18016 - Revealing new regimes in terminal mass loss from massive stars with HST and NEOWISE

Cycle: 33, Proposal Category: GO

(UV Initiative, Roman Preparatory Science)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
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Geoffrey Mo (CoI)	California Institute of Technology
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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) SN2022UDD	WFC3/UVIS	1	22-Oct-2025 15:00:16.0	yes
02	(2) SN2023MIX	WFC3/UVIS	1	22-Oct-2025 15:00:17.0	yes
03	(3) SN2023JVC	WFC3/UVIS	1	22-Oct-2025 15:00:17.0	yes
04	(4) SN2023FDJ	WFC3/UVIS	1	22-Oct-2025 15:00:18.0	yes
05	(5) SN2022XXF	WFC3/UVIS	1	22-Oct-2025 15:00:18.0	yes
06	(6) SN2023BIP	WFC3/UVIS	1	22-Oct-2025 15:00:18.0	yes
07	(7) SN2022YJL	WFC3/UVIS	1	22-Oct-2025 15:00:19.0	yes
08	(8) SN2022VMI	WFC3/UVIS	1	22-Oct-2025 15:00:19.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
09	(9) SN2022YYZ	WFC3/UVIS	1	22-Oct-2025 15:00:20.0	yes
10	(10) SN2022UHK	WFC3/UVIS	1	22-Oct-2025 15:00:20.0	yes
11	(11) SN2022JQN	WFC3/UVIS	1	22-Oct-2025 15:00:20.0	yes
12	(12) SN2022JLI	WFC3/UVIS	1	22-Oct-2025 15:00:21.0	yes
13	(13) SN2021AGHP	WFC3/UVIS	1	22-Oct-2025 15:00:21.0	yes
14	(14) SN2021UED	WFC3/UVIS	1	22-Oct-2025 15:00:22.0	yes
15	(15) SN2021IRP	WFC3/UVIS	1	22-Oct-2025 15:00:22.0	yes
16	(16) SN2021QAR	WFC3/UVIS	1	22-Oct-2025 15:00:22.0	yes
17	(17) SN2021MSA	WFC3/UVIS	1	22-Oct-2025 15:00:23.0	yes
18	(18) SN2020UEM	WFC3/UVIS	1	22-Oct-2025 15:00:24.0	yes
19	(19) SN2020YZQ	WFC3/UVIS	1	22-Oct-2025 15:00:24.0	yes
20	(20) SN2020PJB	WFC3/UVIS	1	22-Oct-2025 15:00:24.0	yes
21	(21) SN2020SVN	WFC3/UVIS	1	22-Oct-2025 15:00:25.0	yes
22	(22) SN2020JFV	WFC3/UVIS	1	22-Oct-2025 15:00:25.0	yes
23	(23) SN2020IZC	WFC3/UVIS	1	22-Oct-2025 15:00:25.0	yes
24	(24) SN2019VXM	WFC3/UVIS	1	22-Oct-2025 15:00:26.0	yes
25	(25) SN2019OYS	WFC3/UVIS	1	22-Oct-2025 15:00:26.0	yes
26	(26) SN2019IBK	WFC3/UVIS	1	22-Oct-2025 15:00:27.0	yes
27	(27) SN2019BZO	WFC3/UVIS	1	22-Oct-2025 15:00:27.0	yes
28	(28) SN2018KCW	WFC3/UVIS	1	22-Oct-2025 15:00:27.0	yes

28 Total Orbits Used

ABSTRACT

Massive stars are known to undergo intense terminal mass loss episodes which remain poorly understood. The energetics and mass budget of this mass loss have wide implications in astrophysics ranging from chemical enrichment to Galactic-scale feedback. While mass loss in the months to decades prior to the core-collapse supernova (CCSN) has been systematically probed through optical spectroscopic interaction signatures with nearby

(< 10^16 cm) dense circumstellar material (CSM), the demographics of mass lost at earlier times that produce CSM enhancements at >10^17 cm remain unknown. Not only does such distant CSM produce signatures at phases (more than thousand days after explosion) where it is very difficult to follow-up CCSNe, their very existence (as inferred from scarce X-ray, radio and optical/UV observations) challenges models of massive stellar evolution. Recently, the use of systematic search techniques on data from the NEOWISE MIR sky survey has been demonstrated to be a powerful probe of late-time CSM interaction via signatures of the heated dust that accompany these episodes. We request HST/WFC3 UVIS observations of 28 recent CCSNe from synoptic surveys that i) do not show spectroscopic signatures of interaction near peak light and ii) exhibit luminous MIR emission at > 1000 days after explosion. Unlike previous blind HST UV snapshot surveys, this curated sample offers a method to measure the mass, energetics and geometry of distant CSM in a sample of CCSNe that are confirmed to be undergoing delayed interaction. Utilizing the unique UV sensitivity and spatial resolution of HST, this program will open new frontiers in understanding massive stellar death.

OBSERVING DESCRIPTION

We aim to obtain WFC3/UVIS imaging of all the objects in the F225W and F275W filters. Each source will be observed in both filters within a total of one orbit. We request 2 X 550 s exposures in each filter with WC3-UVIS-DITHER-LINE dithering to avoid cosmic ray effects and sample the PSF. Our target depth is 25.0 mag as these are expected to be very faint.

Visit

Proposal 18016, Visit 01, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

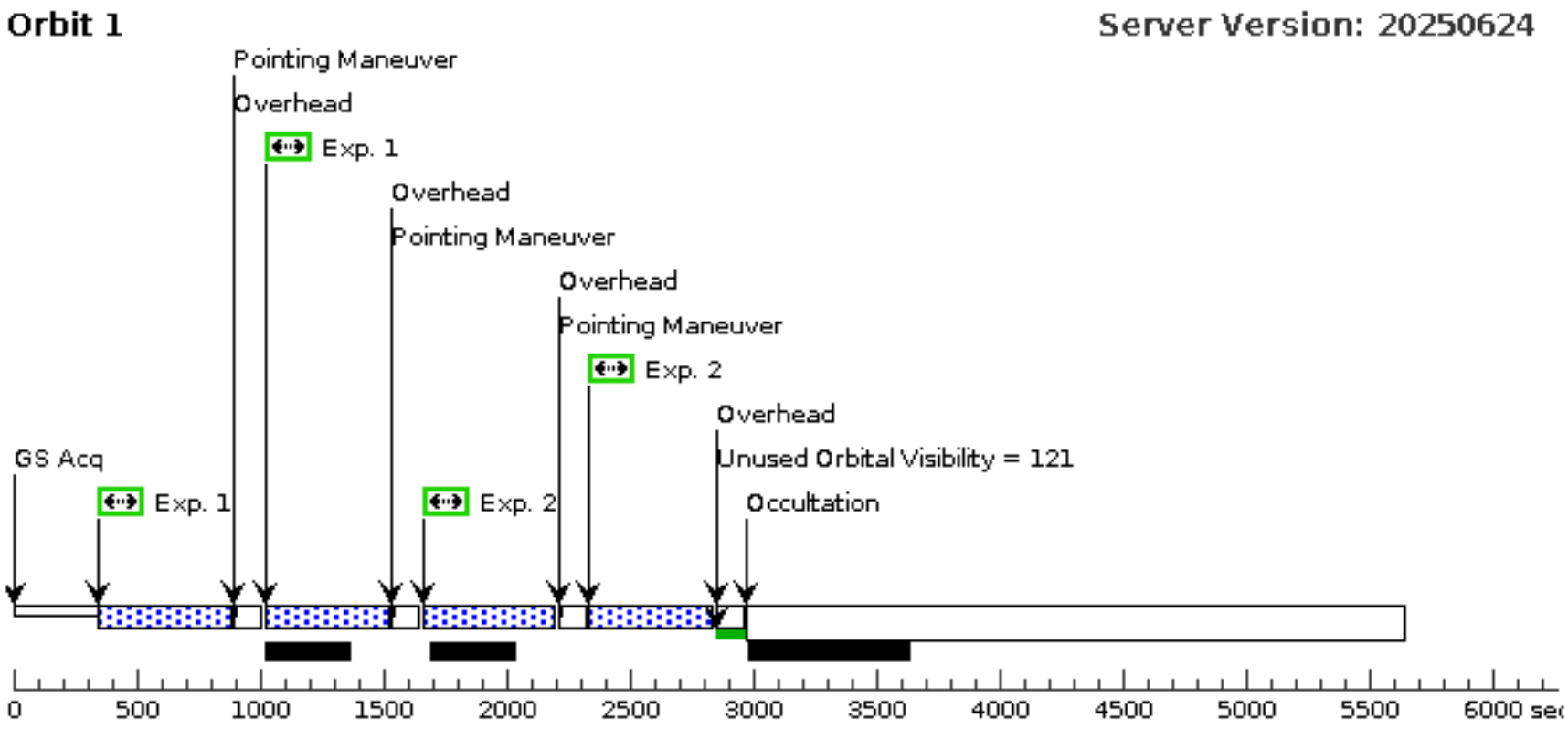
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN2022UDD	RA: 06 05 28.4218 (91.3684242d) Dec: -18 18 43.02 (-18.31195d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SN2022UDD	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 01 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(1) SN2022UDD	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 01 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 02, implementation Wed Oct 22 19:00:28 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 320D TO 10 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

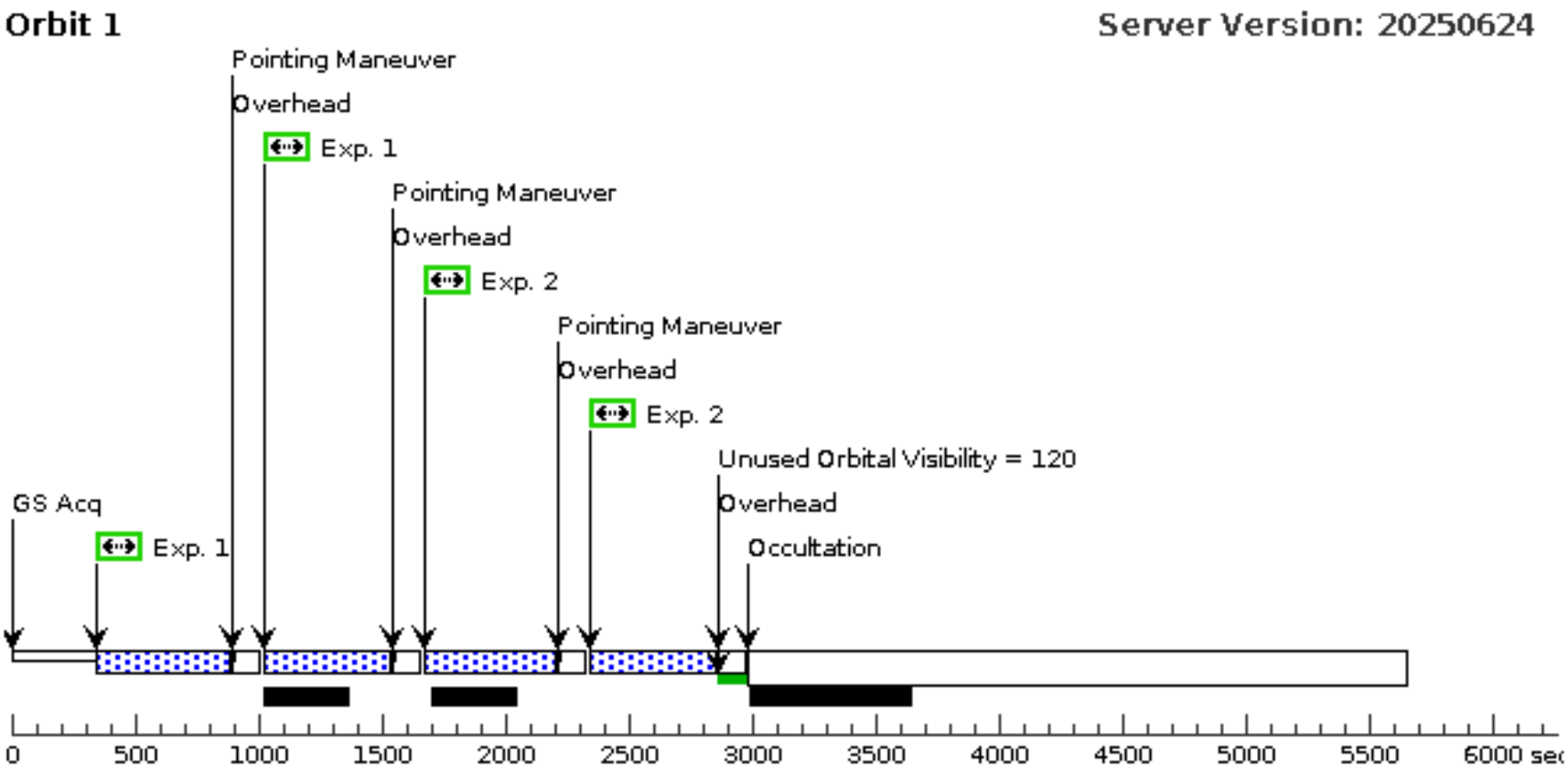
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN2023MIX	RA: 12 48 3.5819 (192.0149246d) Dec: -27 34 55.70 (-27.58214d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) SN2023MIX	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 02 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(2) SN2023MIX	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 02 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 03, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

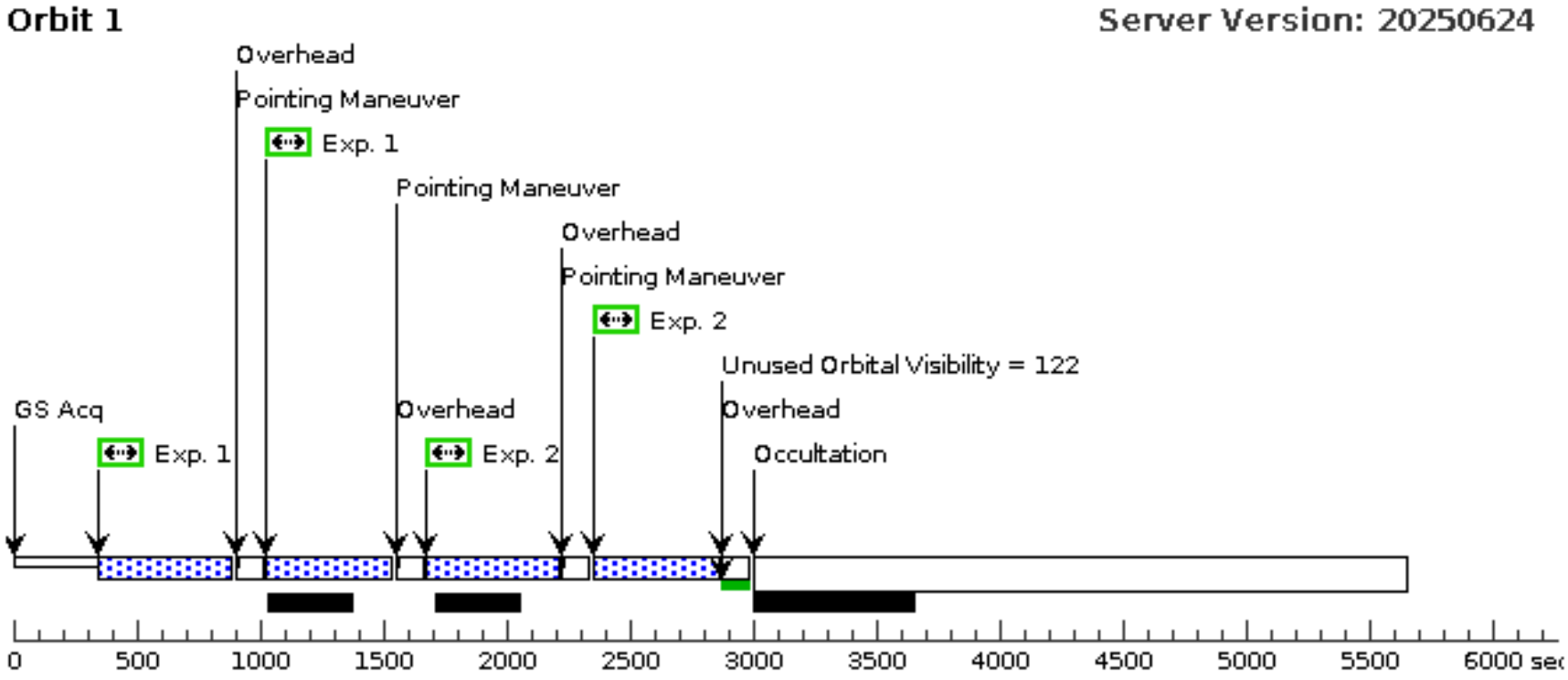
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SN2023JVC	RA: 01 56 39.7784 (29.1657433d) Dec: +43 20 19.68 (43.33880d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) SN2023JVC	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 03 (1)	512 Secs (1024 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(3) SN2023JVC	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 03 (1)	512 Secs (1024 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 04, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

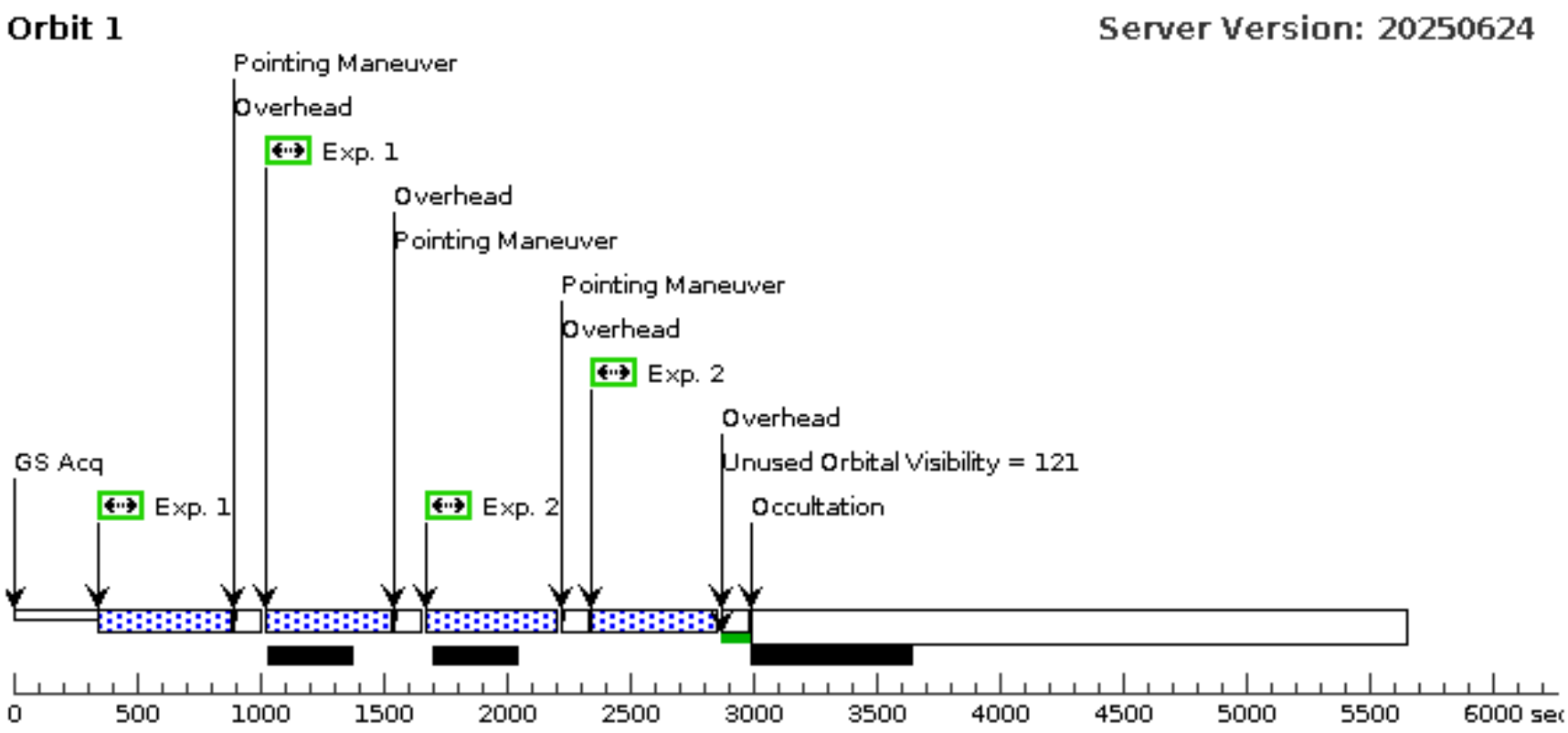
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN2023FDJ	RA: 13 56 28.8048 (209.1200200d) Dec: -36 33 52.36 (-36.56454d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) SN2023FDJ	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 04 (1)	510 Secs (1020 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(4) SN2023FDJ	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 04 (1)	510 Secs (1020 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 05, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

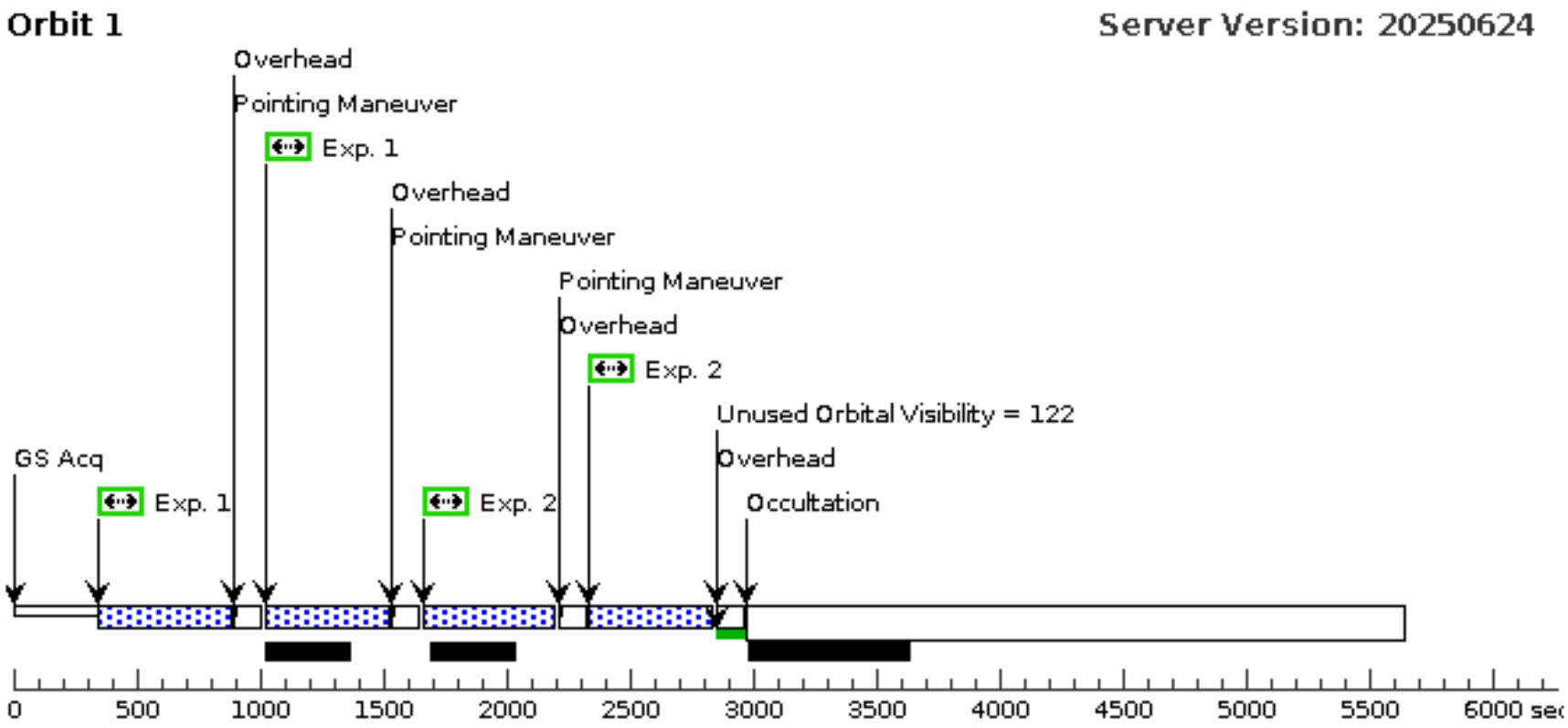
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SN2022XXF	RA: 11 30 5.9403 (172.5247512d) Dec: +09 16 57.37 (9.28260d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) SN2022XXF	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 05 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(5) SN2022XXF	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 05 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 06, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

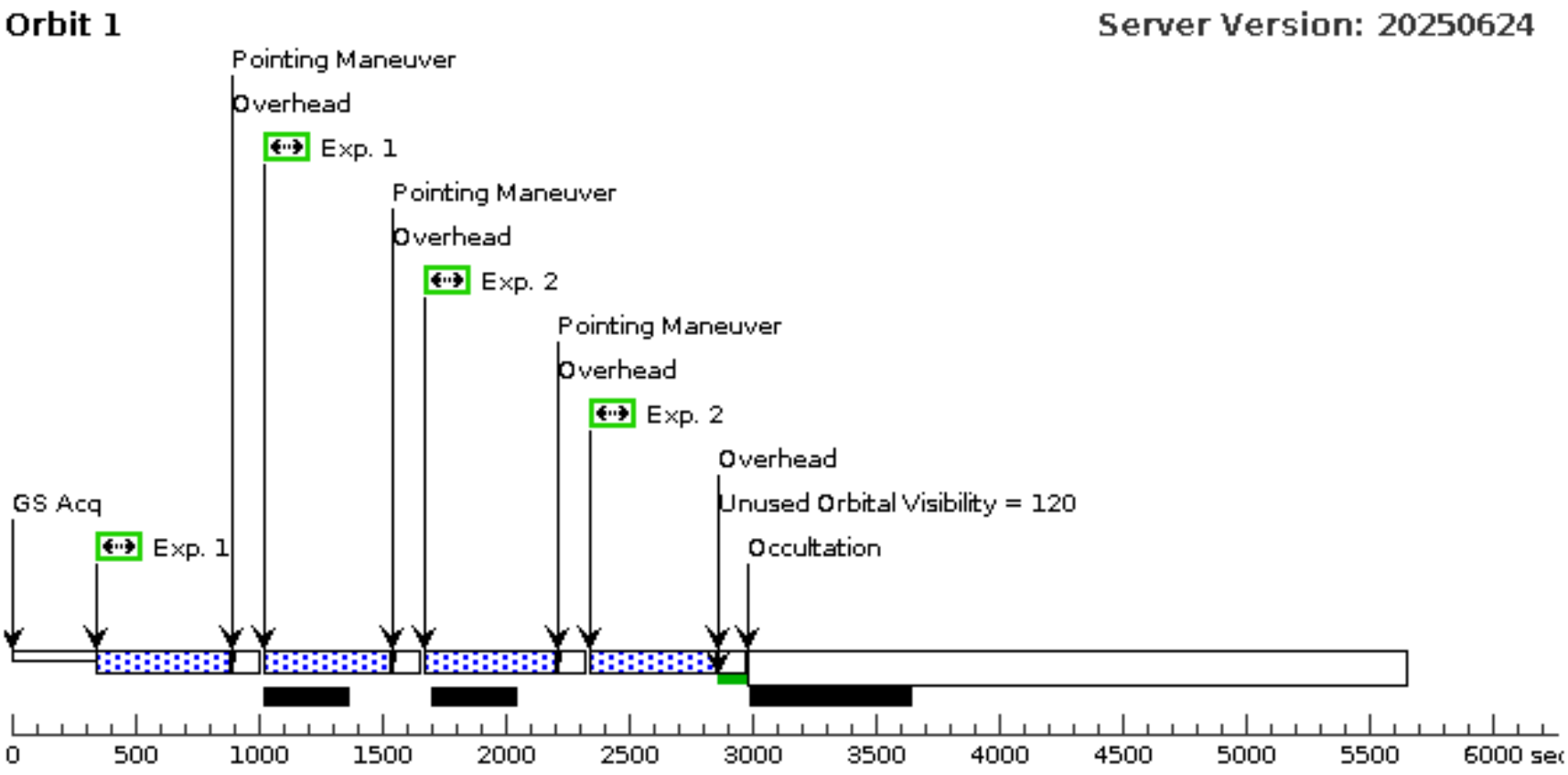
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SN2023BIP	RA: 11 59 54.6250 (179.9776042d) Dec: +26 04 8.07 (26.06891d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) SN2023BIP	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 06 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(6) SN2023BIP	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 06 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 07, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

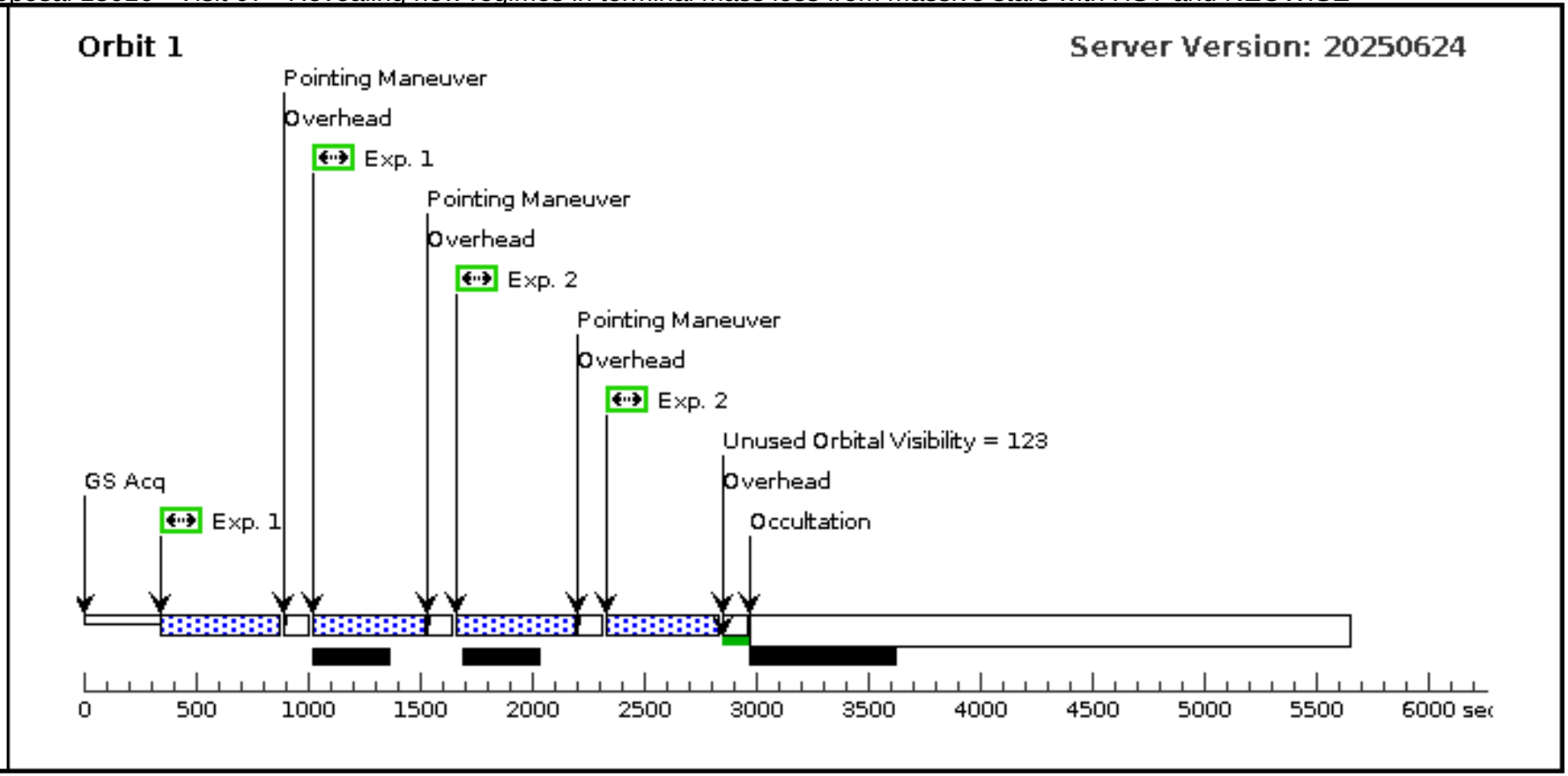
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SN2022YJL	RA: 22 17 58.3109 (334.4929621d) Dec: +10 59 43.15 (10.99532d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) SN2022YJL	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 07 (1)	505 Secs (1010 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(7) SN2022YJL	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 07 (1)	505 Secs (1010 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 08, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

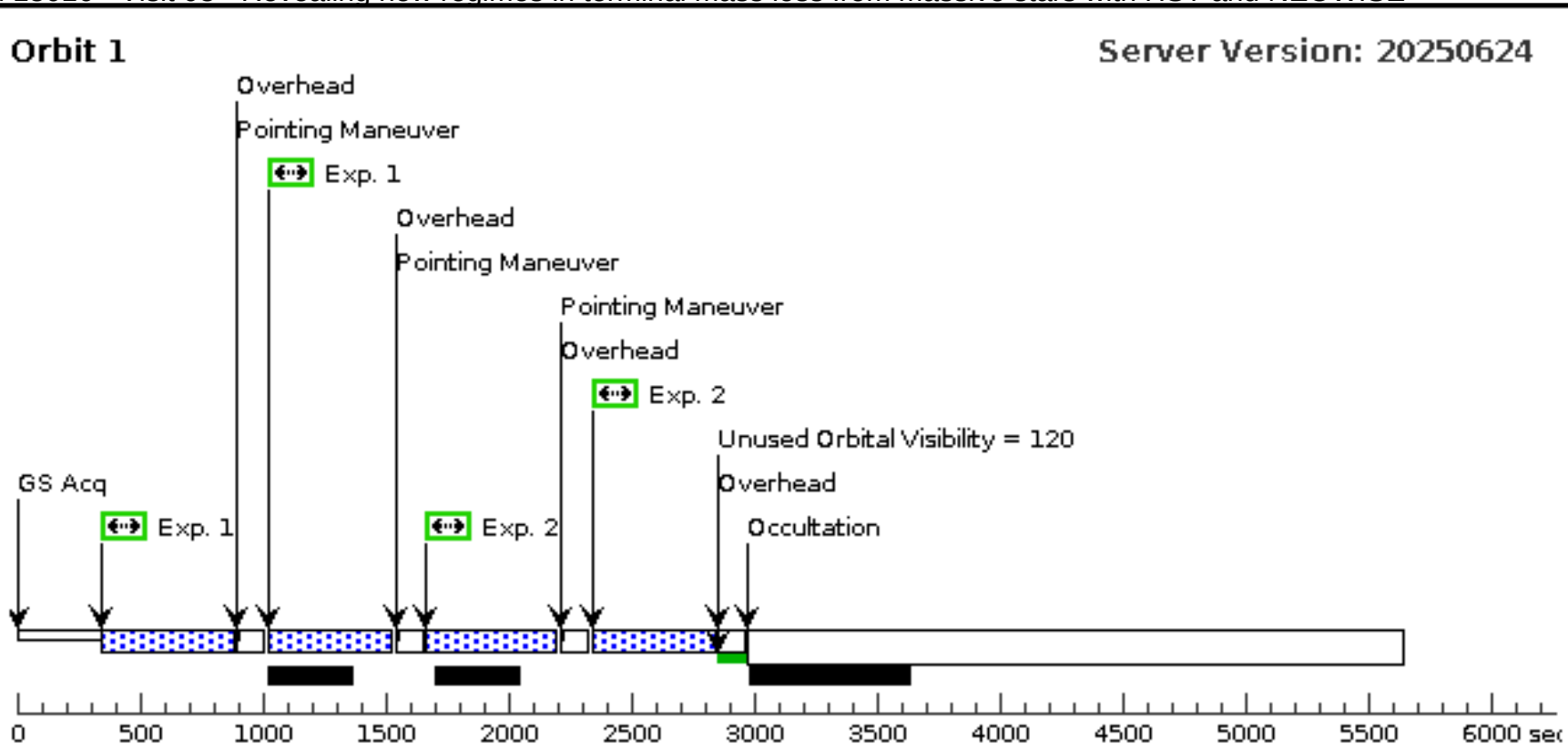
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN2022VMI	RA: 07 46 45.2299 (116.6884579d) Dec: +23 41 48.01 (23.69667d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN2022VMI	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 08 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(8) SN2022VMI	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 08 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 09, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

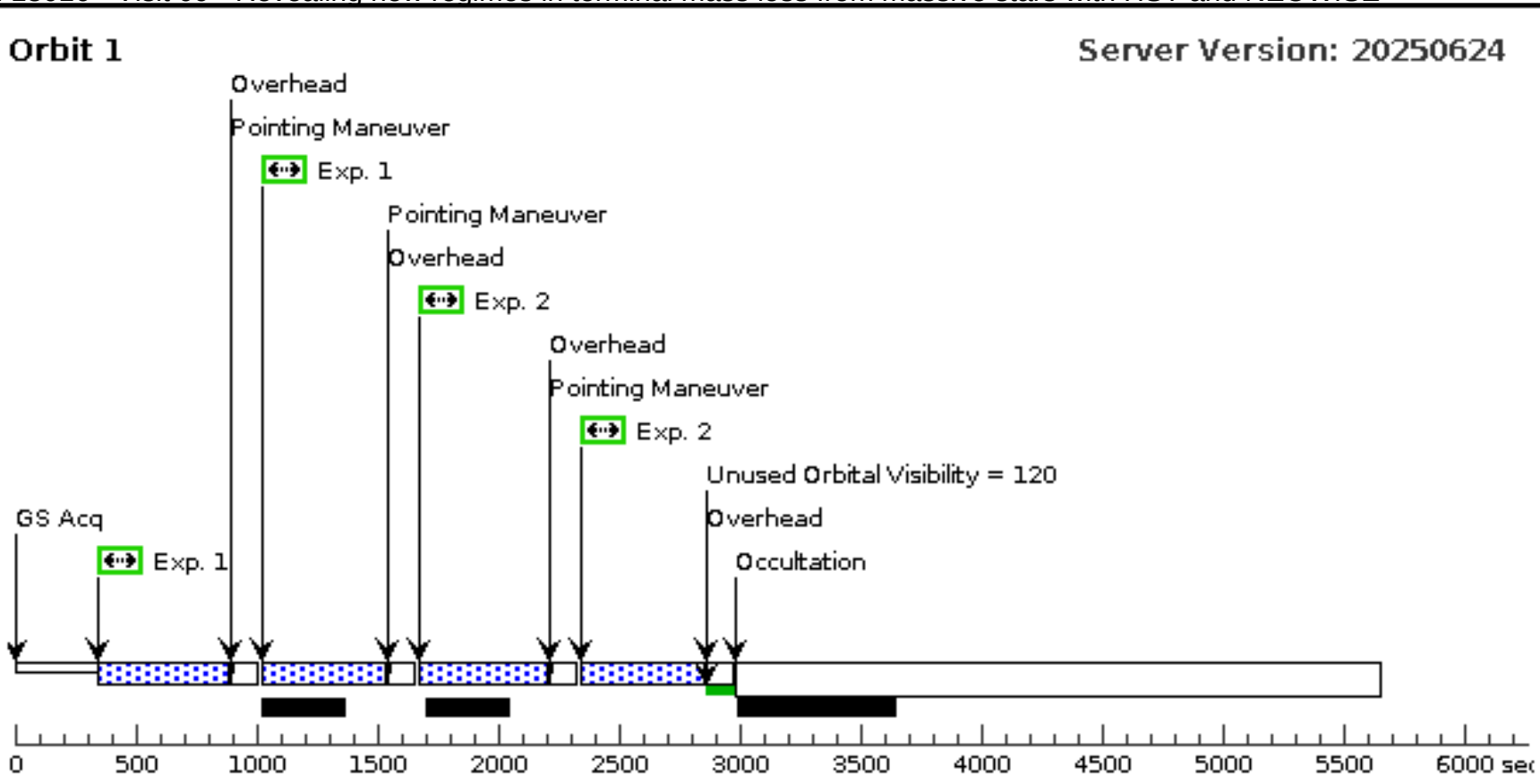
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	SN2022YYZ	RA: 19 07 1.5530 (286.7564708d) Dec: +28 59 50.09 (28.99725d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) SN2022YYZ	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 09 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(9) SN2022YYZ	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 09 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 10, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

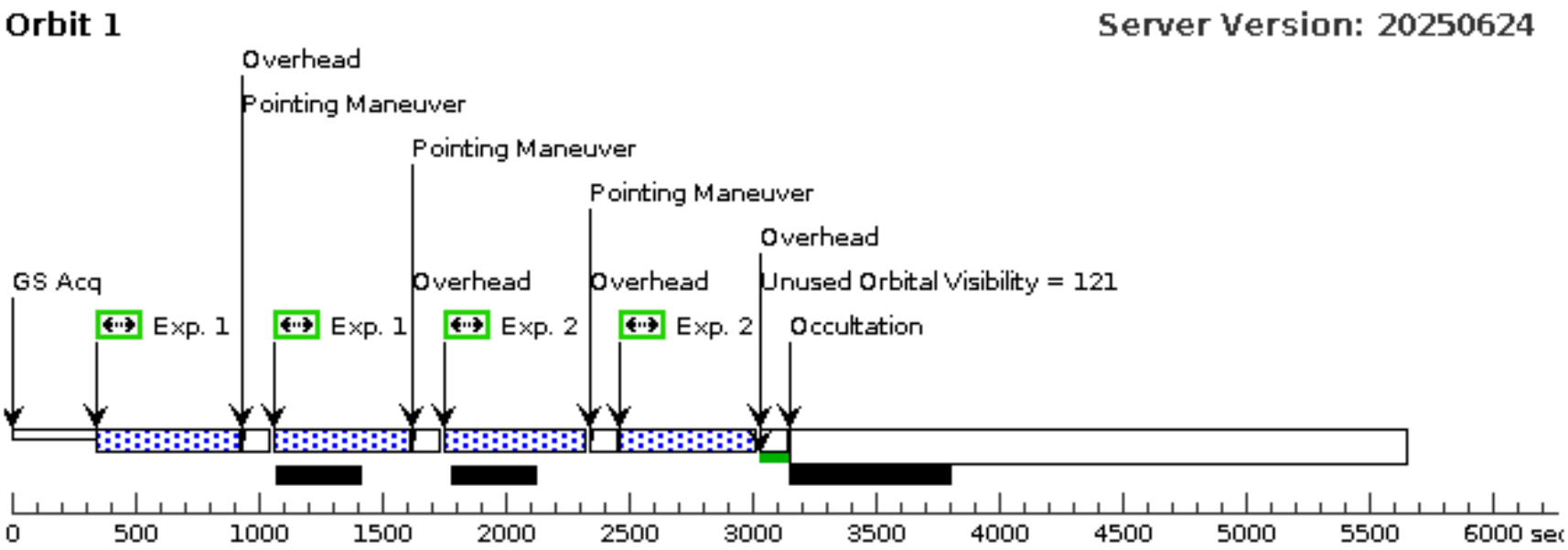
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SN2022UHK	RA: 18 50 17.2800 (282.5720000d) Dec: +75 27 59.90 (75.46664d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) SN2022UHK	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 10 (1)	550 Secs (1100 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(10) SN2022UHK	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 10 (1)	550 Secs (1100 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 11, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

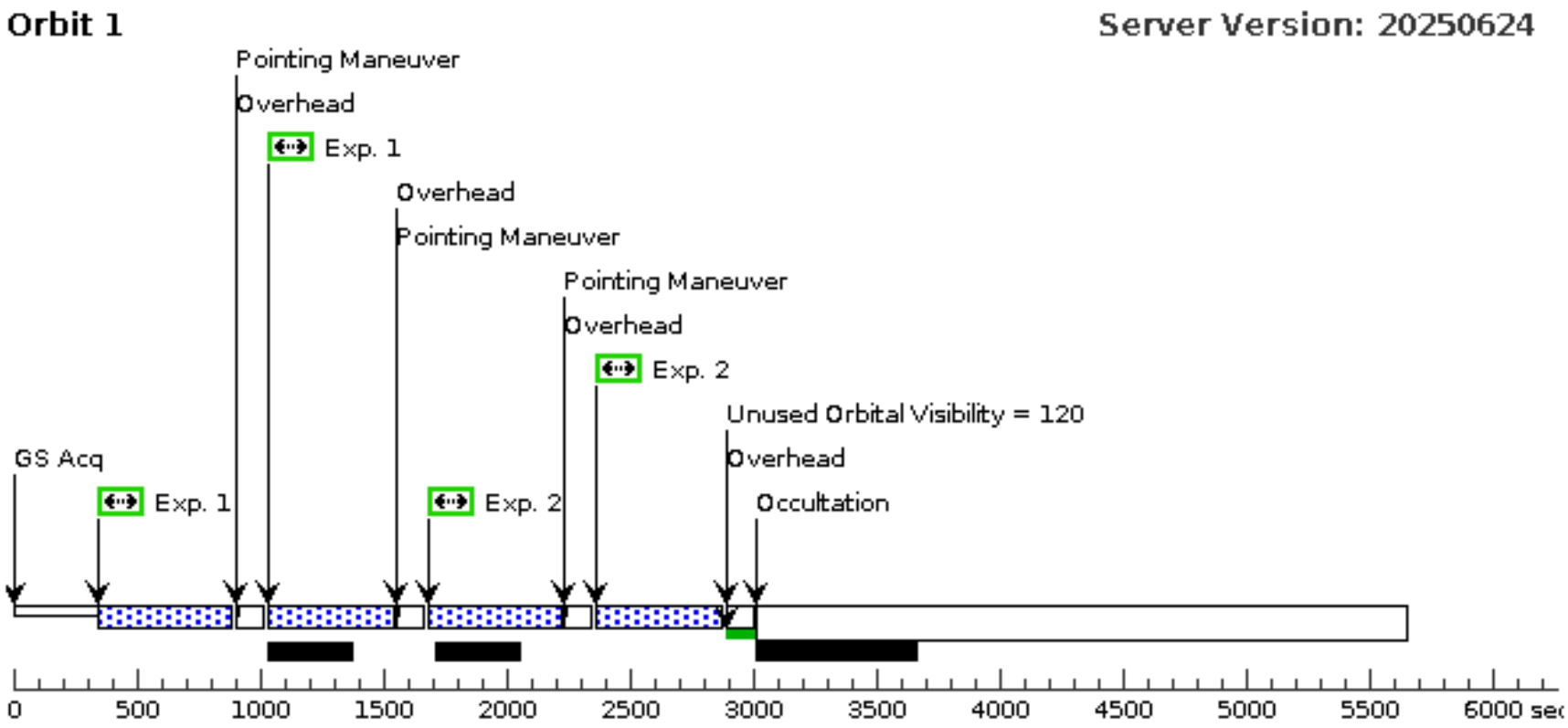
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SN2022JQN	RA: 23 08 16.1400 (347.0672500d) Dec: +47 35 5.17 (47.58477d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SN2022JQN	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 11 (1)	515 Secs (1030 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(11) SN2022JQN	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 11 (1)	515 Secs (1030 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 12, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

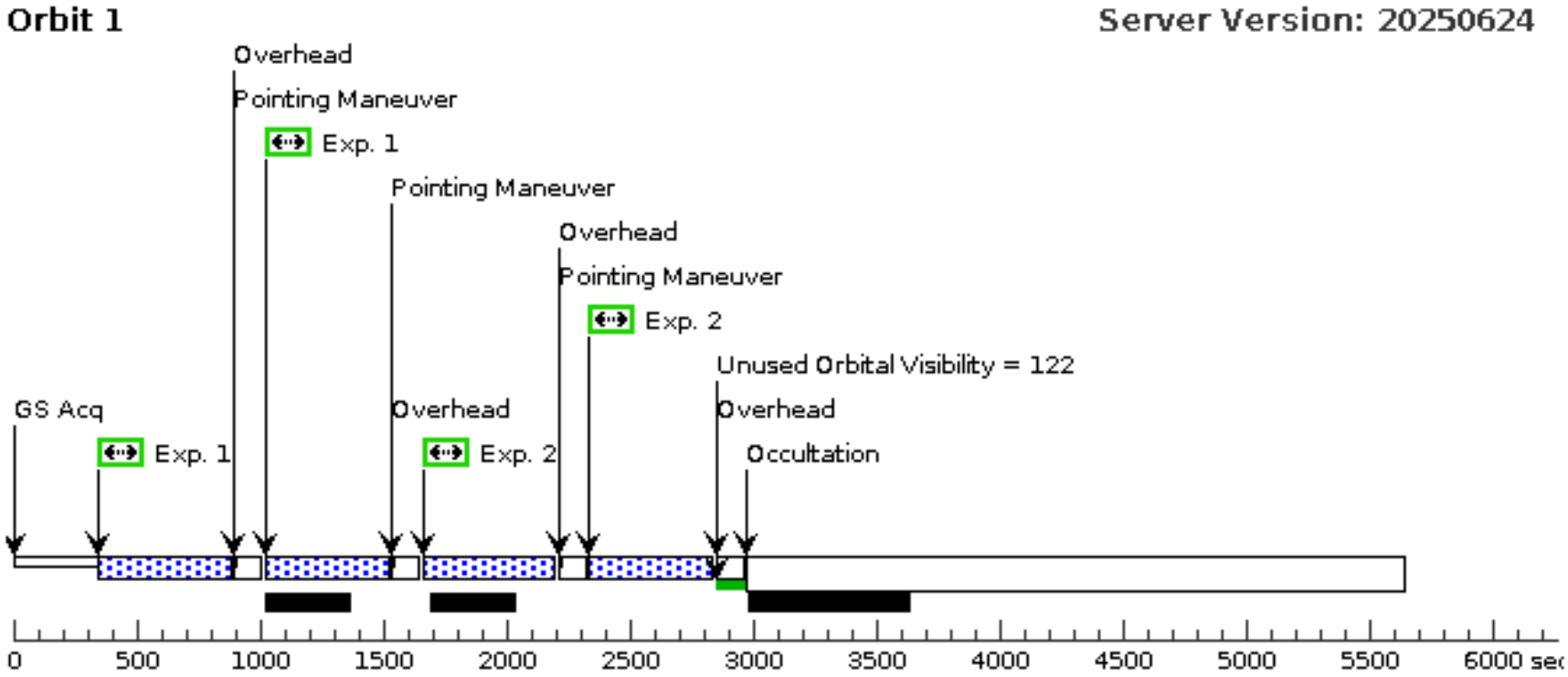
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SN2022JLI	RA: 00 34 45.6900 (8.6903750d) Dec: -08 23 12.16 (-8.38671d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SN2022JLI	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 12 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(12) SN2022JLI	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 12 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 13, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

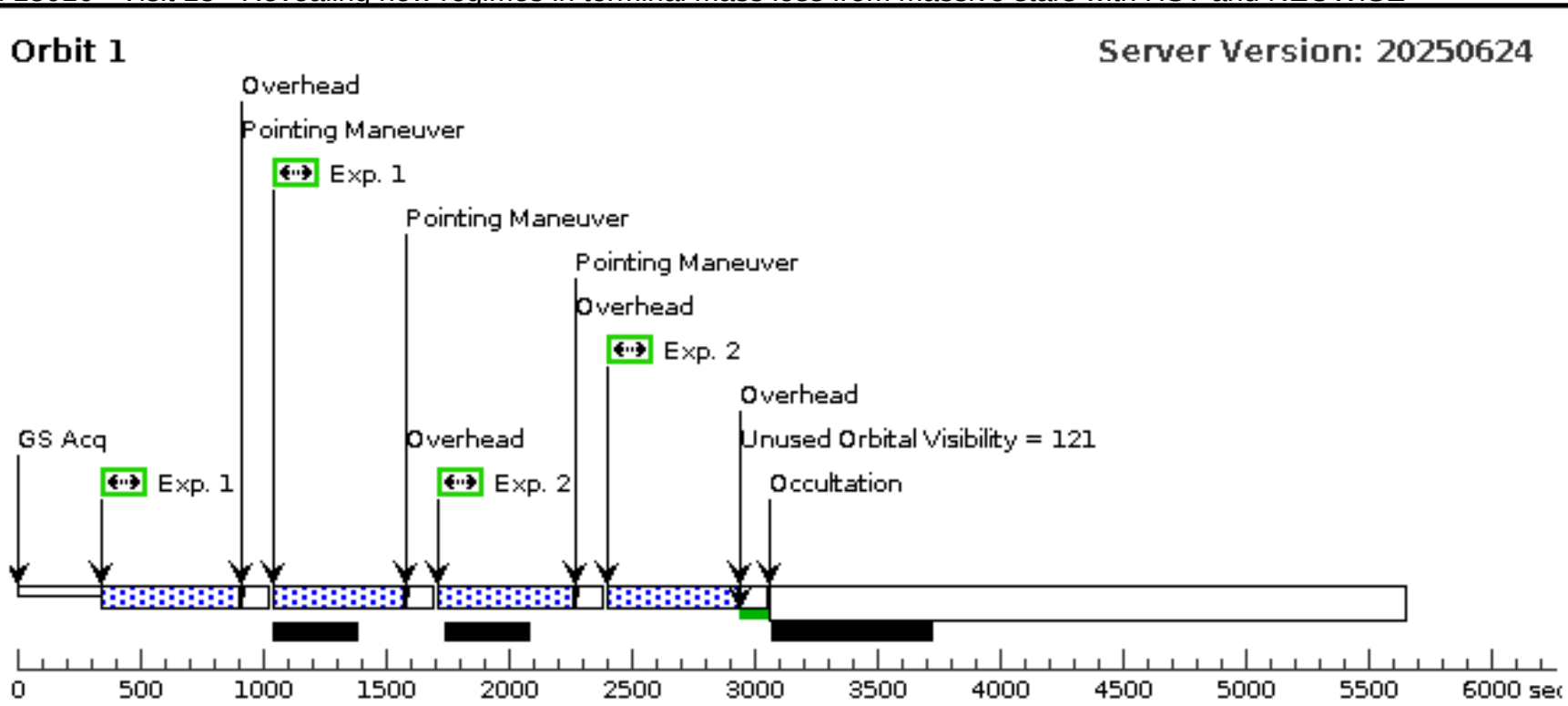
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	SN2021AGHP	RA: 11 30 23.5024 (172.5979267d) Dec: +63 18 1.54 (63.30043d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(13) SN2021AGHP	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 13 (1)	528 Secs (1056 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(13) SN2021AGHP	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 13 (1)	528 Secs (1056 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 14, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

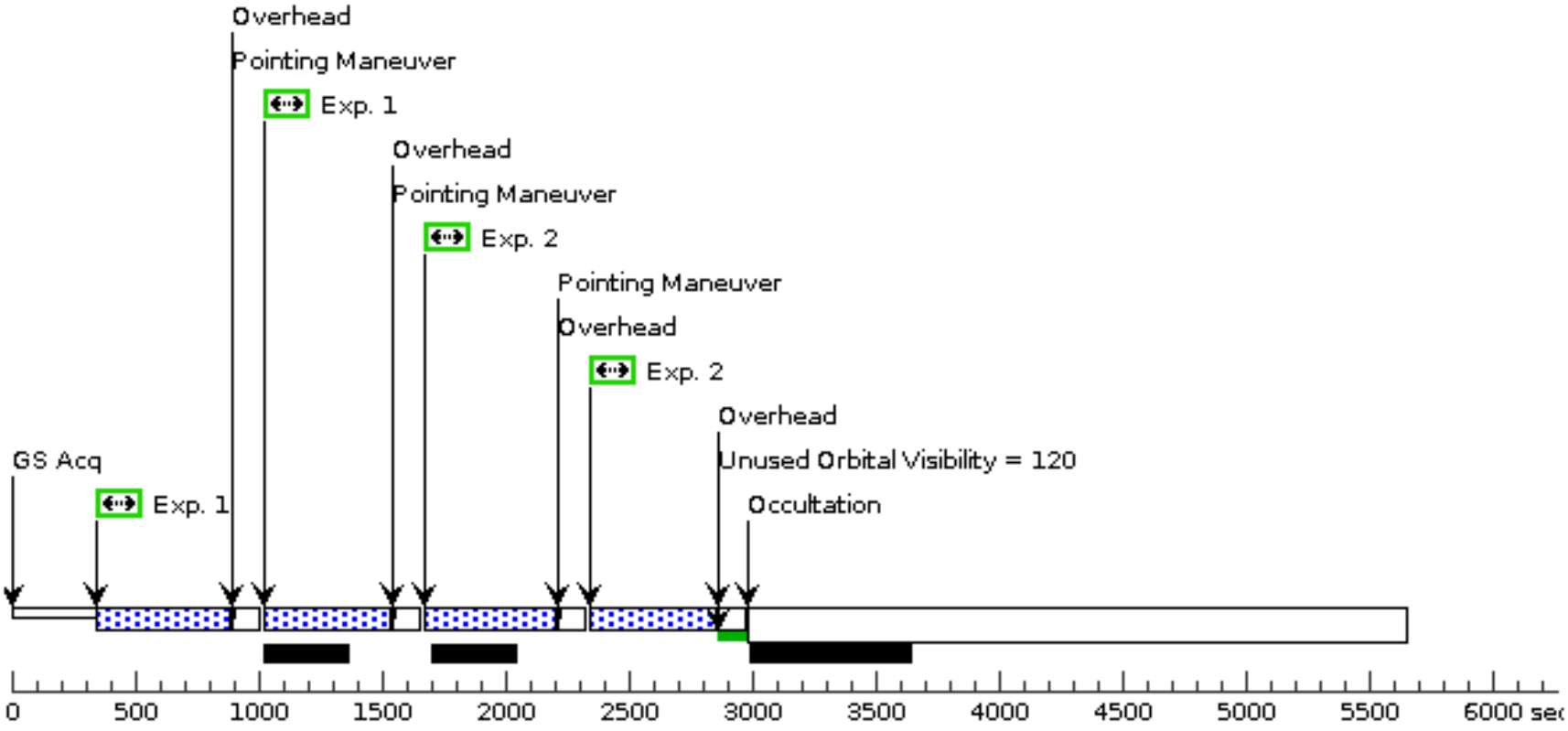
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	SN2021UED	RA: 23 21 41.3805 (350.4224188d) Dec: +26 29 9.60 (26.48600d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(14) SN2021UED	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 14 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(14) SN2021UED	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 14 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 15, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

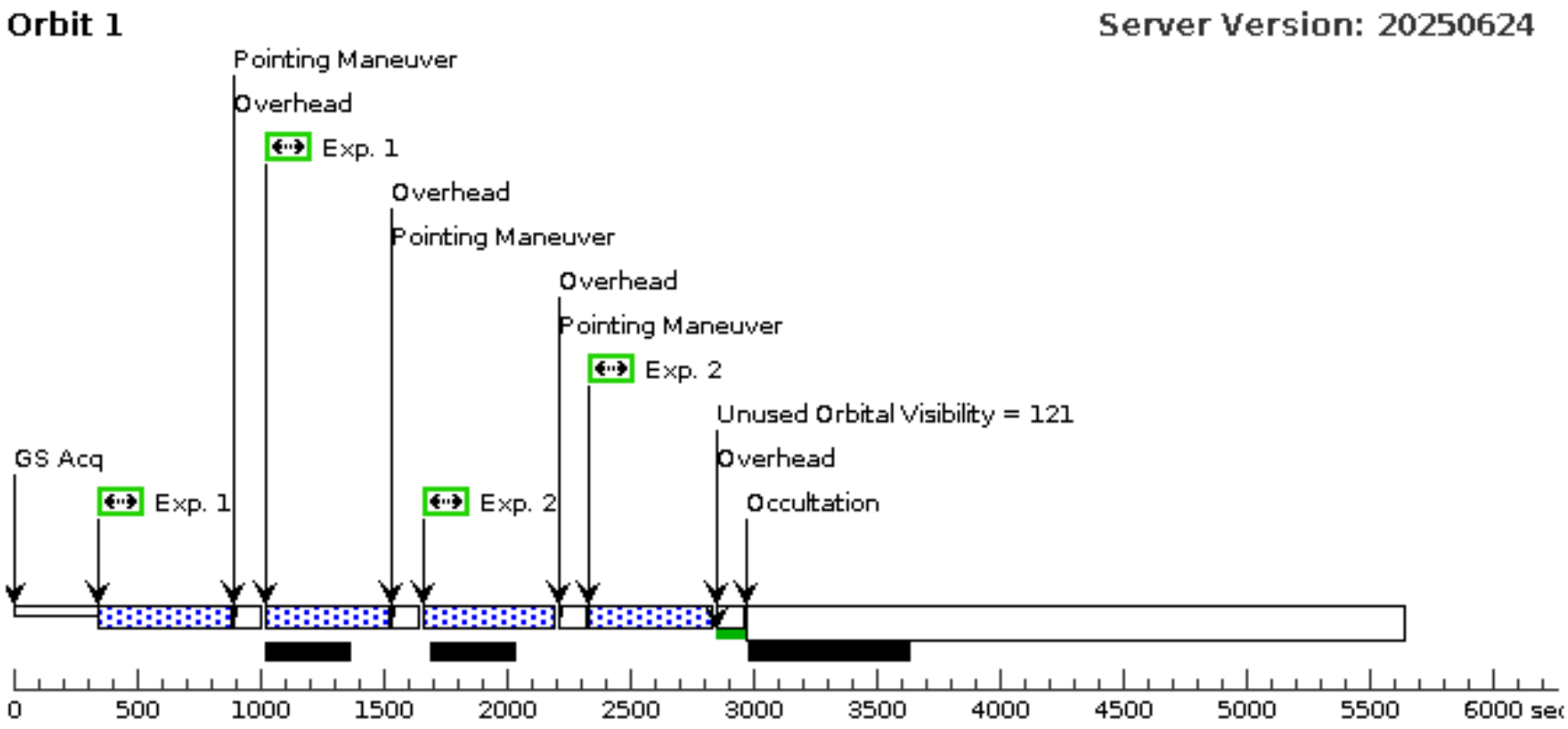
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	SN2021IRP	RA: 05 23 27.4601 (80.8644171d) Dec: +17 04 39.86 (17.07774d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(15) SN2021IRP	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 15 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(15) SN2021IRP	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 15 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 16, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

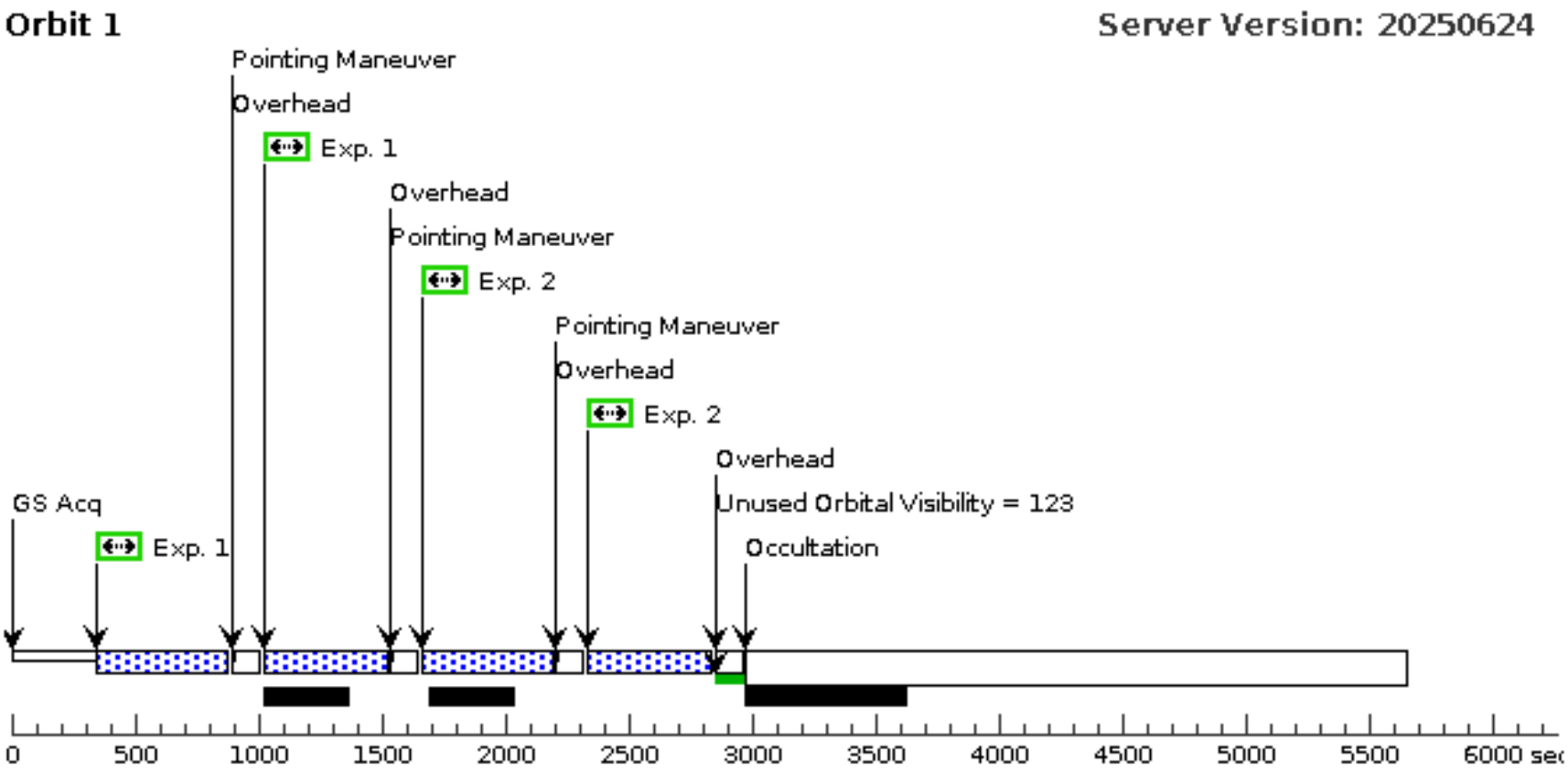
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	SN2021QAR	RA: 23 32 53.5800 (353.2232500d) Dec: +13 21 29.38 (13.35816d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(16) SN2021QAR	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 16 (1)	505 Secs (1010 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(16) SN2021QAR	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 16 (1)	505 Secs (1010 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 17, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

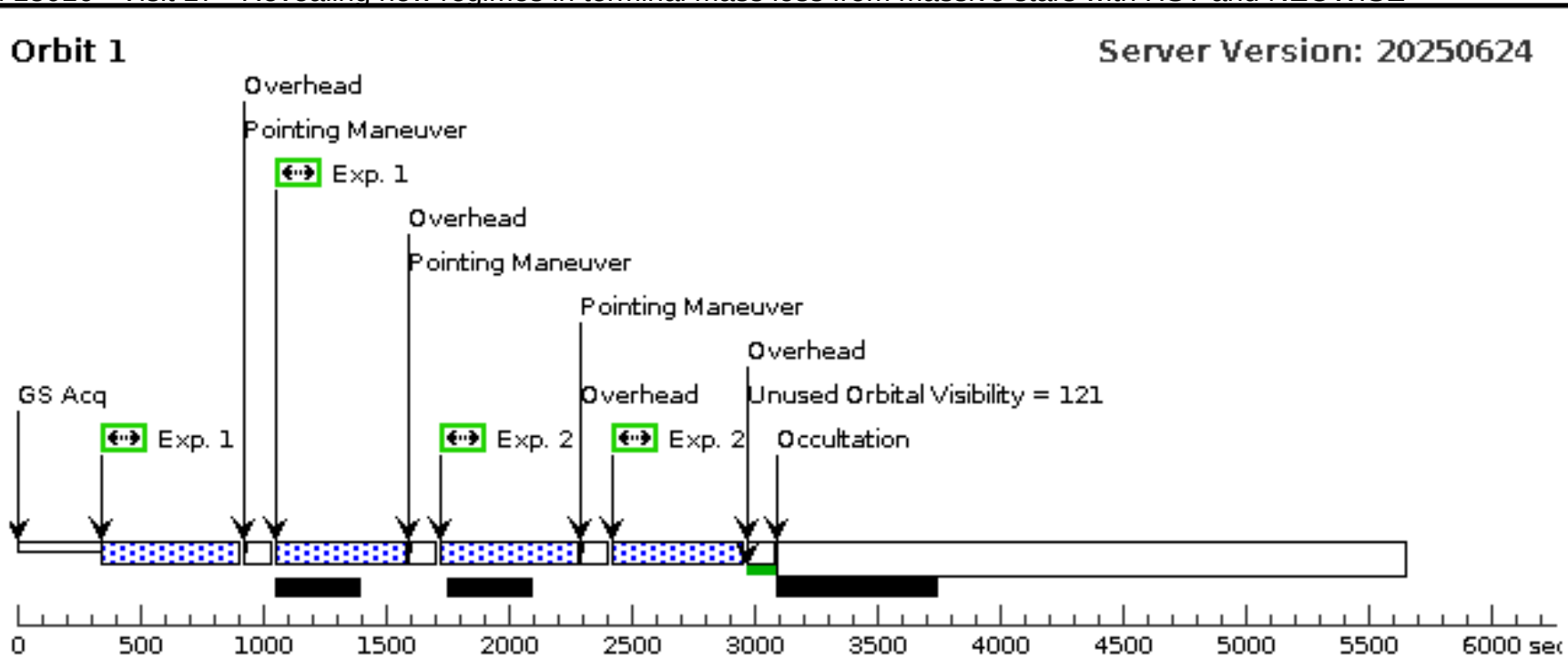
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(17)	SN2021MSA	RA: 10 22 55.6001 (155.7316671d) Dec: +65 12 3.13 (65.20087d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(17) SN2021MSA	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 17 (1)	535 Secs (1070 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(17) SN2021MSA	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 17 (1)	535 Secs (1070 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 18, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

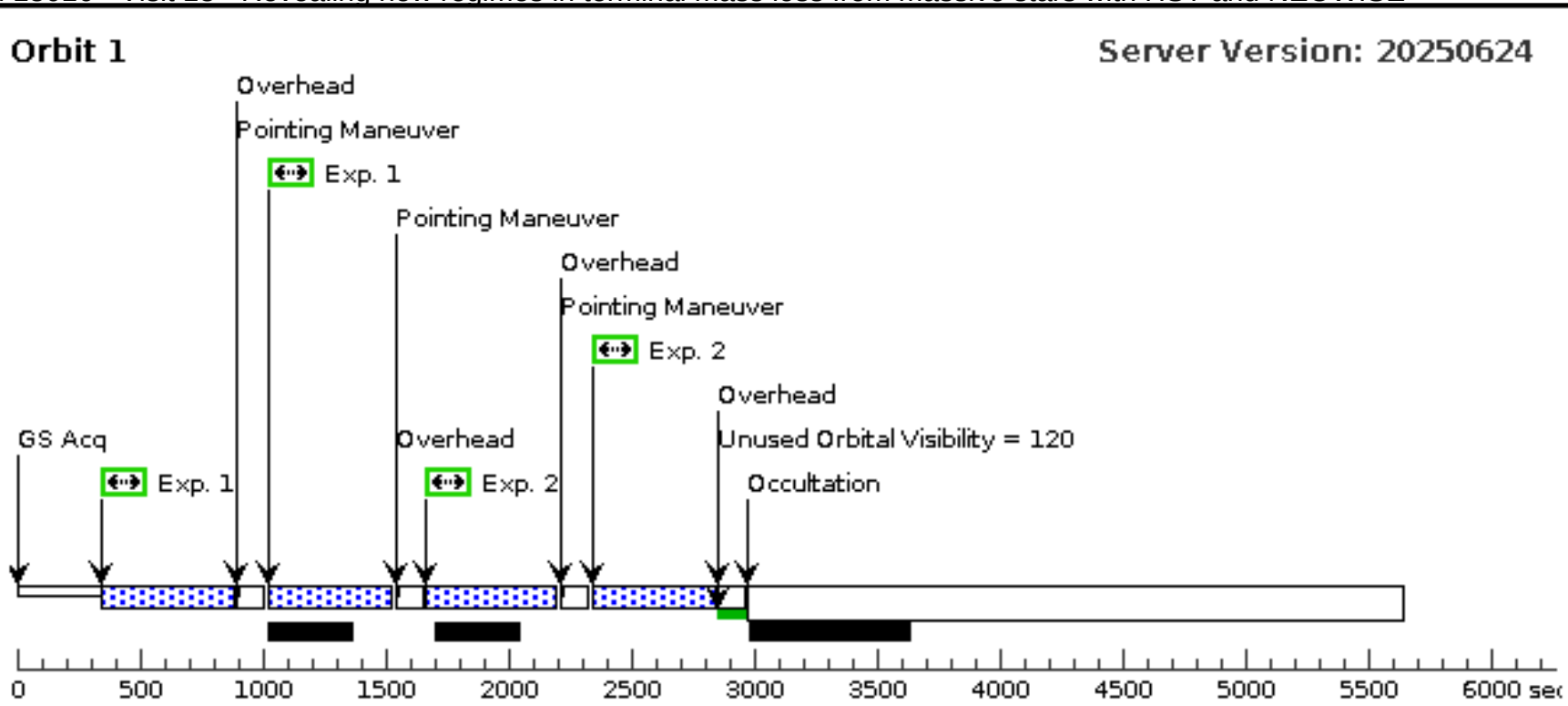
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(18)	SN2020UEM	RA: 08 24 23.8500 (126.0993750d) Dec: -03 29 19.10 (-3.48864d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(18) SN2020UEM	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 18 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(18) SN2020UEM	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 18 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 19, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

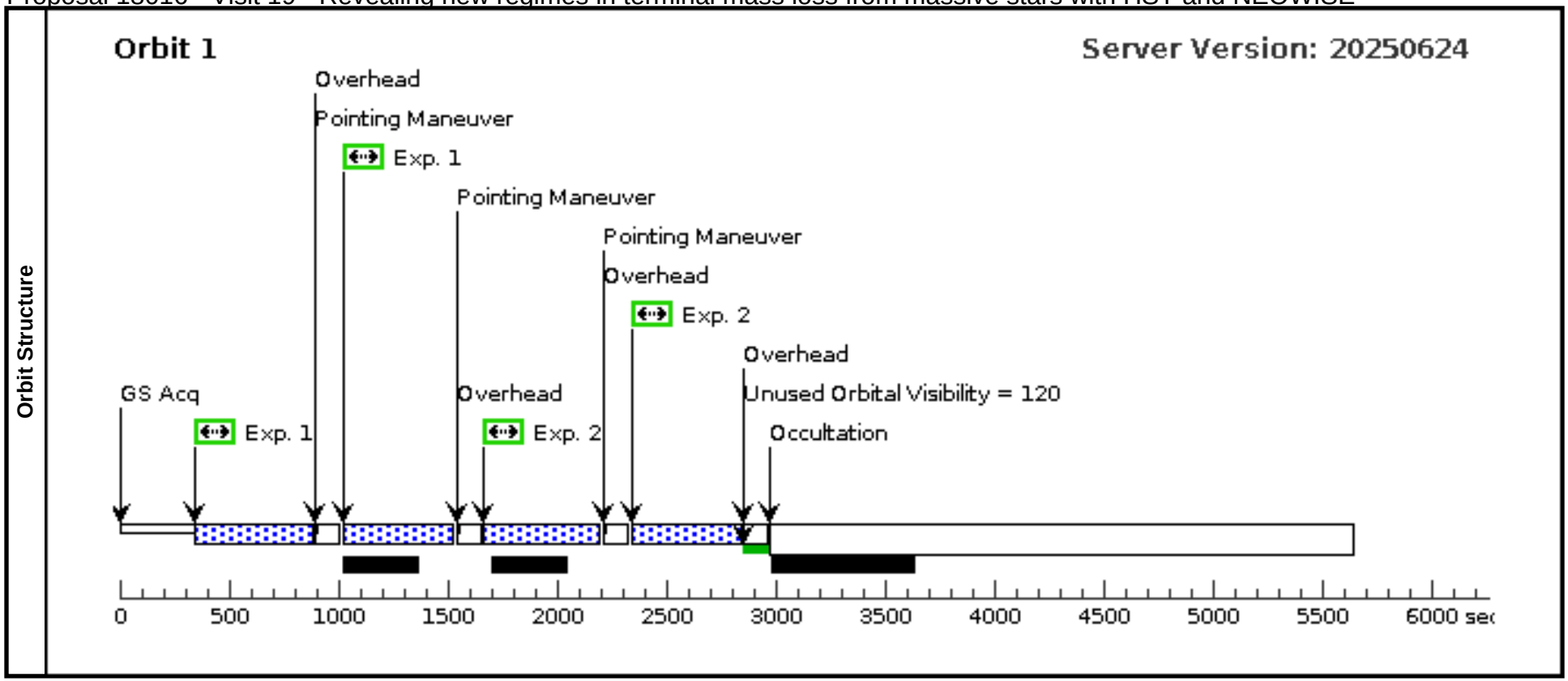
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(19)	SN2020YZQ	RA: 18 22 23.3599 (275.5973329d) Dec: +23 28 32.05 (23.47557d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(19) SN2020YZQ	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 19 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(19) SN2020YZQ	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 19 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20250624
Overhead
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Overhead
Exp. 2
Overhead
GS Acq
Exp. 1
Overhead
Exp. 2
Unused Orbital Visibility = 120
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 18016, Visit 20, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

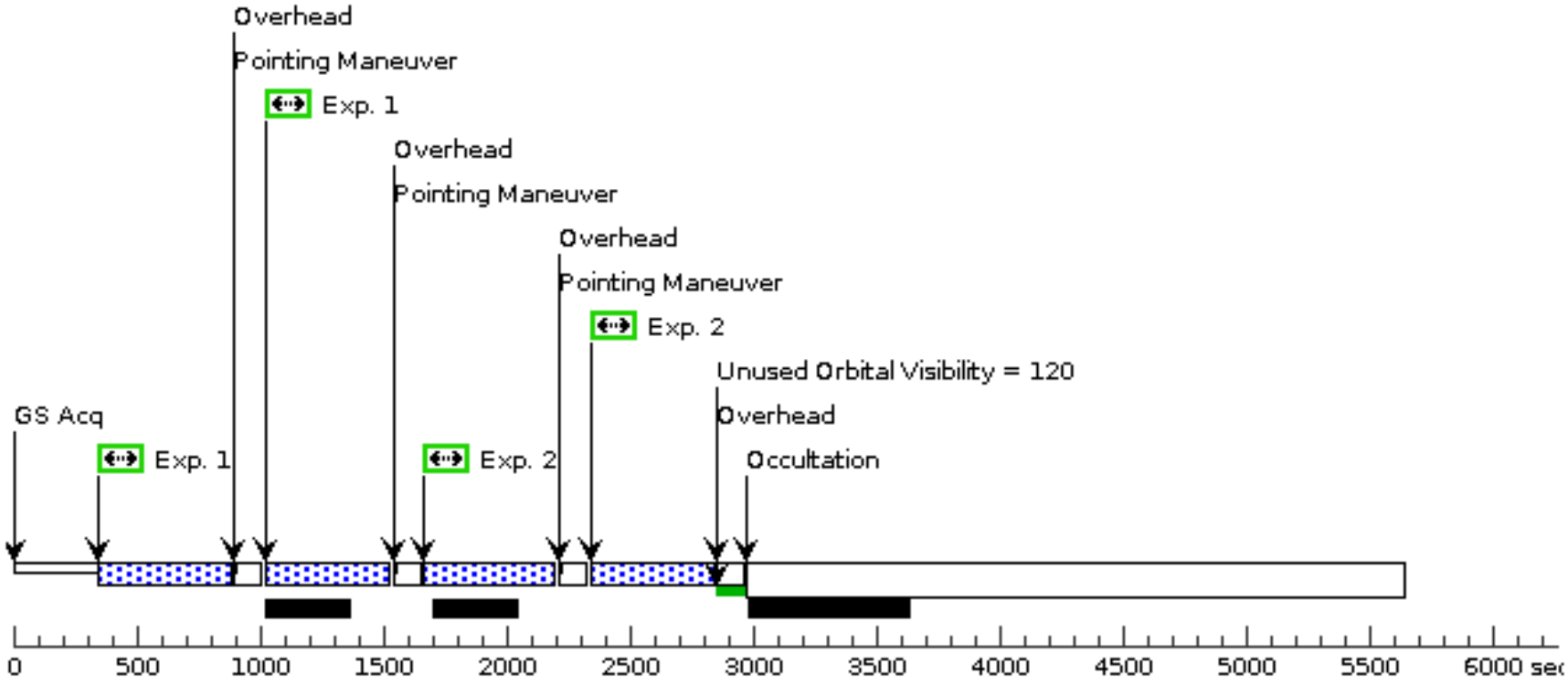
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(20)	SN2020PJB	RA: 02 14 49.8964 (33.7079017d) Dec: -24 51 26.01 (-24.85722d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(20) SN2020PJB	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 20 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(20) SN2020PJB	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 20 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 21, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

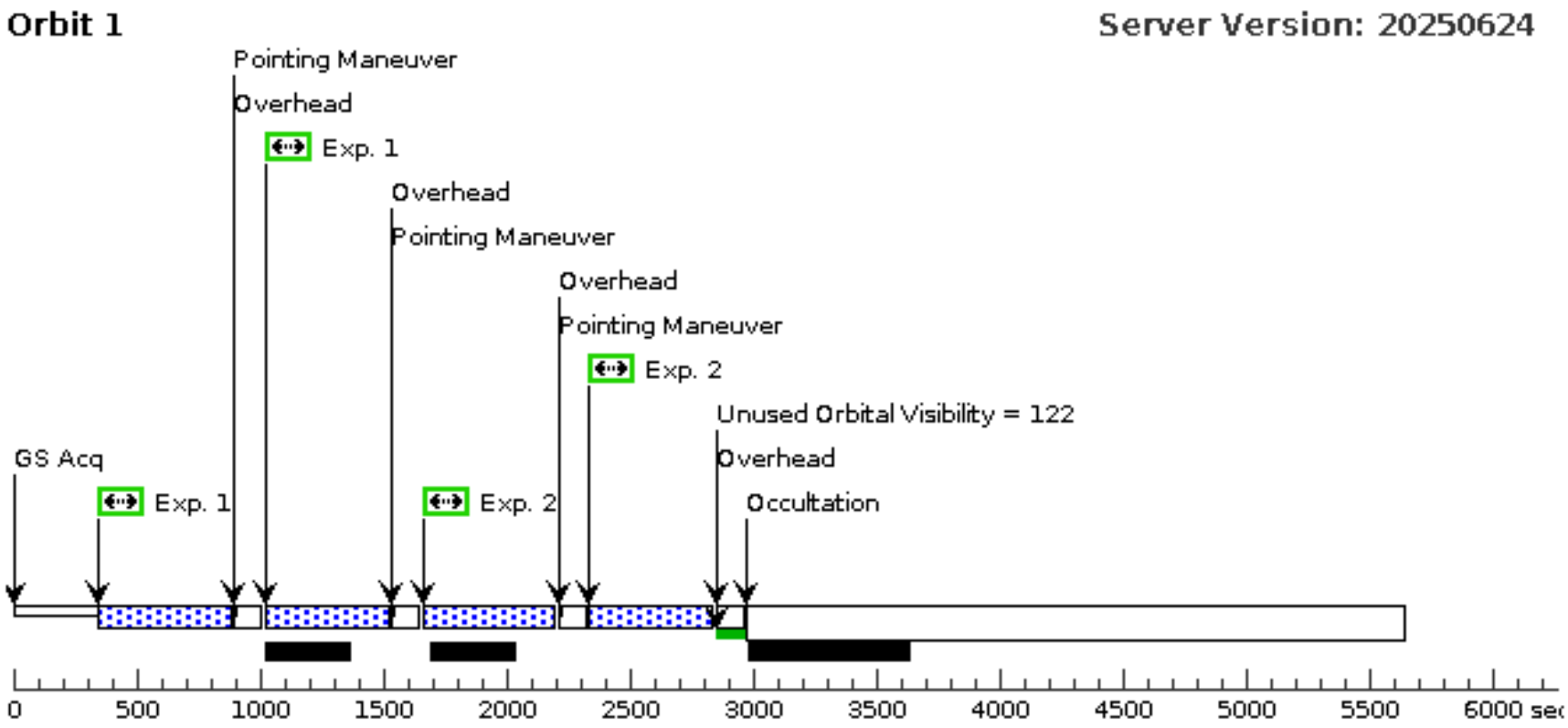
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(21)	SN2020SVN	RA: 03 58 10.7100 (59.5446250d) Dec: -08 49 0.91 (-8.81692d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(21) SN2020SVN	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 21 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(21) SN2020SVN	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 21 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 22, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

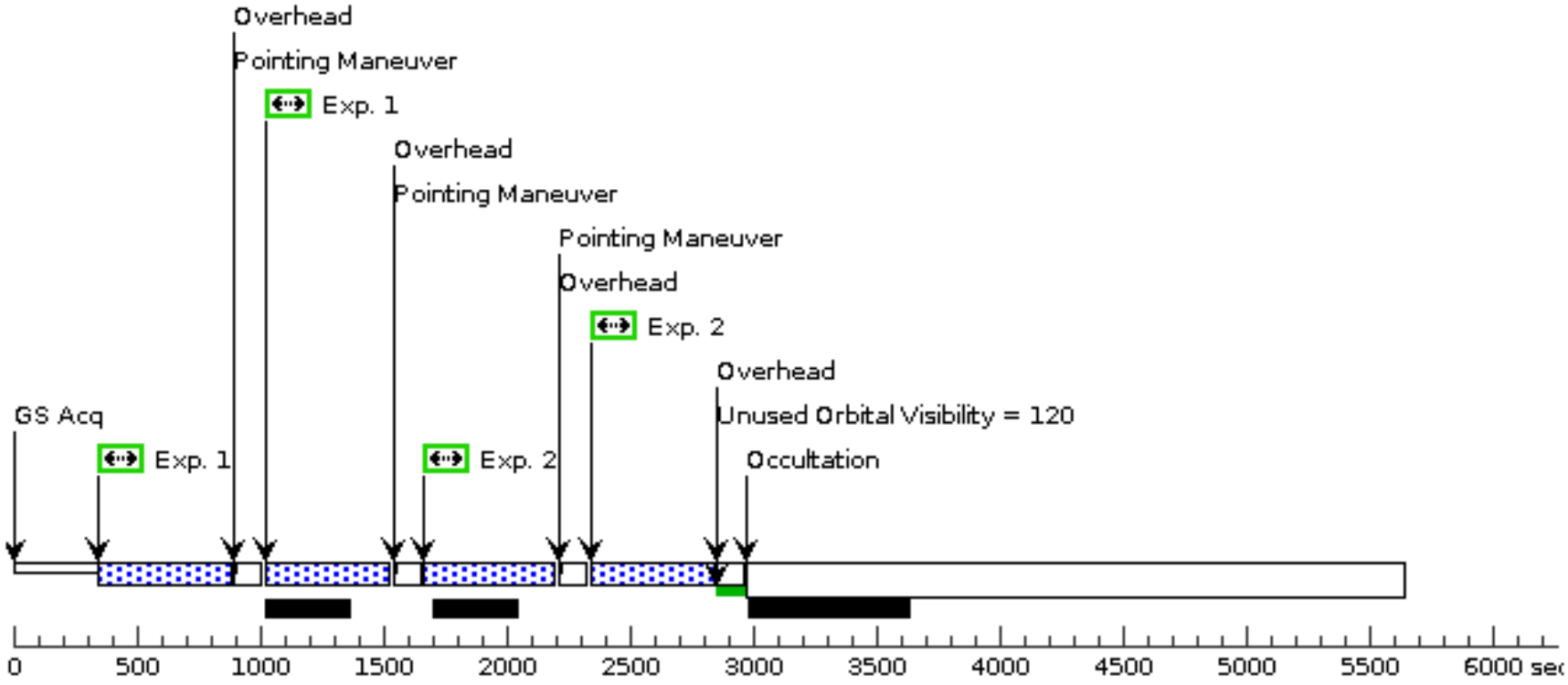
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(22)	SN2020JFV	RA: 23 06 35.7499 (346.6489579d) Dec: +00 36 43.60 (.61211d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(22) SN2020JFV	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 22 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(22) SN2020JFV	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 22 (1)	507 Secs (1014 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 23, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

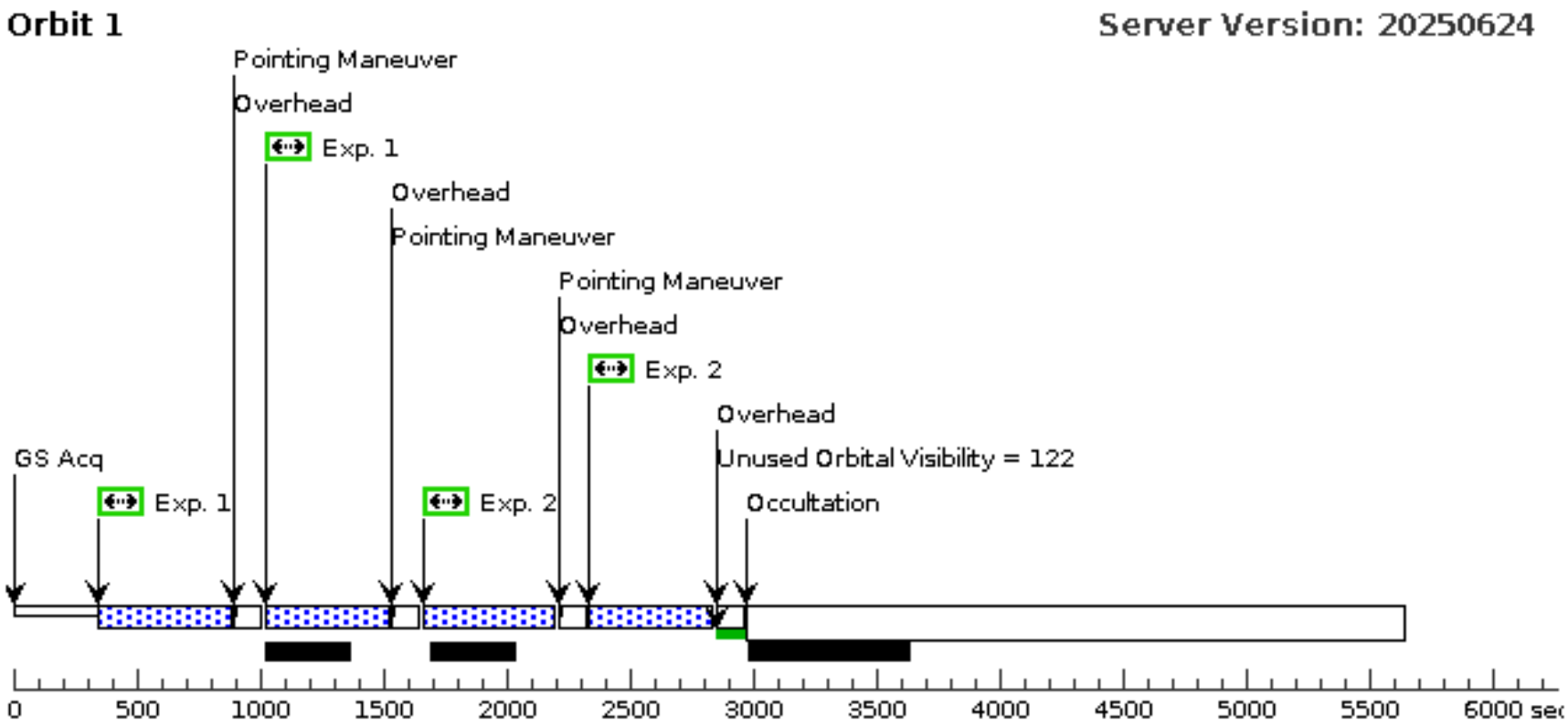
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(23)	SN2020IZC	RA: 00 05 2.5099 (1.2604579d) Dec: -07 06 3.02 (-7.10084d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(23) SN2020IZC	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 23 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(23) SN2020IZC	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 23 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 24, implementation Wed Oct 22 19:00:28 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

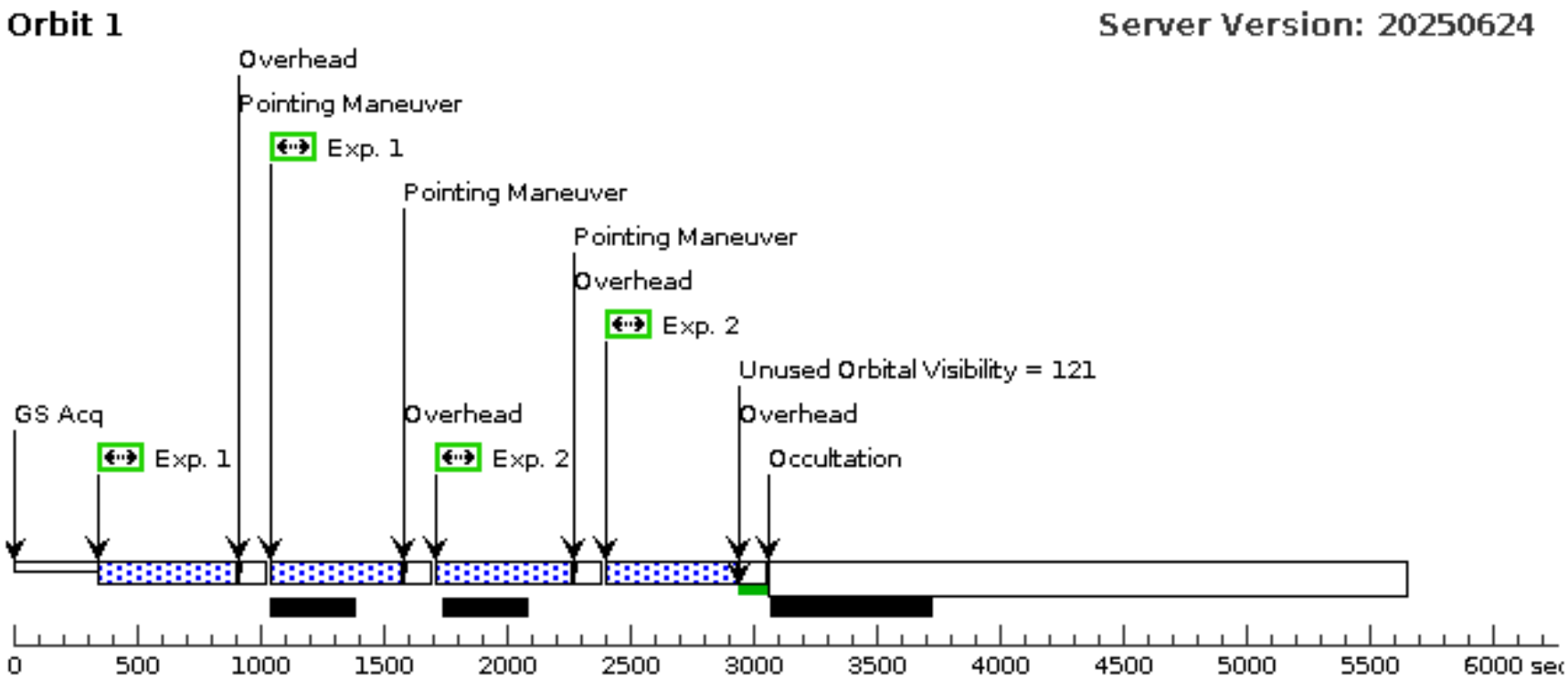
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(24)	SN2019VXM	RA: 19 58 28.5401 (299.6189171d) Dec: +62 08 15.83 (62.13773d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(24) SN2019VXM	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 24 (1)	528 Secs (1056 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(24) SN2019VXM	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 24 (1)	528 Secs (1056 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 25, implementation Wed Oct 22 19:00:29 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

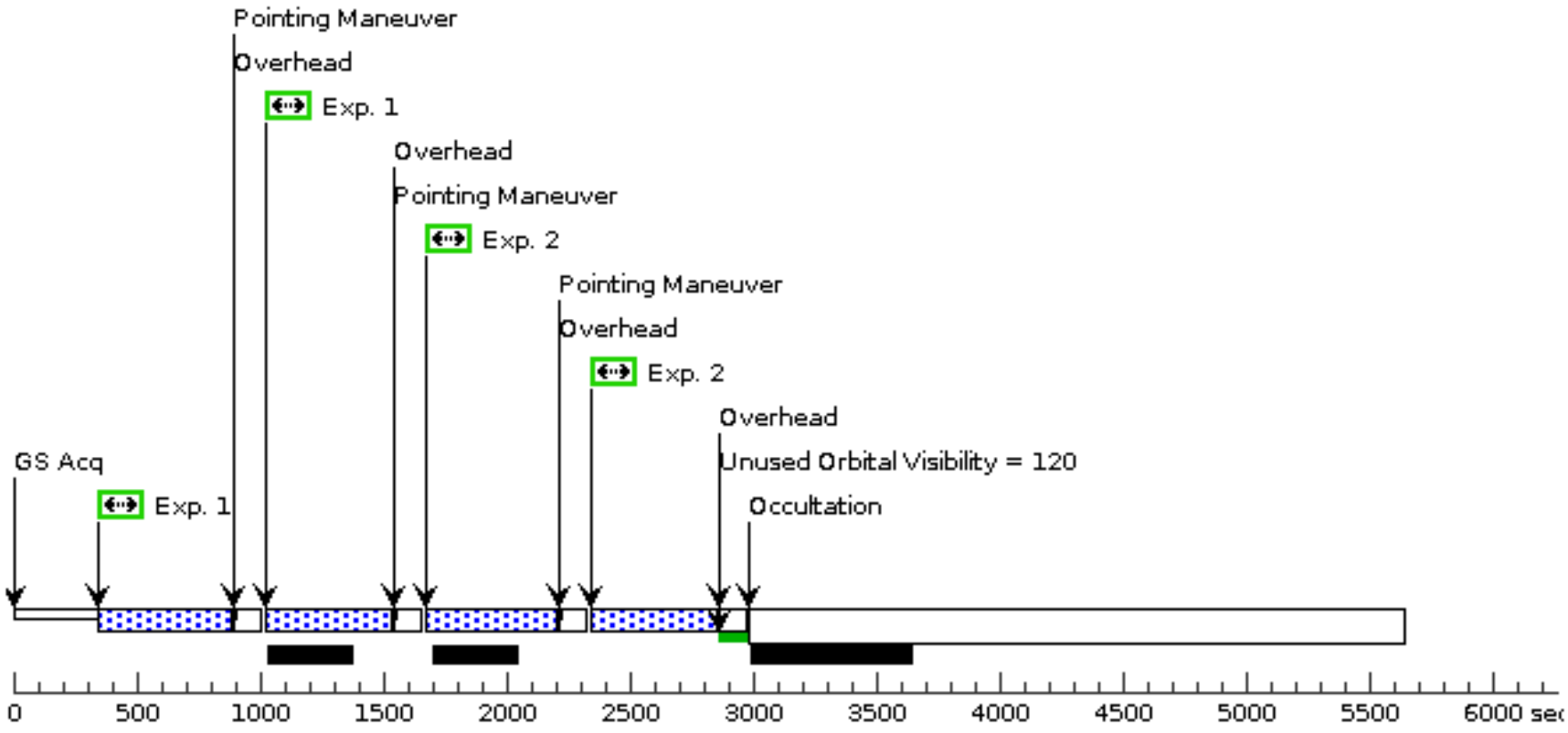
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(25)	SN2019OYS	RA: 07 07 59.2601 (106.9969171d) Dec: +31 39 55.30 (31.66536d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(25) SN2019OYS	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 25 (1)	509 Secs (1018 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(25) SN2019OYS	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 25 (1)	509 Secs (1018 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 26, implementation Wed Oct 22 19:00:29 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

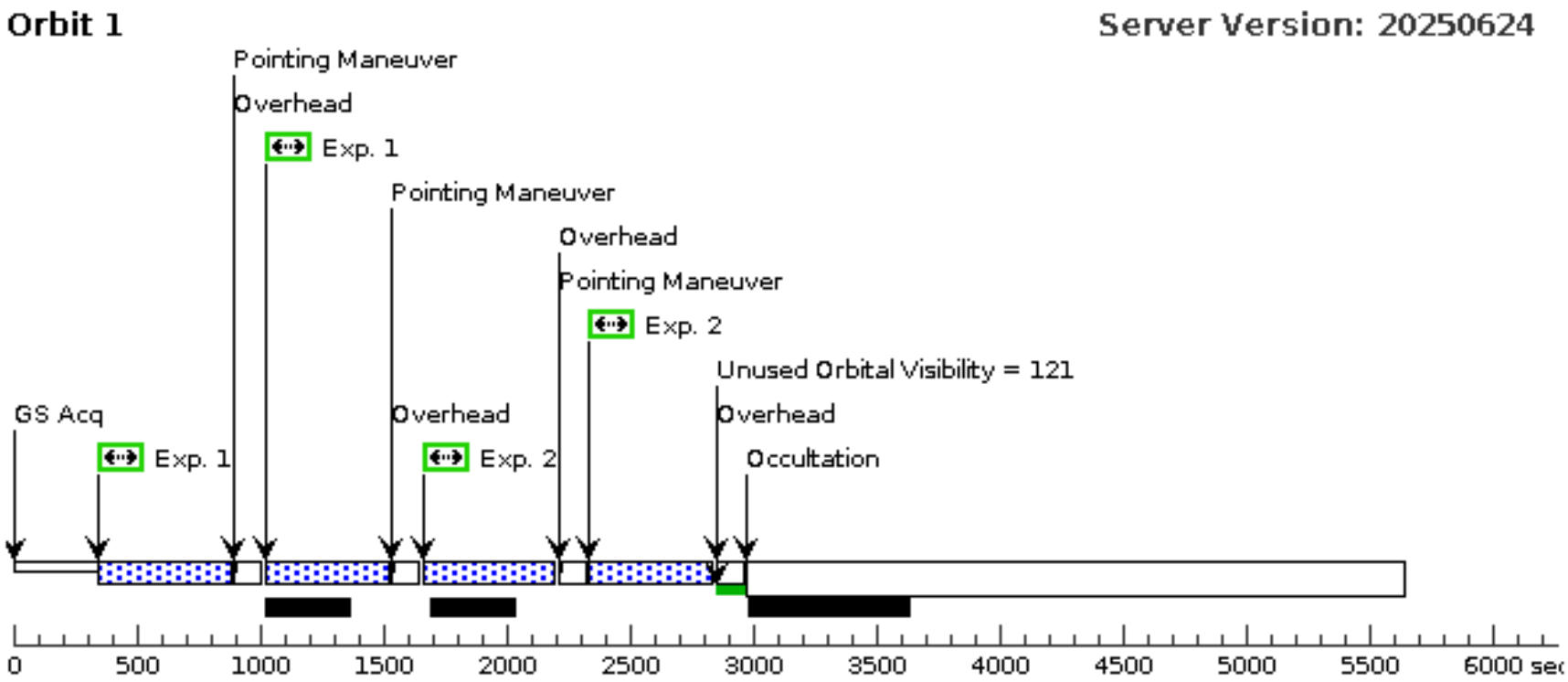
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(26)	SN2019IBK	RA: 01 46 11.1300 (26.5463750d) Dec: -16 17 4.49 (-16.28458d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(26) SN2019IBK	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 26 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(26) SN2019IBK	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 26 (1)	506 Secs (1012 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 27, implementation Wed Oct 22 19:00:29 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

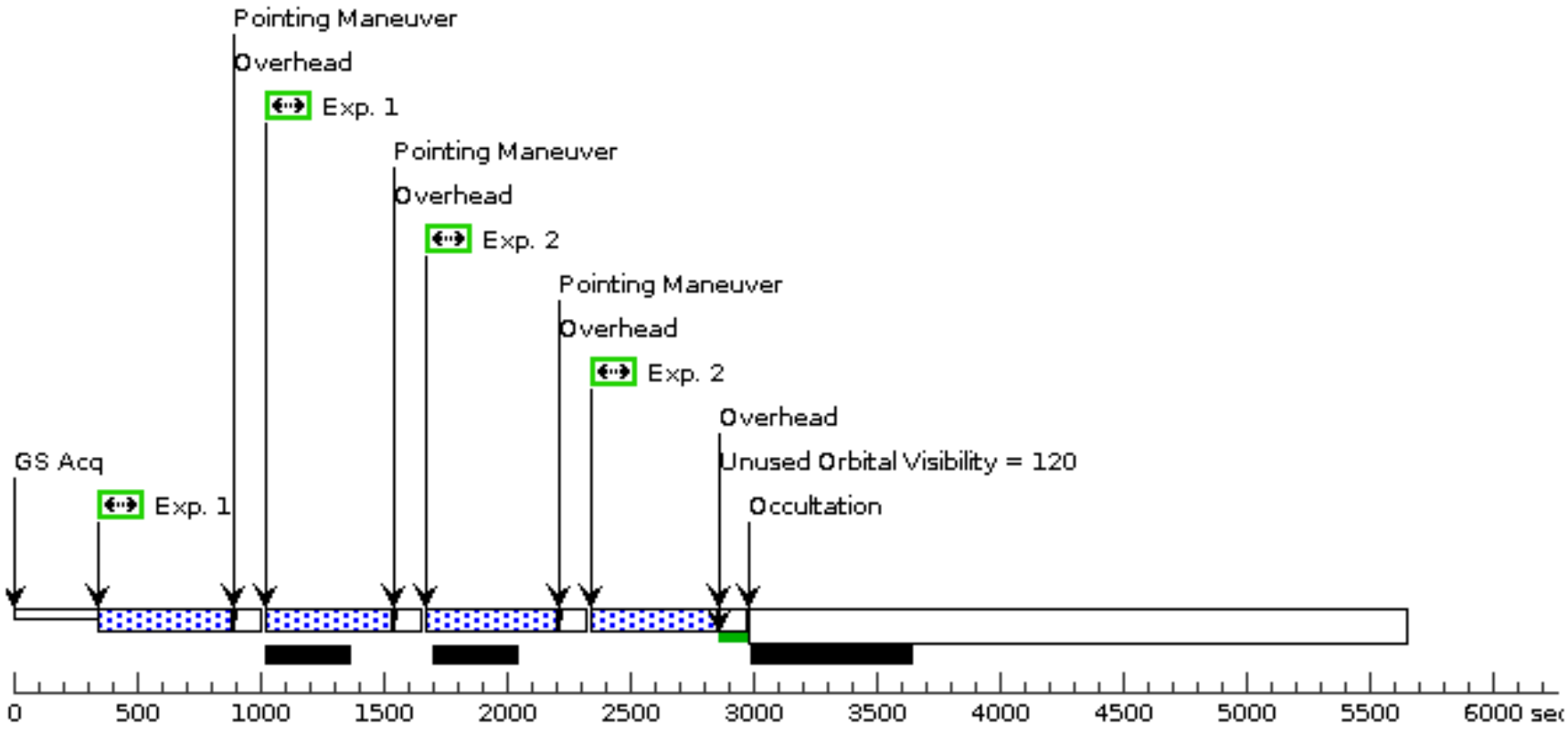
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(27)	SN2019BZO	RA: 15 55 34.4400 (238.8935000d) Dec: +26 54 54.79 (26.91522d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(27) SN2019BZO	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 27 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(27) SN2019BZO	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 27 (1)	508 Secs (1016 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure



Visit

Proposal 18016, Visit 28, implementation Wed Oct 22 19:00:29 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-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 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
(28)	SN2018KCW	RA: 22 16 7.9361 (334.0330671d) Dec: -36 50 56.12 (-36.84892d) Equinox: J2000		V=24.0	Reference Frame: ICRS

Comments:
Category=STAR
Description=[SUPERNOVA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(28) SN2018KCW	WFC3/UVIS, ACCUM, UVIS	F225W	FLASH=20		Pattern 1, Exps 1-1 in Visit 28 (1)	510 Secs (1020 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(28) SN2018KCW	WFC3/UVIS, ACCUM, UVIS	F275W	FLASH=20		Pattern 1, Exps 2-2 in Visit 28 (1)	510 Secs (1020 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure