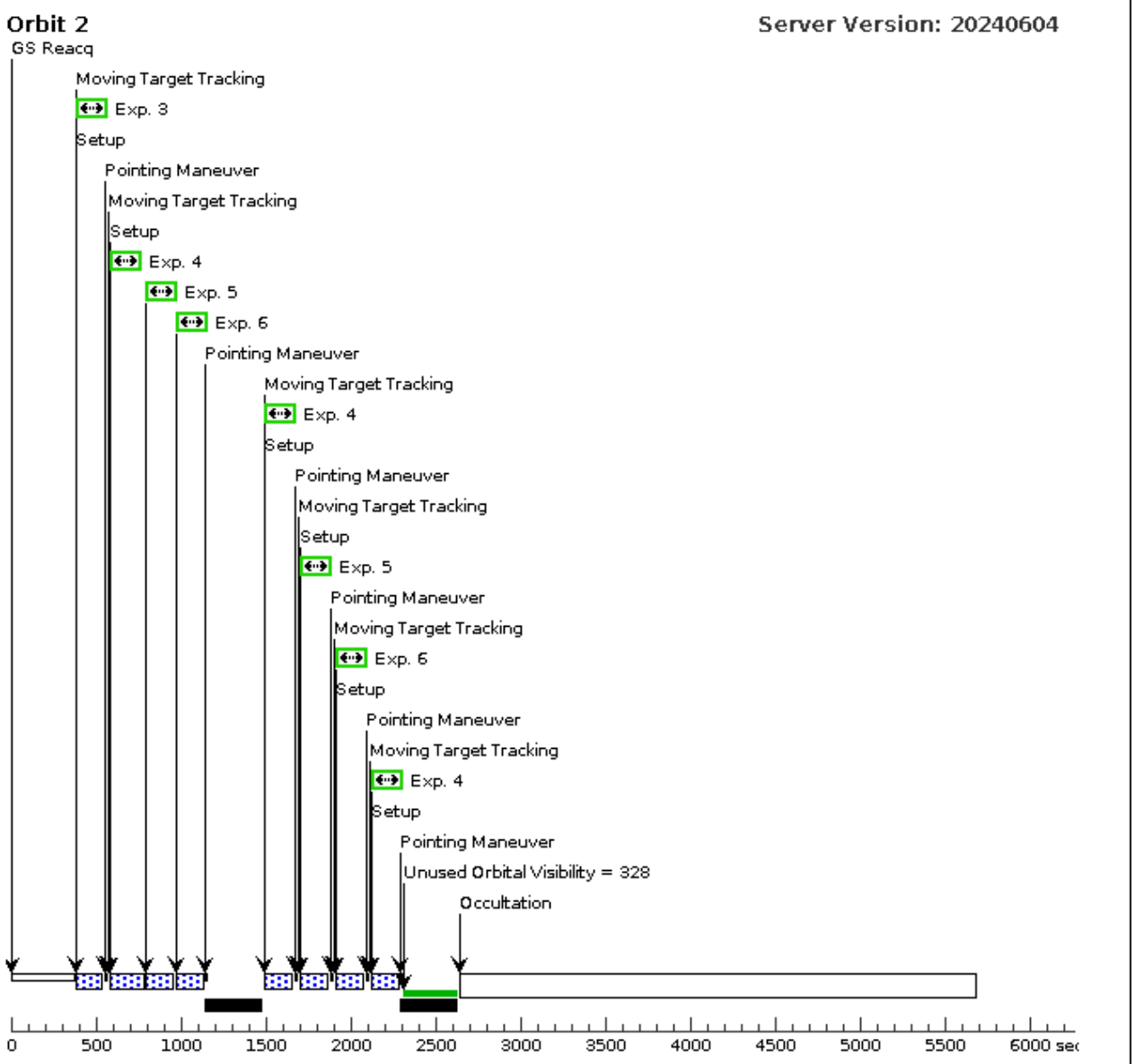
Comments: Description=planet

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL0V			Pattern 1, Exps 1-3 in Uranus low (01) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
2		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL120V			Pattern 1, Exps 1-3 in Uranus low (01) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
3		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL60V			Pattern 1, Exps 1-3 in Uranus low (01) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]*** ***[2]***
4		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL0V			Pattern 1, Exps 4-6 in Uranus low (01) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]***
5		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL120V			Pattern 1, Exps 4-6 in Uranus low (01) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
6		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL60V			Pattern 1, Exps 4-6 in Uranus low (01) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
7		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL0UV			Pattern 2, Exps 7-9 in Uranus low (01) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
8		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL120UV			Pattern 2, Exps 7-9 in Uranus low (01) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
9		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL60UV			Pattern 2, Exps 7-9 in Uranus low (01) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***

Orbit Structure

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GS Reacq
Moving Target Tracking
Exp. 3
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Exp. 5
Exp. 6
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Pointing Maneuver
Unused Orbital Visibility = 328
Occultation
0
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1000
1500
2000
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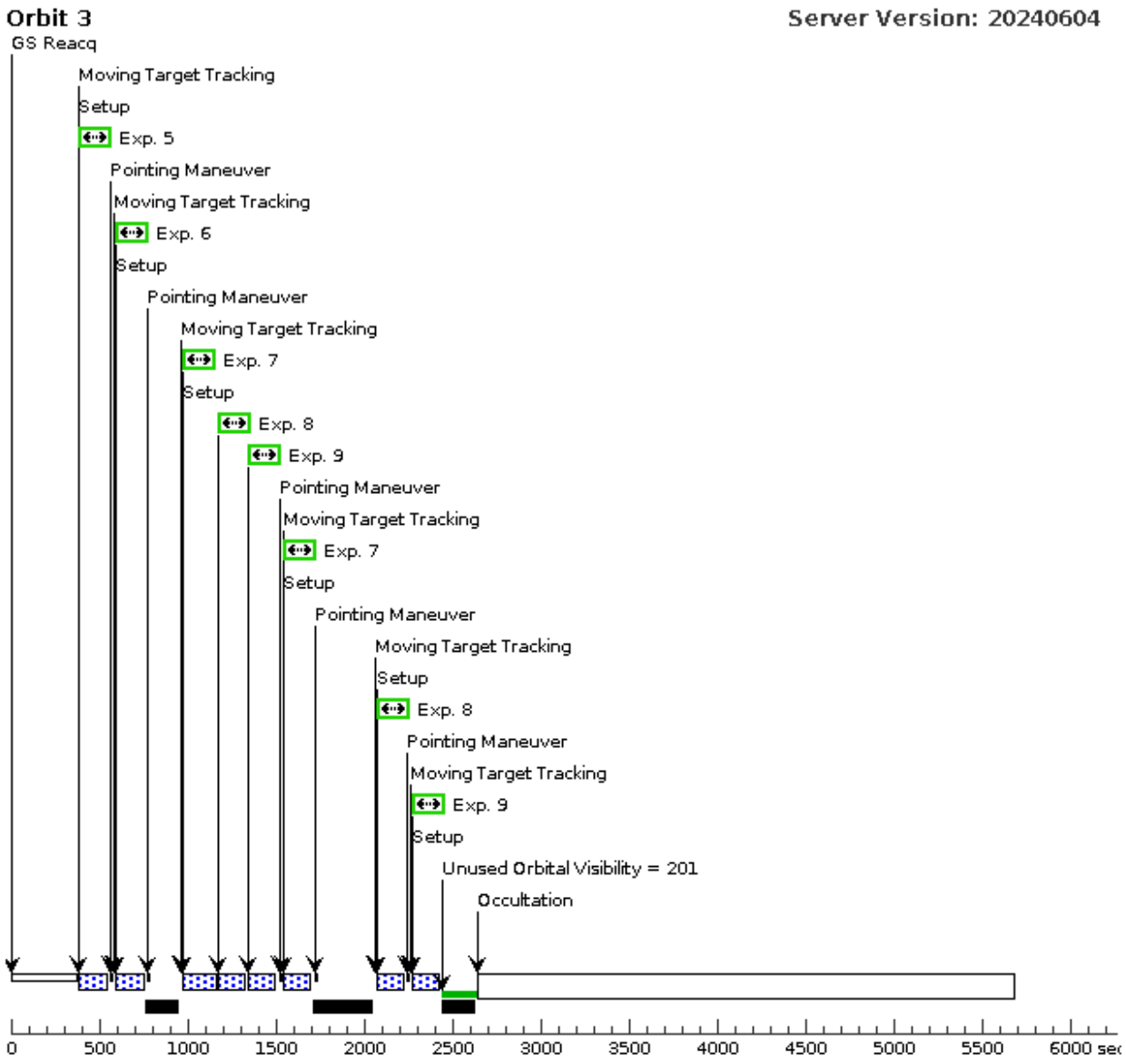
3000
3500
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20240604
GS Reacq
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Exp. 7
Setup
Exp. 8
Exp. 9
Pointing Maneuver
Moving Target Tracking
Exp. 7
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8
Pointing Maneuver
Moving Target Tracking
Exp. 9
Setup
Unused Orbital Visibility = 201
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17808, Uranus high (02), implementation Thu Jul 25 15:01:04 GMT 2024

Diagnostic Status: Informational

Scientific Instruments: ACS/WFC

Special Requirements: BETWEEN 30-DEC-2024:00:00:00 AND 01-APR-2025:00:00:00; BETWEEN 04-JUL-2025:00:00:00 AND 11-OCT-2025:00:00:00

Diagnostics

(Uranus high (02)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.17 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false		(1-3), (4-6)
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.149 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=34.25 Angle Between Sides= Center Pattern=false		(7-9)

Solar System Targets

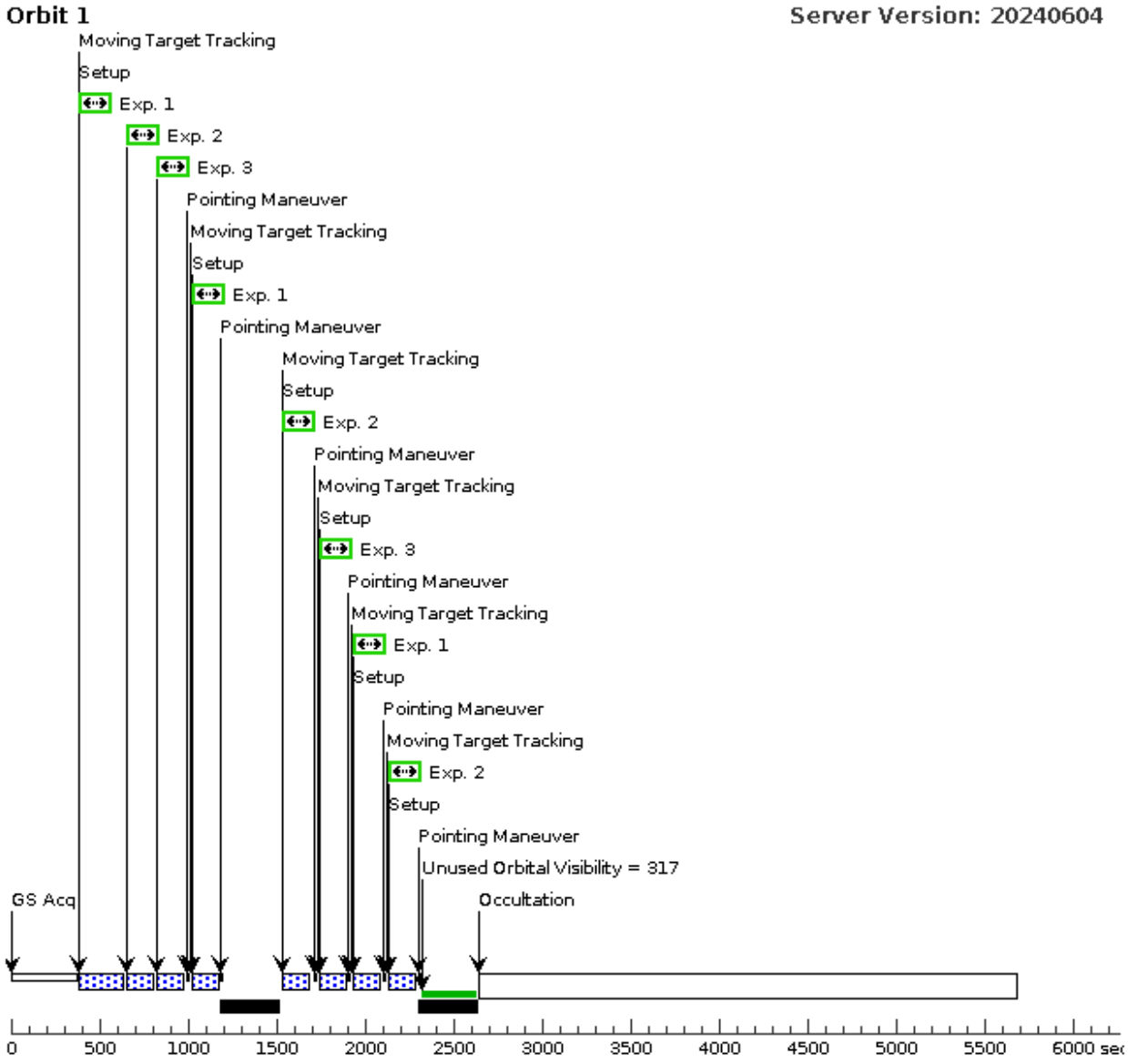
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	URANUS	STD=URANUS				EARTH

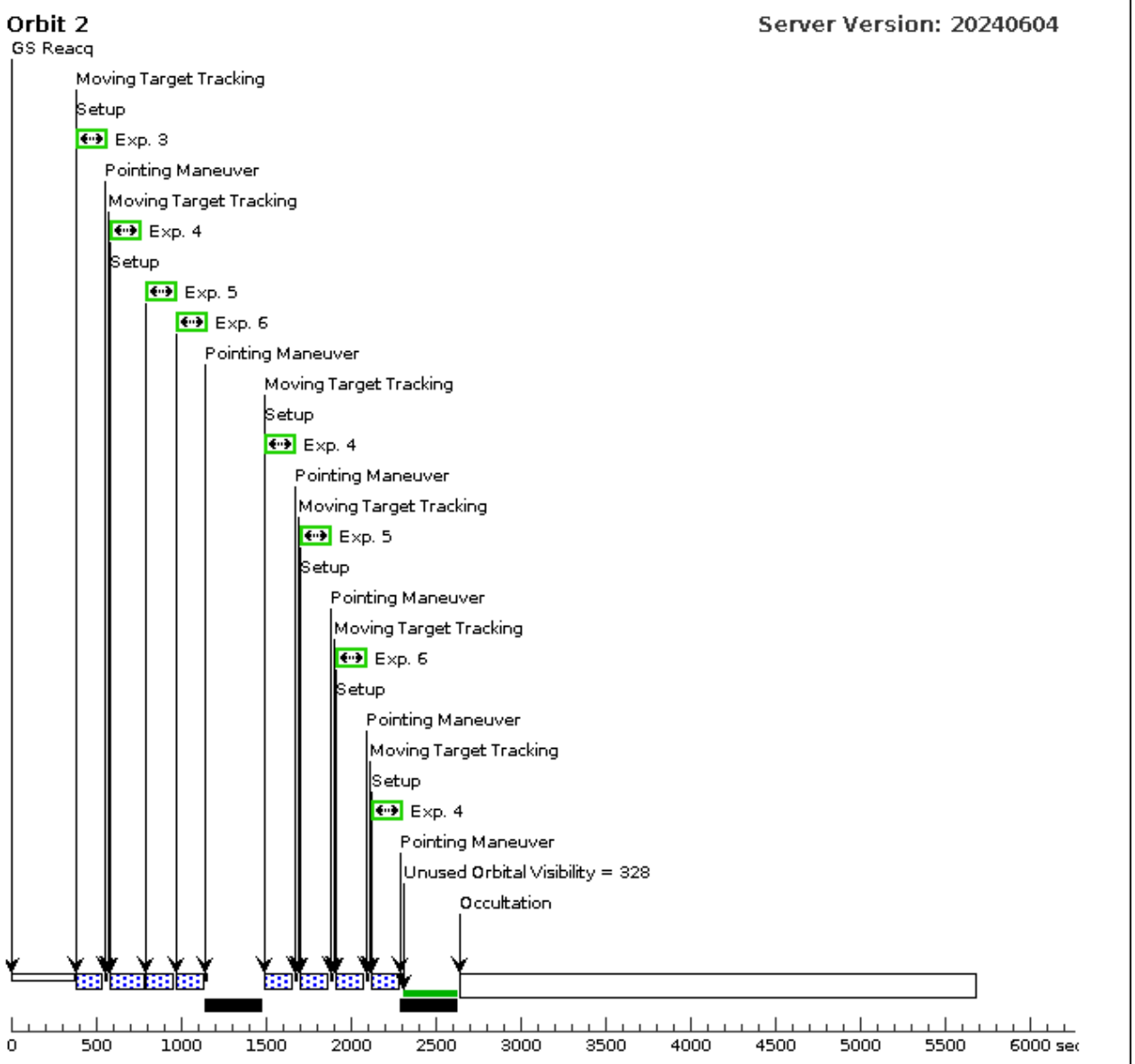
Comments: Description=planet

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL0V			Pattern 1, Exps 1-3 in Uranus high (02) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
2		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL120V			Pattern 1, Exps 1-3 in Uranus high (02) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
3		(1) URANUS	ACS/WFC, ACCUM, WFC	F606W POL60V			Pattern 1, Exps 1-3 in Uranus high (02) (1)	2 Secs (6 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]*** ***[2]***
4		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL0V			Pattern 1, Exps 4-6 in Uranus high (02) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]***
5		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL120V			Pattern 1, Exps 4-6 in Uranus high (02) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
6		(1) URANUS	ACS/WFC, ACCUM, WFC	F775W POL60V			Pattern 1, Exps 4-6 in Uranus high (02) (1)	10 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
7		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL0UV			Pattern 2, Exps 7-9 in Uranus high (02) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
8		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL120UV			Pattern 2, Exps 7-9 in Uranus high (02) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
9		(1) URANUS	ACS/WFC, ACCUM, WFC	F435W POL60UV			Pattern 2, Exps 7-9 in Uranus high (02) (2)	7 Secs (14 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20240604
GS Reacq
Moving Target Tracking
Setup
Exp. 3
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Exp. 5
Exp. 6
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Pointing Maneuver
Moving Target Tracking
Exp. 5
Setup
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Pointing Maneuver
Unused Orbital Visibility = 328
Occultation
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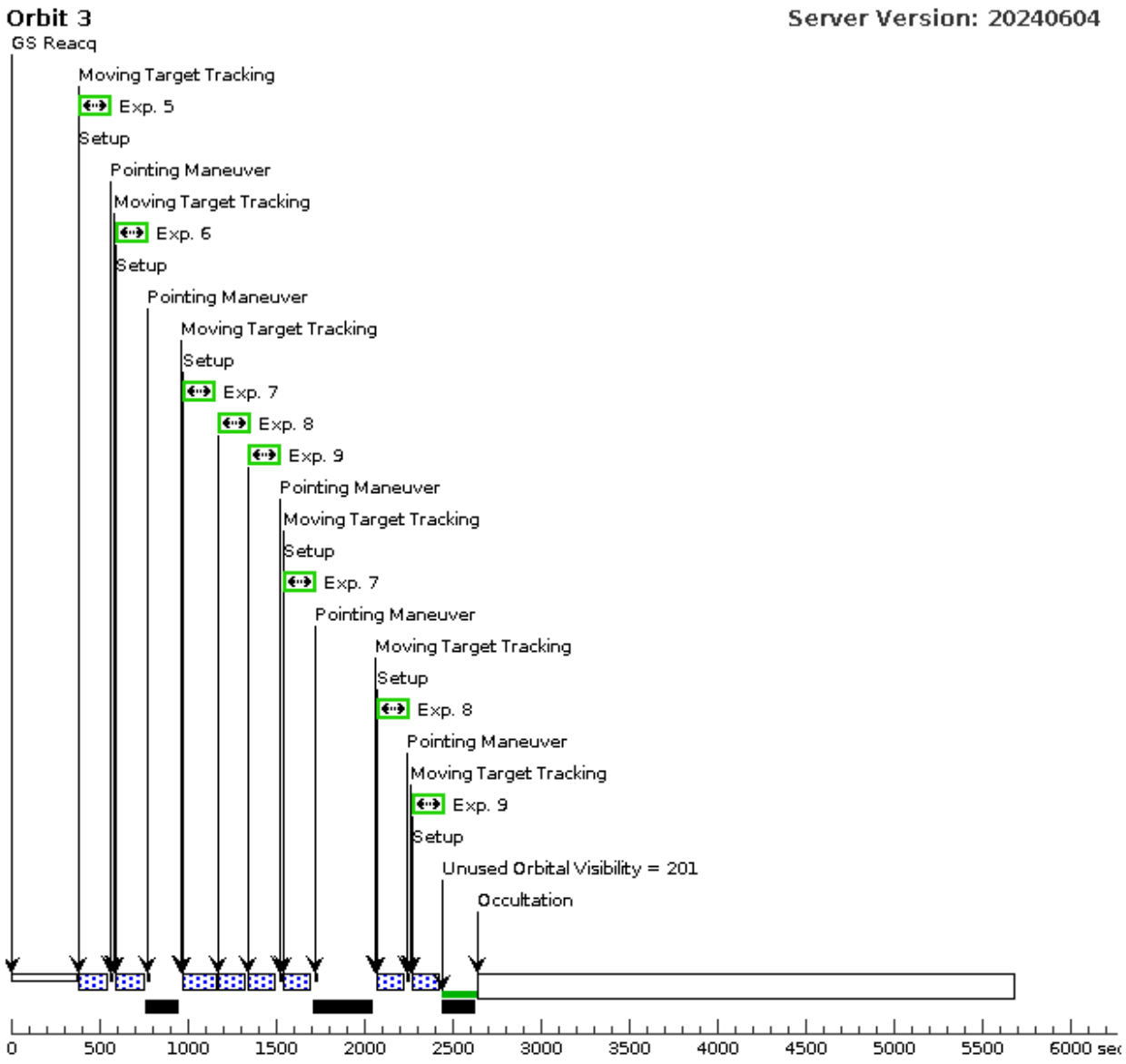
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20240604
GS Reacq
Moving Target Tracking
Exp. 5
Setup
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 7
Exp. 8
Exp. 9
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 7
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8
Pointing Maneuver
Moving Target Tracking
Exp. 9
Setup
Unused Orbital Visibility = 201
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17808, Neptune a (03), implementation Thu Jul 25 15:01:05 GMT 2024

Diagnostic Status: Informational

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Diagnostics

(Neptune a (03)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.17 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false		(1-3), (4-6)
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.149 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=34.25 Angle Between Sides= Center Pattern=false		(7-9)

Solar System Targets

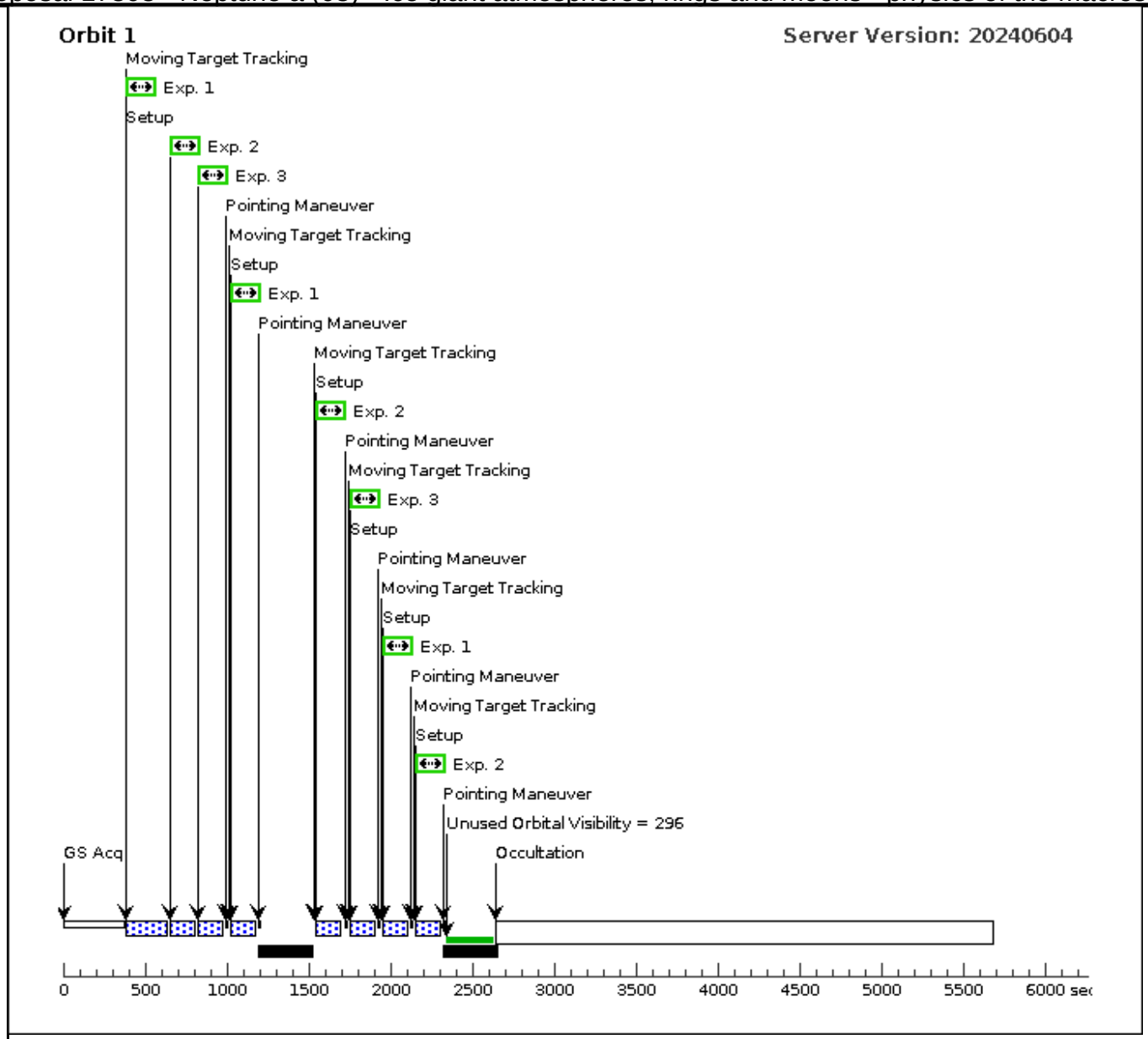
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	NEPTUNE	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE BY TRITON FROM EARTH	EARTH

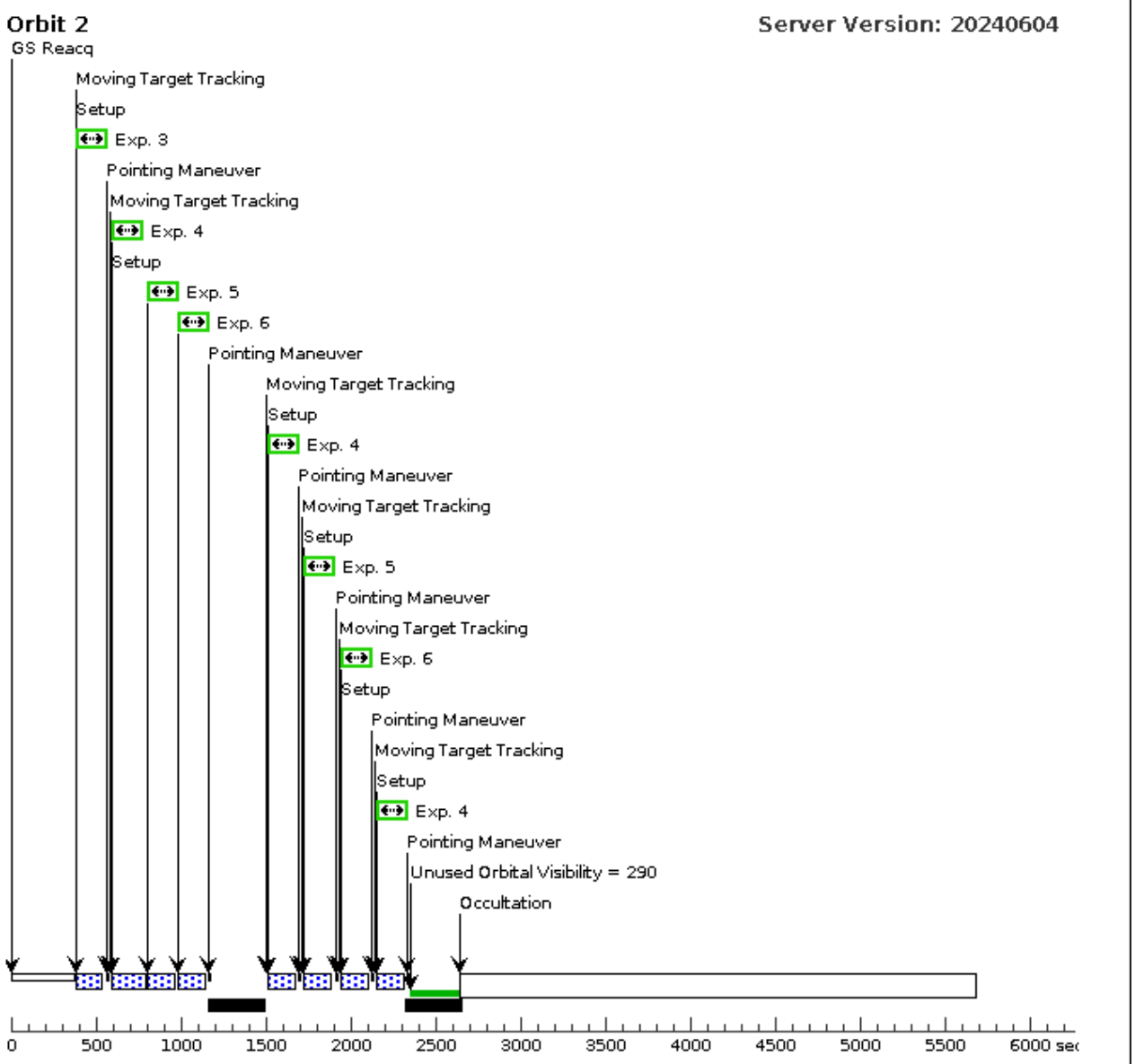
Comments: Description=planet

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL0V			Pattern 1, Exps 1-3 in Neptune a (03) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
2		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL120V			Pattern 1, Exps 1-3 in Neptune a (03) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
3		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL60V			Pattern 1, Exps 1-3 in Neptune a (03) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]*** ***[2]***
4		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL0V			Pattern 1, Exps 4-6 in Neptune a (03) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]***
5		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL120V			Pattern 1, Exps 4-6 in Neptune a (03) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
6		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL60V			Pattern 1, Exps 4-6 in Neptune a (03) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
7		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL0UV			Pattern 2, Exps 7-9 in Neptune a (03) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
8		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL120UV			Pattern 2, Exps 7-9 in Neptune a (03) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
9		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL60UV			Pattern 2, Exps 7-9 in Neptune a (03) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20240604
GS Reacq
Moving Target Tracking
Setup
Exp. 3
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Exp. 5
Exp. 6
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Pointing Maneuver
Unused Orbital Visibility = 290
Occultation
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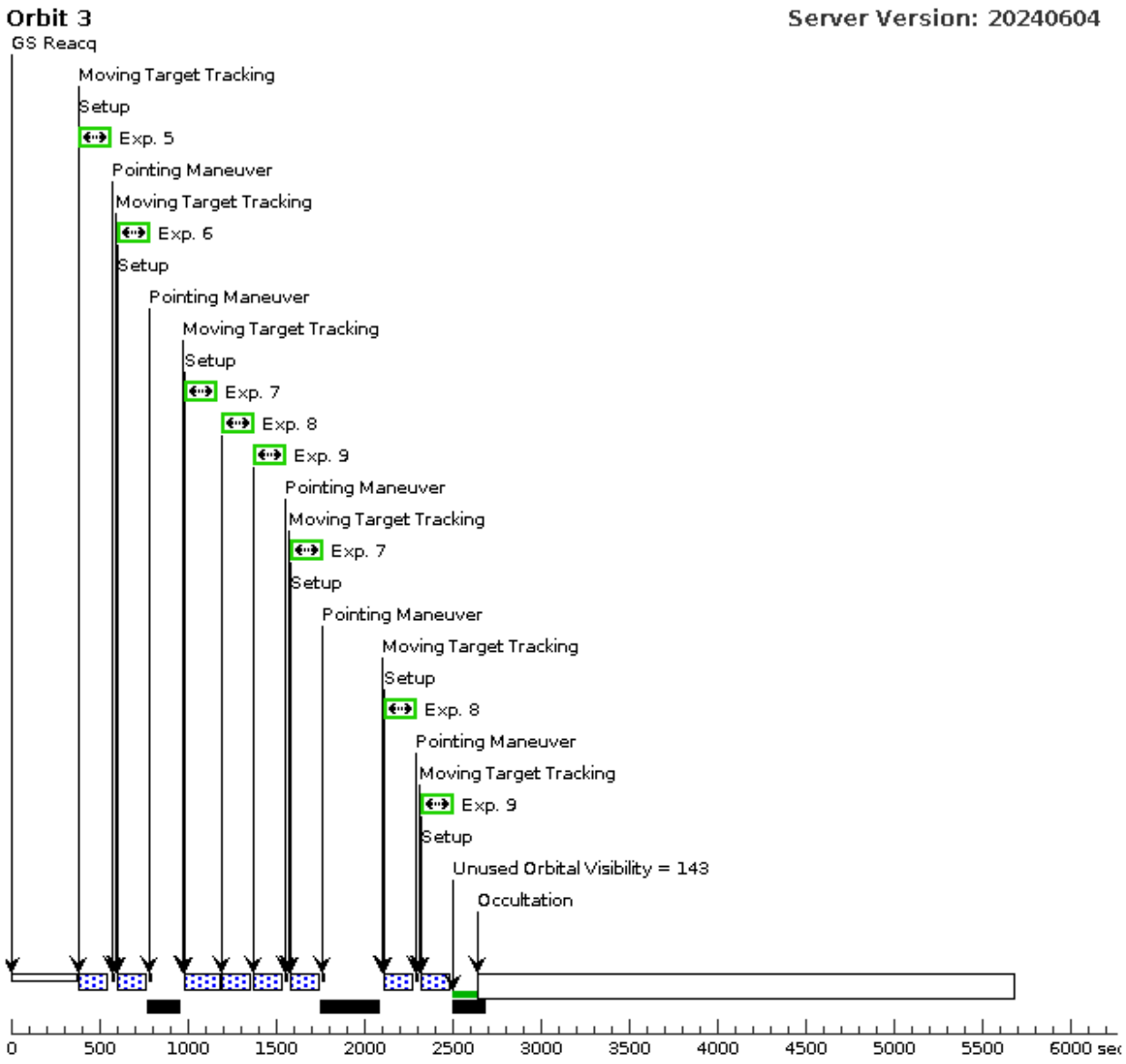
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20240604
GS Reacq
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Exp. 6
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 7
Exp. 8
Exp. 9
Pointing Maneuver
Moving Target Tracking
Exp. 7
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8
Pointing Maneuver
Moving Target Tracking
Exp. 9
Setup
Unused Orbital Visibility = 143
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17808, Neptune b (04), implementation Thu Jul 25 15:01:05 GMT 2024

Diagnostic Status: Informational

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Diagnostics

(Neptune b (04)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=0.17 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false		(1-3), (4-6)
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.149 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=34.25 Angle Between Sides= Center Pattern=false		(7-9)

Solar System Targets

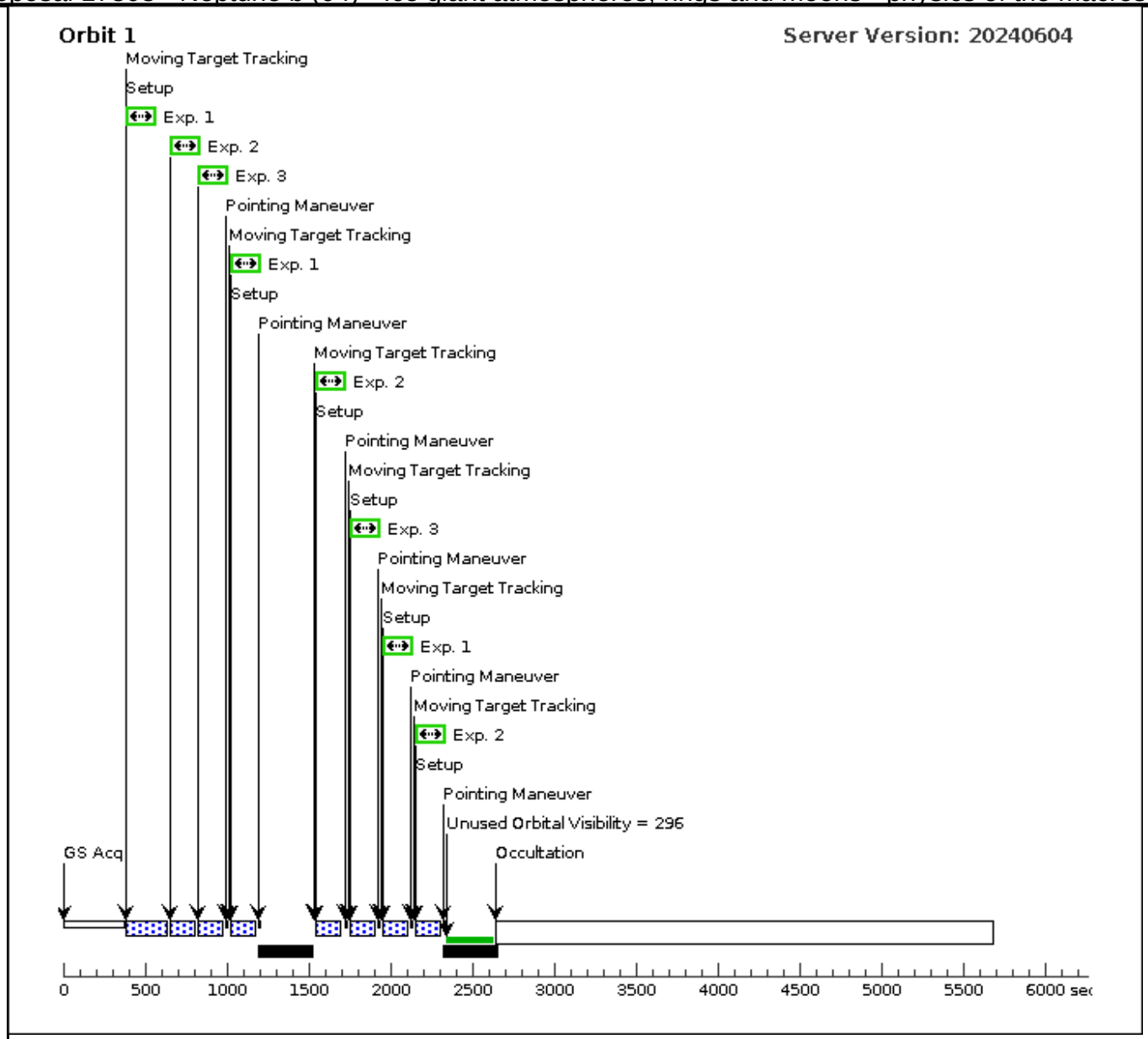
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(2)	NEPTUNE	STD=NEPTUNE			NOT ECL P PARTIAL OF NEPTUNE BY TRITON FROM EARTH	EARTH

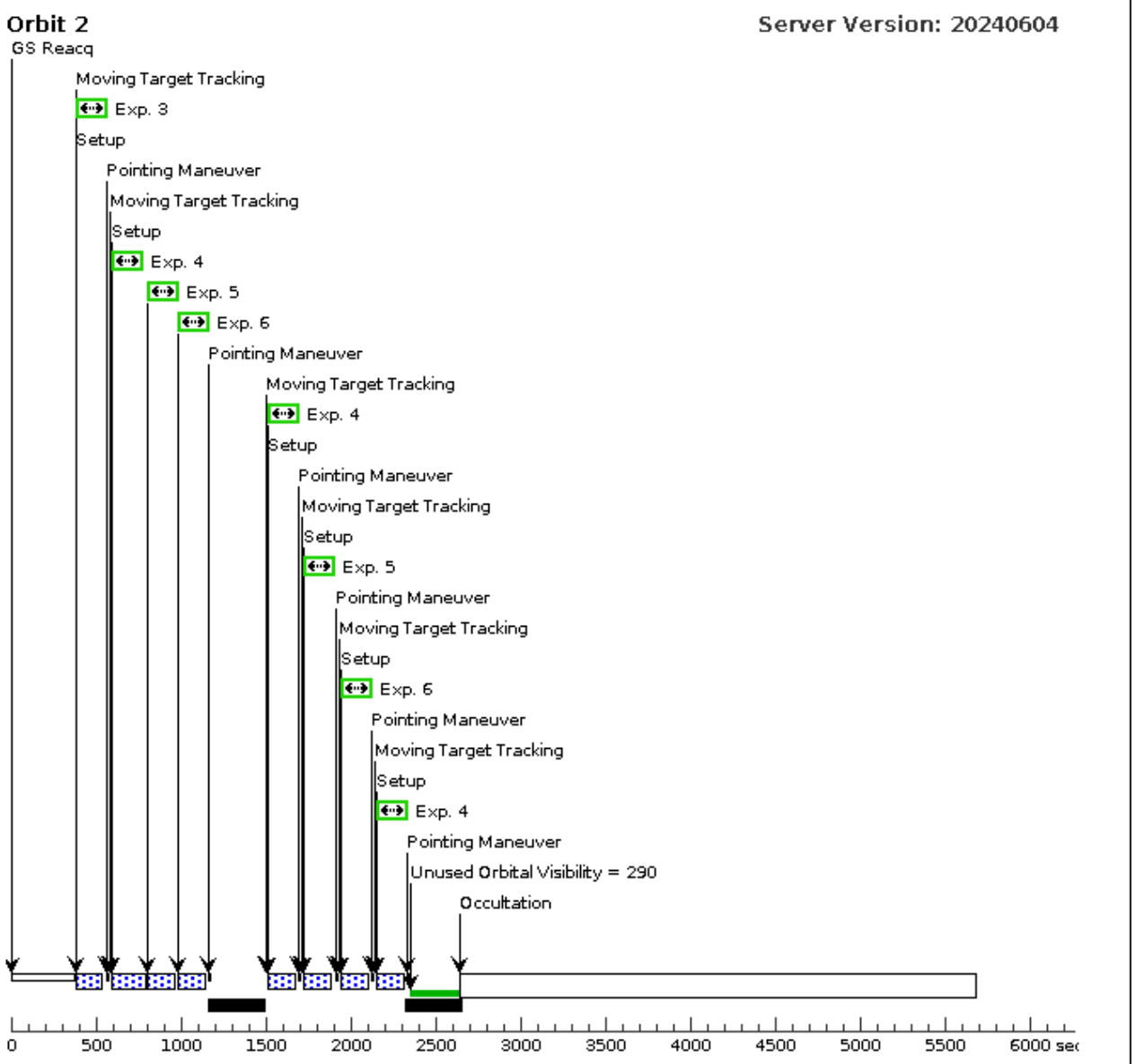
Comments: Description=planet

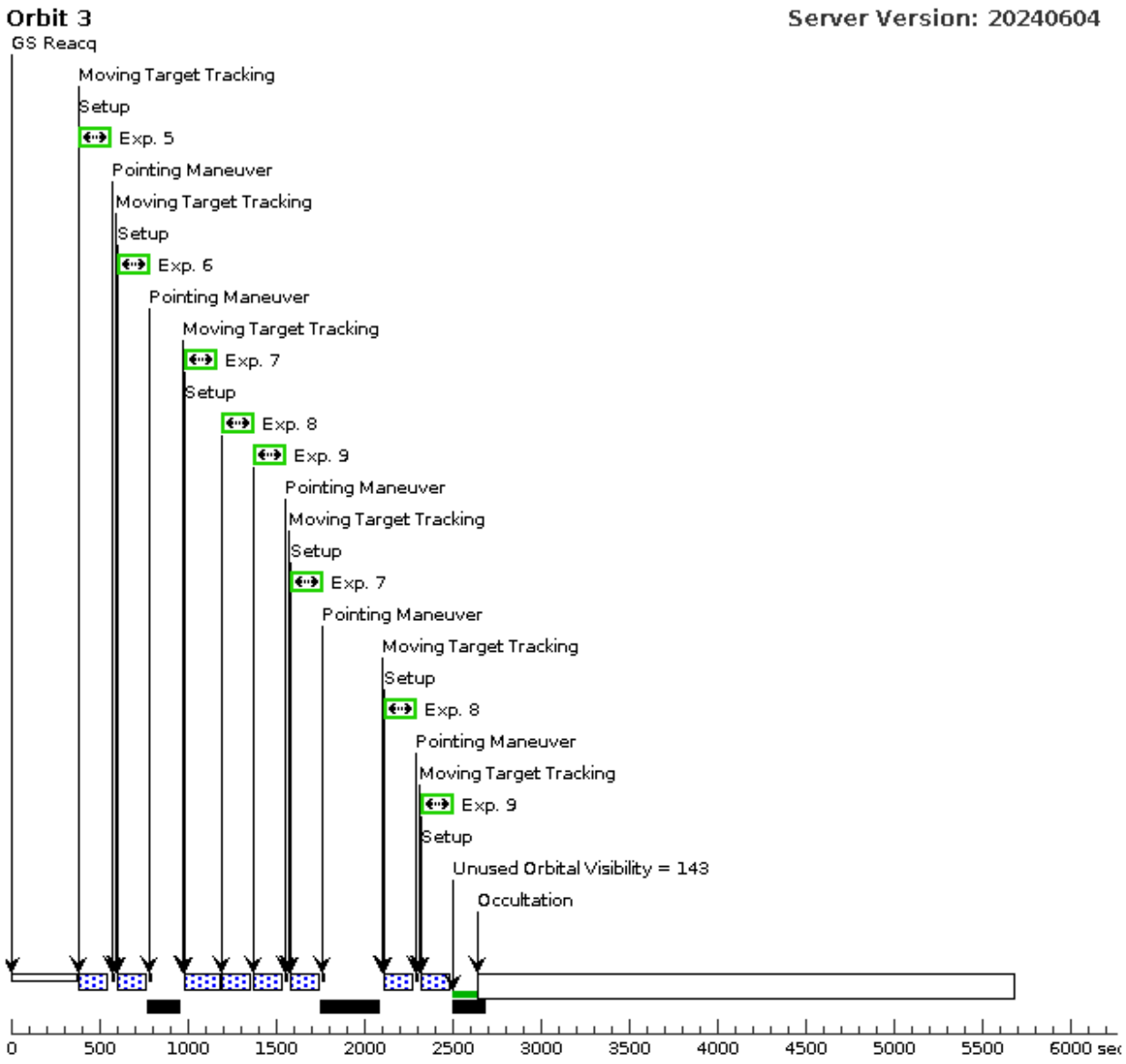
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL0V			Pattern 1, Exps 1-3 in Neptune b (04) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
2		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL120V			Pattern 1, Exps 1-3 in Neptune b (04) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
3		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F606W POL60V			Pattern 1, Exps 1-3 in Neptune b (04) (1)	5 Secs (15 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]*** ***[2]***
4		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL0V			Pattern 1, Exps 4-6 in Neptune b (04) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]***
5		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL120V			Pattern 1, Exps 4-6 in Neptune b (04) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
6		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F775W POL60V			Pattern 1, Exps 4-6 in Neptune b (04) (1)	15 Secs (45 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[2]*** ***[3]***
7		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL0UV			Pattern 2, Exps 7-9 in Neptune b (04) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
8		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL120UV			Pattern 2, Exps 7-9 in Neptune b (04) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***
9		(2) NEPTUNE	ACS/WFC, ACCUM, WFC	F435W POL60UV			Pattern 2, Exps 7-9 in Neptune b (04) (2)	15 Secs (30 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20240604
GS Reacq
Moving Target Tracking
Exp. 3
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Exp. 5
Exp. 6
Pointing Maneuver
Moving Target Tracking
Exp. 4
Setup
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 6
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 4
Pointing Maneuver
Unused Orbital Visibility = 290
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20240604
GS Reacq
Moving Target Tracking
Setup
Exp. 5
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 6
Pointing Maneuver
Moving Target Tracking
Exp. 7
Setup
Exp. 8
Exp. 9
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 7
Pointing Maneuver
Moving Target Tracking
Setup
Exp. 8
Pointing Maneuver
Moving Target Tracking
Exp. 9
Setup
Unused Orbital Visibility = 143
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec