17203 - Towards a Comprehensive Search for Surviving Companions to Stripped-Envelope Supernovae

Cycle: 30, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
Dr. Ori Dosovitz Fox (PI) (Contact)	**Space Telescope Science Institute**
Dr. Jennifer Andrews (CoI)	NOIRLab - Gemini North (HI)
Ms. K. Azalee Bostroem (CoI)	University of California - Davis
Maria Drout (CoI) (CSA Member)	University of Toronto
Prof. Alex V. Filippenko (CoI)	University of California - Berkeley
Dr. Patrick Kelly (CoI)	University of Minnesota - Twin Cities
Dr. Dan Milisavljevic (CoI)	Purdue University
Prof. Selma E. de Mink (CoI) (ESA Member)	Max Planck Institute for Astrophysics
Dr. Stuart Ryder (CoI)	Macquarie University
Dr. Nathan Smith (CoI)	University of Arizona
Dr. Niharika Sravan (CoI)	California Institute of Technology
Dr. Schuyler D. Van Dyk (CoI)	California Institute of Technology
Dr. Benjamin F. Williams (CoI)	University of Washington
Dr. Emmanouil Zapartas (CoI) (ESA Member)	IAASARS, National Observatory Athens
Dr. WeiKang Zheng (CoI)	University of California - Berkeley
Dr. Sebastian Gomez (CoI)	Space Telescope Science Institute
Dr. Justin Pierel (CoI)	Space Telescope Science Institute
Dr. Melissa Shahbandeh (CoI)	Space Telescope Science Institute

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(4) SN-2013GE	WFC3/UVIS	2	02-May-2023 16:01:15.0	yes
02	(4) SN-2013GE	WFC3/UVIS	2	02-May-2023 16:01:16.0	yes
03	(1) SN-2016COI	WFC3/UVIS	2	02-May-2023 16:01:16.0	yes
04	(1) SN-2016COI	WFC3/UVIS	3	02-May-2023 16:01:17.0	yes
05	(1) SN-2016COI	WFC3/UVIS	2	02-May-2023 16:01:17.0	yes
06	(1) SN-2016COI	WFC3/UVIS	2	02-May-2023 16:01:18.0	yes
07	(2) SN-2017GAX	WFC3/UVIS	2	02-May-2023 16:01:19.0	yes
08	(2) SN-2017GAX	WFC3/UVIS	3	02-May-2023 16:01:19.0	yes
09	(2) SN-2017GAX	WFC3/UVIS	2	02-May-2023 16:01:20.0	yes
10	(2) SN-2017GAX	WFC3/UVIS	2	02-May-2023 16:01:21.0	yes

22 Total Orbits Used

ABSTRACT

The mass-loss mechanism for stripped-envelope supernovae (SESNe) remains debated, but indirect evidence is mounting in support of binary stars. It wasn't until 2014, however, that the community obtained the first direct post-explosion detection of a surviving companion to a SESN (Type IIb SN 1993J). Since then, there have been four more, including the first fully stripped Type Ib/c SN 2013ge this past year. The field is now past the point of targeting individual systems one at a time. A statistically complete companion-mass distribution (including deep upper limits) can provide important constraints on the underlying physics used in binary evolution models (e.g., winds, rotation, metallicity, nuclear burning instabilities), which in turn has far-reaching implications in all of astrophysics, including merger sources for gravitational waves. Building the proper dataset is a slow process given the small number of viable candidates each year (considering distance, extinction, etc.). Here we propose optical+UV observations at the sites of the two most viable SESNe targets of this year to detect (or place meaningful limits on) any surviving companion. NUV (F275W/F336W) imaging offers an optimum detection strategy for the expected hot, blue stellar companions, while optical imaging can rule out shock interaction contributions and probe less likely, but possible, cooler star companions. We also propose ongoing monitoring of SN 2013ge. Given HST's time horizon, the degrading UV response on WFC3, and the requisite waiting period to allow the SN to fade before conducting a companion search, now is the time to take full advantage of HST's unique UV capabilities.

OBSERVING DESCRIPTION

WFC3:

- Use entire array to aquire fiducial stars for alignment purposes
- Use 512_UVIS2_CTE aperture to minimize photon transfer losses
- When scheduled, please have CS contact PI to finalize pos_tag based on final orientation

- EXPTIME (actual):
  - -SN 2016coi (9 orbit)
    - -F275W (13803 s)
    - -F336W (8082 s)
    - -F438W (1000 s)
    - -F555W (700 s)
  - -SN 2017gax (9 orbit)
    - -F275W (13803 s)
    - -F336W (8082 s)
    - -F438W (1000 s)
    - -F555W (700 s)
  - -SN 2013ge (4 orbits)
    - -F336W (8082 s)
    - -F555W (700 s)
- FLASH = varies with aim of minimizing photon transfer losses and read noise
  - Note prior email to Sylvia. Hope all is well. Tis the night before Phase 2's are due, and I need a clue. We are wondering about Flash settings.
  - Here is the situation:
    - *We are trying to detect a single, very faint source (surviving star from a supernova). We only care about one position, not the entire field.
    - *We have placed the pointing in the center of the UVIS2-512C-CTE aperture, so that will help with the CTE.
    - *We are not sure what the background from the galaxy looks like, but it may contribute to the flux slightly (or not at all).
    - *It is easy to adjust the Flash value in APT to turn the warning off, but we are hoping we aren't adding too much noise unnecessarily, as this

source is faint.

- 4 pt WFC3-UVIS-DITHER-Box
  -We use 4 POS TARGS instead

Impact of Gyros

We have considered the impact of reduced gyro operations on our program. The only problematic observation is SN 2013ge, which has 9 orbits requested. We were able to successfully reduce this target to 4 visits, each with 2-3 orits per visit. The only condition is that all filters must be obtained in the same orientation for several reasons, including time variablility and optimized sampling and reductions. Therefore, we have added this constraint.

Visit

Proposal 17203, SN2013ge_1 (01), completed Tue May 02 20:01:21 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Diagnostics

(F336W (01.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

(F336W (01.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

Fixed Targets

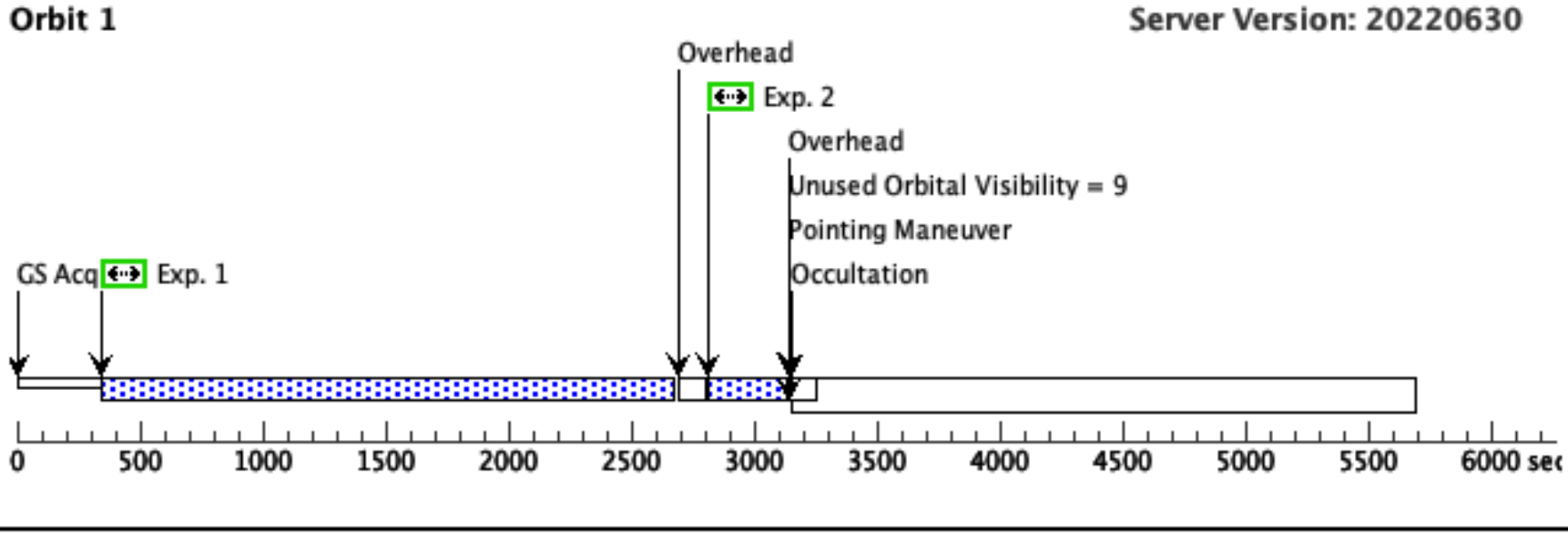
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN-2013GE	RA: 10 34 48.4610 (158.7019208d) Dec: +21 39 41.90 (21.66164d) Equinox: J2000	Epoch of Position: 2015.5	V=25.0	Reference Frame: SIMBAD

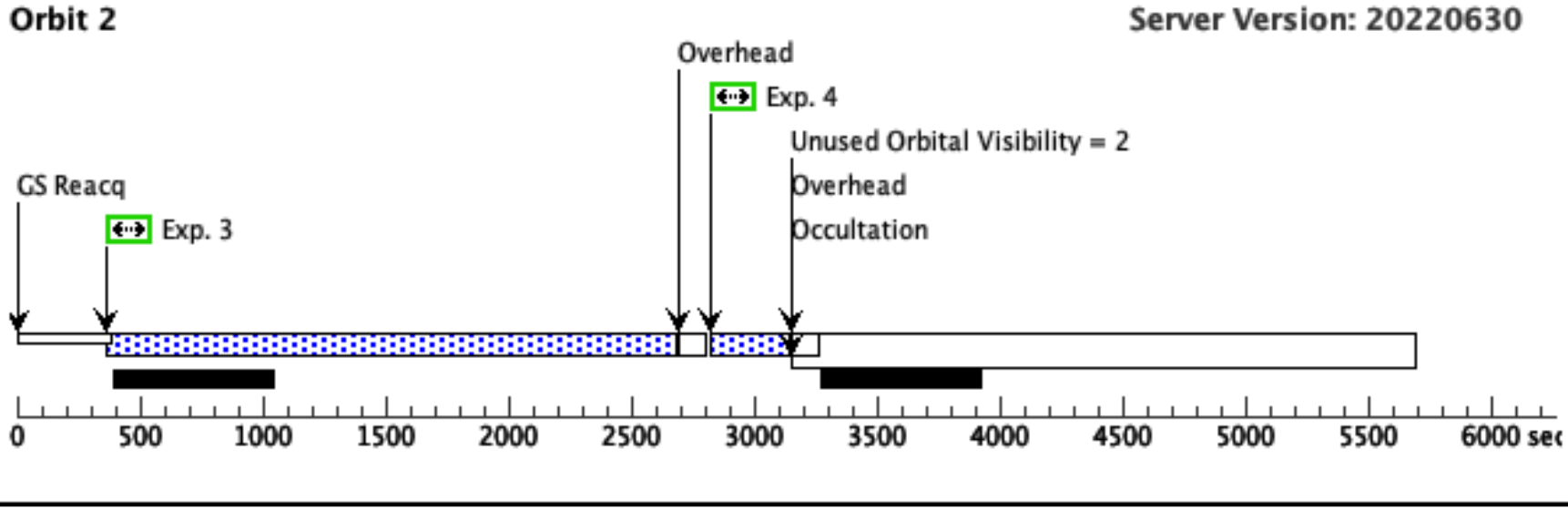
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F336W (WFC3UVIS.im.1448769)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=9	POS TARG 0,0		2500 Secs (2300 Secs) *[==>2300 Secs]*	 ***[1]***
2	F555W (WFC3UVIS.im.1452352)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=9	POS TARG 0,0		2500 Secs (300 Secs) *[==>300 Secs]*	 ***[1]***
3	F336W (WFC3UVIS.im.1448769)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=9	POS TARG 0.1719,0.1837		2500 Secs (2299 Secs) *[==>2299.0 Secs]*	 ***[2]***
4	F555W (WFC3UVIS.im.1452352)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=9	POS TARG 0.1719,0.1837		2500 Secs (299 Secs) *[==>299.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 17203, SN2013ge_2 (02), completed Tue May 02 20:01:21 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 01; AFTER_01 BY 0 D TO 5 D; GROUP 02,01 WITHIN 1D

Diagnostics

(F336W (02.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

(F336W (02.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

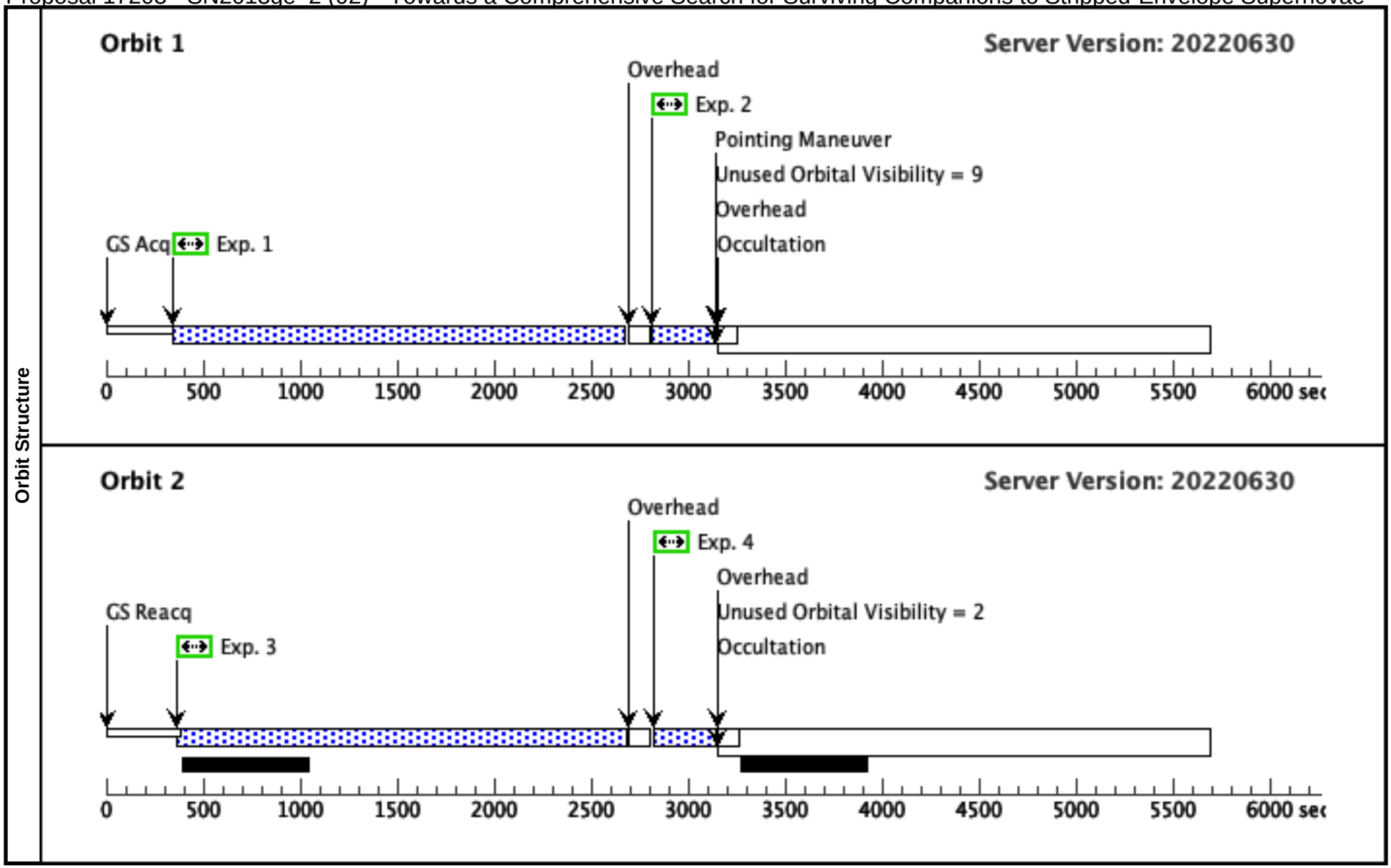
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN-2013GE	RA: 10 34 48.4610 (158.7019208d) Dec: +21 39 41.90 (21.66164d) Equinox: J2000	Epoch of Position: 2015.5	V=25.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F336W (WFC3UVIS.im.1452352)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=9	POS TARG 0.4760,0.5286		2500 Secs (2300 Secs) *[==>2300 Secs]*	 ***[1]***
2	F555W (WFC3UVIS.im.1452352)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=9	POS TARG 0.4760,0.5286		2500 Secs (300 Secs) *[==>300 Secs]*	 ***[1]***
3	F336W (WFC3UVIS.im.1448769)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=9	POS TARG 0.3437,0.3674		2500 Secs (2299 Secs) *[==>2299.0 Secs]*	 ***[2]***
4	F555W (WFC3UVIS.im.1452352)	(4) SN-2013GE	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=9	POS TARG 0.3437,0.3674		2500 Secs (299 Secs) *[==>299.0 Secs]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20220630
Overhead
Exp. 2
Pointing Maneuver
Unused Orbital Visibility = 9
Overhead
Occultation
GS Acq
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20220630
Overhead
Exp. 4
Overhead
Unused Orbital Visibility = 2
Occultation
GS Reacq
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2016coi_1 (03), implementation Tue May 02 20:01:21 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SEQ 03,04,05,06 WITHIN 2 D

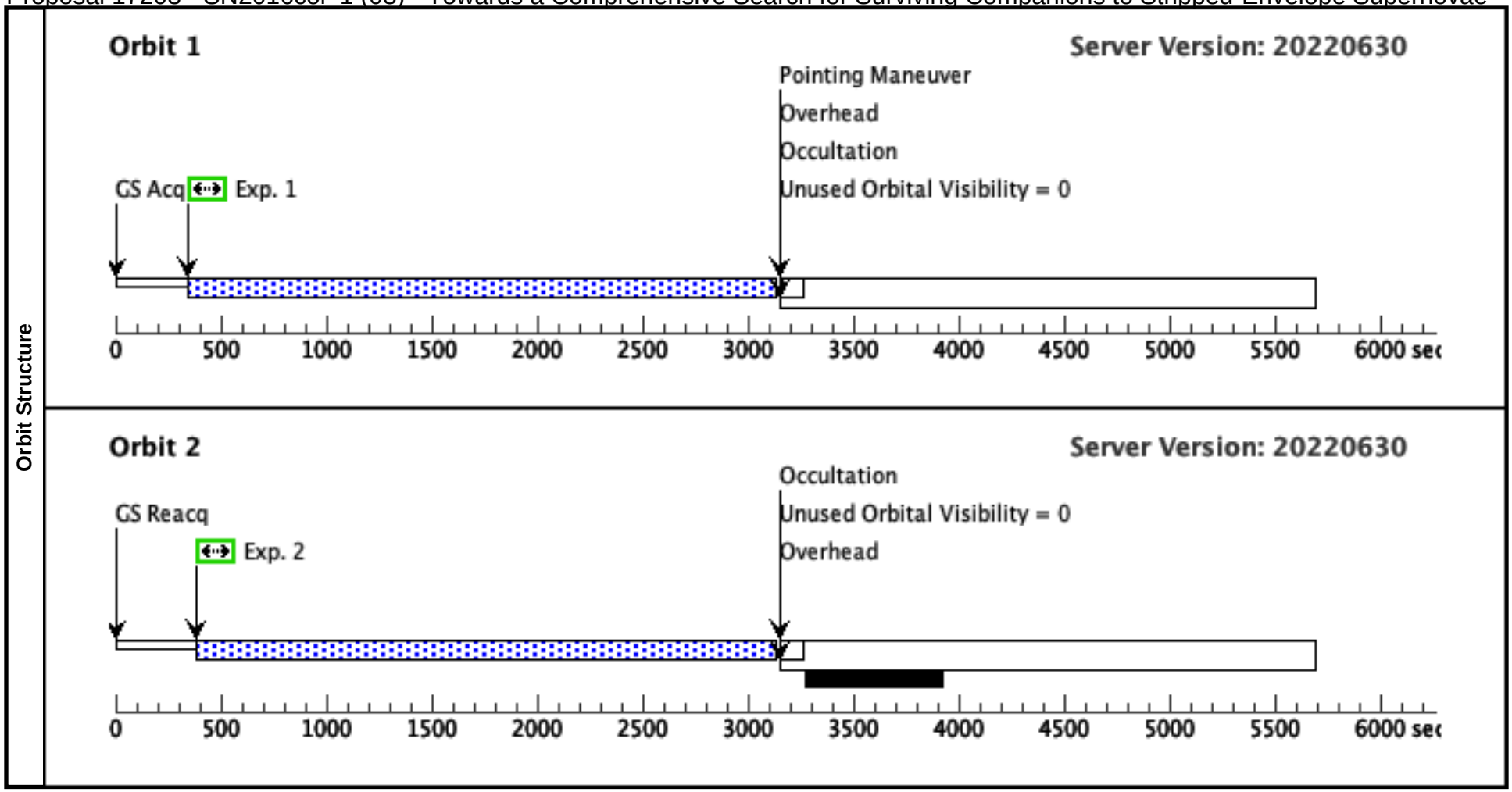
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-2016COI	RA: 21 59 4.1400 (329.7672500d) Dec: +18 11 10.50 (18.18625d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F275W (WFC3UVIS.im.1448769)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0,0		2500 Secs (2765 Secs) *[==>2765.0 Secs]*	 ***[1]***
2	F275W (WFC3UVIS.im.1448769)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.1719,0.1837		2500 Secs (2756 Secs) *[==>2756.0 Secs]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20220630
Pointing Maneuver
Overhead
Occultation
Unused Orbital Visibility = 0
GS Acq
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20220630
Occultation
Unused Orbital Visibility = 0
Overhead
GS Reacq
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2016coi_2 (04), implementation Tue May 02 20:01:21 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 03

Fixed Targets

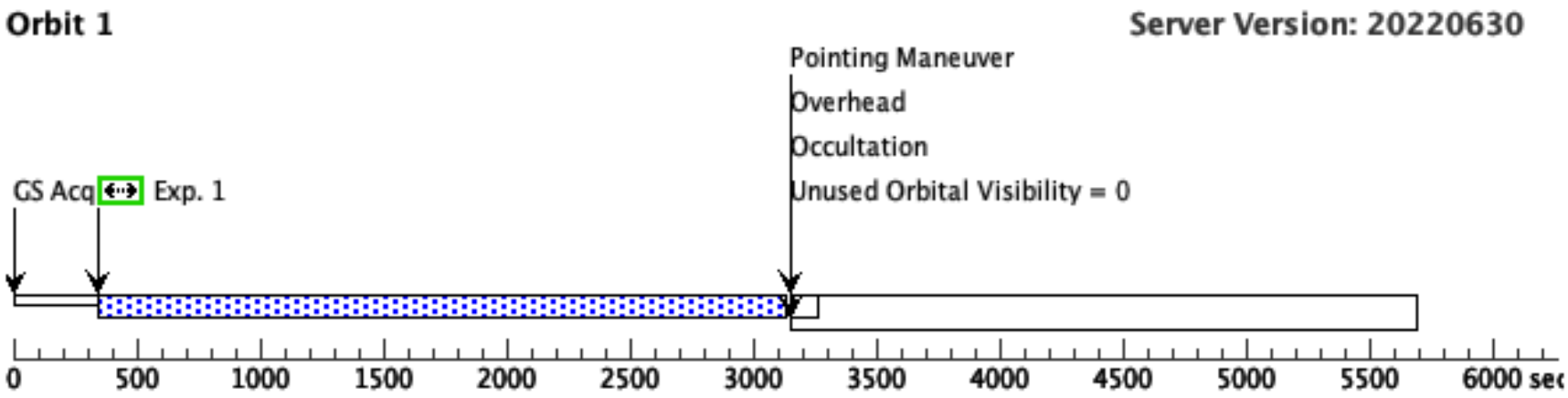
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-2016COI	RA: 21 59 4.1400 (329.7672500d) Dec: +18 11 10.50 (18.18625d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

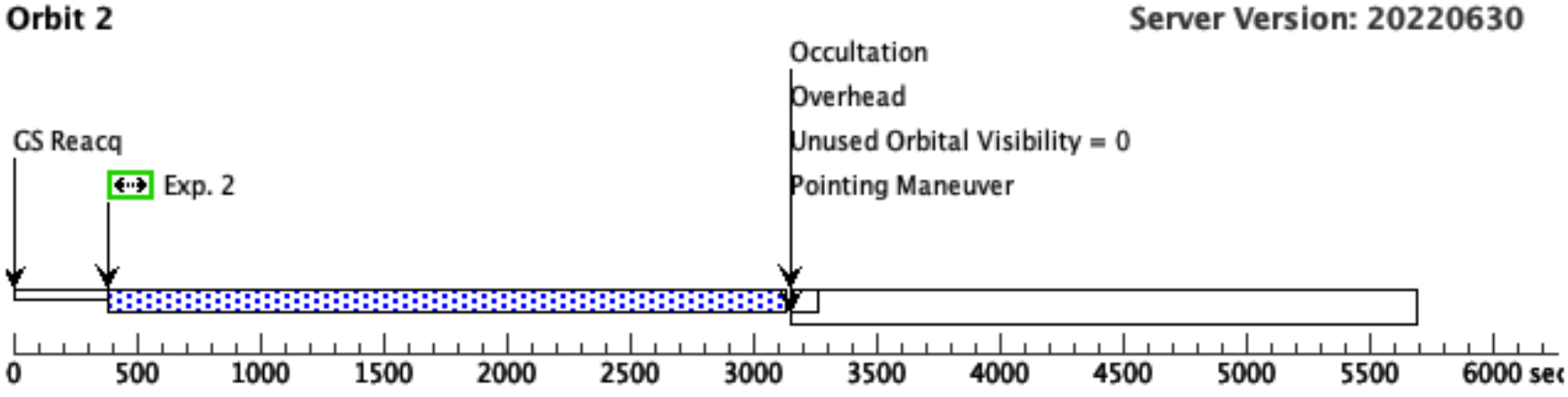
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

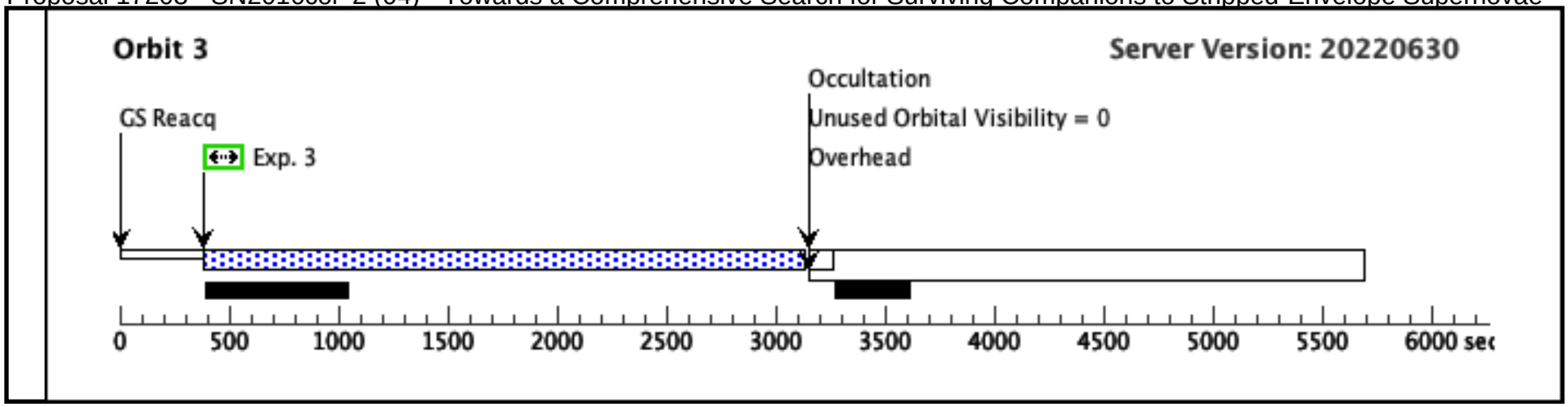
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F275W (WFC3UVIS.im.1448769)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.3437,0.3674		2500 Secs (2765 Secs) *[==>2765.0 Secs]*	 ***[1]***
2	F275W (WFC3UVIS.im.1448769)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.4760,0.5286		2500 Secs (2756 Secs) *[==>2756.0 Secs]*	 ***[2]***
3	F275W (WFC3UVIS.im.1448769)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.6544,0.6796		2500 Secs (2756 Secs) *[==>2756.0 Secs]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 3
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2016coi_3 (05), implementation Tue May 02 20:01:22 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Diagnostics

(F336W (05.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

(F336W (05.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

Fixed Targets

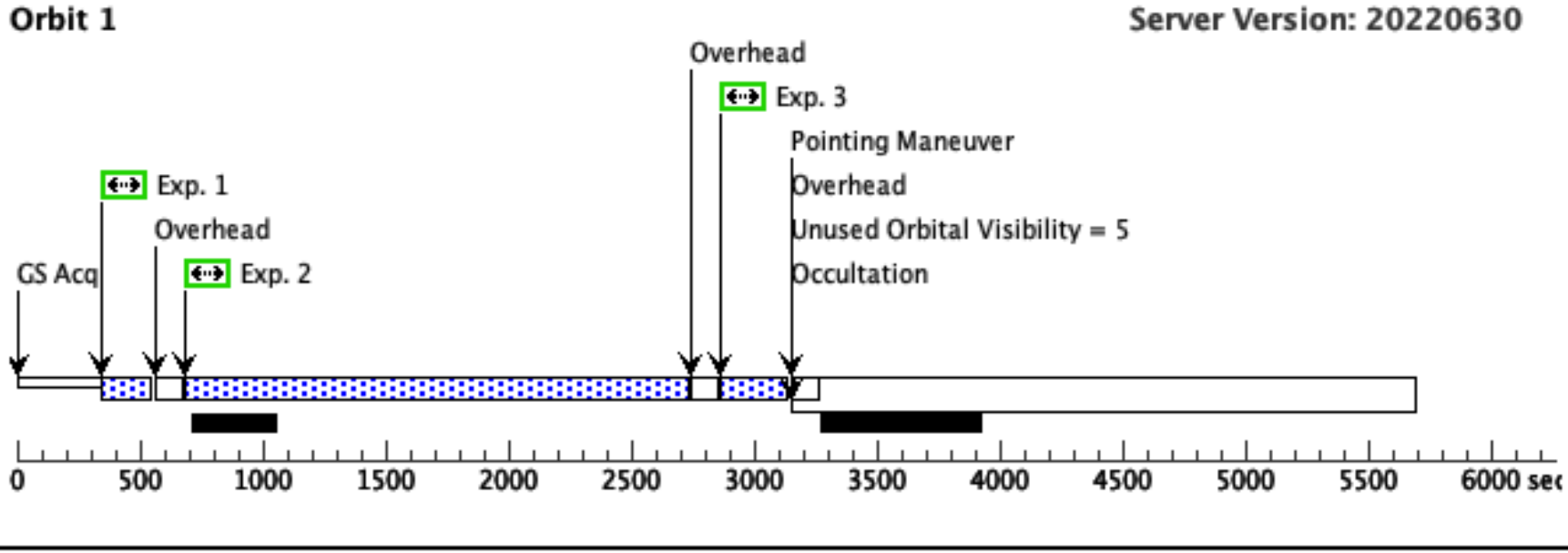
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-2016COI	RA: 21 59 4.1400 (329.7672500d) Dec: +18 11 10.50 (18.18625d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

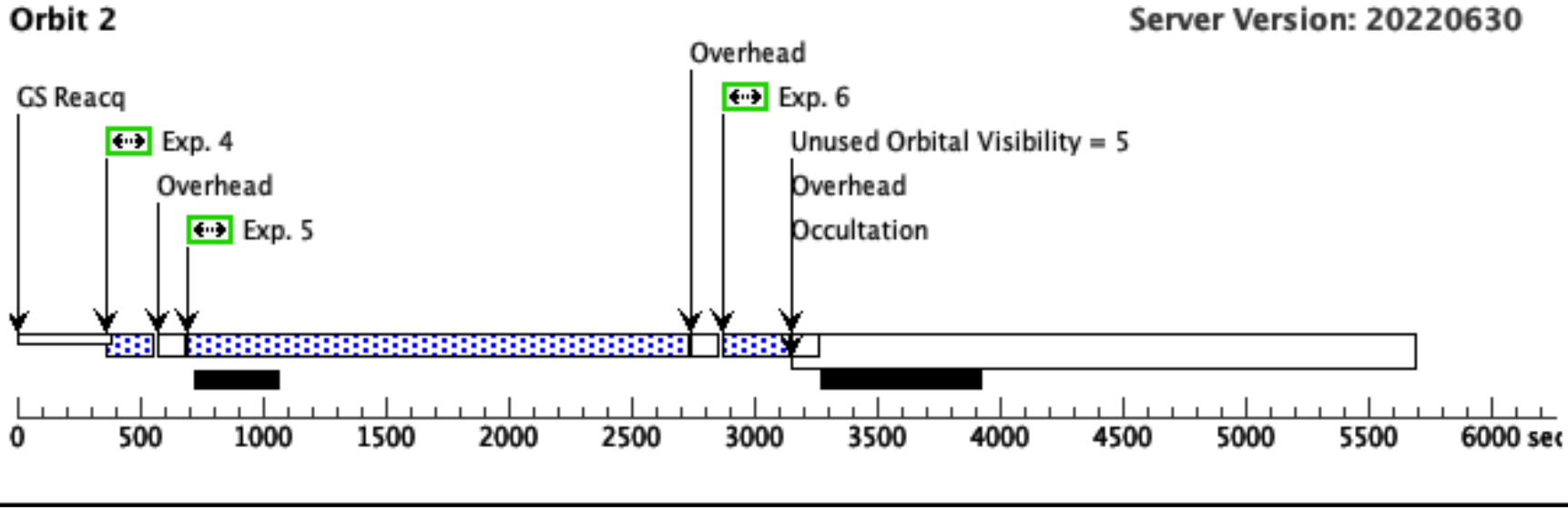
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F555W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0,0		300 Secs (173 Secs) *[==>173.0 Secs]*	 ***[1]***
2	F336W (WFC3UVIS.im.1452352)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 1		2500 Secs (2025 Secs) *[==>2025.0 Secs]*	 ***[1]***
3	F438W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=17	SAME POS AS 1		300 Secs (248 Secs) *[==>248.0 Secs]*	 ***[1]***
4	F555W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.1785,0.1908		300 Secs (170 Secs) *[==>170.0 Secs]*	 ***[2]***
5	F336W (WFC3UVIS.im.1448780)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 4		2500 Secs (2022 Secs) *[==>2022.0 Secs]*	 ***[2]***
6	F438W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=17	SAME POS AS 4		300 Secs (245 Secs) *[==>245.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 17203, SN2016coi_4 (06), implementation Tue May 02 20:01:22 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

Diagnostics

(F336W (06.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

(F336W (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser

Fixed Targets

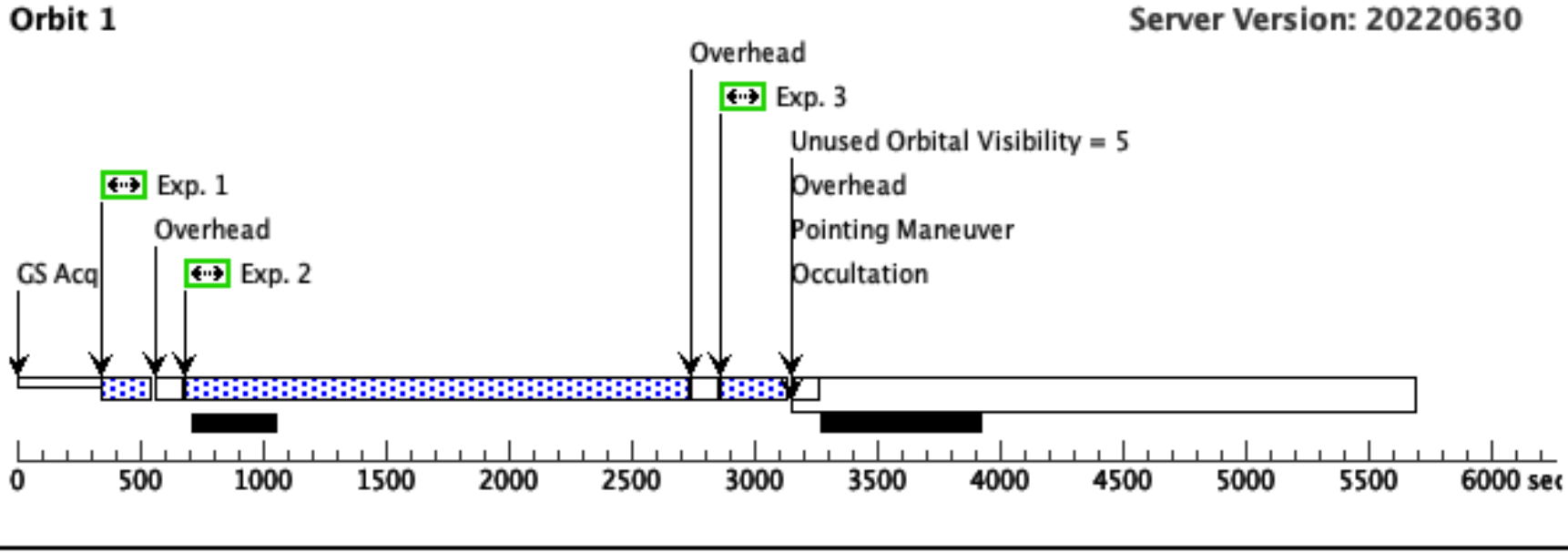
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-2016COI	RA: 21 59 4.1400 (329.7672500d) Dec: +18 11 10.50 (18.18625d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

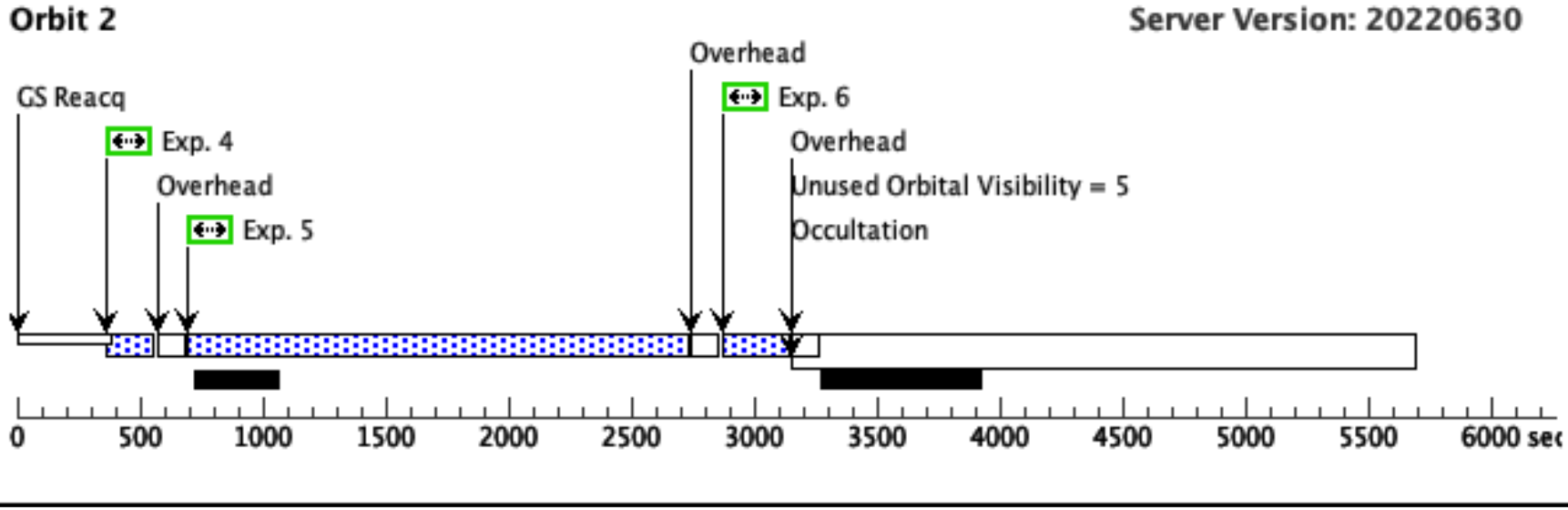
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F555W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.3173,0.3591		300 Secs (173 Secs) *[==>173.0 Secs]*	 ***[1]***
2	F336W (WFC3UVIS.im.1448780)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 1		2500 Secs (2025 Secs) *[==>2025.0 Secs]*	 ***[1]***
3	F438W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=17	SAME POS AS 1		300 Secs (248 Secs) *[==>248.0 Secs]*	 ***[1]***
4	F555W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.4958,0.5101		300 Secs (170 Secs) *[==>170.0 Secs]*	 ***[2]***
5	F336W (WFC3UVIS.im.1448780)	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 4		2500 Secs (2022 Secs) *[==>2022.0 Secs]*	 ***[2]***
6	F438W	(1) SN-2016COI	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=17	SAME POS AS 4		300 Secs (245 Secs) *[==>245.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 17203, SN2017gax_1 (07), scheduling Tue May 02 20:01:22 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SEQ 07,08,09,10 WITHIN 30 D

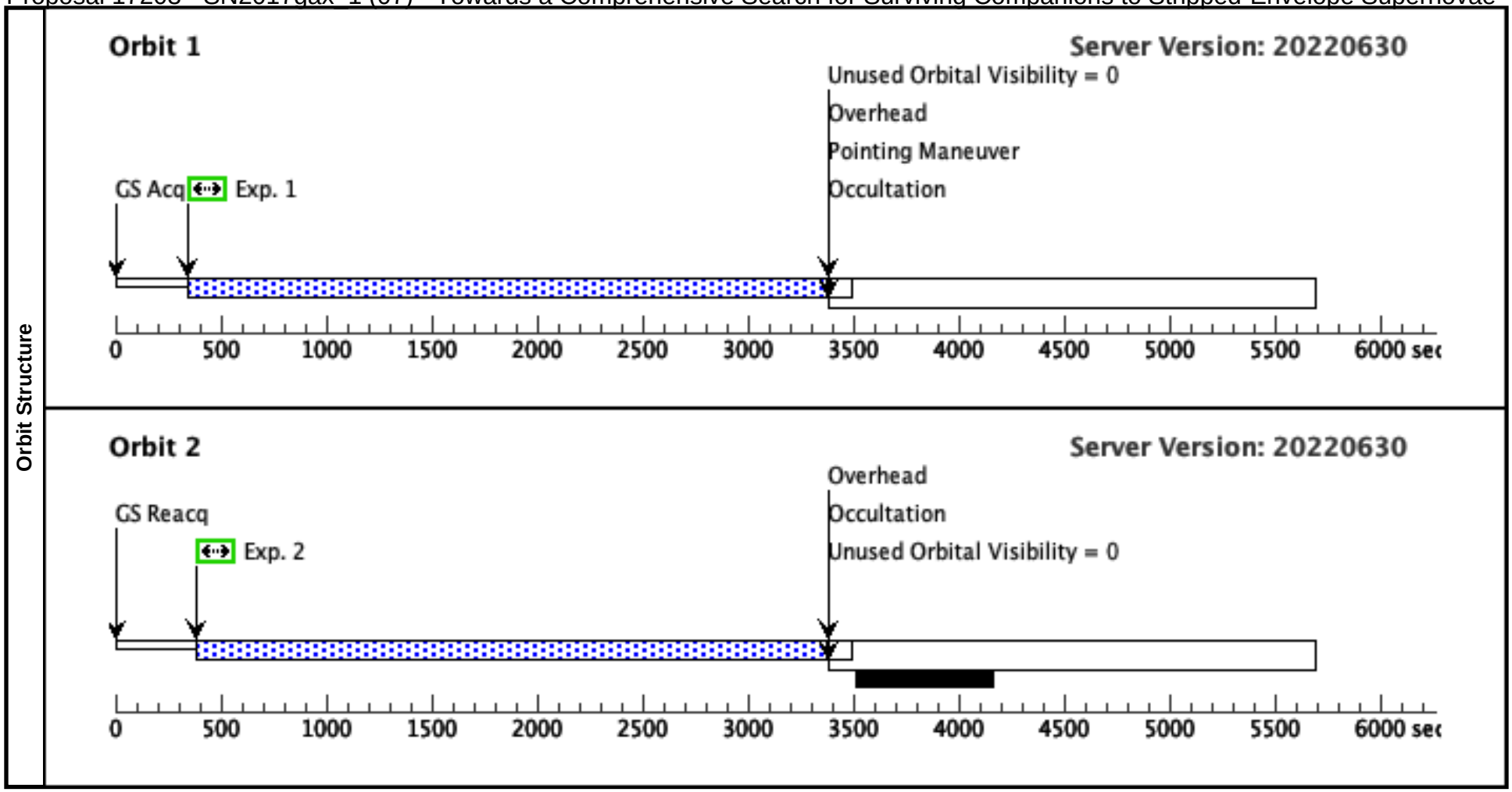
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-2017GAX	RA: 04 45 49.4300 (71.4559583d) Dec: -59 14 42.56 (-59.24516d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F275W (WFC3UVIS.im.1448769)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0,0		2500 Secs (2998 Secs) *[==>2998.0 Secs]*	 ***[1]***
2	F275W (WFC3UVIS.im.1448769)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.1719,0.1837		2500 Secs (2989 Secs) *[==>2989.0 Secs]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20220630
Unused Orbital Visibility = 0
Overhead
Pointing Maneuver
Occultation
GS Acq
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20220630
Overhead
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2017gax_2 (08), scheduling Tue May 02 20:01:22 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 07

Fixed Targets

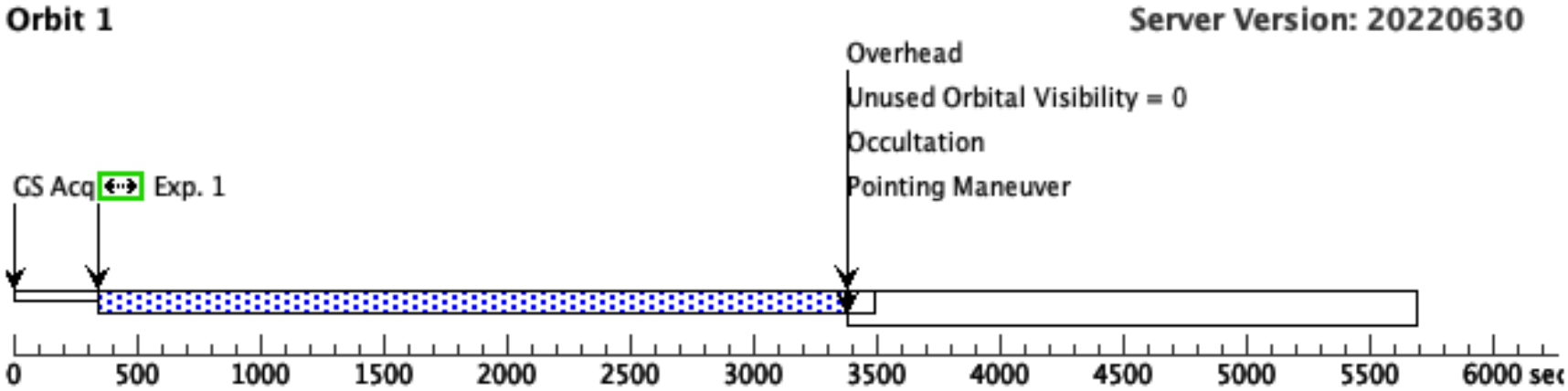
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-2017GAX	RA: 04 45 49.4300 (71.4559583d) Dec: -59 14 42.56 (-59.24516d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

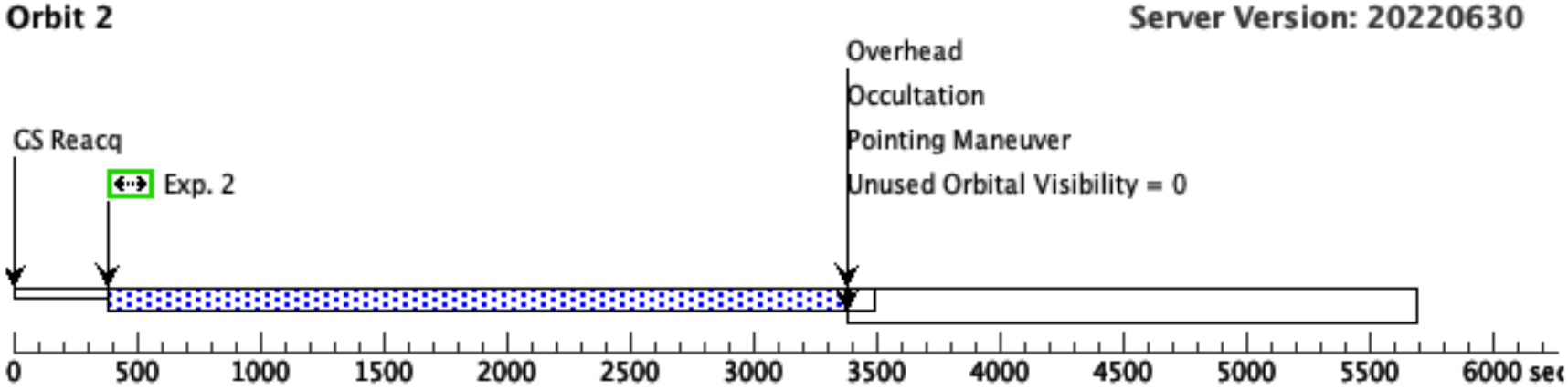
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

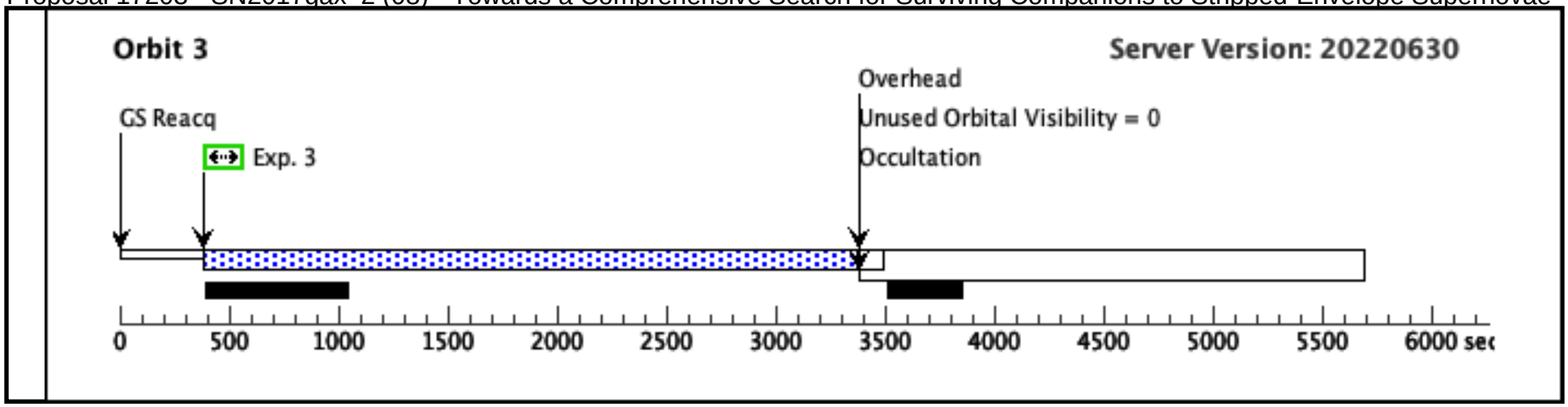
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F275W (WFC3UVIS.im.1448769)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.3437,0.3674		2500 Secs (2998 Secs) *[==>2998.0 Secs]*	 ***[1]***
2	F275W (WFC3UVIS.im.1448769)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.4760,0.5286		2500 Secs (2989 Secs) *[==>2989.0 Secs]*	 ***[2]***
3	F275W (WFC3UVIS.im.1448769)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F275W	FLASH=12	POS TARG 0.6544,0.6796		2500 Secs (2989 Secs) *[==>2989.0 Secs]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Overhead
GS Reacq
Unused Orbital Visibility = 0
Exp. 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2017gax_3 (09), scheduling Tue May 02 20:01:22 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: GROUP 09,07 WITHIN 1D

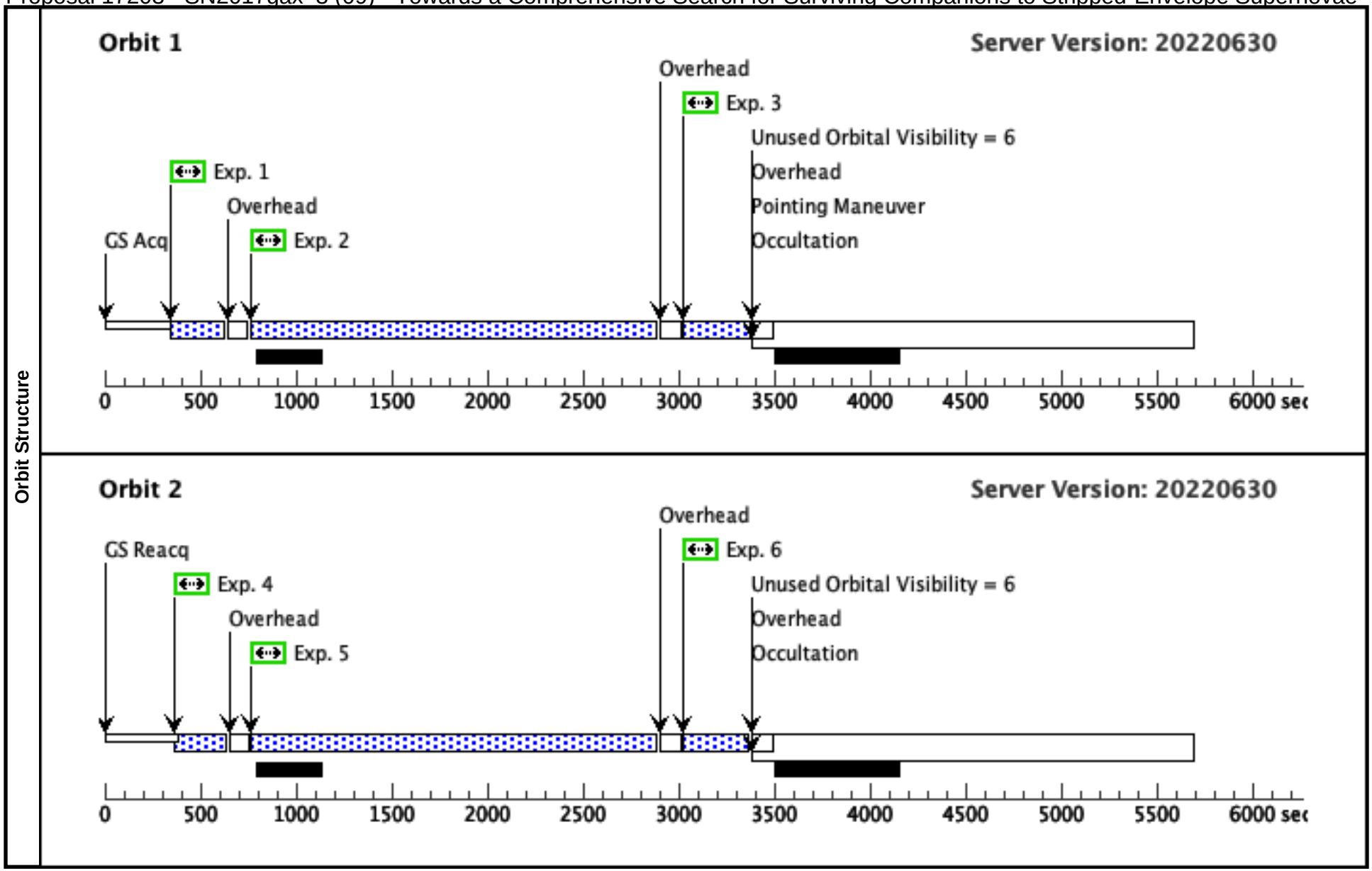
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-2017GAX	RA: 04 45 49.4300 (71.4559583d) Dec: -59 14 42.56 (-59.24516d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F555W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0,0		300 Secs (253 Secs) *[==>253.0 Secs]*	 ***[1]***
2	F336W (WFC3UVIS.im.1452352)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 1		2500 Secs (2102 Secs) *[==>2102.0 Secs]*	 ***[1]***
3	F438W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=16	SAME POS AS 1		300 Secs (325 Secs) *[==>325.0 Secs]*	 ***[1]***
4	F555W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.1785,0.1908		300 Secs (250 Secs) *[==>250.0 Secs]*	 ***[2]***
5	F336W (WFC3UVIS.im.1448780)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 4		2500 Secs (2099 Secs) *[==>2099.0 Secs]*	 ***[2]***
6	F438W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=16	SAME POS AS 4		300 Secs (322 Secs) *[==>322.0 Secs]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20220630
GS Acq
Exp. 1
Overhead
Exp. 2
Overhead
Exp. 3
Unused Orbital Visibility = 6
Overhead
Pointing Maneuver
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20220630
GS Reacq
Exp. 4
Overhead
Exp. 5
Overhead
Exp. 6
Unused Orbital Visibility = 6
Overhead
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17203, SN2017gax_4 (10), scheduling Tue May 02 20:01:22 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 09; GROUP 10,07 WITHIN 1D

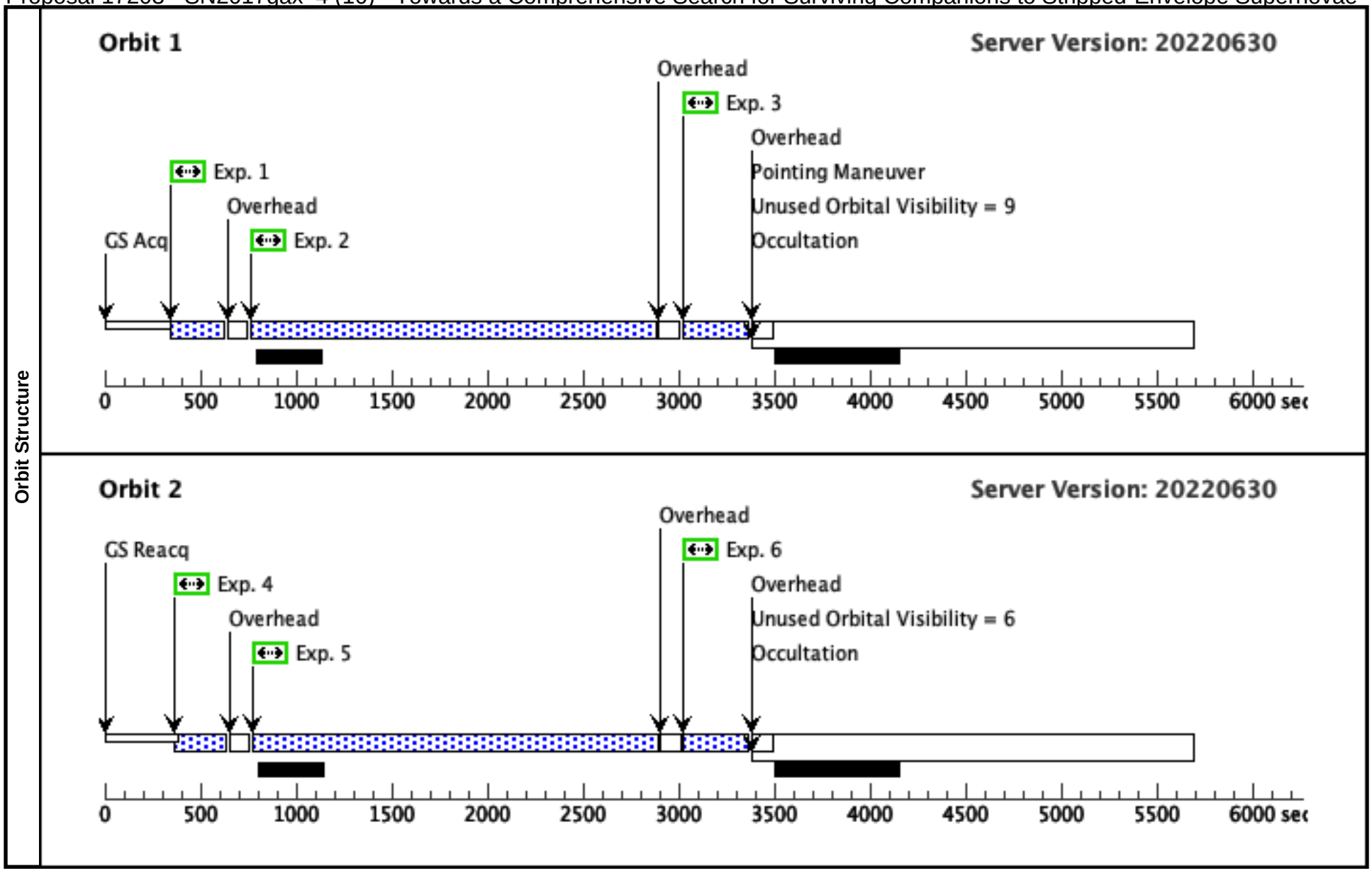
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-2017GAX	RA: 04 45 49.4300 (71.4559583d) Dec: -59 14 42.56 (-59.24516d) Equinox: J2000		V=25.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[SUPERNOVA TYPE IB]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F555W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.3173,0.3591		300 Secs (254 Secs) *[==>254.0 Secs]*	 ***[1]***
2	F336W (WFC3UVIS.im.1448780)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 1		2500 Secs (2100 Secs) *[==>2100.0 Secs]*	 ***[1]***
3	F438W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=16	SAME POS AS 1		300 Secs (323 Secs) *[==>323.0 Secs]*	 ***[1]***
4	F555W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F555W	FLASH=14	POS TARG 0.4958,0.5101		300 Secs (252 Secs) *[==>252.0 Secs]*	 ***[2]***
5	F336W (WFC3UVIS.im.1448780)	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F336W	FLASH=10	SAME POS AS 4		2500 Secs (2098 Secs) *[==>2098.0 Secs]*	 ***[2]***
6	F438W	(2) SN-2017GAX	WFC3/UVIS, ACCUM, UVIS2-C512C-CTE	F438W	FLASH=16	SAME POS AS 4		300 Secs (321 Secs) *[==>321.0 Secs]*	 ***[2]***


Orbit Structure
Orbit 1
Server Version: 20220630
GS Acq
Exp. 1
Overhead
Exp. 2
Overhead
Exp. 3
Overhead
Pointing Maneuver
Unused Orbital Visibility = 9
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20220630
GS Reacq
Exp. 4
Overhead
Exp. 5
Overhead
Exp. 6
Overhead
Unused Orbital Visibility = 6
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec