16690 - Measuring the Effect of Progenitor Metallicity on Type Ia Supernova Distance Estimates

Cycle: 29, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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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	(11) AT2022EYW CCDFLAT	STIS/CCD STIS/NUV-MAMA	1	20-Sep-2022 17:00:17.0	yes
02	(12) SN2022HRS CCDFLAT	STIS/CCD STIS/NUV-MAMA	1	20-Sep-2022 17:00:18.0	yes
03	(3) SN3 CCDFLAT	STIS/CCD STIS/NUV-MAMA	1	20-Sep-2022 17:00:19.0	yes
04	(4) SN4 CCDFLAT	STIS/CCD STIS/NUV-MAMA	1	20-Sep-2022 17:00:20.0	yes
05	(13) SN2022UIV CCDFLAT	STIS/CCD STIS/NUV-MAMA	2	20-Sep-2022 17:00:22.0	yes
06	(6) SN6 CCDFLAT	STIS/CCD STIS/NUV-MAMA	2	20-Sep-2022 17:00:23.0	yes
07	(7) SN7 CCDFLAT	STIS/CCD STIS/NUV-MAMA	2	20-Sep-2022 17:00:24.0	yes
08	(8) SN8 CCDFLAT	STIS/CCD STIS/NUV-MAMA	2	20-Sep-2022 17:00:26.0	yes

12 Total Orbits Used

ABSTRACT

Despite using Type Ia supernovae (SN Ia) to precisely measure cosmological parameters, we still do not know basic facts about the progenitor systems and explosions. Theory suggests that SN Ia progenitor metallicity is correlated with peak luminosity, but not how quickly it fades, which we use to calibrate the luminosity and measure distances. This effect should lead to an increased Hubble scatter, reducing the precision with which we measure distances. If the mean progenitor metallicity changes with redshift or population, cosmological measurements such as the dark energy equation-of-state parameter and the Hubble constant could be biased. Models also indicate that changing progenitor metallicity will have little effect on the appearance of optical/NIR SN data, but significantly alter UV spectra. These data can only be obtained with HST.

Previous HST observations of 2 "twin" SN (having nearly identical optical spectra and light-curve shapes) with different UV spectra and peak optical luminosities indicate progenitor metallicity differences consistent with models. To determine the overall impact of progenitor metallicity on

cosmological measurements, we must increase the sample.

The community now discovers ~20 SN Ia each year >2 weeks before peak. With the increased discovery rate of young SN, we can increase the sample of SN Ia with UV spectra near peak by 50% in a single Cycle. UV observations are critical to the understanding of SN Ia explosions and progenitors and constraining fundamental parameters such as the Hubble constant. This is our best opportunity to further our understanding of SN Ia while directly improving the utility of SN Ia for cosmology.

OBSERVING DESCRIPTION

There are 8 separate TOO targets, each will obtain a single spectrum. 4 targets will be bright enough for a single orbit, while half will require 2 orbits.

Fast turn around is key, and we will work closely to speed this process up. Some tweaking to the visits will be required for each trigger.

Visit

Proposal 16690, Visit 01, completed Tue Sep 20 21:00:26 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Fixed Targets

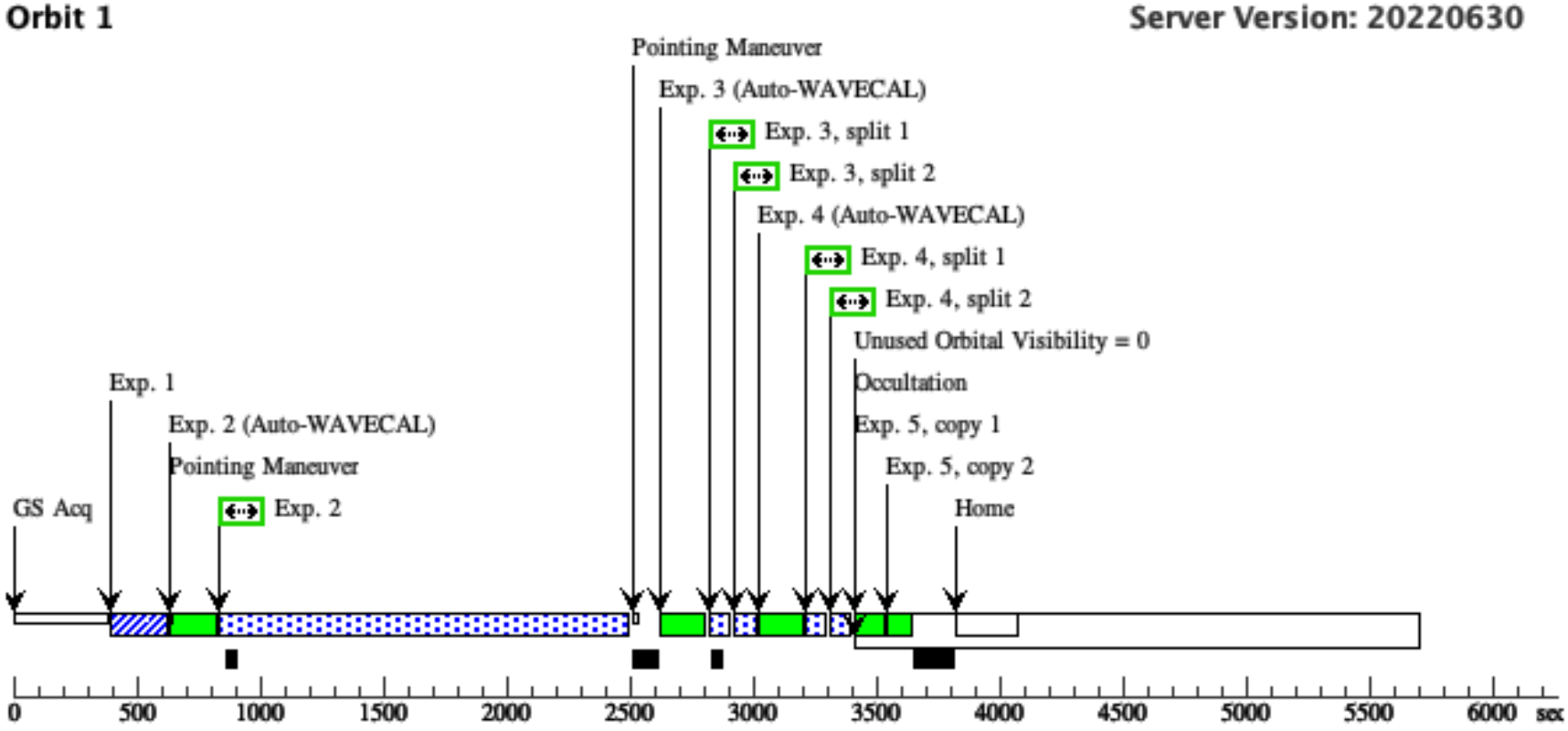
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	AT2022EYW	RA: 12 43 59.9710 (190.9998792d) Dec: +62 19 48.30 (62.33008d) Equinox: J2000		V=14	Reference Frame: ICRS

Comments: Rising SN Ia currently 19.7
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) AT2022EYW	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO PAIR		1 Secs (1 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186473)	(11) AT2022EYW	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1649 Secs (1649 Secs) *[==>1649 Secs]*	 ***[1]***
3		(11) AT2022EYW	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
4		(11) AT2022EYW	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
5		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				25 Secs X 2 (50 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***

Orbit Structure



Visit

Proposal 16690, Visit 02, completed Tue Sep 20 21:00:26 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

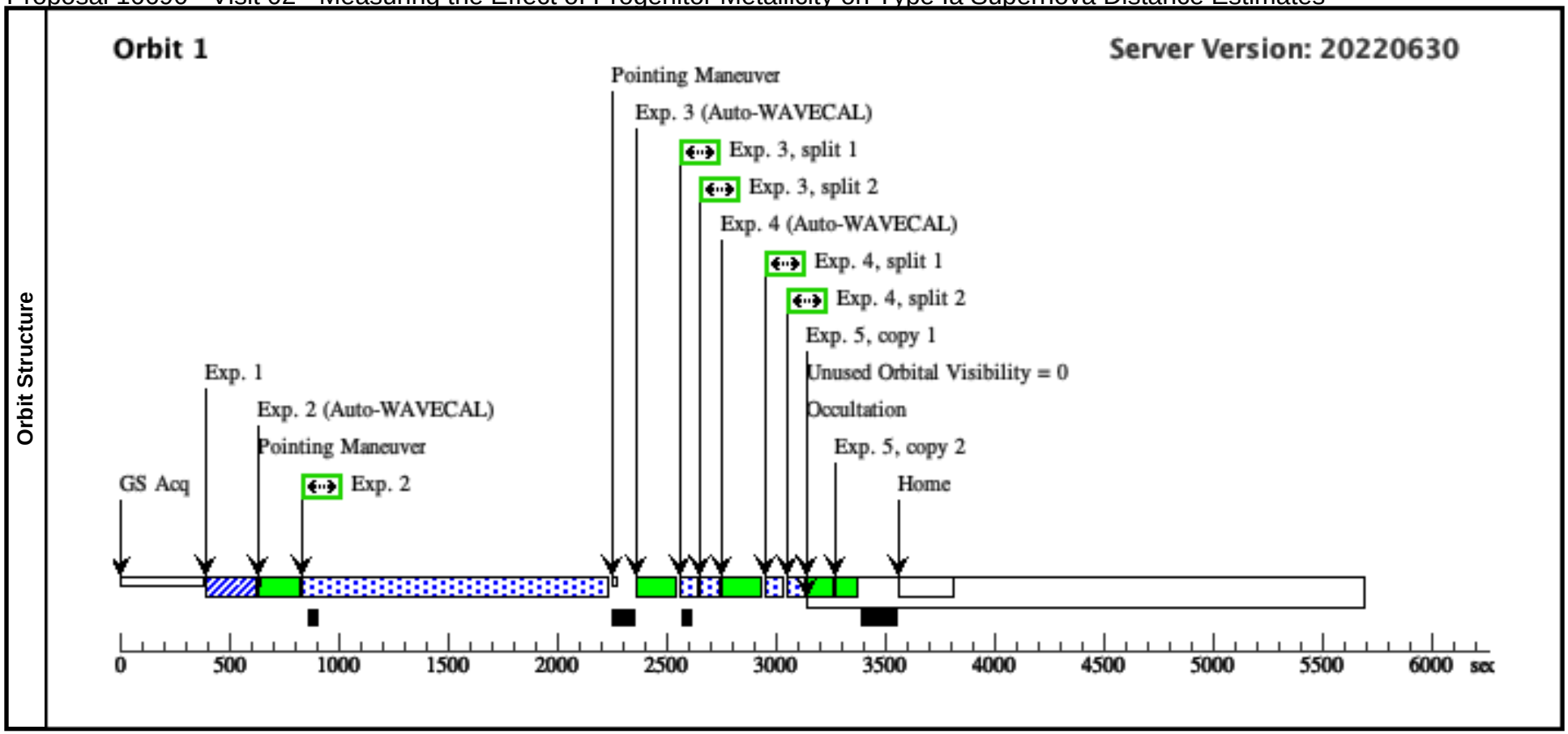
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SN2022HRS	RA: 12 43 34.3500 (190.8931250d) Dec: +11 34 36.00 (11.57667d) Equinox: J2000		V=15	Reference Frame: ICRS

Comments: Rising SN Ia currently 15.0
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SN2022HRS	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO PAIR		1 Secs (1 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186473)	(12) SN2022HRS	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1387 Secs (1387 Secs) *[==>1387 Secs]*	 ***[1]***
3		(12) SN2022HRS	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
4		(12) SN2022HRS	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
5		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				25 Secs X 2 (50 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20220630
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3, split 1
Exp. 3, split 2
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5, copy 1
Unused Orbital Visibility = 0
Occultation
Exp. 5, copy 2
Home
Exp. 1
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
GS Acq
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 03, implementation Tue Sep 20 21:00:26 GMT 2022

Diagnostic Status: Error

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

(Visit 03) Error (Orbit Planner): ORBIT PLANNER SERVER INTERNAL ERROR

(Exposure 1 (Visit 03)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 2 (Visit 03)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 3 (Visit 03)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 4 (Visit 03)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

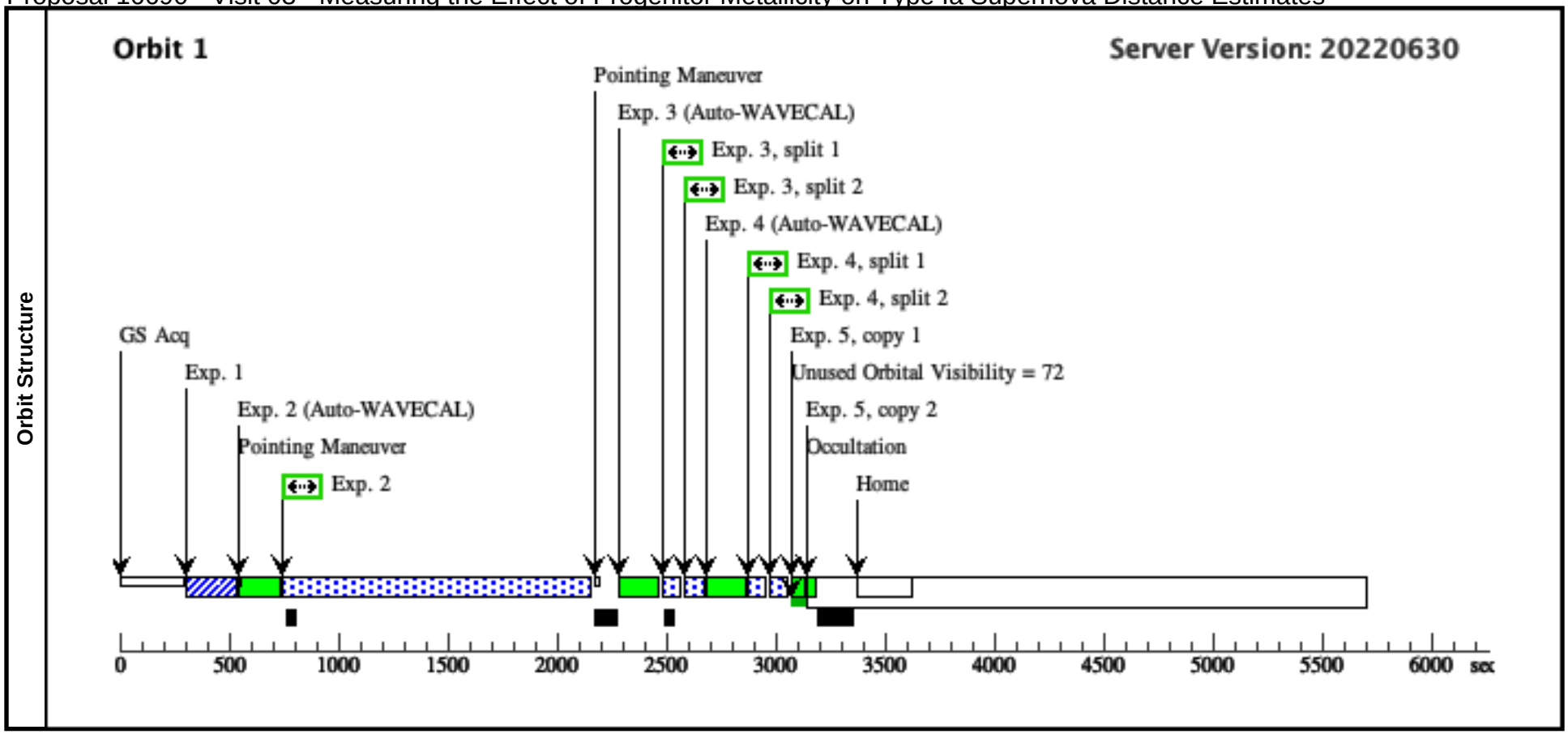
(Exposure 5 (Visit 03)) Error (Form): Exposure Time is a required field.

Generic Targets

#	Name	Criteria	Description
(3)	SN3	TOO	SUPERNOVA TYPE IA

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) SN3	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		1 Secs (1 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186473)	(3) SN3	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1400 Secs (1400 Secs) *[==>1400 Secs]*	 ***[1]***
3		(3) SN3	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
4		(3) SN3	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
5		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20220630
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3, split 1
Exp. 3, split 2
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5, copy 1
Unused Orbital Visibility = 72
Exp. 5, copy 2
Occultation
Home
GS Acq
Exp. 1
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 04, implementation Tue Sep 20 21:00:26 GMT 2022

Diagnostic Status: Error

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

(Visit 04) Error (Orbit Planner): ORBIT PLANNER SERVER INTERNAL ERROR

(Exposure 1 (Visit 04)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 2 (Visit 04)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 3 (Visit 04)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 4 (Visit 04)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

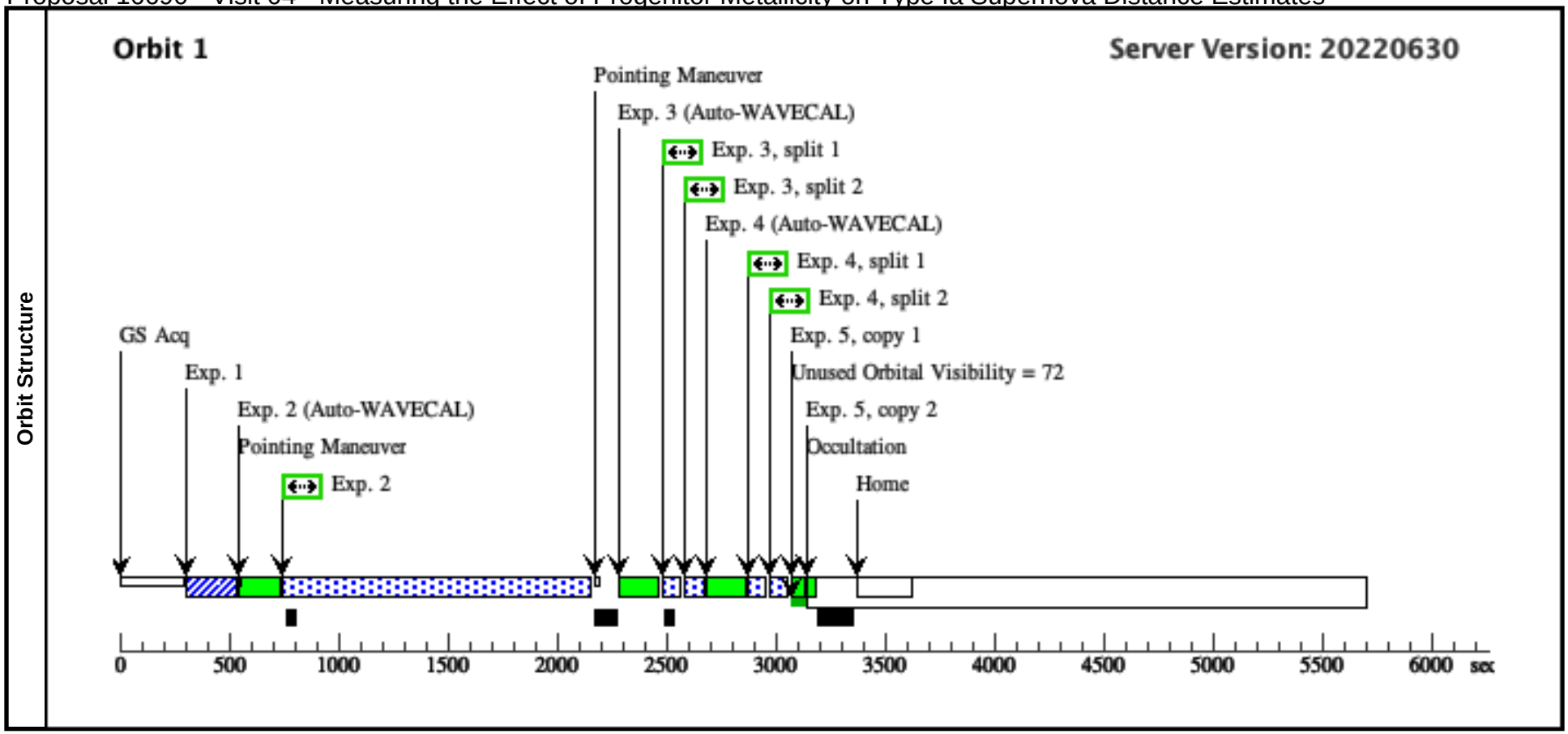
(Exposure 5 (Visit 04)) Error (Form): Exposure Time is a required field.

Generic Targets

#	Name	Criteria	Description
(4)	SN4	TOO	SUPERNOVA TYPE IA

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) SN4	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		1 Secs (1 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186473)	(4) SN4	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1400 Secs (1400 Secs) *[==>1400 Secs]*	 ***[1]***
3		(4) SN4	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
4		(4) SN4	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			50 Secs (100 Secs) *[==>50 Secs (Split 1)]* *[==>50 Secs (Split 2)]*	 ***[1]***
5		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20220630
Pointing Maneuver
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Exp. 3, split 1
Exp. 3, split 2
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5, copy 1
Unused Orbital Visibility = 72
Exp. 5, copy 2
Occultation
Home
GS Acq
Exp. 1
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Exp. 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 05, implementation Tue Sep 20 21:00:27 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Fixed Targets

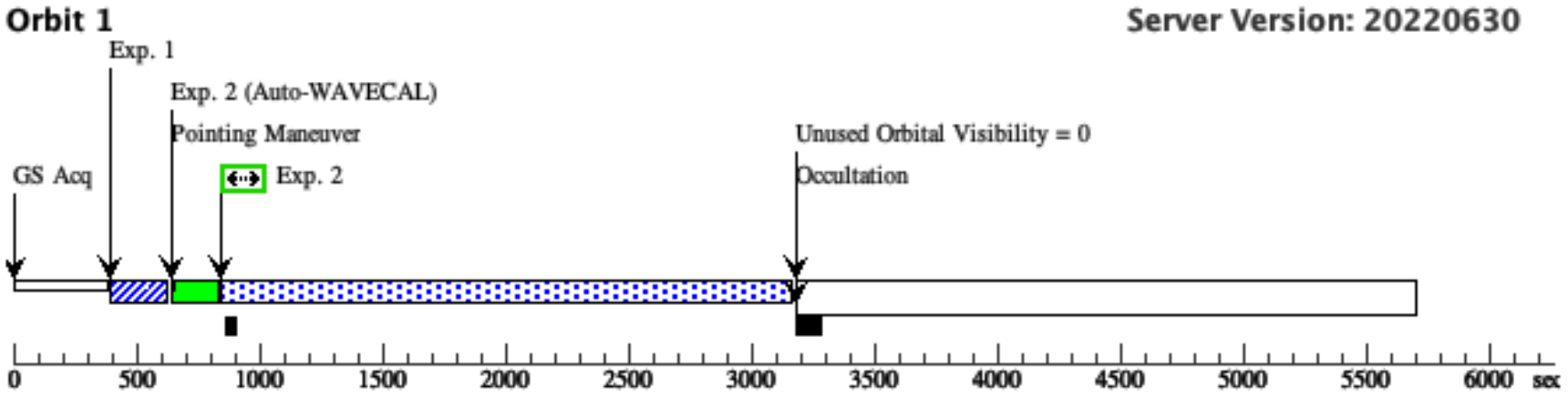
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	SN2022UIV	RA: 08 48 35.1730 (132.1465542d) Dec: +30 42 4.02 (30.70112d) Equinox: J2000		V=16	Reference Frame: ICRS

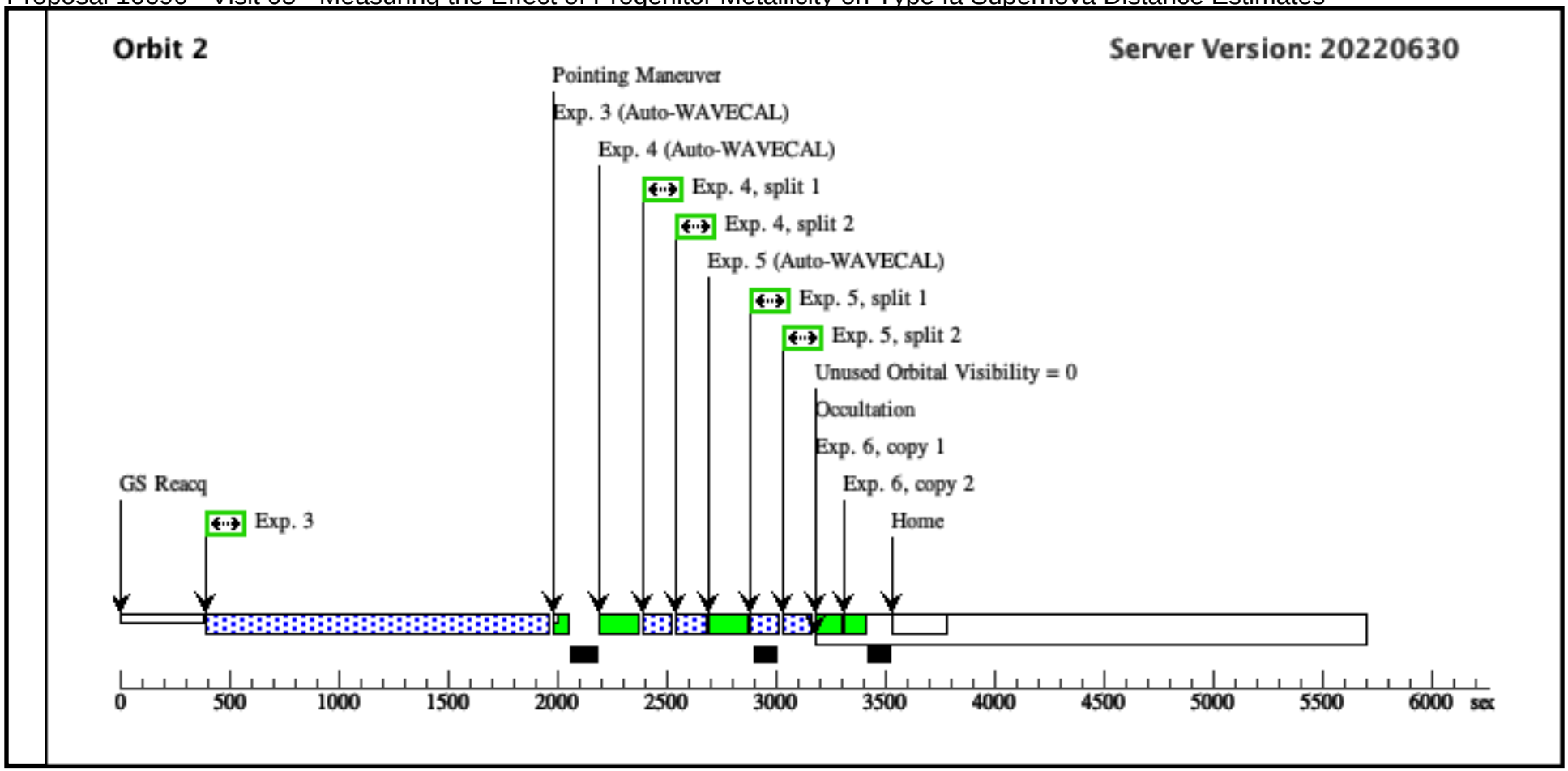
Comments: Rising SN Ia currently 17.6
Category=EXT-STAR
Description=[SUPERNOVA TYPE IA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(13) SN2022UIV	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1BE		2 Secs (2 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186468)	(13) SN2022UIV	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				2310 Secs (2310 Secs) *[==>2310 Secs]*	 ***[1]***
3	(STIS.sp.186471)	(13) SN2022UIV	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1560 Secs (1560 Secs) *[==>1560 Secs]*	 ***[2]***
4		(13) SN2022UIV	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
5		(13) SN2022UIV	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
6		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				25 Secs X 2 (50 Secs) *[==>(Copy 1)]* *[==>(Copy 2)]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
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Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5 (Auto-WAVECAL)
Exp. 5, split 1
Exp. 5, split 2
Unused Orbital Visibility = 0
Occultation
Exp. 6, copy 1
Exp. 6, copy 2
Home
GS Reacq
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 06, implementation Tue Sep 20 21:00:27 GMT 2022

Diagnostic Status: Error

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

(Visit 06) Error (Orbit Planner): ORBIT PLANNER SERVER INTERNAL ERROR

(Exposure 1 (Visit 06)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 2 (Visit 06)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 3 (Visit 06)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 4 (Visit 06)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 5 (Visit 06)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 6 (Visit 06)) Error (Form): Exposure Time is a required field.

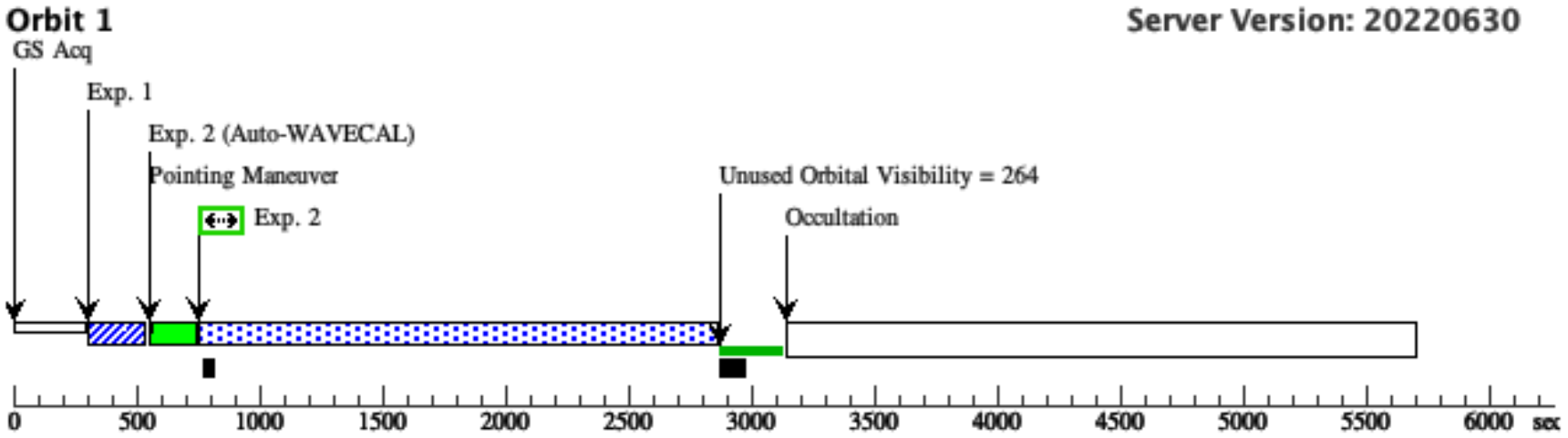
Generic Targets

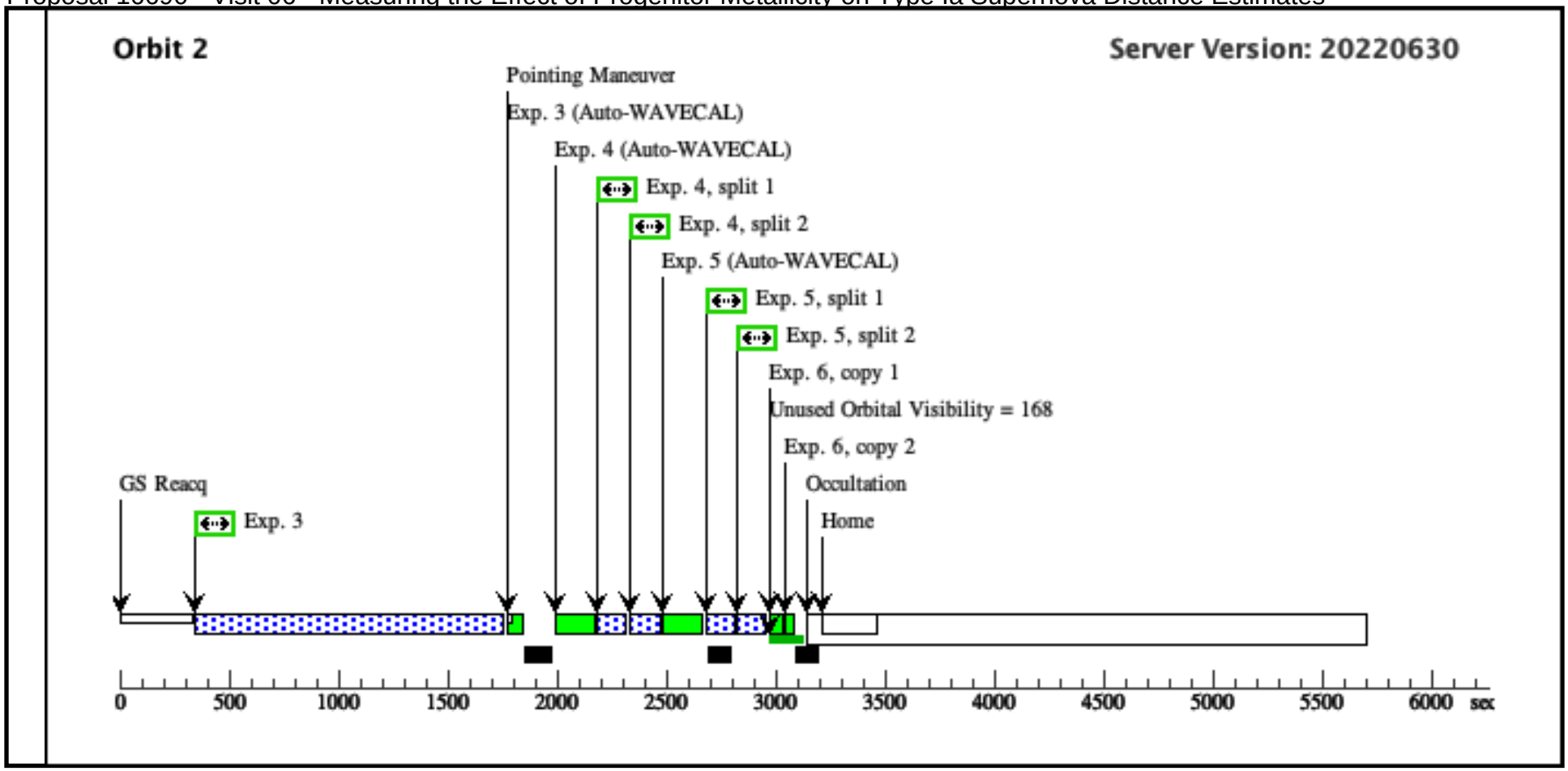
#	Name	Criteria	Description
(6)	SN6	TOO	SUPERNOVA TYPE IA

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) SN6	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		2 Secs (2 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.186468)	(6) SN6	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				2100 Secs (2100 Secs) *[==>2100 Secs]*	 ***[1]***
3	(STIS.sp.186471)	(6) SN6	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1400 Secs (1400 Secs) *[==>1400 Secs]*	 ***[2]***
4		(6) SN6	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
5		(6) SN6	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
6		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5 (Auto-WAVECAL)
Exp. 5, split 1
Exp. 5, split 2
Exp. 6, copy 1
Unused Orbital Visibility = 168
Exp. 6, copy 2
Occultation
Home
GS Reacq
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 07, implementation Tue Sep 20 21:00:27 GMT 2022

Diagnostic Status: Error

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

(Visit 07) Error (Orbit Planner): ORBIT PLANNER SERVER INTERNAL ERROR

(Exposure 1 (Visit 07)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

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(Exposure 3 (Visit 07)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 4 (Visit 07)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 5 (Visit 07)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 6 (Visit 07)) Error (Form): Exposure Time is a required field.

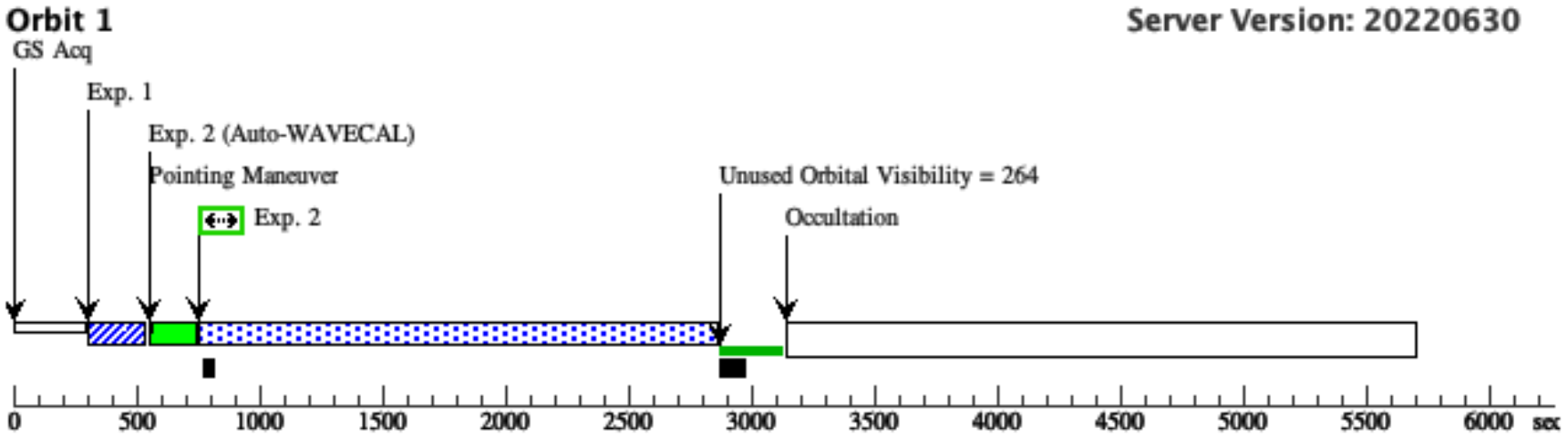
Generic Targets

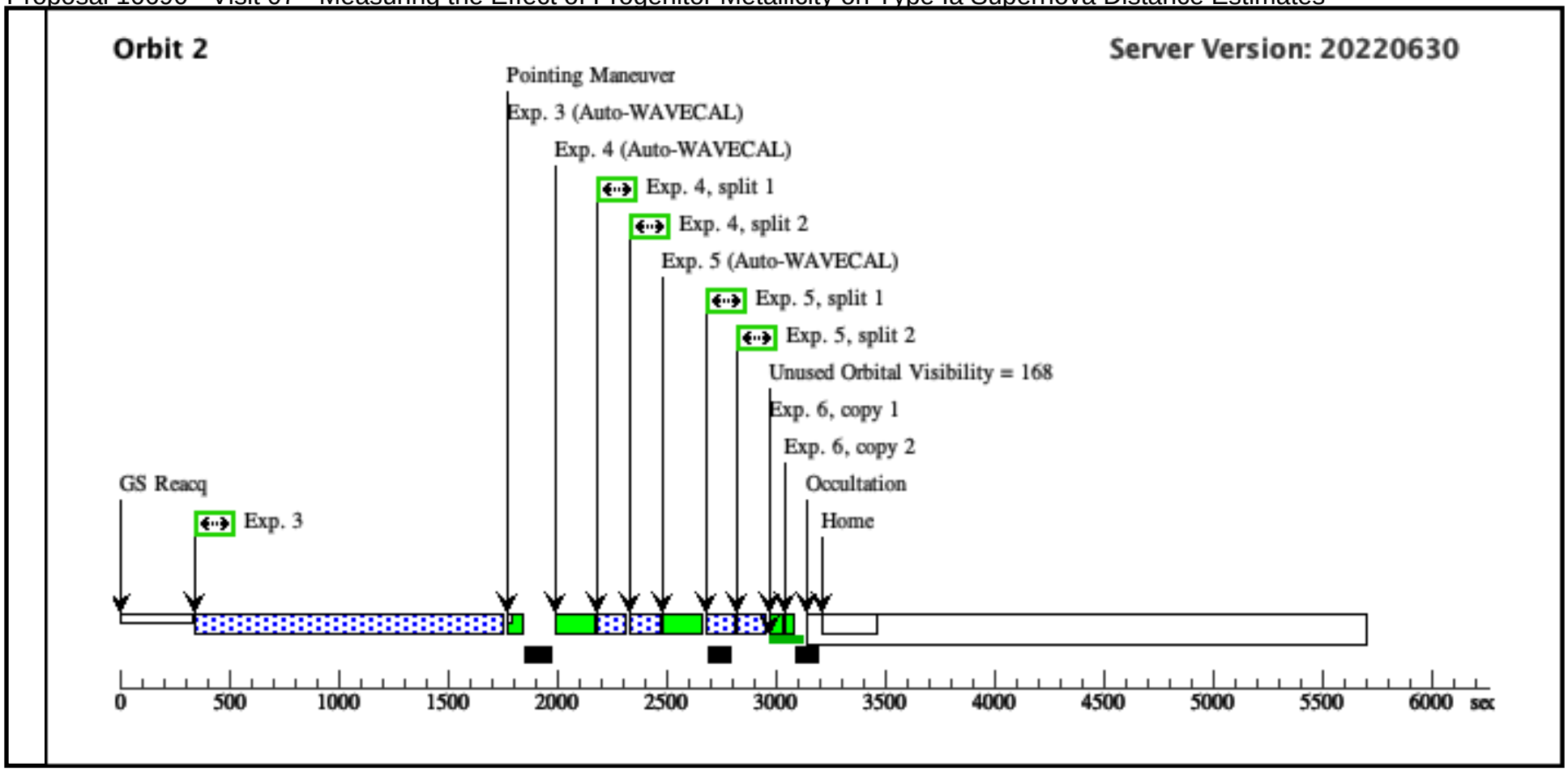
#	Name	Criteria	Description
(7)	SN7	TOO	SUPERNOVA TYPE IA

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) SN7	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		2 Secs (2 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.18 6468)	(7) SN7	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				2100 Secs (2100 Secs) *[==>2100 Secs]*	 ***[1]***
3	(STIS.sp.18 6471)	(7) SN7	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1400 Secs (1400 Secs) *[==>1400 Secs]*	 ***[2]***
4		(7) SN7	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
5		(7) SN7	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
6		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 5 (Auto-WAVECAL)
Exp. 5, split 1
Exp. 5, split 2
Unused Orbital Visibility = 168
Exp. 6, copy 1
Exp. 6, copy 2
Occultation
Home
GS Reacq
Exp. 3
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16690, Visit 08, implementation Tue Sep 20 21:00:27 GMT 2022

Diagnostic Status: Error

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

(Visit 08) Error (Orbit Planner): ORBIT PLANNER SERVER INTERNAL ERROR

(Exposure 1 (Visit 08)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 2 (Visit 08)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 3 (Visit 08)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 4 (Visit 08)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 5 (Visit 08)) Error (Form): Illegal use of Generic Target or ANY target. See full description for details

(Exposure 6 (Visit 08)) Error (Form): Exposure Time is a required field.

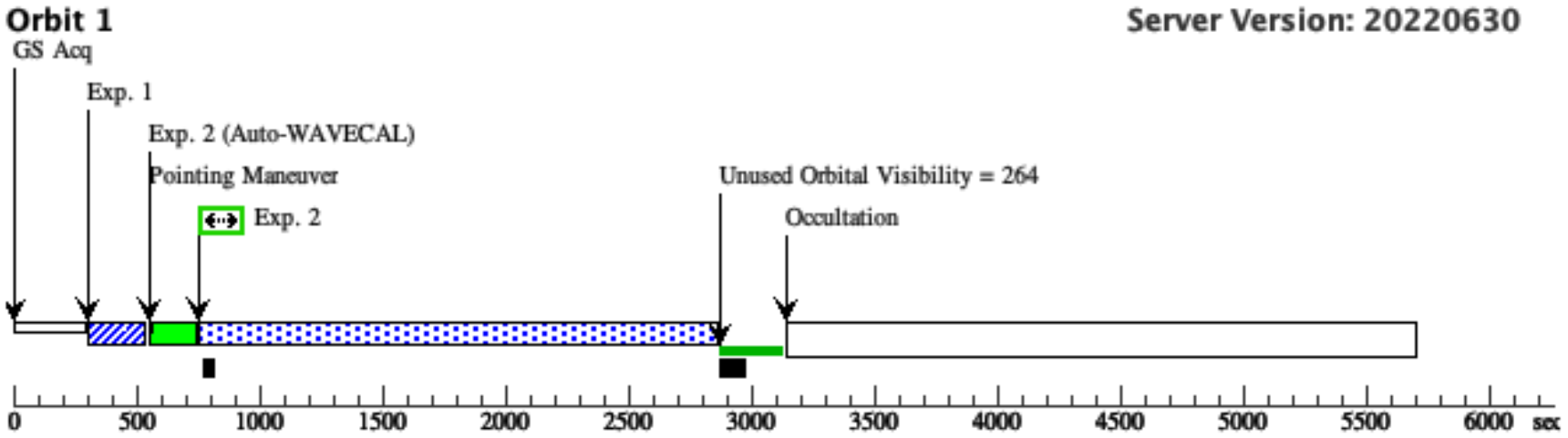
Generic Targets

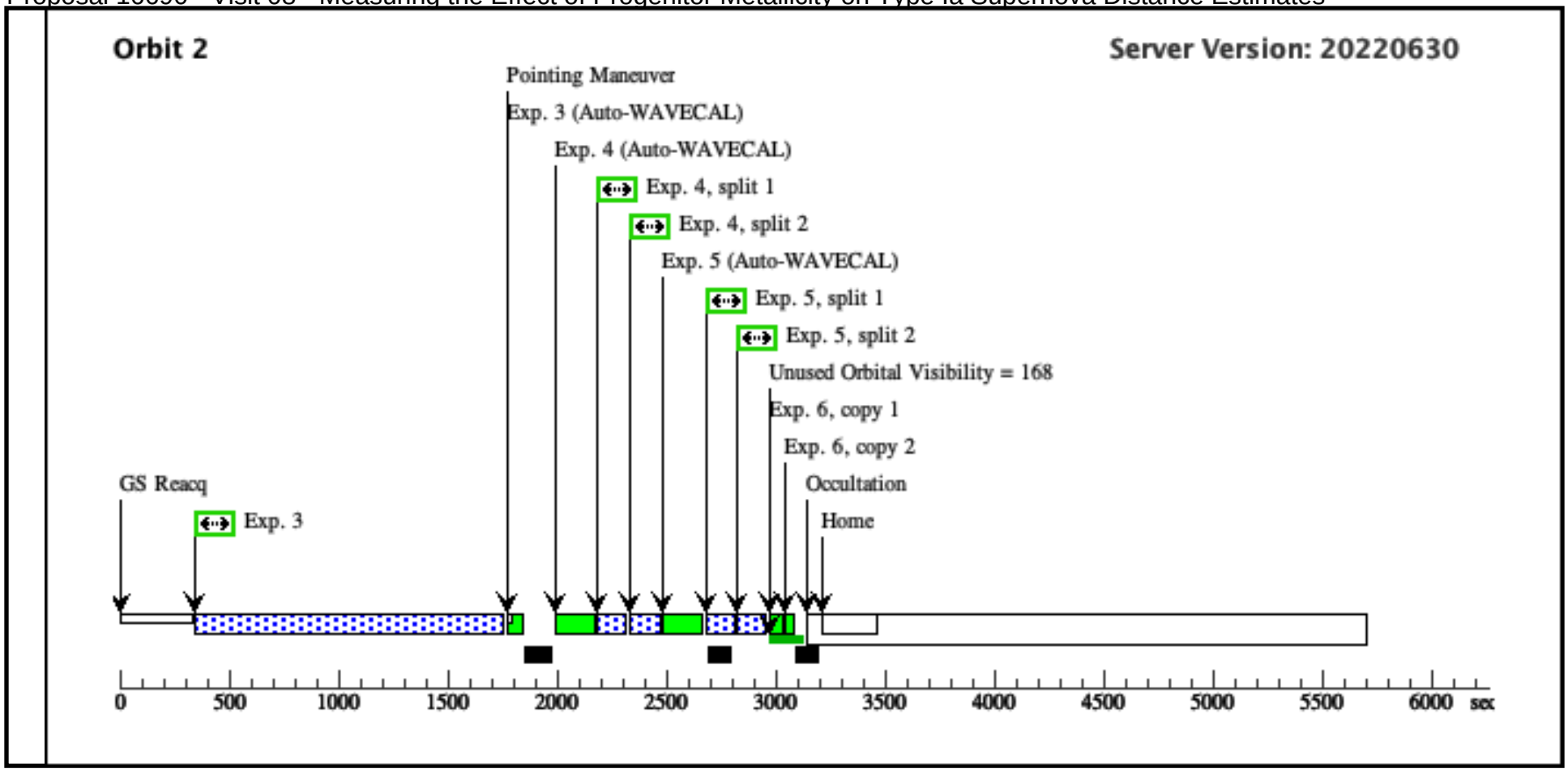
#	Name	Criteria	Description
(8)	SN8	TOO	SUPERNOVA TYPE IA

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) SN8	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		2 Secs (2 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.18 6468)	(8) SN8	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				2100 Secs (2100 Secs) *[==>2100 Secs]*	 ***[1]***
3	(STIS.sp.18 6471)	(8) SN8	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				1400 Secs (1400 Secs) *[==>1400 Secs]*	 ***[2]***
4		(8) SN8	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
5		(8) SN8	STIS/CCD, ACCUM, 52X0.2E1	G750L 7751 A	CR-SPLIT=2			200 Secs (200 Secs) *[==>100 Secs (Split 1)]* *[==>100 Secs (Split 2)]*	 ***[2]***
6		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***

Orbit Structure

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6000
sec