



14674 - Far UV Spectroscopy of Superluminous Supernovae

Cycle: 24, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Prof. Robert M. Quimby (PI) (Contact)	San Diego State University	quimby.robert@gmail.com
Prof. Jeff Cooke (CoI)	Swinburne University of Technology	jcooke@astro.swin.edu.au
Dr. Peter J. Brown (CoI)	Texas A & M University	pbrown@physics.tamu.edu
Melanie Kae Olaes (CoI)	San Diego State University	mkbolaes@gmail.com
Dr. Ragnhild Lunnan (CoI)	California Institute of Technology	rlunnan@astro.caltech.edu

VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
07	(5) SN2017EGM	COS/FUV COS/NUV	3	13-Jun-2017 21:04:10.0	yes
08	(5) SN2017EGM	STIS/CCD STIS/NUV-MAMA	1	13-Jun-2017 21:04:12.0	yes
03	(2) SLSN2	COS/FUV COS/NUV	3	13-Jun-2017 21:04:13.0	yes
04	(2) SLSN2	STIS/CCD STIS/NUV-MAMA	1	13-Jun-2017 21:04:14.0	yes
05	(3) SLSN3	WFC3/UVIS	3	13-Jun-2017 21:04:16.0	yes
06	(4) SLSN4	WFC3/UVIS	3	13-Jun-2017 21:04:17.0	yes

14 Total Orbits Used

ABSTRACT

Optical transient searches have yielded a diverse sample of supernovae with peak luminosities 10-100 times greater than common events. These superluminous supernovae (SLSN) have been shown to be especially UV bright, which make these objects ripe for discovery at high redshifts. Indeed, archival searches have already identified SLSN out to $z=3.9$ and the first dedicated searches for these events at $z>3$ are now underway. However, there is a dearth of rest-frame, far-UV (FUV; $<1800 \text{ \AA}$) spectra of SLSN available to enable classification of these high redshift discoveries. FUV comparison spectra from optically confirmed SLSN are needed to rule out contaminating sources, such as AGN and tidal disruption events. These spectra will also provide a new window on the physical nature of SLSN, which remains a source of debate. Here we propose to more than double the entire sample SLSN with rest-frame FUV spectra. This sample will enable the first test of whether these transients can accurately be classified through only their FUV spectra.

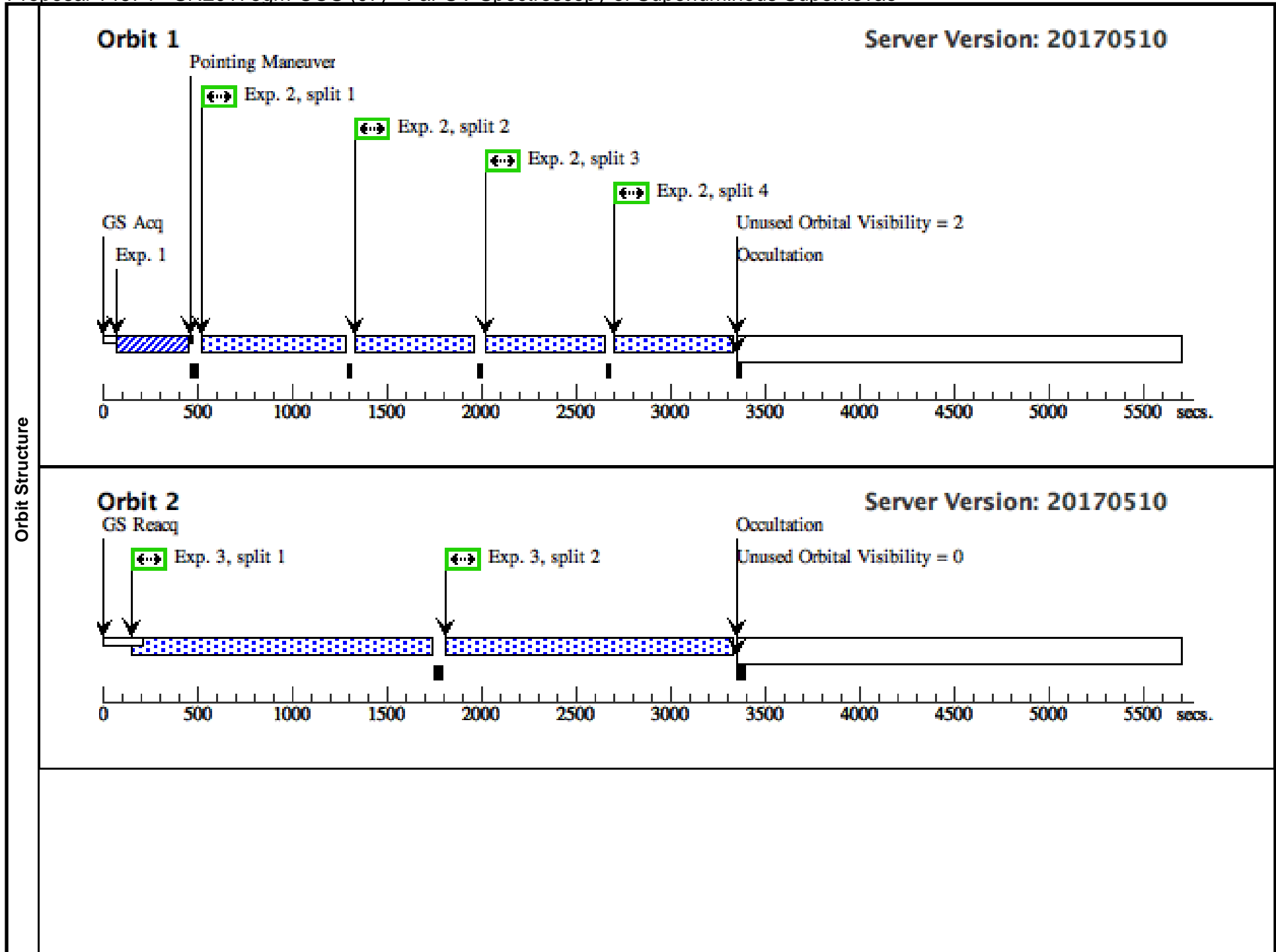
OBSERVING DESCRIPTION

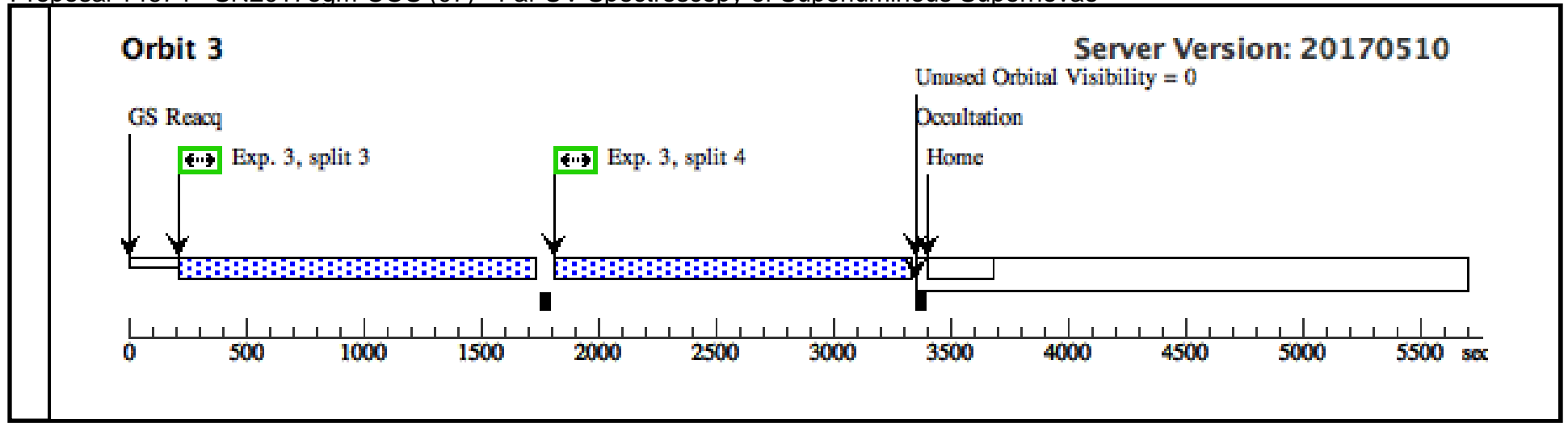
This proposal is for UV spectroscopy of four superluminous supernovae to be found in Cycle 24. Two of these targets will be at low redshifts ($z<0.4$) and the other two will be at moderate redshifts ($0.6 < z < 0.8$). For each low-redshift target we request both COS/G140L and STIS/G230L observations. These observations require fast turn around (<10 days from activation), and should be considered disruptive ToOs. The other two, moderate-redshift targets will also be ToO targets, but these will be non-disruptive. For these, we request WFC3 G280 UV grism observations.

Proposal 14674 - SN2017egm-COS (07) - Far UV Spectroscopy of Superluminous Supernovae

Wed Jun 14 01:04:19 GMT 2017

Visit	Proposal 14674, SN2017egm-COS (07), implementation Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: ON HOLD ; TOO RESPONSE TIME 10.0D <i>On Hold Comments: Target of Opportunity</i>									
	(SN2017egm-COS (07)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE. (SN2017egm-COS (07)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS									
Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	SN2017EGM Alt Name1: GAIA17BIU	RA: 10 19 5.6200 (154.7734167d) Dec: +46 27 14.15 (46.45393d) Equinox: J2000		V=15.3	Reference Frame: ICRS				
<i>Comments: Extended=NO</i>										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	SN2017egm-COS-acquisition (COS.ta.998563)	(5) SN2017EGM	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs (30 Secs) [==>]	[1]
	2	SN2017egm-COS-spectrum (COS.sp.998151)	(5) SN2017EGM	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			500 Secs (2316 Secs) [==>579.0 Secs (Split 1)] [==>579.0 Secs (Split 2)] [==>579.0 Secs (Split 3)] [==>579.0 Secs (Split 4)]	[1]
	3	SN2017-COS-spectrum (COS.sp.998151)	(5) SN2017EGM	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			1300 Secs (5884 Secs) [==>1471.0 Secs (Split 1)] [==>1471.0 Secs (Split 2)] [==>1471.0 Secs (Split 3)] [==>1471.0 Secs (Split 4)]	[2] [3]

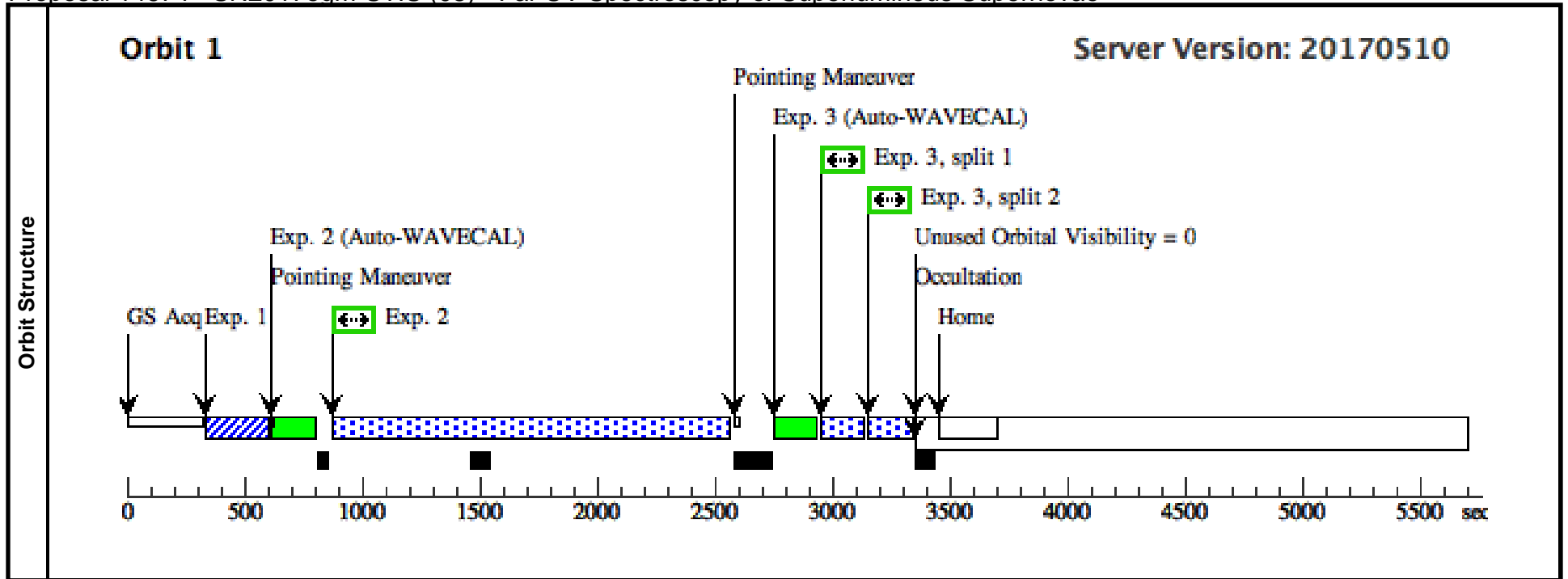




Proposal 14674 - SN2017egm-STIS (08) - Far UV Spectroscopy of Superluminous Supernovae

Wed Jun 14 01:04:19 GMT 2017

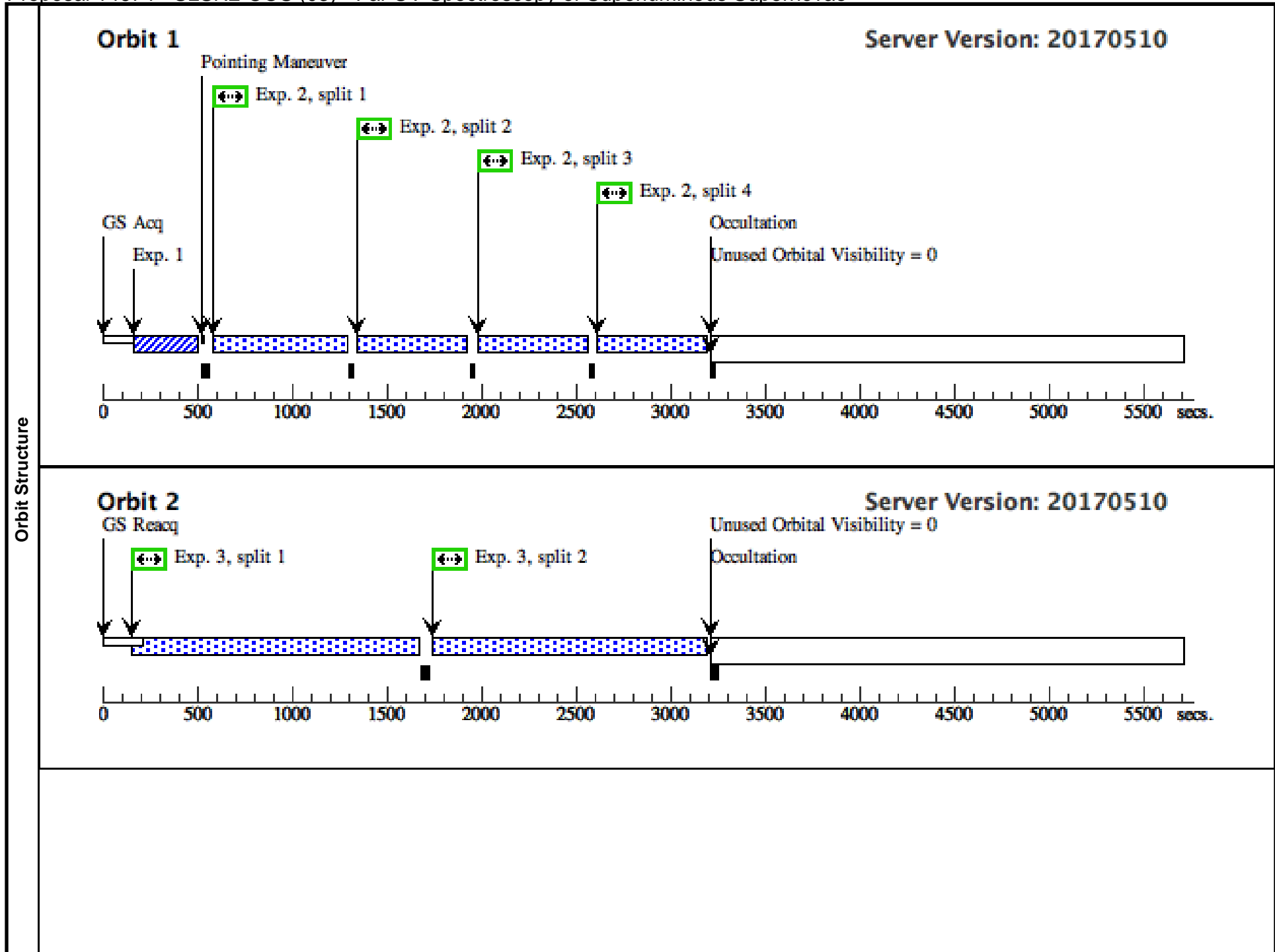
Visit	Proposal 14674, SN2017egm-STIS (08), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: AFTER 07 BY 0 D TO 2 D; ON HOLD <i>On Hold Comments: Target of Opportunity</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(5)	SN2017EGM	RA: 10 19 5.6200 (154.7734167d)		V=15.3	Reference Frame: ICRS				
		Alt Name1: GAIA17BIU	Dec: +46 27 14.15 (46.45393d)							
			Equinox: J2000							
	<i>Comments: Extended=NO</i>									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	SN2017egm-STIS-acquisition (STIS.ta.998162)	(5) SN2017EGM	STIS/CCD, ACQ, F28X50LP	MIRROR				10 Secs (10 Secs)	
									[==>]	[1]
	2	SN2017egm-STIS-230L-spectrum (STIS.sp.998154)	(5) SN2017EGM	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0			1681 Secs (1681 Secs)	
								[==>]	[1]	
	3	SN2017egm-STIS-430L-spectrum (STIS.sp.998164)	(5) SN2017EGM	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A				300 Secs (300 Secs)	
								[==>(Split 1)]		
								[==>(Split 2)]	[1]	

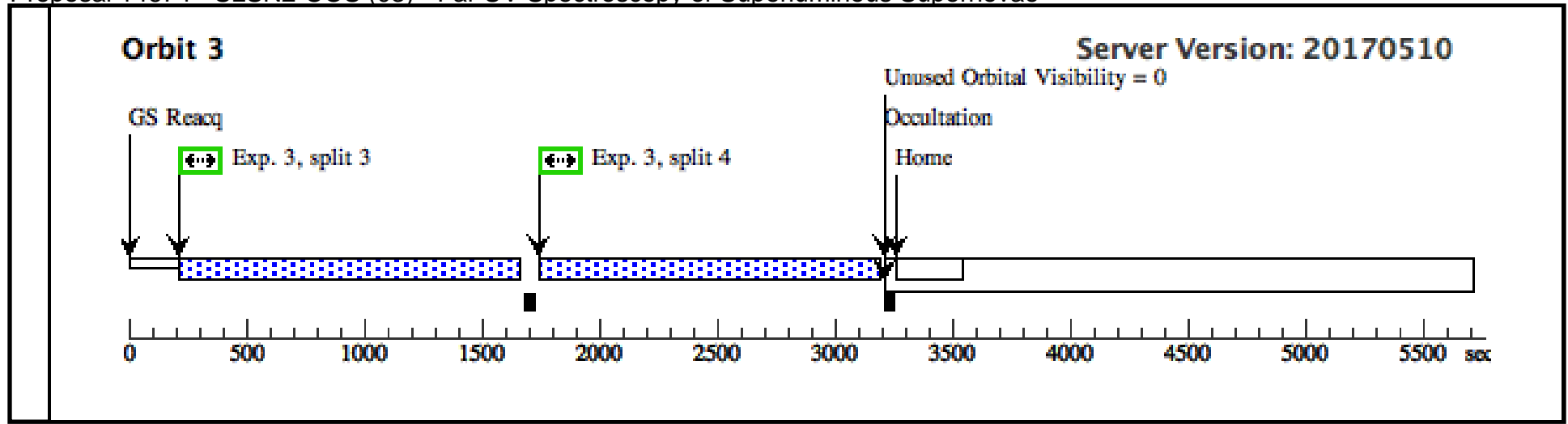


Proposal 14674 - SLSN2-COS (03) - Far UV Spectroscopy of Superluminous Supernovae

Wed Jun 14 01:04:19 GMT 2017

Visit	Proposal 14674, SLSN2-COS (03), implementation Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: ON HOLD ; TOO RESPONSE TIME 10.0D <i>On Hold Comments: Target of Opportunity</i>																																																	
	Diagnosics (SLSN2-COS (03)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS																																																	
Generic Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Criteria</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>SLSN2</td> <td>SLSN at z<0.4</td> <td></td> </tr> </tbody> </table>										#	Name	Criteria	Description	(2)	SLSN2	SLSN at z<0.4																																	
	#	Name	Criteria	Description																																														
(2)	SLSN2	SLSN at z<0.4																																																
Exposures	<table border="1"> <thead> <tr> <th>#</th> <th>Label (ETC Run)</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SLSN2-CO S-acquisition (COS.ta.826897)</td> <td>(2) SLSN2</td> <td>COS/NUV, ACQ/IMAGE, PSA</td> <td>MIRRORA</td> <td></td> <td></td> <td></td> <td>60 Secs (60 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>SLSN2-CO S-spectrum (COS.sp.826898)</td> <td>(2) SLSN2</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL</td> <td></td> <td></td> <td>500 Secs (2116 Secs) [==>529.0 Secs (Split 1)] [==>529.0 Secs (Split 2)] [==>529.0 Secs (Split 3)] [==>529.0 Secs (Split 4)]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>SLSN2-CO S-spectrum (COS.sp.826898)</td> <td>(2) SLSN2</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1105 A</td> <td>FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL</td> <td></td> <td></td> <td>1300 Secs (5600 Secs) [==>1400.0 Secs (Split 1)] [==>1400.0 Secs (Split 2)] [==>1400.0 Secs (Split 3)] [==>1400.0 Secs (Split 4)]</td> <td>[2] [3]</td> </tr> </tbody> </table>										#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	1	SLSN2-CO S-acquisition (COS.ta.826897)	(2) SLSN2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				60 Secs (60 Secs) [==>]	[1]	2	SLSN2-CO S-spectrum (COS.sp.826898)	(2) SLSN2	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			500 Secs (2116 Secs) [==>529.0 Secs (Split 1)] [==>529.0 Secs (Split 2)] [==>529.0 Secs (Split 3)] [==>529.0 Secs (Split 4)]	[1]	3	SLSN2-CO S-spectrum (COS.sp.826898)	(2) SLSN2	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			1300 Secs (5600 Secs) [==>1400.0 Secs (Split 1)] [==>1400.0 Secs (Split 2)] [==>1400.0 Secs (Split 3)] [==>1400.0 Secs (Split 4)]	[2] [3]
	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																																								
	1	SLSN2-CO S-acquisition (COS.ta.826897)	(2) SLSN2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				60 Secs (60 Secs) [==>]	[1]																																								
	2	SLSN2-CO S-spectrum (COS.sp.826898)	(2) SLSN2	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			500 Secs (2116 Secs) [==>529.0 Secs (Split 1)] [==>529.0 Secs (Split 2)] [==>529.0 Secs (Split 3)] [==>529.0 Secs (Split 4)]	[1]																																								
	3	SLSN2-CO S-spectrum (COS.sp.826898)	(2) SLSN2	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FLASH=YES; BUFFER-TIME=6000; FP-POS=ALL			1300 Secs (5600 Secs) [==>1400.0 Secs (Split 1)] [==>1400.0 Secs (Split 2)] [==>1400.0 Secs (Split 3)] [==>1400.0 Secs (Split 4)]	[2] [3]																																								

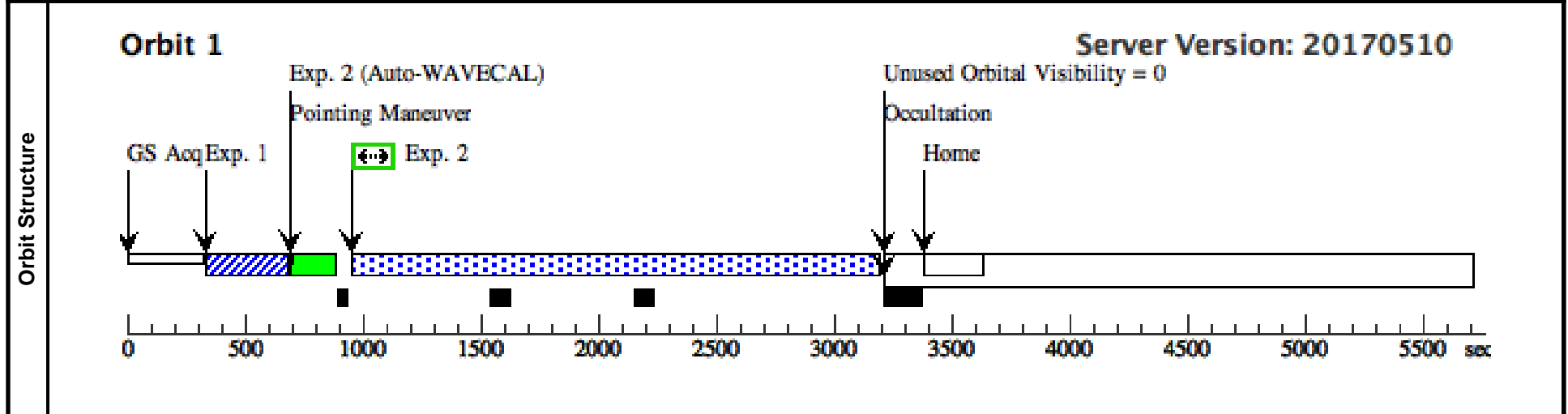




Visit	Proposal 14674, SLSN2-STIS (04), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: AFTER 03 BY 0 D TO 2 D; ON HOLD <i>On Hold Comments: Target of Opportunity</i>	

Generic Targets	#	Name	Criteria	Description
	(2)	SLSN2	SLSN at z<0.4	

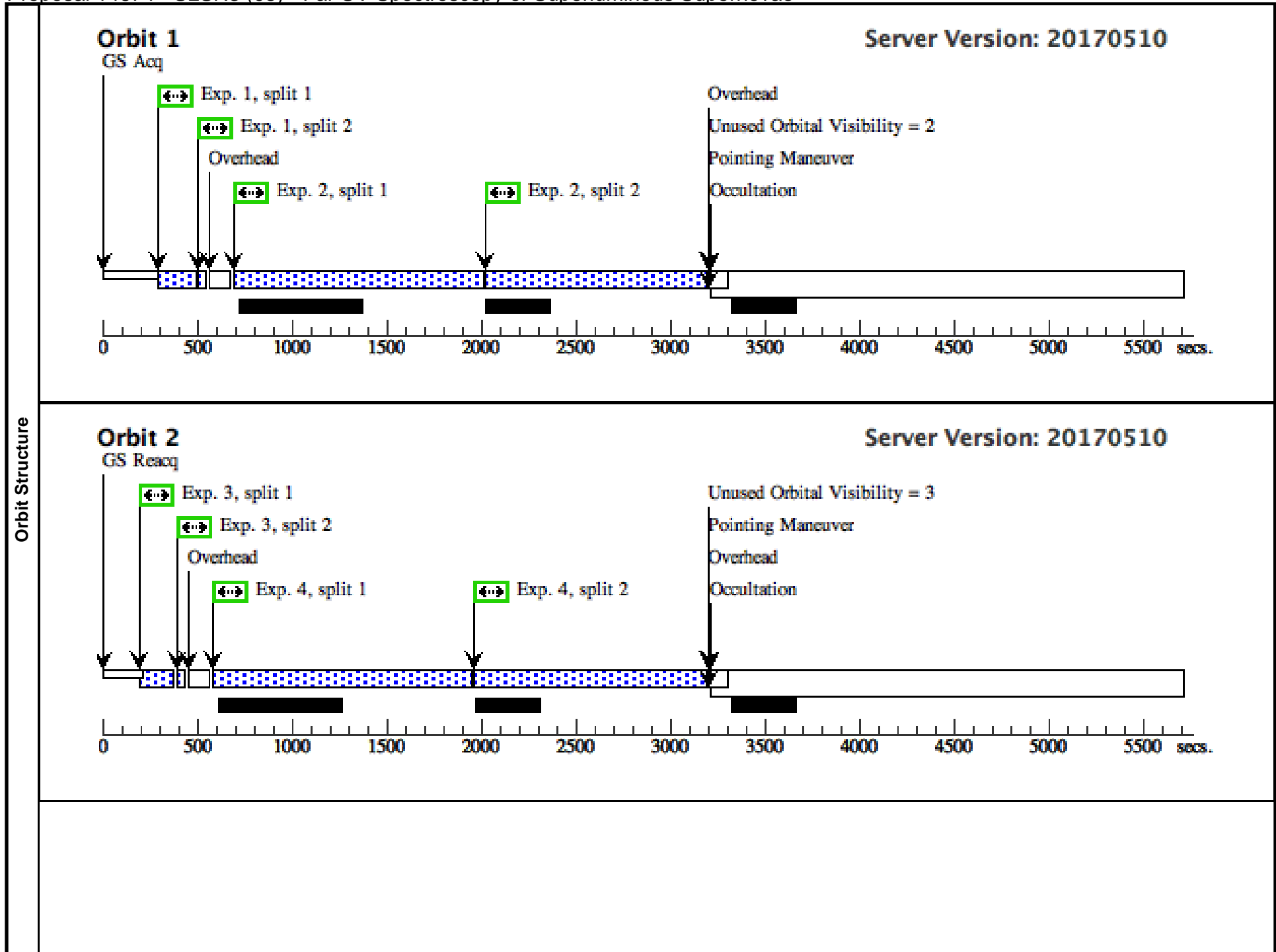
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	SLSN2-STIS-acquisition	(2) SLSN2	STIS/CCD, ACQ, F28X50LP	MIRROR					30 Secs (30 Secs) [=>]
2	SLSN2-STIS-spectrum (STIS.sp.82 6895)	(2) SLSN2	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230L 2376 A	BUFFER-TIME=60 0				500 Secs (2230 Secs) [=>2230.0 Secs]	[1]



Proposal 14674 - SLSN3 (05) - Far UV Spectroscopy of Superluminous Supernovae

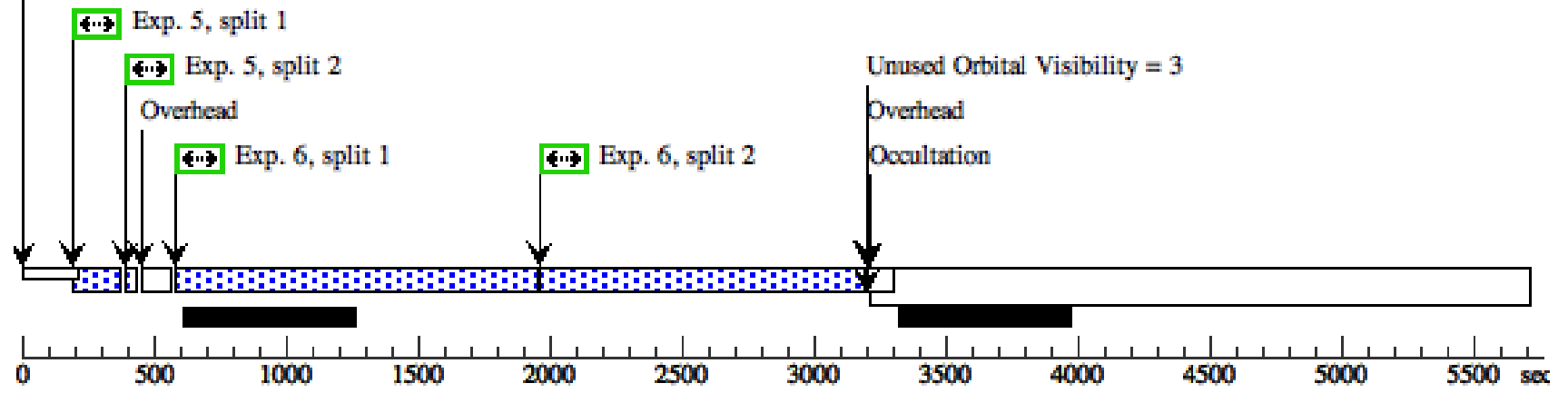
Wed Jun 14 01:04:19 GMT 2017

Generic Targets	Visit									
	#	Name	Criteria	Description						
	Proposal 14674, SLSN3 (05), implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ON HOLD <i>On Hold Comments: Target of Opportunity</i>									
	(3)	SLSN3	SLSN at 0.6<z<0.8							
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	SLSN3-WF C3-direct (WFC3UVI S.im.826768)	(3) SLSN3	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG 0.135,-4 9.865		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[1]
	2	SLSN3-WF C3-spectra (WFC3UVI S.sp.826753)	(3) SLSN3	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG 0.135,-4 9.865		2350 Secs (2348 Secs) [==>1174.0 Secs (Split 1)] [==>1174.0 Secs (Split 2)]	[1]
	3	SLSN3-WF C3-direct (WFC3UVI S.im.826768)	(3) SLSN3	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG 0.0,-50		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[2]
	4	SLSN3-WF C3-spectra (WFC3UVI S.sp.826753)	(3) SLSN3	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG 0.0,-50		2460 Secs (2458 Secs) [==>1229.0 Secs (Split 1)] [==>1229.0 Secs (Split 2)]	[2]
	5	SLSN3-WF C3-direct (WFC3UVI S.im.826768)	(3) SLSN3	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG -0.135,-50.135		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[3]
	6	SLSN3-WF C3-spectra (WFC3UVI S.sp.826753)	(3) SLSN3	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG -0.135,-50.135		2460 Secs (2458 Secs) [==>1229.0 Secs (Split 1)] [==>1229.0 Secs (Split 2)]	[3]



Orbit 3

GS Reacq

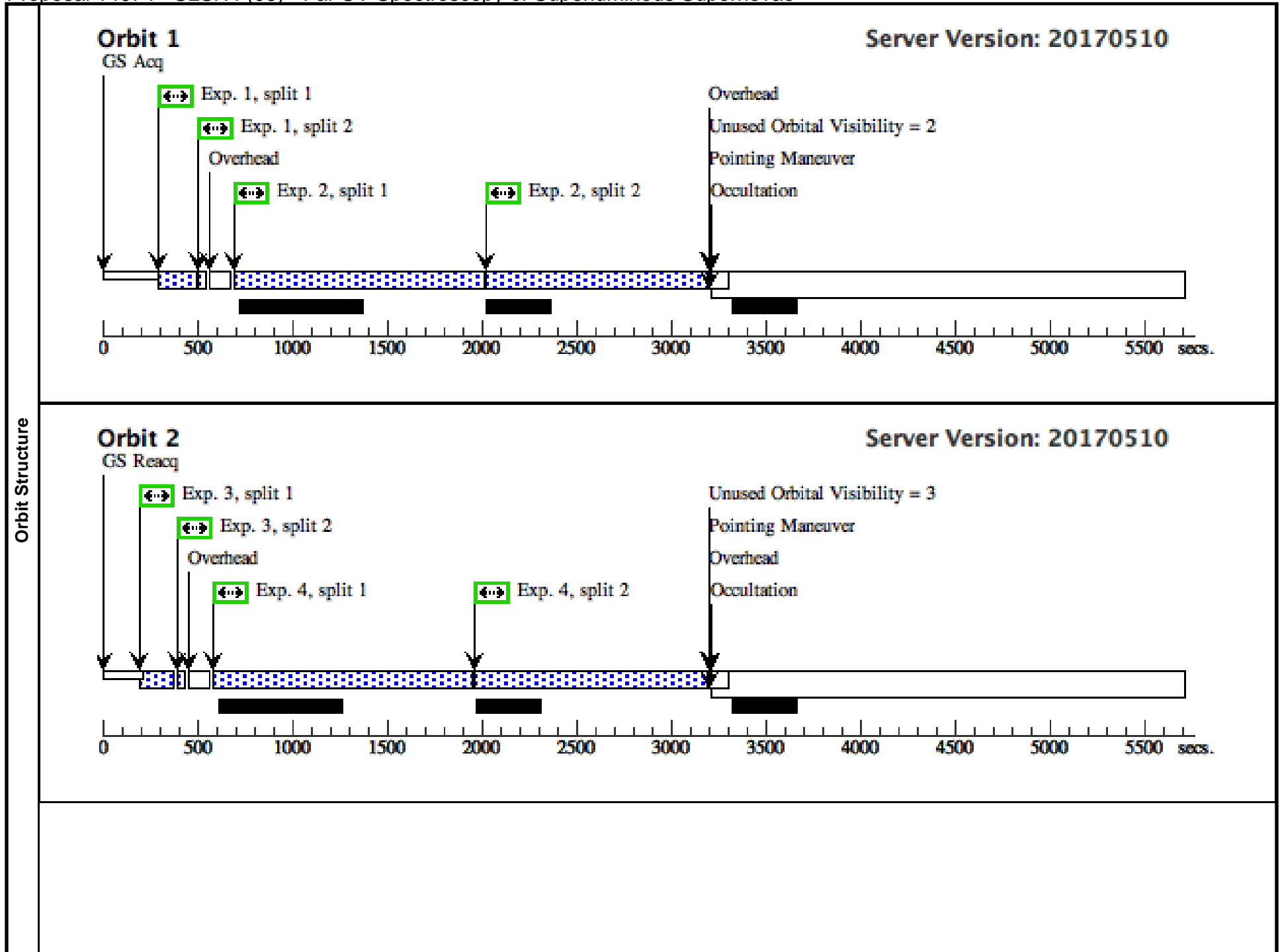


Proposal 14674 - SLSN4 (06) - Far UV Spectroscopy of Superluminous Supernovae

Wed Jun 14 01:04:19 GMT 2017

Generic Targets	#	Name	Criteria	Description						
		(4)	SLSN4	SLSN at 0.6<z<0.8						

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	SLSN4-WF C3-direct (WFC3UVI S.im.826768)	(4) SLSN4	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG 0.135,-4 9.865		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[1]
	2	SLSN4-WF C3-spectra (WFC3UVI S.sp.826753)	(4) SLSN4	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG 0.135,-4 9.865		2350 Secs (2348 Secs) [==>1174.0 Secs (Split 1)] [==>1174.0 Secs (Split 2)]	[1]
	3	SLSN4-WF C3-direct (WFC3UVI S.im.826768)	(4) SLSN4	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG 0.0,-50		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[2]
	4	SLSN4-WF C3-spectra (WFC3UVI S.sp.826753)	(4) SLSN4	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG 0.0,-50		2460 Secs (2458 Secs) [==>1229.0 Secs (Split 1)] [==>1229.0 Secs (Split 2)]	[2]
	5	SLSN4-WF C3-direct (WFC3UVI S.im.826768)	(4) SLSN4	WFC3/UVIS, ACCUM, G280-REF	F200LP	FLASH=8; CR-SPLIT=2	POS TARG -0.135,-50.135		90 Secs (88 Secs) [==>44.0 Secs (Split 1)] [==>44.0 Secs (Split 2)]	[3]
	6	SLSN4-WF C3-spectra (WFC3UVI S.sp.826753)	(4) SLSN4	WFC3/UVIS, ACCUM, UVIS	G280	CR-SPLIT=2	POS TARG -0.135,-50.135		2460 Secs (2458 Secs) [==>1229.0 Secs (Split 1)] [==>1229.0 Secs (Split 2)]	[3]



Orbit 3

GS Reacq

