17413 - Tripling the sample of late-time Type Ia supernovae

Cycle: 31, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	***Institution***
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David Oscar Jones (CoI)	University of Hawaii
Dr. Yi Yang (CoI)	Tsinghua University
Huei Sears (CoI)	Rutgers the State University of New Jersey

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
30	(1) SN2021J	WFC3/UVIS	1	23-Sep-2024 09:00:27.0	yes
31	(1) SN2021J	WFC3/UVIS	1	23-Sep-2024 09:00:28.0	yes
32	(2) SN2021HIZ	WFC3/UVIS	1	23-Sep-2024 09:00:28.0	yes
33	(2) SN2021HIZ	WFC3/UVIS	1	23-Sep-2024 09:00:29.0	yes
35	(3) SN2021HPR	WFC3/UVIS	1	23-Sep-2024 09:00:29.0	yes
37	(4) SN2021JAD	WFC3/UVIS	1	23-Sep-2024 09:00:29.0	yes
38	(4) SN2021JAD	WFC3/UVIS	1	23-Sep-2024 09:00:30.0	yes
39	(5) SN2021PFS	WFC3/UVIS	1	23-Sep-2024 09:00:30.0	yes
60	(5) SN2021PFS	WFC3/UVIS	1	23-Sep-2024 09:00:31.0	yes
40	(5) SN2021PFS	WFC3/UVIS	1	23-Sep-2024 09:00:31.0	yes
42	(6) SN2021PIT	WFC3/UVIS	1	23-Sep-2024 09:00:31.0	yes
43	(6) SN2021PIT	WFC3/UVIS	1	23-Sep-2024 09:00:32.0	yes
44	(6) SN2021PIT	WFC3/UVIS	1	23-Sep-2024 09:00:32.0	yes
45	(7) SN2021RHU	WFC3/UVIS	1	23-Sep-2024 09:00:32.0	yes
46	(7) SN2021RHU	WFC3/UVIS	1	23-Sep-2024 09:00:33.0	yes
47	(8) SN2021SMJ	WFC3/UVIS	1	23-Sep-2024 09:00:33.0	yes
61	(8) SN2021SMJ	WFC3/UVIS	1	23-Sep-2024 09:00:33.0	yes
48	(8) SN2021SMJ	WFC3/UVIS	1	23-Sep-2024 09:00:34.0	yes
50	(9) SN2021TKM	WFC3/UVIS	1	23-Sep-2024 09:00:34.0	yes
52	(10) SN2021WUF	WFC3/UVIS	1	23-Sep-2024 09:00:35.0	yes
53	(10) SN2021WUF	WFC3/UVIS	1	23-Sep-2024 09:00:35.0	yes
57	(11) SN2021XJU	WFC3/UVIS	1	23-Sep-2024 09:00:35.0	yes
58	(11) SN2021XJU	WFC3/UVIS	1	23-Sep-2024 09:00:36.0	yes
55	(12) SN2021AEFX	WFC3/UVIS	1	23-Sep-2024 09:00:36.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
56	(12) SN2021AEFX	WFC3/UVIS	1	23-Sep-2024 09:00:37.0	yes
34	(2) SN2021HIZ	WFC3/UVIS	1	23-Sep-2024 09:00:37.0	yes
36	(3) SN2021HPR	WFC3/UVIS	1	23-Sep-2024 09:00:37.0	yes
41	(5) SN2021PFS	WFC3/UVIS	1	23-Sep-2024 09:00:38.0	yes
62	(7) SN2021RHU	WFC3/UVIS	1	23-Sep-2024 09:00:39.0	yes
49	(8) SN2021SMJ	WFC3/UVIS	1	23-Sep-2024 09:00:39.0	yes
51	(9) SN2021TKM	WFC3/UVIS	1	23-Sep-2024 09:00:39.0	yes
54	(10) SN2021WUF	WFC3/UVIS	1	23-Sep-2024 09:00:40.0	yes
59	(11) SN2021XJU	WFC3/UVIS	1	23-Sep-2024 09:00:40.0	yes

33 Total Orbits Used

ABSTRACT

Type Ia supernovae (SNe Ia) have long been used as standard candles to measure extragalactic distances and cosmological parameters. SNe Ia are portrayed as a homogeneous class, but there are actually several subtypes. Even the "normal" SNe Ia used for cosmology may not be homogeneous. Recently, the optical light curves of SNe Ia have been shown to slow down, relative to their earlier decline rate, at >800 days after explosion. Moreover, more luminous SNe Ia may slow down faster than less luminous objects. This correlation, which recalls the peak-light stretch-luminosity relation used to standardize SNe Ia, also hints at the existence of several production channels for normal SNe Ia, as no single explosion model can produce the full range of late-time light curves. But this new correlation is based on just 6 objects. We ask for 67 WFC3/UVIS orbits (with the F438W, F555W, and F814W filters) spread over Cycles 30-32 to observe 12 SNe Ia when they are 600-1200 days old. By tripling the sample of late-time SNe Ia, we will prove the existence of the new stretch-luminosity correlation at a significance of >5-sigma. The impact on SN cosmology will be twofold. First, a new stretch-luminosity correlation could further standardize SNe Ia and reduce systematic uncertainties. Second, strong evidence for the existence of multiple production channels for normal SNe Ia would force cosmologists to revisit their use of SNe Ia as a monolithic class. This experiment is time critical. Every year, on average, <5 SNe Ia can be used for this experiment. We are lucky to have 12 targets to work with this year; this chance may not come again during HST's remaining lifetime.

OBSERVING DESCRIPTION

In this program, we will observe the late-time decline of 12 Type Ia supernovae at late times (600 < t < 1200 days after explosion). Each target will be visited at least 5 times. Some targets will be visited a 6th time, long after they have faded below the detection limit of our observations, to obtain template images for subtractions. Each visit will be 1 orbit long and will always include the F555W filter. The first two visits, while the targets are brightest, will also include the F438W and F625W filters, respectively. We will continue to use these additional filters in subsequent visits so long as the targets are bright enough. We will download and reduce the data for each visit immediately after they are taken to determine whether the targets are still bright enough or whether we need to drop the additional filters and devote the next orbits wholly to F555W. The cadence of our observations (100-150) days is long enough that we will have enough time to alter our phase II proposal in time for the next set of observations for any specific target.

To ensure high-quality images for PSF-fitting photometry, we will use the WFC3-UVIS-3PT-LINE dither pattern. This means that, to fit in two filters, we will sometimes need to use a smaller field-of-view. Hence, we alternate between a full UVIS field of view (using UVIS, UVIS1 or UVIS2 to cover as much of the host galaxy as possible, depending on the target) and the UVIS2-C1K1C-SUB aperture. Once a given filter has been imaged once with the full aperture, we switch to the smaller one. F555W is an exception, as future visits will be devoted wholly to it, at which point we will switch from the smaller aperture to a full one.

The timing of our observations is important, as we want to catch our targets at specific phases. To that end, we use BETWEEN timing constraints for each visit. Where possible, we use a ~10-day window for schduleability.

This is a multi-cycle proposal, with 27 orbits in Cycle 30, 30 orbits in Cycle 31, and 10 orbits in Cycle 32.

Visit

Proposal 17413, SN 2021J - 1080 days (30), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 07-JAN-2024:00:00:00 AND 17-JAN-2024:00:00:00

Comments: We may drop the F438W filter if, based on the first two visits, we decide the target is too faint. If that is the case, the cadence of 100-150 days between each visit is long enough to resubmit the phase II plan in time for the next visit.

Diagnostics

(SN 2021J - 1080 days (30)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

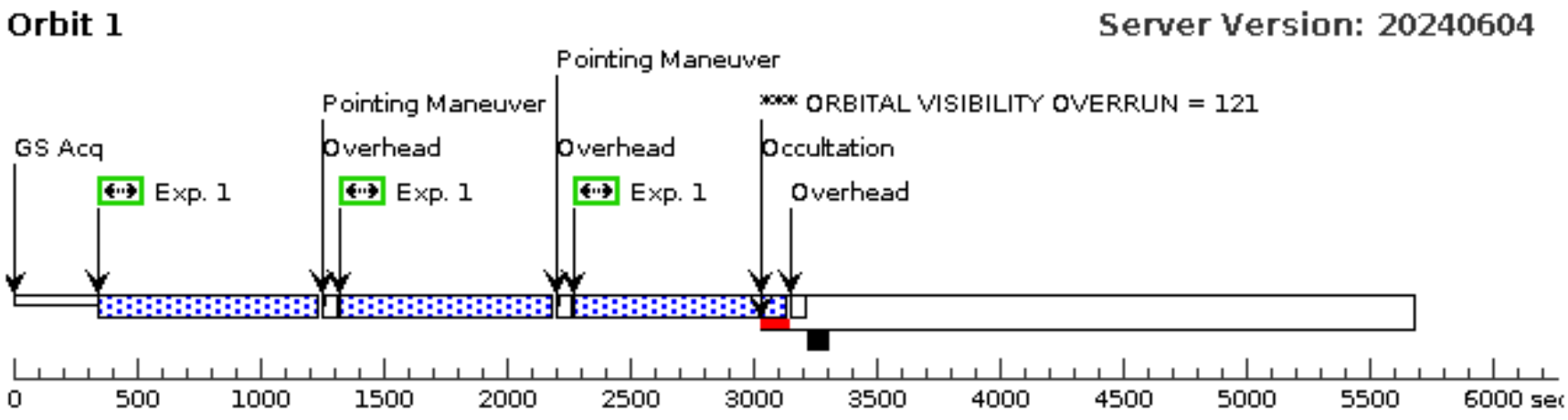
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN2021J	RA: 12 26 27.0100 (186.6125417d) Dec: +31 13 20.57 (31.22238d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SN2021J	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021J - 1080 days (30) (1)	865 Secs (2595 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021J - 1190 days (31), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 20-MAY-2024:00:00:00 AND 30-MAY-2024:00:00:00

Comments: We may drop the F438W filter if, based on the first two visits, we decide the target is too faint. If that is the case, the cadence of 100-150 days between each visit is long enough to resubmit the phase II plan in time for the next visit.

Diagnostics

(SN 2021J - 1190 days (31)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

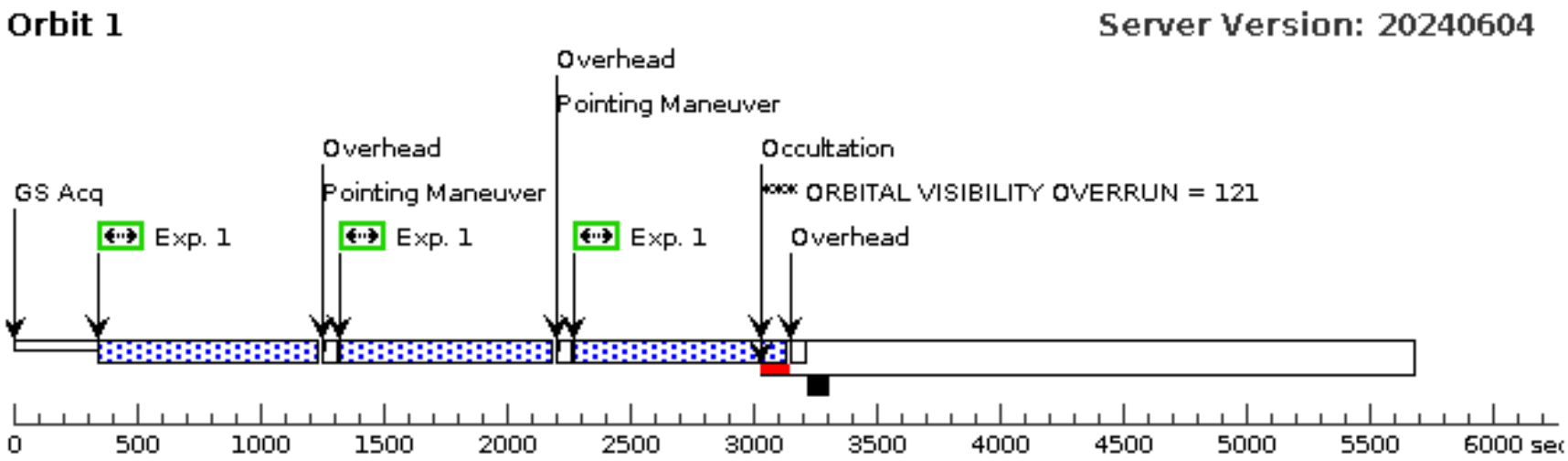
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN2021J	RA: 12 26 27.0100 (186.6125417d) Dec: +31 13 20.57 (31.22238d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) SN2021J	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021J - 1190 days (31) (1)	865 Secs (2595 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021hiz - 970 days (32), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 15-DEC-2023:00:00:00 AND 25-DEC-2023:00:00:00

Diagnostics

(SN 2021hiz - 970 days (32)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

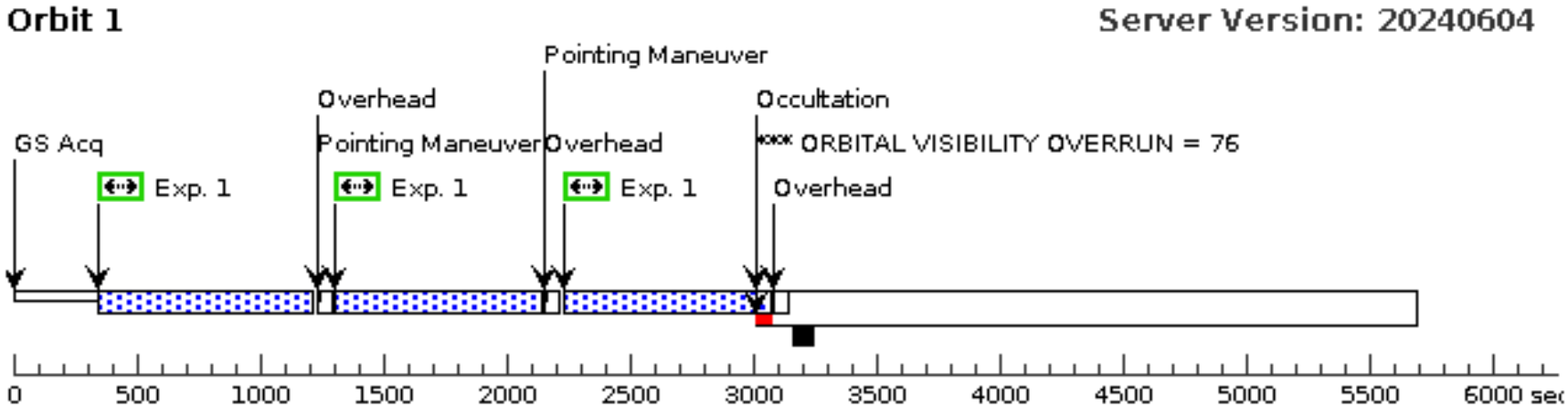
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN2021HIZ	RA: 12 25 41.6800 (186.4236667d) Dec: +07 13 42.20 (7.22839d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) SN2021HIZ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021hiz - 970 days (32) (1)	842 Secs (2526 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021hiz - 1055 days (33), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 01-MAR-2024:00:00:00 AND 09-MAR-2024:00:00:00

Diagnostics

(SN 2021hiz - 1055 days (33)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

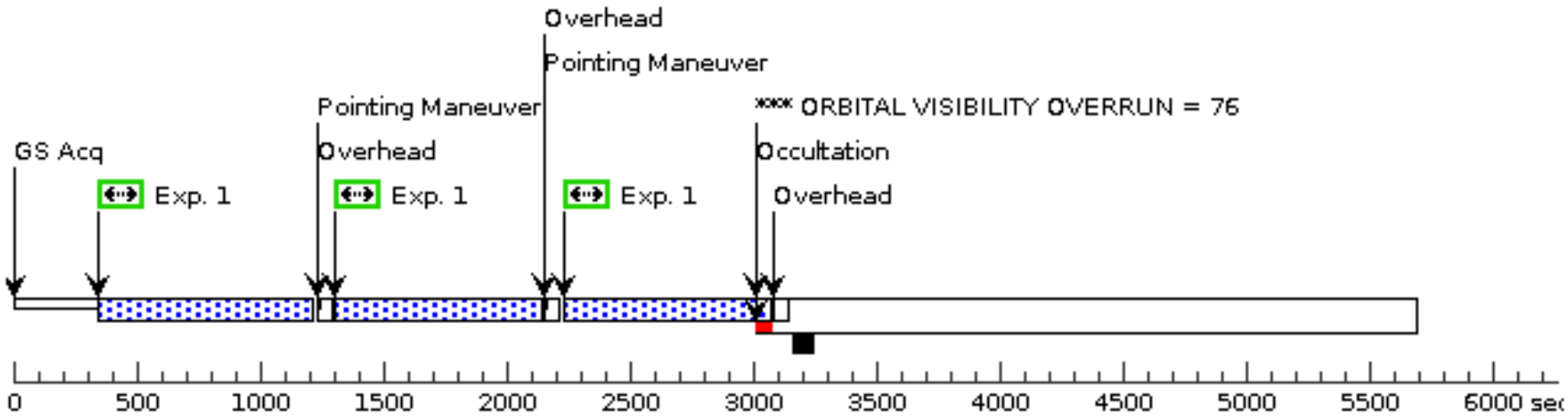
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN2021HIZ	RA: 12 25 41.6800 (186.4236667d) Dec: +07 13 42.20 (7.22839d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) SN2021HIZ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021hiz - 1055 days (33) (1)	842 Secs (2526 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021hpr - 1000 days (35), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 16-JAN-2024:00:00:00 AND 22-JAN-2024:00:00:00

Diagnostics

(SN 2021hpr - 1000 days (35)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

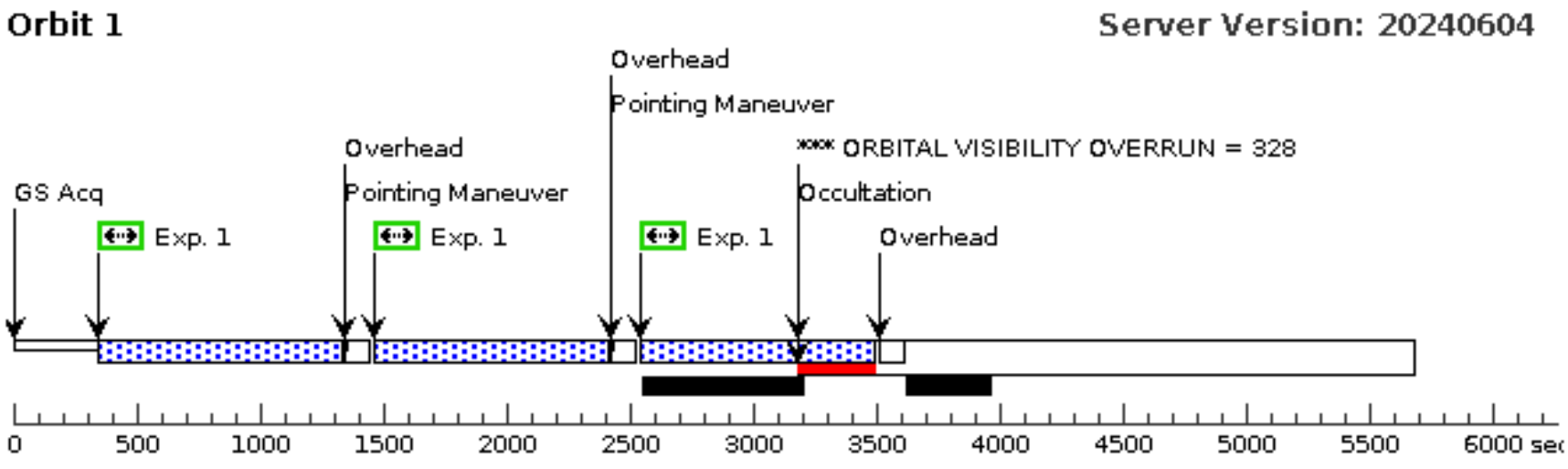
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SN2021HPR	RA: 10 16 38.6800 (154.1611667d) Dec: +73 24 1.80 (73.40050d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) SN2021HPR	WFC3/UVIS, ACCUM, UVIS1	F555W			Pattern 1, Exps 1-1 in SN 2021hpr - 1000 days (35) (1)	956 Secs (2868 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021jad - 1050 days (37), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 25-FEB-2024:00:00:00 AND 06-MAR-2024:00:00:00

Diagnostics

(SN 2021jad - 1050 days (37)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

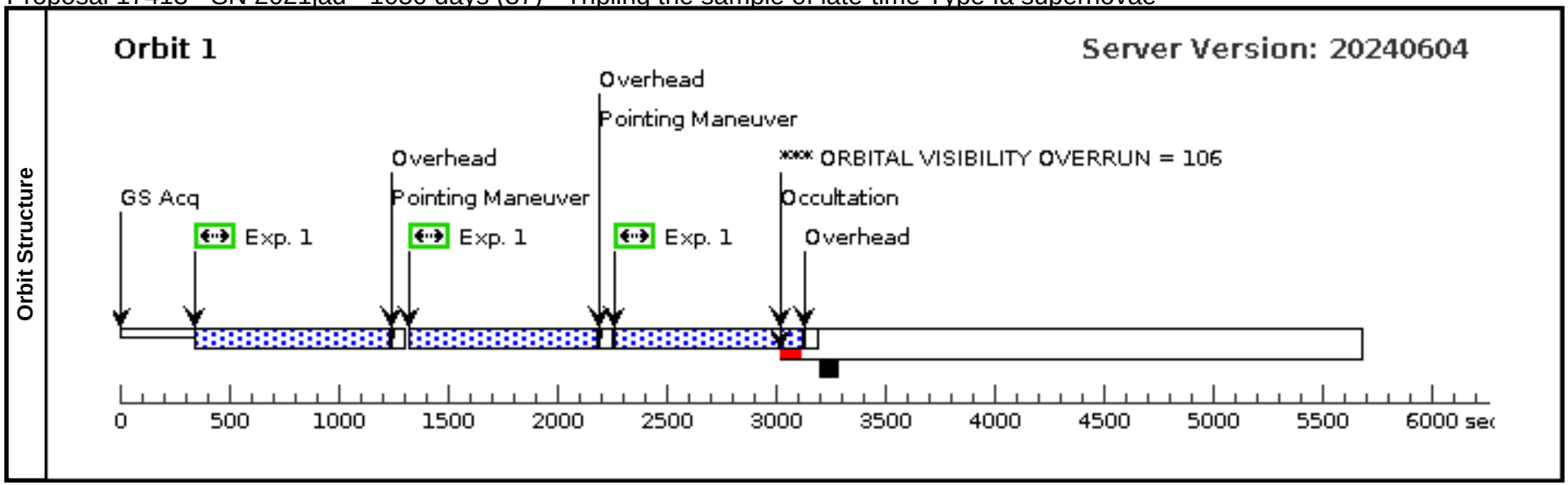
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN2021JAD	RA: 05 33 22.1800 (83.3424167d) Dec: -21 57 6.50 (-21.95181d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) SN2021JAD	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021jad - 1050 days (37) (1)	858 Secs (2574 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
**** ORBITAL VISIBILITY OVERRUN = 106
GS Acq
Occultation
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021jad - 1200 days (38), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 29-JUL-2024:00:00:00 AND 08-AUG-2024:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

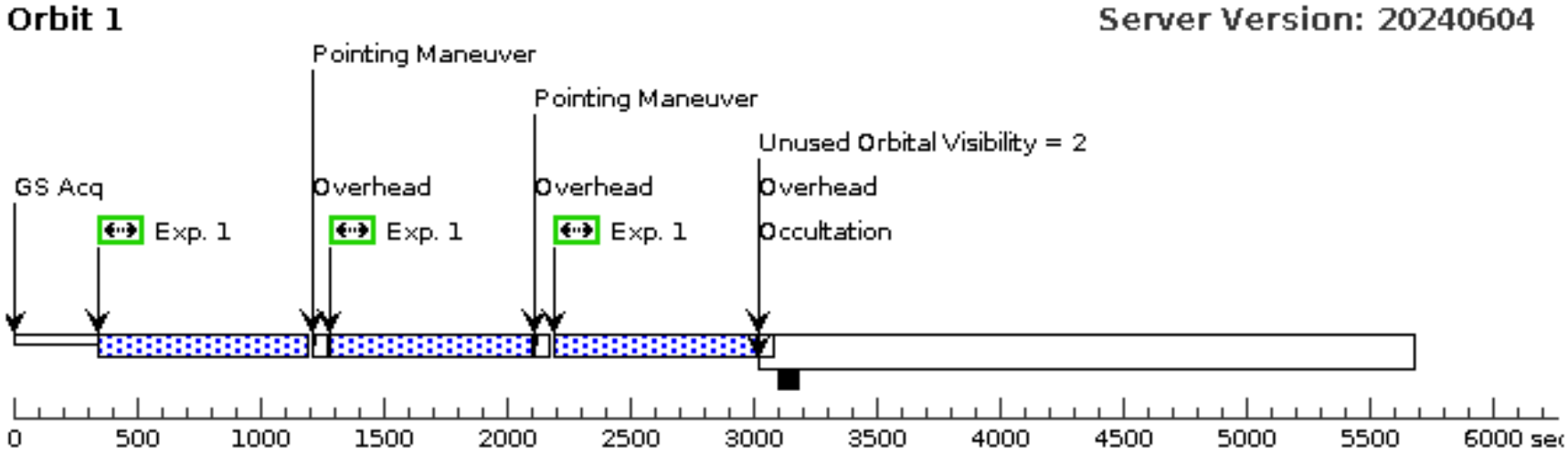
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN2021JAD	RA: 05 33 22.1800 (83.3424167d) Dec: -21 57 6.50 (-21.95181d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) SN2021JAD	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021jad - 1200 days (38) (1)	822 Secs (2466 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021pfs - 900 days (39), failed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 17-DEC-2023:00:00:00 AND 27-DEC-2023:00:00:00

Diagnostics

(SN 2021pfs - 900 days (39)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

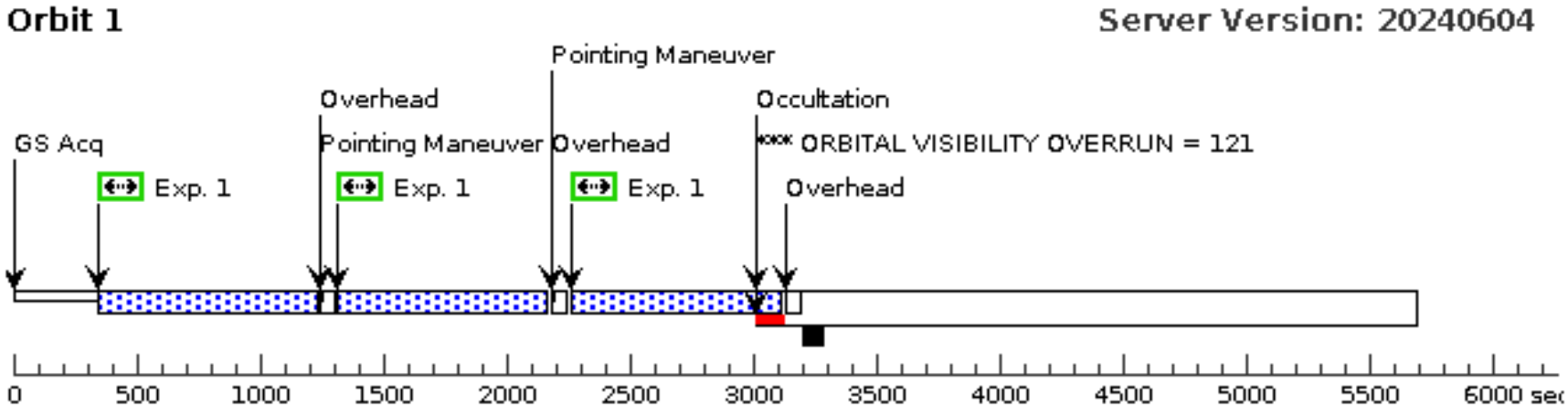
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SN2021PFS	RA: 14 03 23.5900 (210.8482917d) Dec: -06 01 53.80 (-6.03161d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) SN2021PFS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pfs - 900 days (39) (1)	857 Secs (2571 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021pfs - 950 days (60), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 04-FEB-2024:00:00:00 AND 14-FEB-2024:00:00:00

Diagnostics

(SN 2021pfs - 950 days (60)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

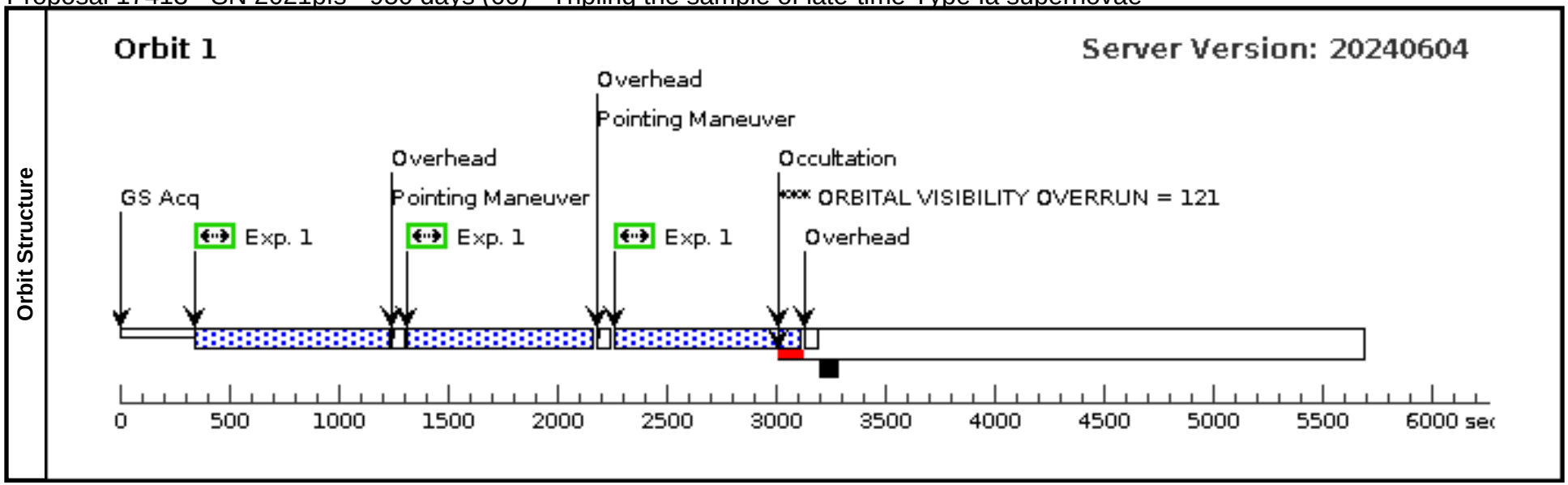
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SN2021PFS	RA: 14 03 23.5900 (210.8482917d) Dec: -06 01 53.80 (-6.03161d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) SN2021PFS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pfs - 950 days (60) (1)	857 Secs (2571 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Occultation
GS Acq
**** ORBITAL VISIBILITY OVERRUN = 121
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021pfs - 1000 days (40), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 23-MAR-2024:00:00:00 AND 02-APR-2024:00:00:00

Diagnostics

(SN 2021pfs - 1000 days (40)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

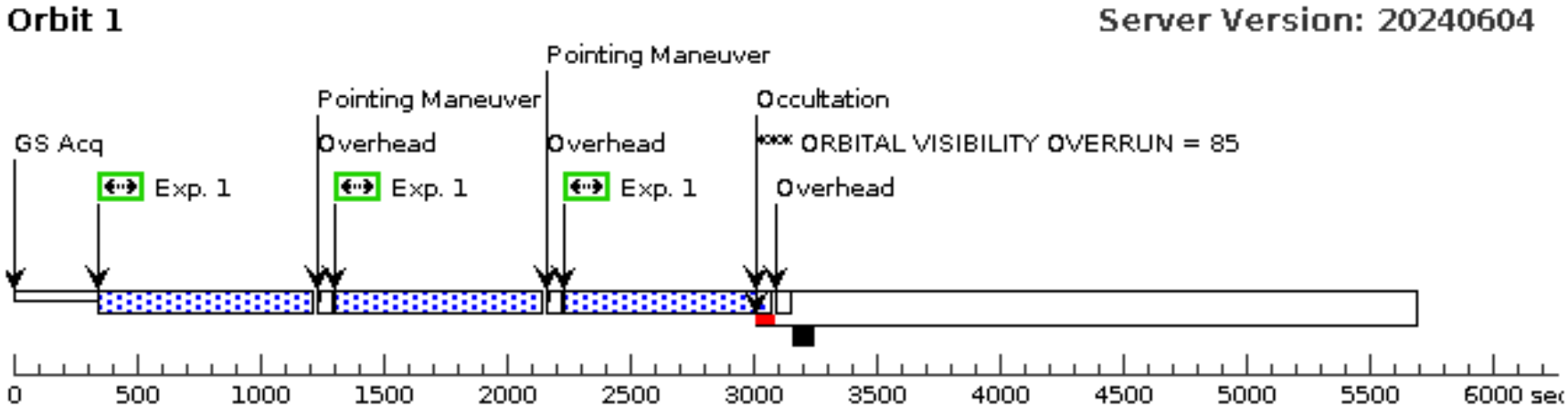
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SN2021PFS	RA: 14 03 23.5900 (210.8482917d) Dec: -06 01 53.80 (-6.03161d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) SN2021PFS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pfs - 1000 days (40) (1)	845 Secs (2535 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021pit - 915 days (42), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 15-DEC-2023:00:00:00 AND 25-DEC-2023:00:00:00

Diagnostics

(SN 2021pit - 915 days (42)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

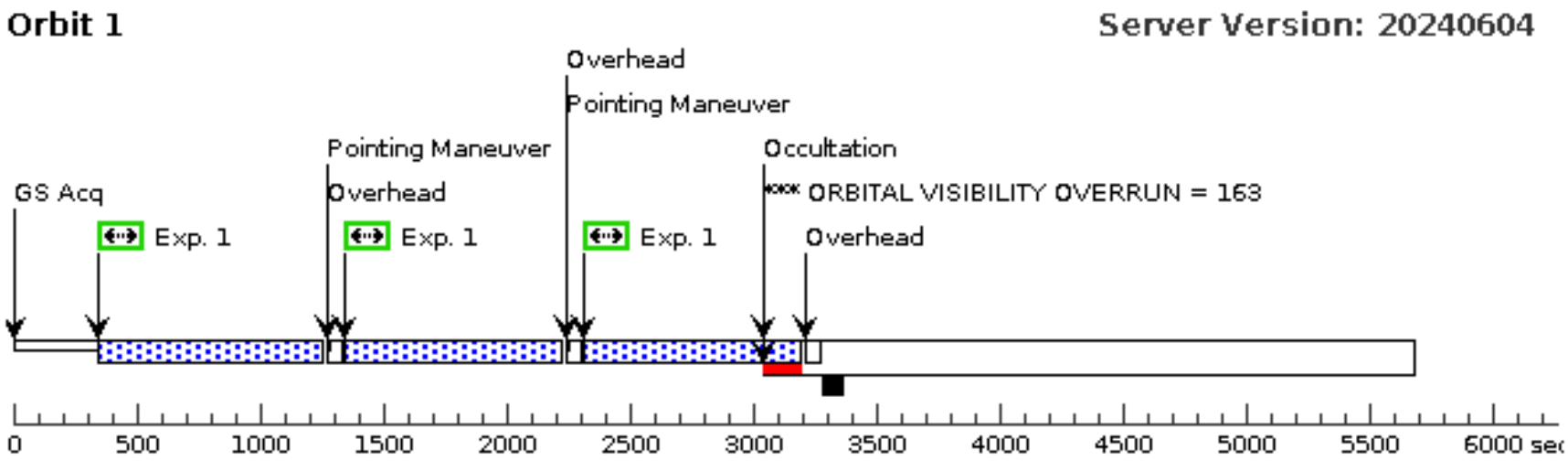
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SN2021PIT	RA: 03 44 30.1700 (56.1257083d) Dec: -44 37 57.10 (-44.63253d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) SN2021PIT	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pit - 915 days (42) (1)	884 Secs (2652 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021pit - 1080 days (43), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 09-JUN-2024:00:00:00 AND 19-JUN-2024:00:00:00

Diagnostics

(SN 2021pit - 1080 days (43)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

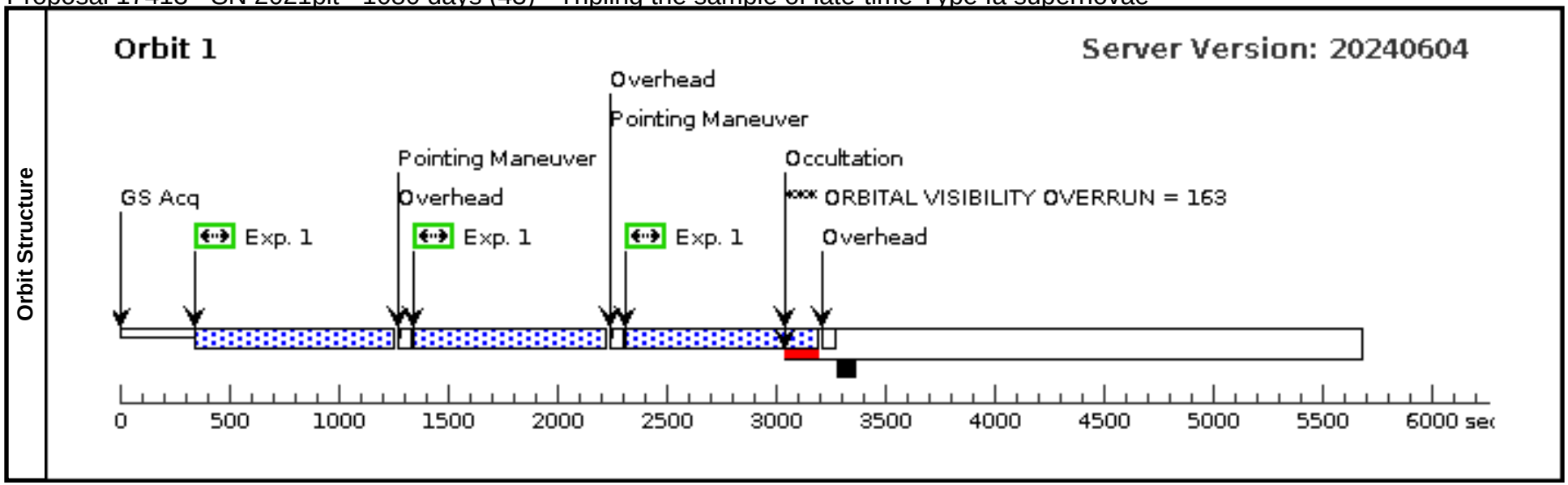
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SN2021PIT	RA: 03 44 30.1700 (56.1257083d) Dec: -44 37 57.10 (-44.63253d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) SN2021PIT	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pit - 1080 days (43) (1)	884 Secs (2652 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Overhead
*** ORBITAL VISIBILITY OVERRUN = 163
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021pit - 1200 days (44), scheduled Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 03-OCT-2024:00:00:00 AND 13-OCT-2024:00:00:00

Diagnostics

(SN 2021pit - 1200 days (44)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

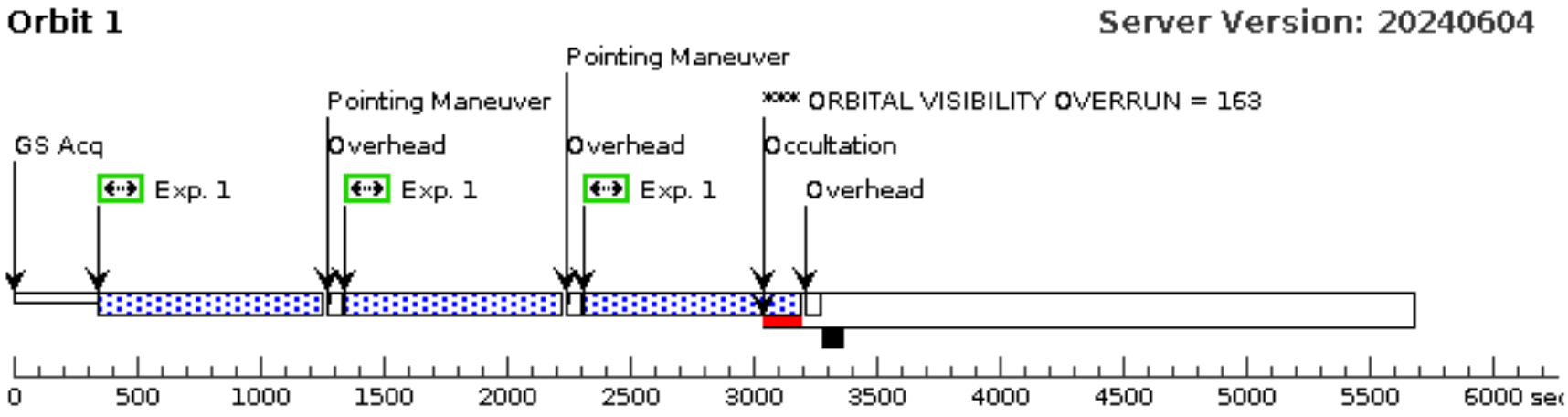
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SN2021PIT	RA: 03 44 30.1700 (56.1257083d) Dec: -44 37 57.10 (-44.63253d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) SN2021PIT	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pit - 1200 days (44) (1)	884 Secs (2652 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021rhu - 1000 days (45), failed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 23-MAY-2024:00:00:00 AND 31-MAY-2024:00:00:00

Diagnostics

(SN 2021rhu - 1000 days (45)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

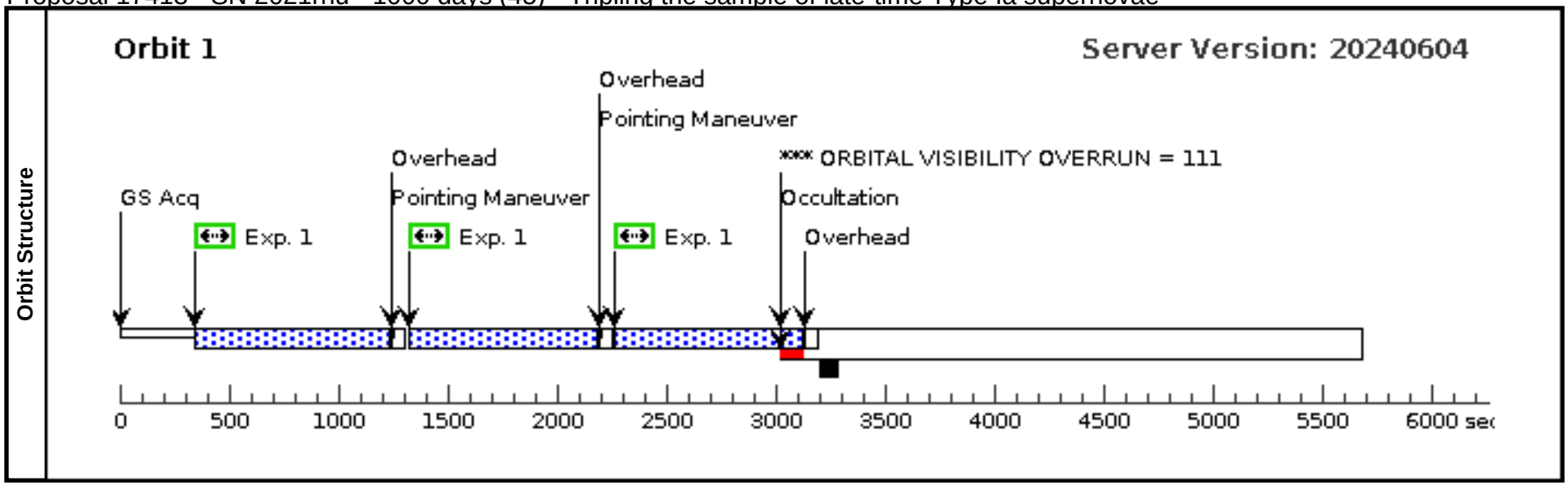
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SN2021RHU	RA: 00 03 15.4300 (.8142917d) Dec: +16 08 44.50 (16.14569d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) SN2021RHU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021rhu - 1000 days (45) (1)	858 Secs (2574 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
**** ORBITAL VISIBILITY OVERRUN = 111
GS Acq
Occultation
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021rhu - 1100 days (46), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 16-JUL-2024:00:00:00 AND 26-JUL-2024:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

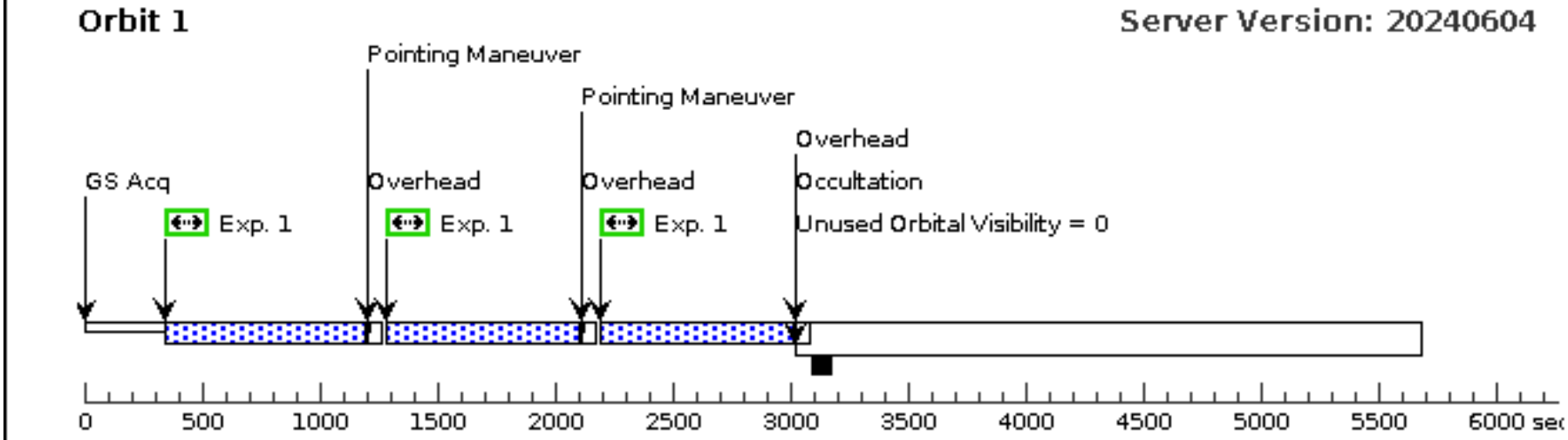
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SN2021RHU	RA: 00 03 15.4300 (.8142917d) Dec: +16 08 44.50 (16.14569d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) SN2021RHU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021rhu - 1100 days (46) (1)	821 Secs (2463 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021smj - 850 days (47), failed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 19-NOV-2023:00:00:00 AND 28-NOV-2023:00:00:00

Diagnostics

(SN 2021smj - 850 days (47)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

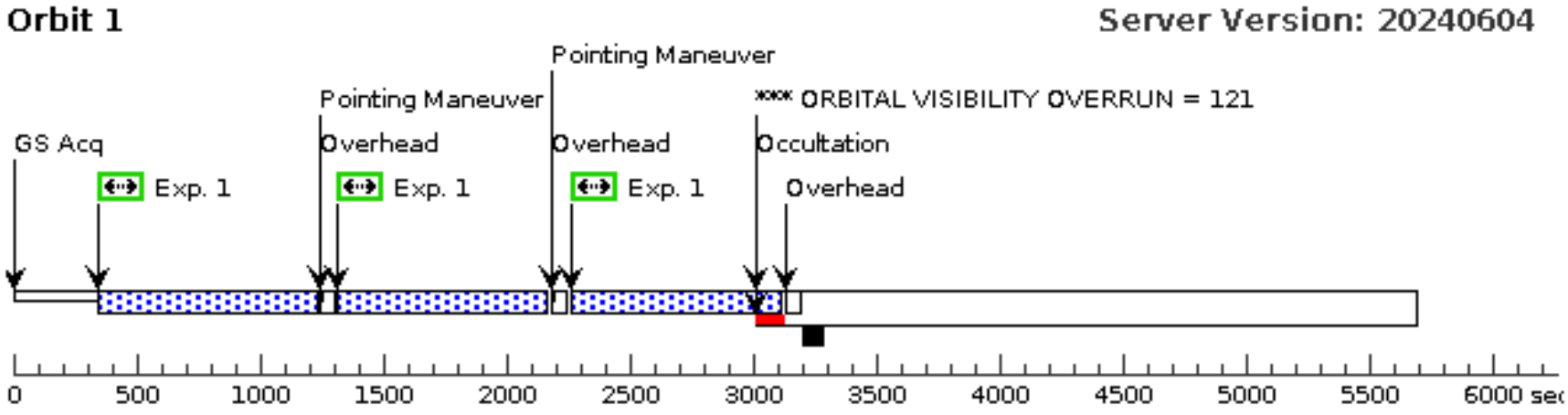
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN2021SMJ	RA: 12 26 46.5500 (186.6939583d) Dec: +08 52 57.70 (8.88269d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN2021SMJ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021smj - 850 days (47) (1)	857 Secs (2571 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021smj - 900 days (61), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 11-JAN-2024:00:00:00 AND 21-JAN-2024:00:00:00

Diagnostics

(SN 2021smj - 900 days (61)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

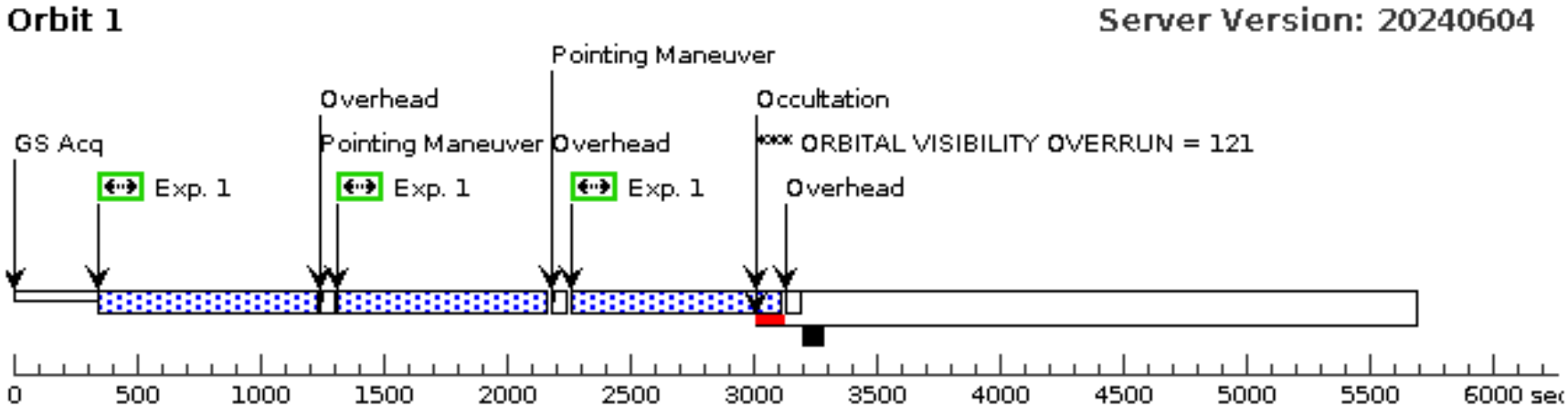
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN2021SMJ	RA: 12 26 46.5500 (186.6939583d) Dec: +08 52 57.70 (8.88269d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN2021SMJ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021smj - 900 days (61) (1)	857 Secs (2571 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021smj - 1000 days (48), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 11-APR-2024:00:00:00 AND 21-APR-2024:00:00:00

Diagnostics

(SN 2021smj - 1000 days (48)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

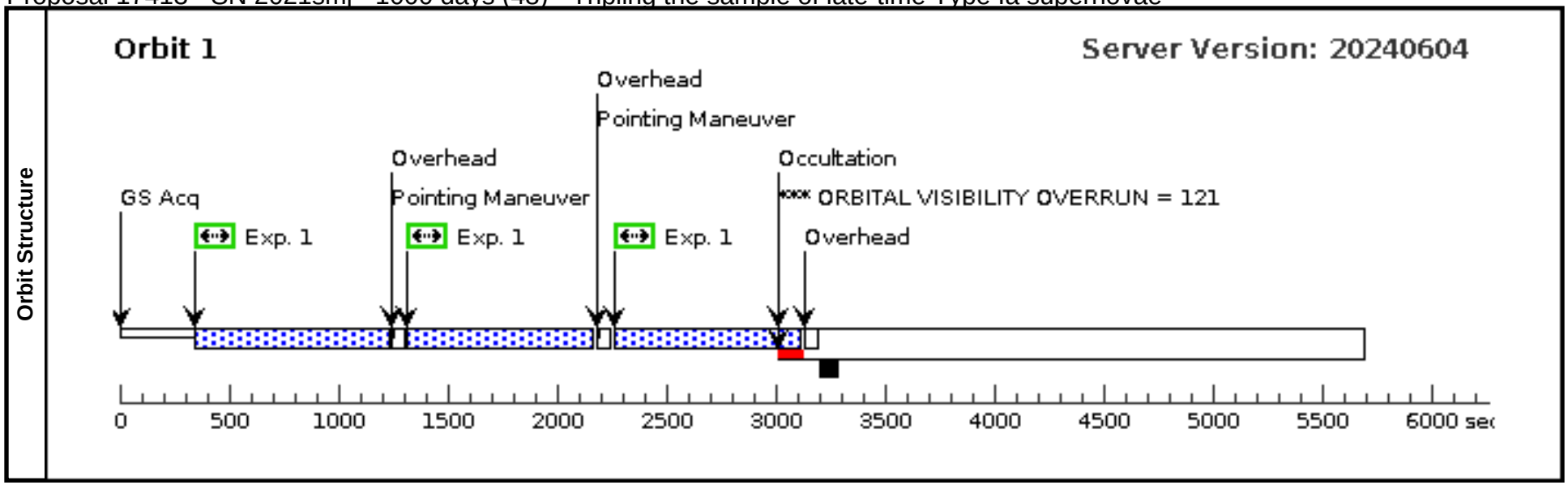
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN2021SMJ	RA: 12 26 46.5500 (186.6939583d) Dec: +08 52 57.70 (8.88269d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN2021SMJ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021smj - 1000 days (48) (1)	857 Secs (2571 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Occultation
GS Acq
**** ORBITAL VISIBILITY OVERRUN = 121
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021tkm - 985 days (50), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 03-APR-2024:00:00:00 AND 13-APR-2024:00:00:00

Diagnostics

(SN 2021tkm - 985 days (50)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

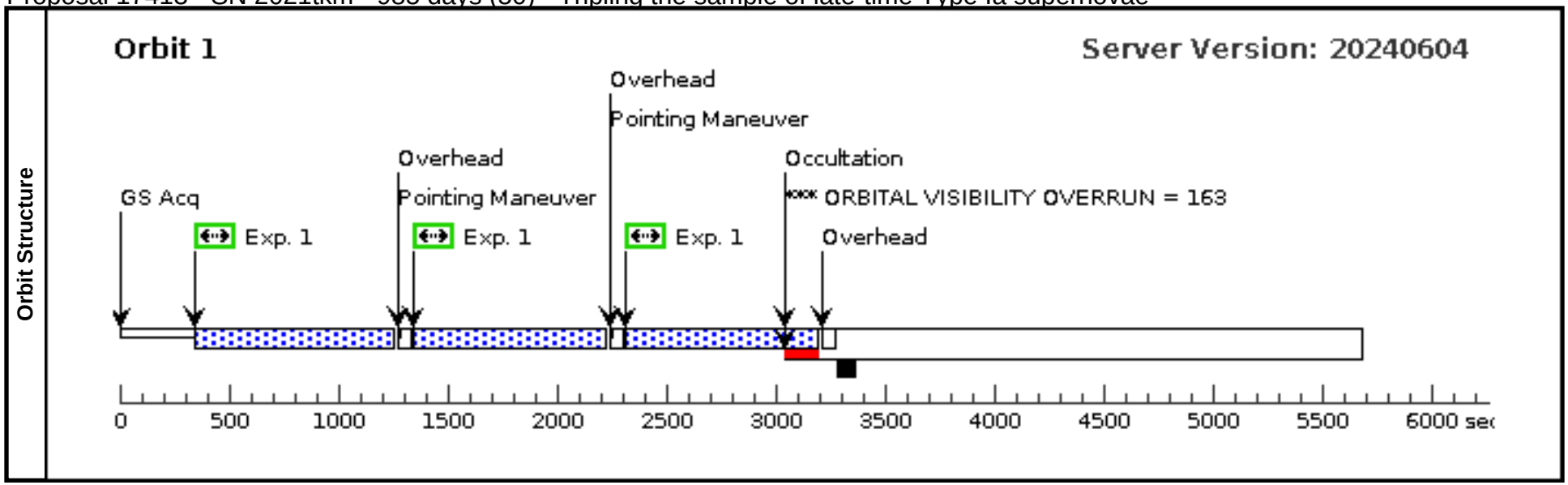
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	SN2021TKM	RA: 14 31 41.5500 (217.9231250d) Dec: -43 24 53.00 (-43.41472d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) SN2021TKM	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021tkm - 985 days (50) (1)	884 Secs (2652 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Occultation
GS Acq
**** ORBITAL VISIBILITY OVERRUN = 163
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021wuf - 880 days (52), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 28-JAN-2024:00:00:00 AND 07-FEB-2024:00:00:00

Diagnostics

(SN 2021wuf - 880 days (52)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

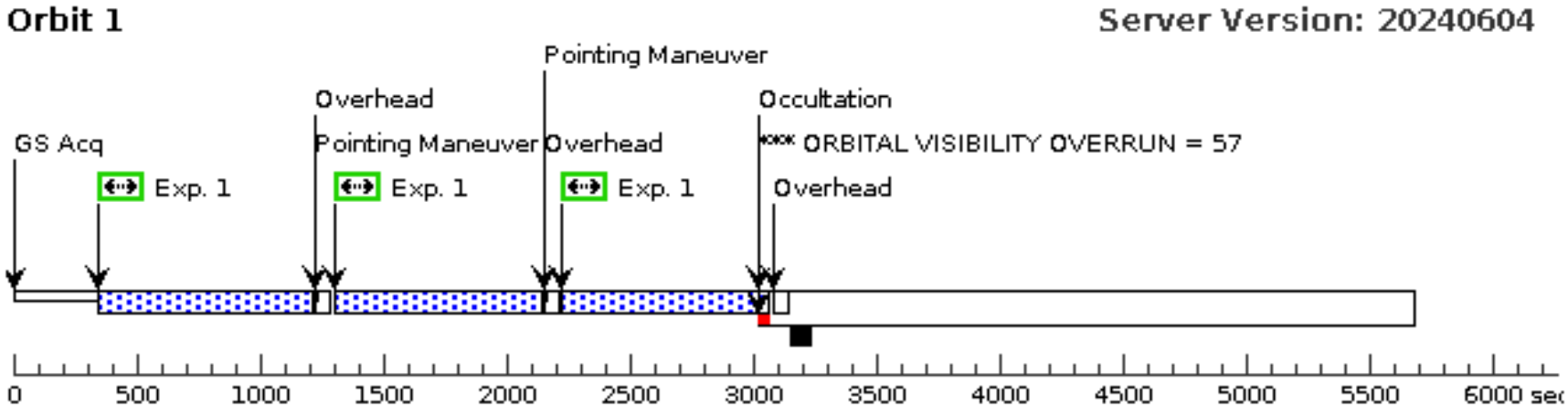
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SN2021WUF	RA: 17 56 2.5100 (269.0104583d) Dec: +18 21 14.10 (18.35392d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) SN2021WUF	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021wuf - 880 days (52) (1)	840 Secs (2520 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021wuf - 990 days (53), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 13-MAY-2024:00:00:00 AND 23-MAY-2024:00:00:00

Diagnostics

(SN 2021wuf - 990 days (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

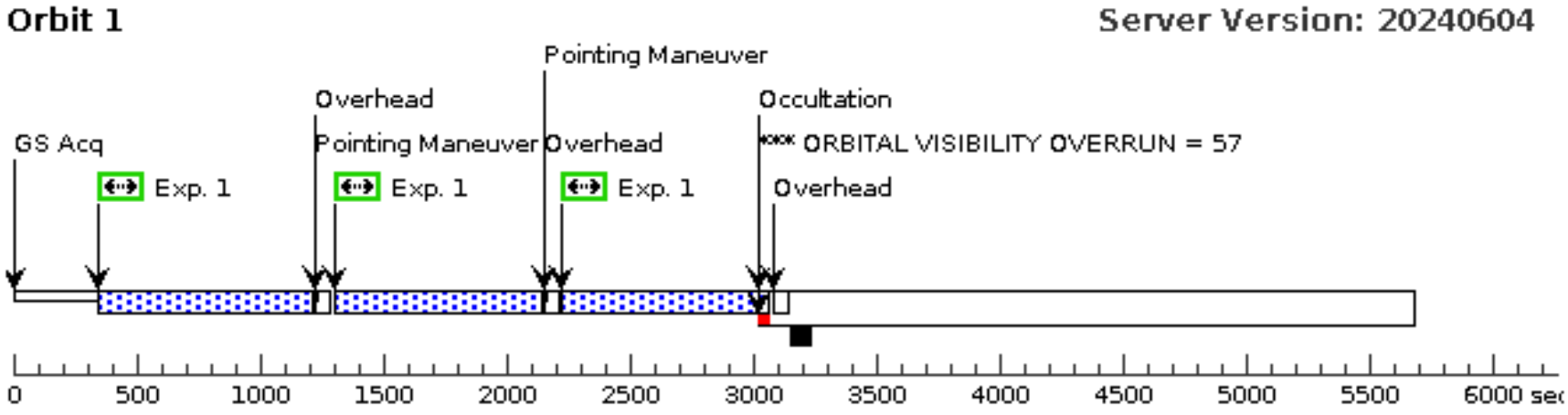
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SN2021WUF	RA: 17 56 2.5100 (269.0104583d) Dec: +18 21 14.10 (18.35392d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) SN2021WUF	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021wuf - 990 days (53) (1)	840 Secs (2520 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021xju - 750 days (57), completed Mon Sep 23 13:00:41 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 01-OCT-2023:00:00:00 AND 10-OCT-2023:00:00:00

Diagnostics

(SN 2021xju - 750 days (57)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

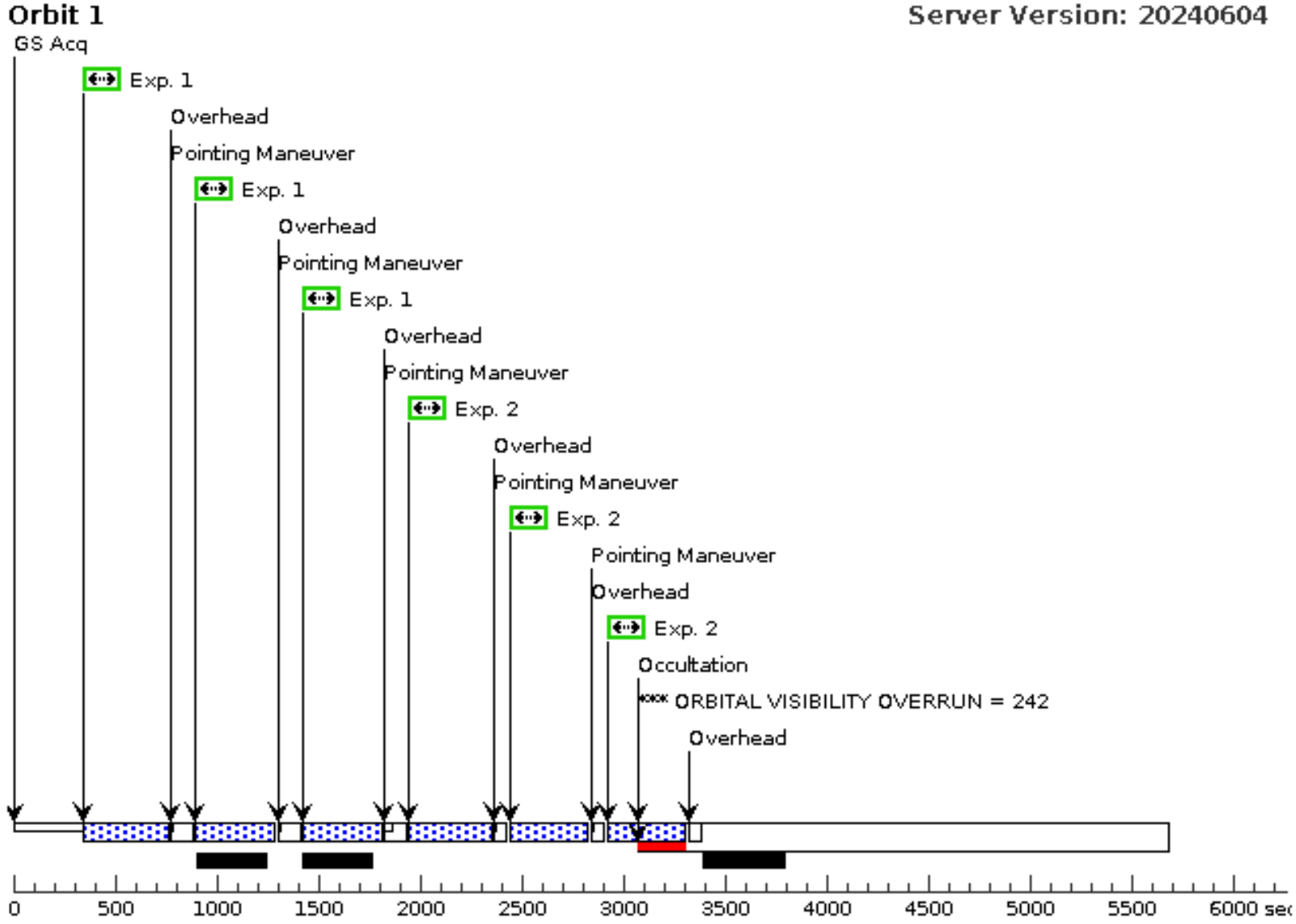
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SN2021XJU	RA: 20 22 30.9600 (305.6290000d) Dec: -53 16 44.20 (-53.27894d) Equinox: J2000		V=25	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SN2021XJU	WFC3/UVIS, ACCUM, UVIS2	F625W	FLASH=6		Pattern 1, Exps 1-1 in SN 2021xju - 750 days (57) (1)	390 Secs (1170 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***
2		(11) SN2021XJU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W	FLASH=6		Pattern 1, Exps 2-2 in SN 2021xju - 750 days (57) (1)	386 Secs (1158 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Proposal 17413 - SN 2021xju - 900 days (58) - Tripling the sample of late-time Type Ia supernovae

Visit

Proposal 17413, SN 2021xju - 900 days (58), completed Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 09-MAR-2024:00:00:00 AND 19-MAR-2024:00:00:00

Diagnostics

(SN 2021xju - 900 days (58)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

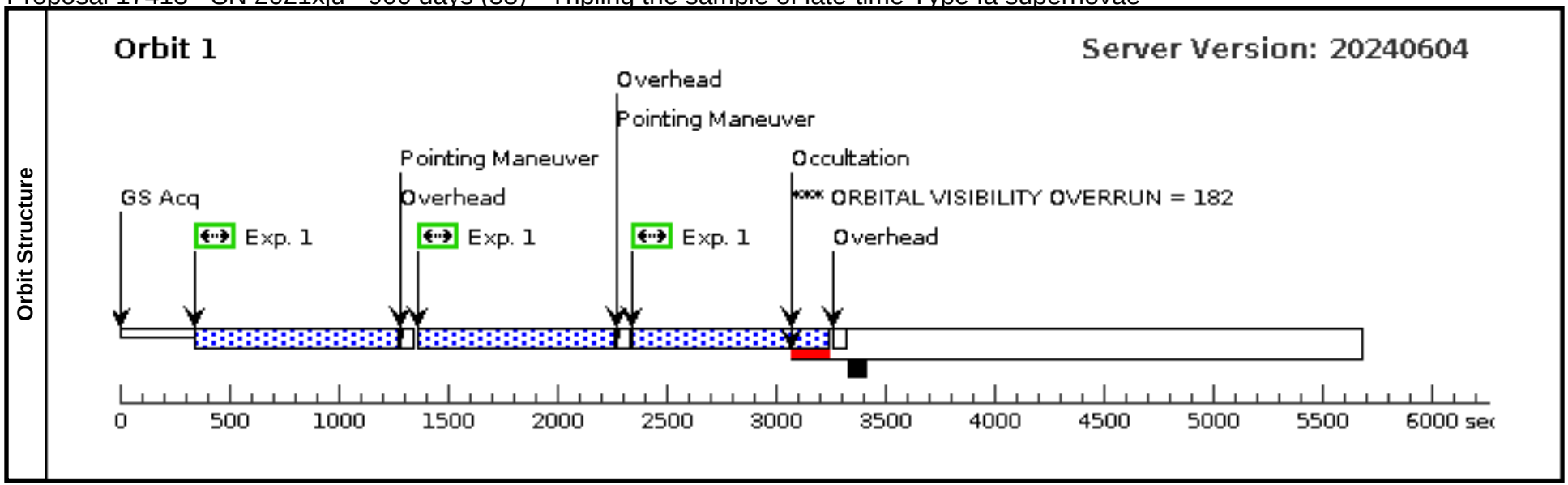
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SN2021XJU	RA: 20 22 30.9600 (305.6290000d) Dec: -53 16 44.20 (-53.27894d) Equinox: J2000		V=25	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SN2021XJU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021xju - 900 days (58) (1)	900 Secs (2700 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Overhead
**** ORBITAL VISIBILITY OVERRUN = 182
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021aefx - 800 days (55), completed Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 16-FEB-2024:00:00:00 AND 26-FEB-2024:00:00:00

Diagnostics

(SN 2021aefx - 800 days (55)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1), (2)

Fixed Targets

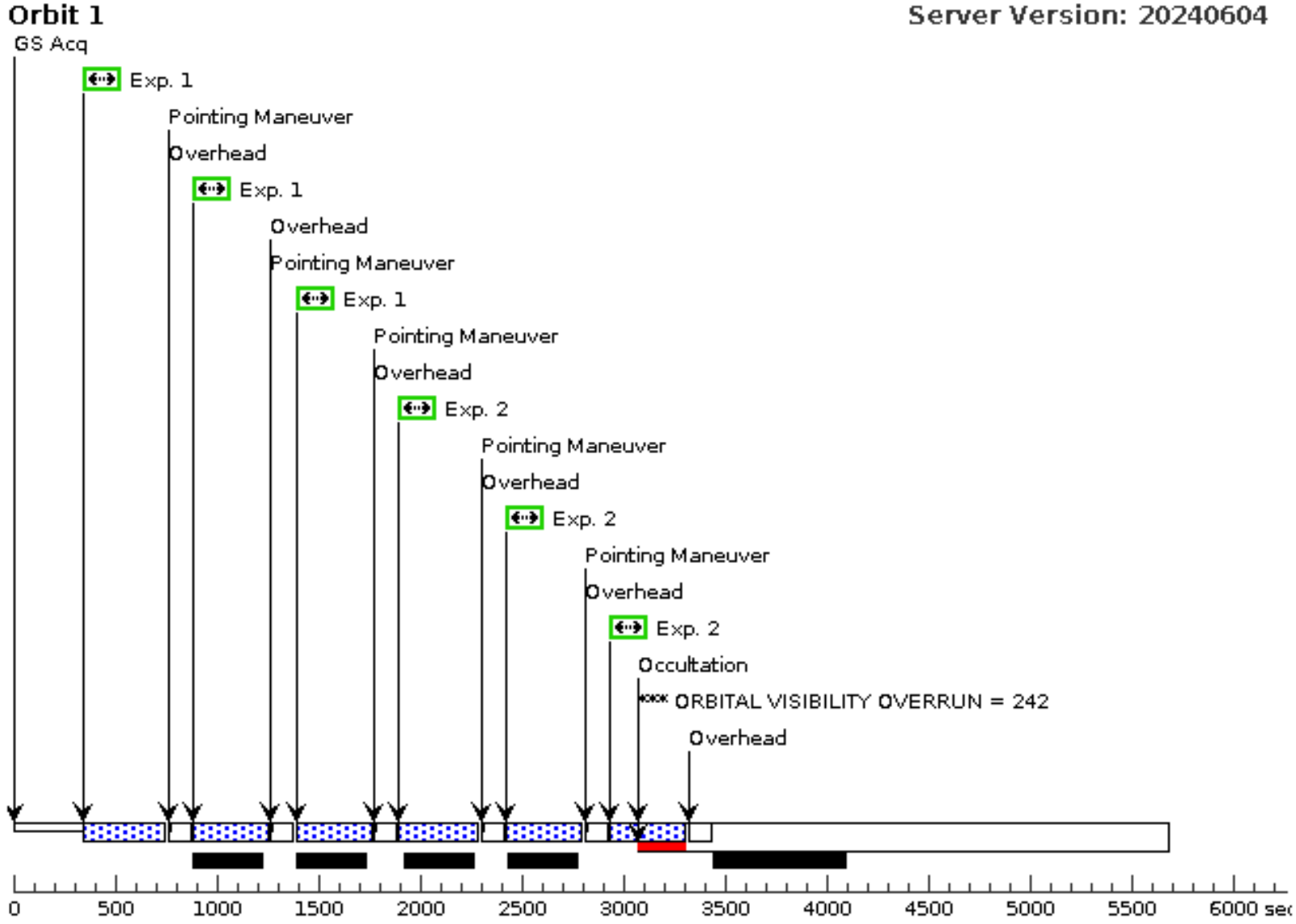
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SN2021AEFX	RA: 04 19 53.3400 (64.9722500d) Dec: -54 56 52.60 (-54.94794d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SN2021AEFX	WFC3/UVIS, ACCUM, UVIS1	F625W	FLASH=6		Pattern 1, Exps 1-1 in SN 2021aefx - 800 days (55) (1)	374 Secs (1122 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***
2		(12) SN2021AEFX	WFC3/UVIS, ACCUM, UVIS1	F555W	FLASH=7		Pattern 1, Exps 2-2 in SN 2021aefx - 800 days (55) (1)	374 Secs (1122 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021aefx - 935 days (56), completed Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 19-JUN-2024:00:00:00 AND 29-JUN-2024:00:00:00

Diagnostics

(SN 2021aefx - 935 days (56)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

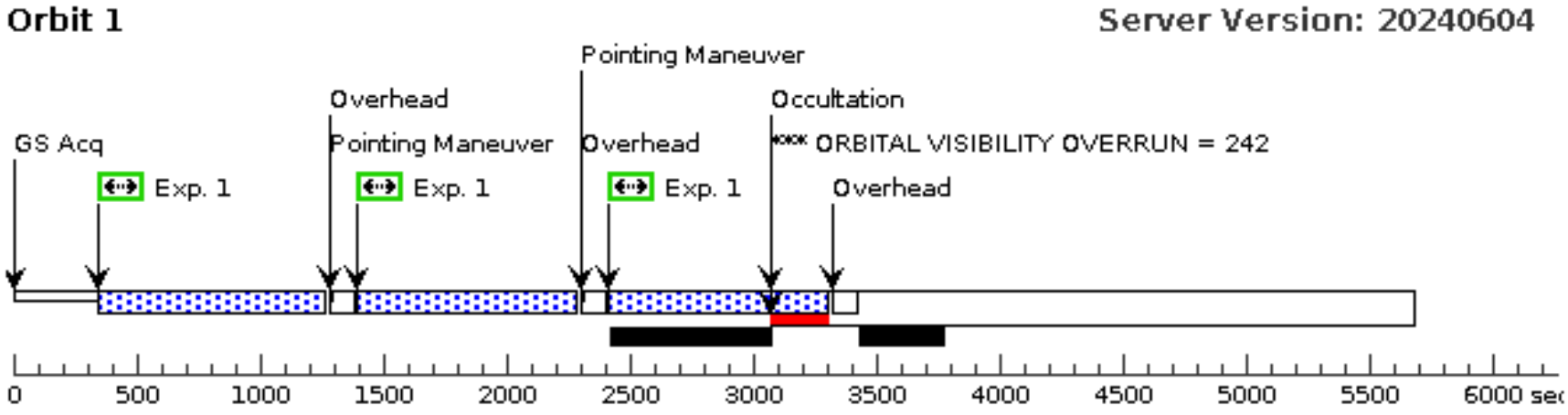
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SN2021AEFX	RA: 04 19 53.3400 (64.9722500d) Dec: -54 56 52.60 (-54.94794d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SN2021AEFX	WFC3/UVIS, ACCUM, UVIS1	F555W			Pattern 1, Exps 1-1 in SN 2021aefx - 935 days (56) (1)	892 Secs (2676 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Proposal 17413 - SN 2021hiz - 1150 days (34) - Tripling the sample of late-time Type Ia supernovae

Visit

Proposal 17413, SN 2021hiz - 1150 days (34), implementation Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 14-DEC-2024:00:00:00 AND 24-DEC-2024:00:00:00

Diagnostics

(SN 2021hiz - 1150 days (34)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

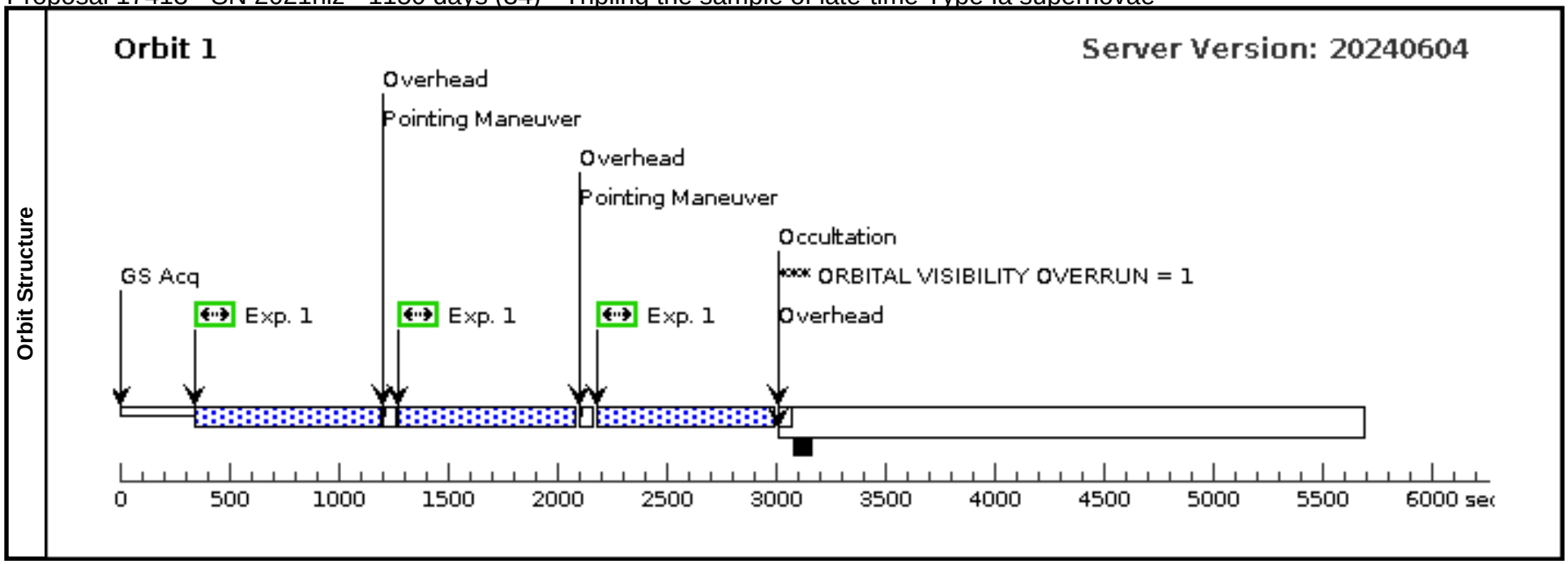
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN2021HIZ	RA: 12 25 41.6800 (186.4236667d) Dec: +07 13 42.20 (7.22839d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) SN2021HIZ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021hiz - 1150 days (34) (1)	817 Secs (2451 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20240604
Overhead
Pointing Maneuver
Overhead
Pointing Maneuver
Occultation
**** ORBITAL VISIBILITY OVERRUN = 1
GS Acq
Exp. 1
Exp. 1
Exp. 1
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17413, SN 2021hpr - 1150 days (36), implementation Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 25-OCT-2024:00:00:00 AND 29-OCT-2024:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

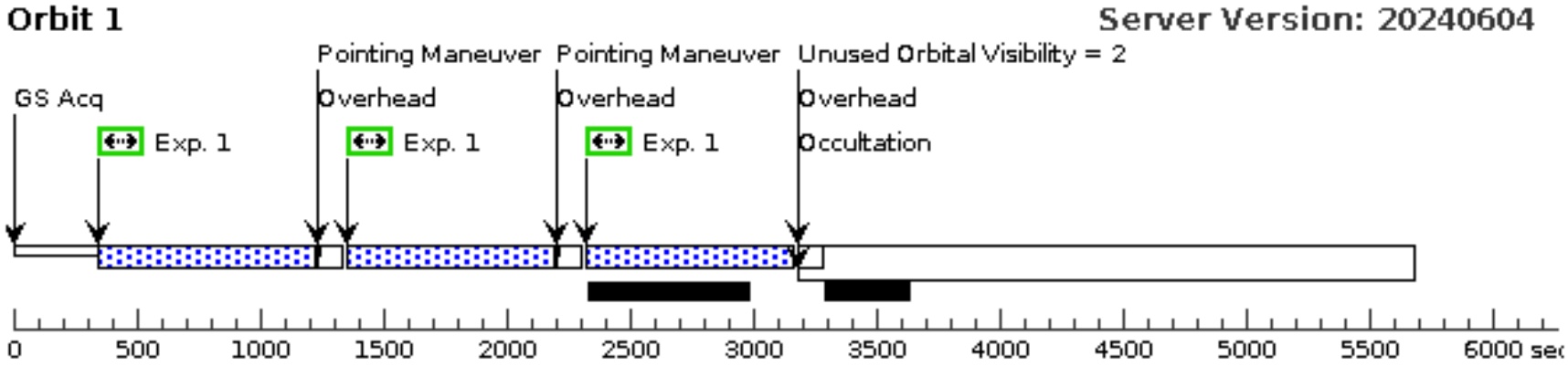
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SN2021HPR	RA: 10 16 38.6800 (154.1611667d) Dec: +73 24 1.80 (73.40050d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) SN2021HPR	WFC3/UVIS, ACCUM, UVIS1	F555W			Pattern 1, Exps 1-1 in SN 2021hpr - 1150 days (36) (1)	846 Secs (2538 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	 ***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021pfs - 1100 days (41), implementation Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 23-DEC-2024:00:00:00 AND 02-JAN-2025:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

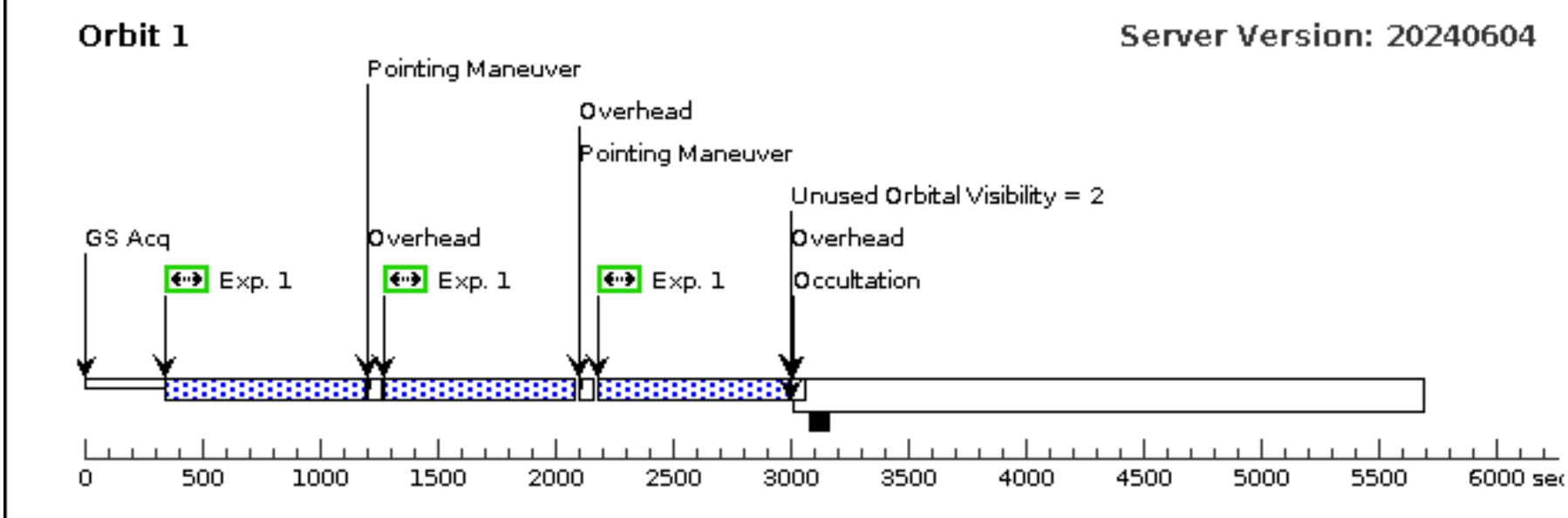
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SN2021PFS	RA: 14 03 23.5900 (210.8482917d) Dec: -06 01 53.80 (-6.03161d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) SN2021PFS	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021pfs - 1100 days (41) (1)	816 Secs (2448 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021rhu - 1200 days (62), scheduled Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 28-SEP-2024:00:00:00 AND 07-OCT-2024:00:00:00

Comments: This is a repeat of the failed visit 45

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

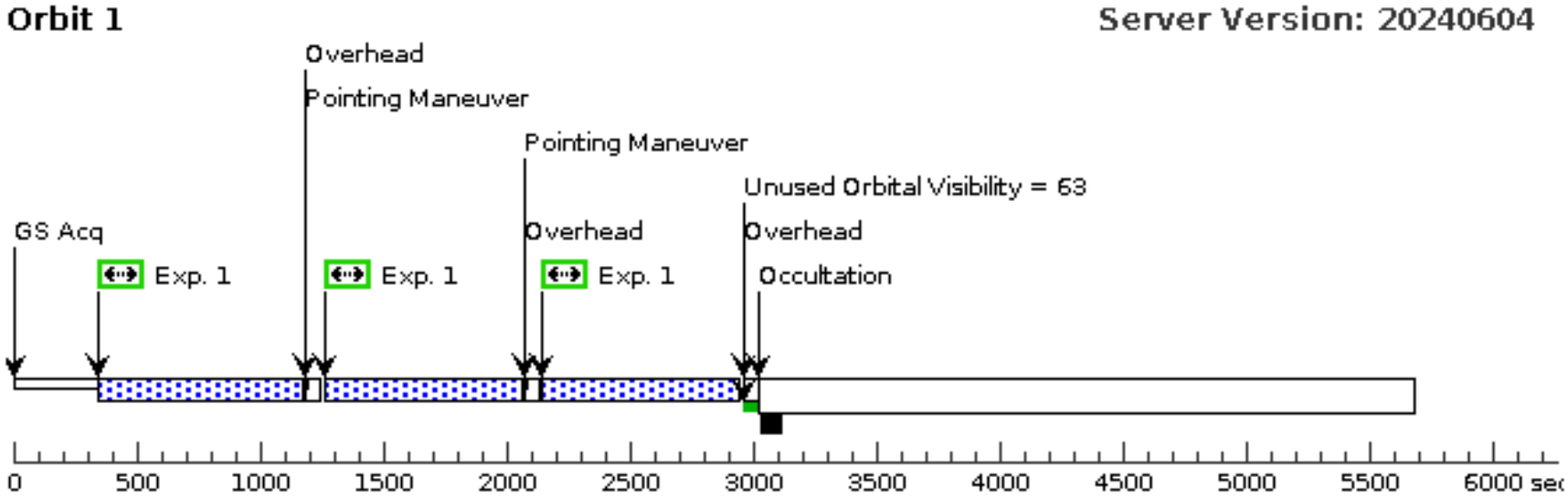
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SN2021RHU	RA: 00 03 15.4300 (.8142917d) Dec: +16 08 44.50 (16.14569d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) SN2021RHU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021rhu - 1200 days (62) (1)	800 Secs (2400 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021smj - 1100 days (49), implementation Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 14-DEC-2024:00:00:00 AND 24-DEC-2024:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

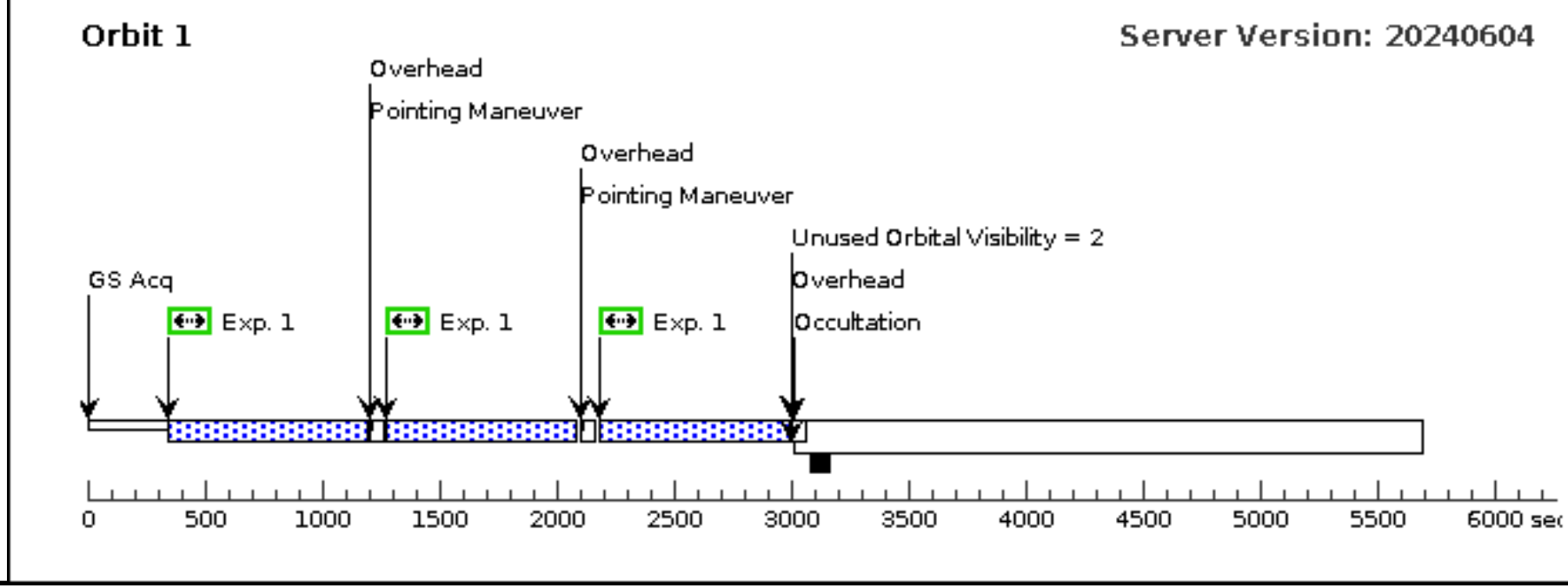
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN2021SMJ	RA: 12 26 46.5500 (186.6939583d) Dec: +08 52 57.70 (8.88269d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN2021SMJ	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021smj - 1100 days (49) (1)	816 Secs (2448 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021tkm - 1100 days (51), completed Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 06-SEP-2024:00:00:00 AND 08-SEP-2024:00:00:00

Diagnostics

(SN 2021tkm - 1100 days (51)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

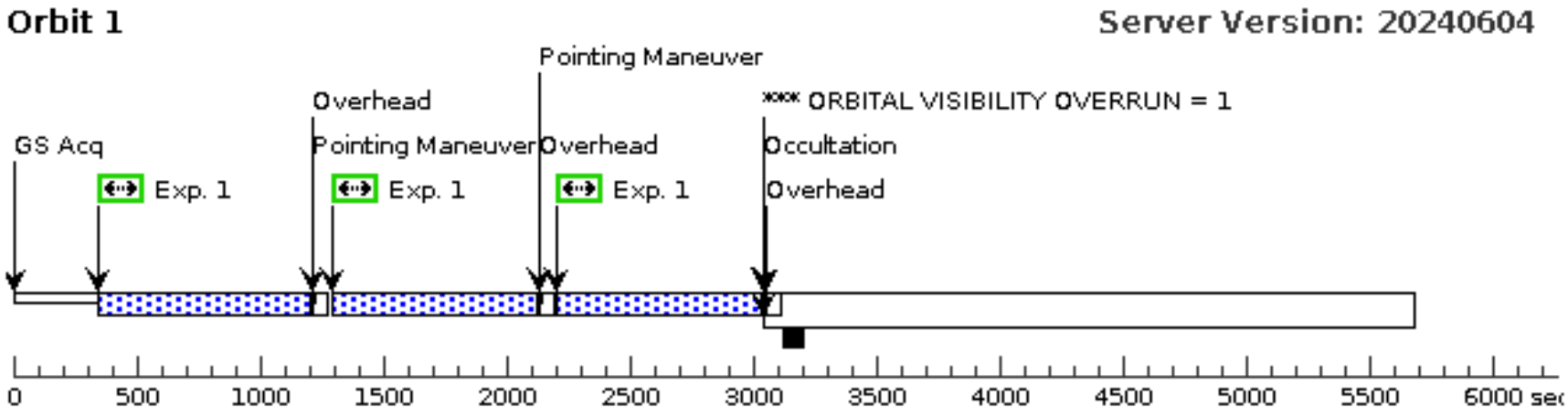
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	SN2021TKM	RA: 14 31 41.5500 (217.9231250d) Dec: -43 24 53.00 (-43.41472d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) SN2021TKM	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021tkm - 1100 days (51) (1)	830 Secs (2490 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	*[1]*

Orbit Structure



Visit

Proposal 17413, SN 2021wuf - 1100 days (54), implementation Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 06-FEB-2025:00:00:00 AND 16-FEB-2025:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

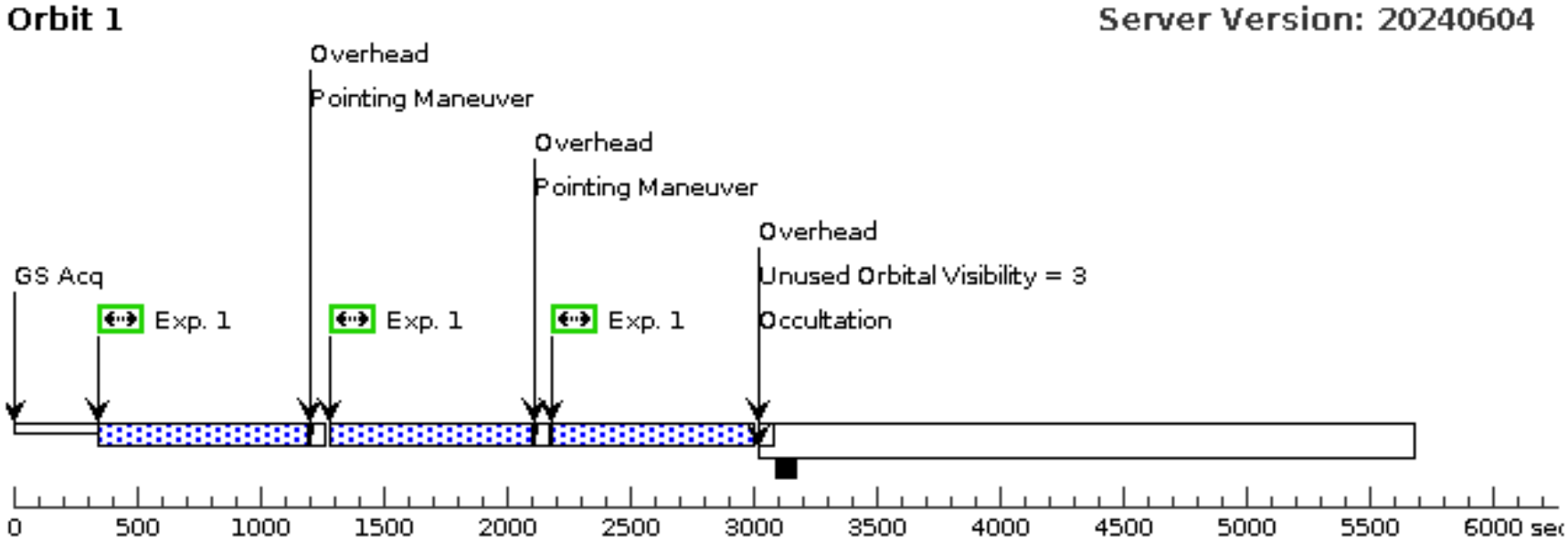
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SN2021WUF	RA: 17 56 2.5100 (269.0104583d) Dec: +18 21 14.10 (18.35392d) Equinox: J2000		V=25+/-1	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) SN2021WUF	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021wuf - 1100 days (54) (1)	820 Secs (2460 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17413, SN 2021xju - 1030 days (59), completed Mon Sep 23 13:00:42 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 05-AUG-2024:00:00:00 AND 30-AUG-2024:00:00:00

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 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
(11)	SN2021XJU	RA: 20 22 30.9600 (305.6290000d) Dec: -53 16 44.20 (-53.27894d) Equinox: J2000		V=25	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SN2021XJU	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F555W			Pattern 1, Exps 1-1 in SN 2021xju - 1030 days (59) (1)	839 Secs (2517 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[1]***

Orbit Structure