15488 - UV Spectroscopy of the Nearby Superluminous Supernova SN2018bsz

Cycle: 25, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Mr. Peter Blanchard (PI) (Contact)	**Harvard University**	**pblanchard@cfa.harvard.edu**
Matt Nicholl (CoI)	Harvard University	matt.nicholl@cfa.harvard.edu
Prof. Edo Berger (CoI)	Harvard University	eberger@cfa.harvard.edu
Prof. Ryan Chornock (CoI)	Ohio University	chornock@ohio.edu
Dr. Raffaella Margutti (CoI)	Northwestern University	rafmargutti@gmail.com
Dr. Deanne Coppejans (CoI)	Northwestern University	deanne.coppejans@gmail.com
Dr. Kate Denham Alexander (CoI)	Northwestern University	katedenhamalexander@gmail.com
Dr. Dan Milisavljevic (CoI)	Purdue University	dmilisav@purdue.edu
Giacomo Terreran (CoI)	Northwestern University	giacomo.terreran@northwestern.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) SN2018BSZ	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	08-Jun-2018 20:03:31.0	yes

3 Total Orbits Used

ABSTRACT

The latest generation of wide-field time-domain surveys has led to the discovery of rare, extreme transients such as superluminous supernovae (SLSNe). Recently, exotic power sources such as a magnetar central engine have gained traction as a plausible explanation for their enormous luminosities. However, due to their low volumetric rates, only a handful of SLSNe have been discovered at $z < 0.1$ where the effects of the power source can be probed in the greatest detail. A key region of the spectrum for testing the effects of various proposed power sources is the UV, where the spectral energy distributions peak. Fully understanding the UV characteristics and diversity revealed by ground-based observations of high-redshift events and HST observations of low-redshift events requires additional observations. Here we propose to obtain FUV and NUV observations with HST of SN2018bsz at a redshift of $z = 0.026$, the nearest SLSN discovered to date. In addition to one epoch of FUV+NUV observations, we request two additional epochs of NUV observations to monitor the UV evolution. SN2018bsz provides an exellent opporunity to obtain high signal-to-noise UV spectroscopy that can be compared with other events with UV spectra and with radiative transfer models. Characterizing the UV spectra of low-z SLSNe with HST is critical for understanding the rest-frame UV spectra of future events that will be discovered at $z > 1$ with upcoming surveys such as LSST.

OBSERVING DESCRIPTION

We request a single visit with 2 orbits of COS/FUV and 1 orbit of STIS/NUV.

Visit

Proposal 15488, Visit 01, implementation Sat Jun 09 00:03:33 GMT 2018

Diagnostic Status: Warning

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

Special Requirements: BEFORE 02-JUL-2018:00:00:00

Diagnostics

(Visit 01) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

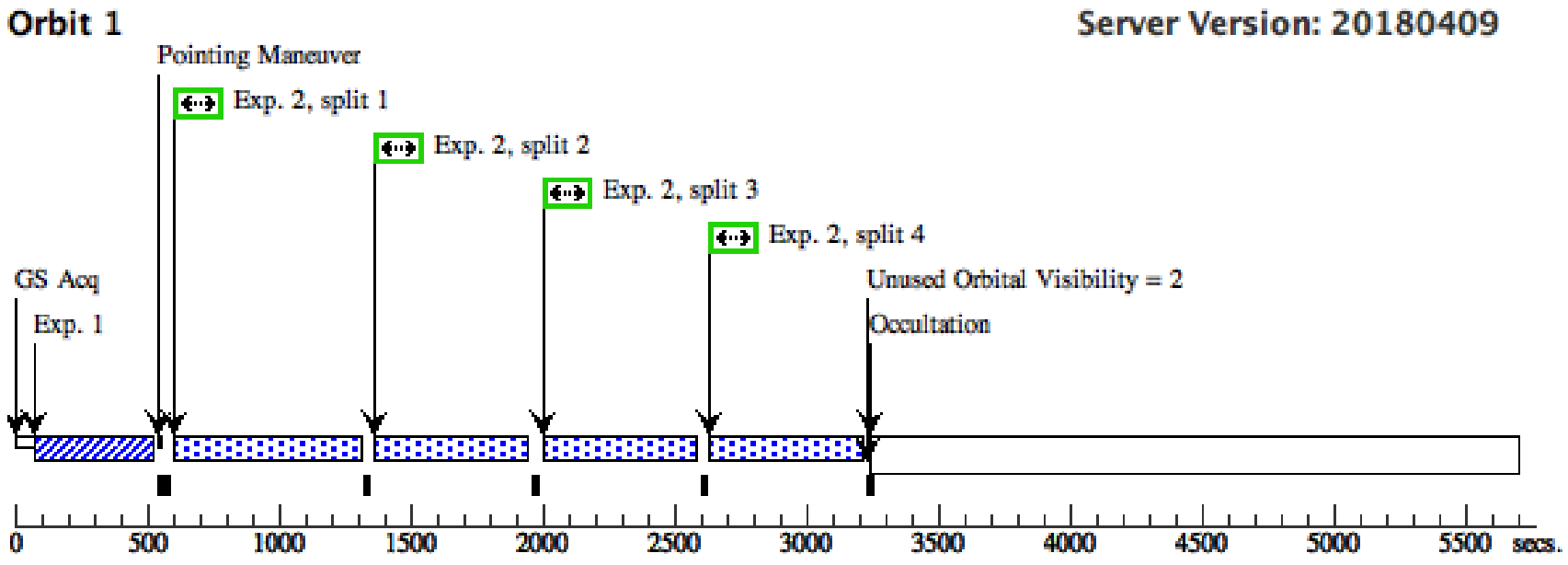
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN2018BSZ	RA: 16 09 39.1100 (242.4129583d) Dec: -32 03 45.63 (-32.06268d) Equinox: J2000		V=16.03 U = 15.50, UVW1 = 15.51, UVM2 = 16.05, UVW2 = 16.42	Reference Frame: ICRS

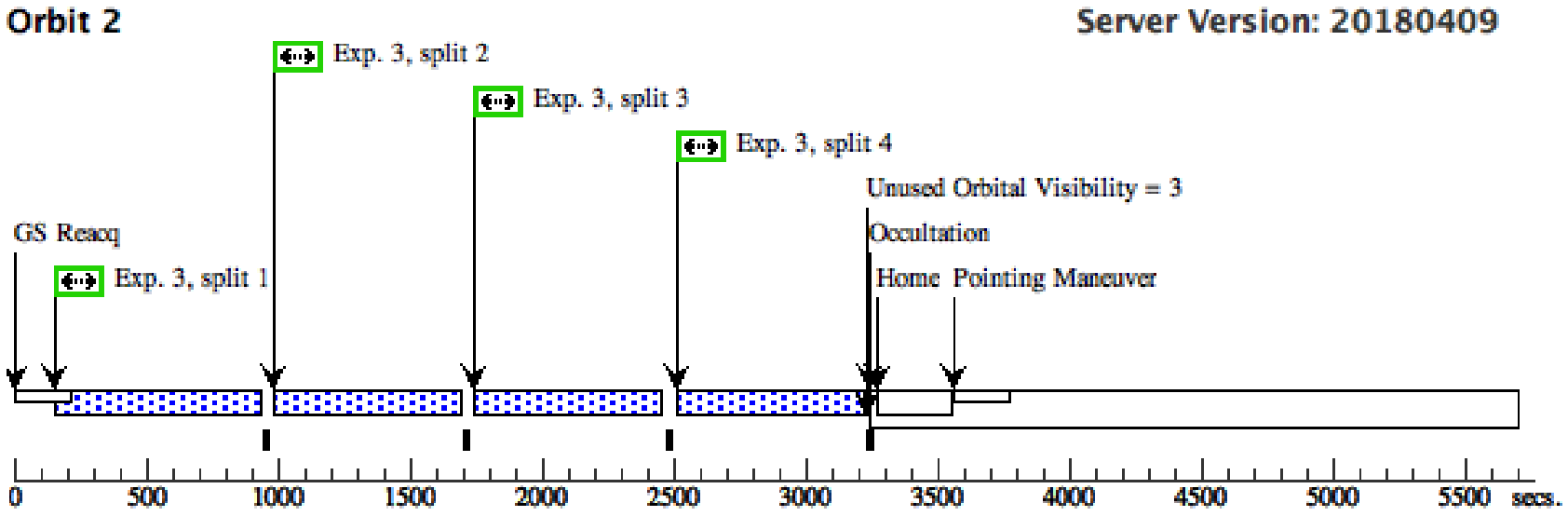
Comments:
Category=EXT-STAR
Description=[SUPERNOVA]
Extended=NO

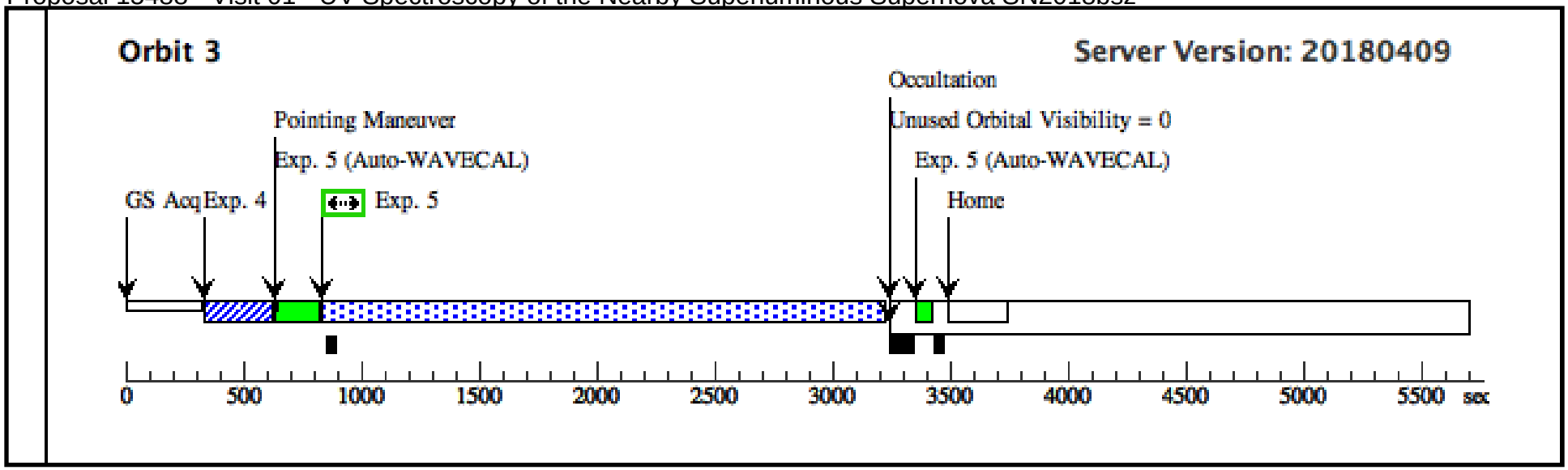
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1167707)	(1) SN2018BSZ	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				70 Secs (70 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1167733)	(1) SN2018BSZ	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=6000; FP-POS=ALL; FLASH=YES			532 Secs (2128 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
3	(COS.sp.1167786)	(1) SN2018BSZ	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=6000; FP-POS=ALL; FLASH=YES			659 Secs (2636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]***
4		(1) SN2018BSZ	STIS/CCD, ACQ, F28X50LP	MIRROR				15 Secs (15 Secs) *[==>]*	 ***[3]***
5	(STIS.sp.1167787)	(1) SN2018BSZ	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A				2378 Secs (2378 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20180409
Occultation
Pointing Maneuver
Unused Orbital Visibility = 0
Exp. 5 (Auto-WAVECAL)
Exp. 5 (Auto-WAVECAL)
GS Acq
Exp. 4
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec