



14665 - Ultraviolet Spectra of a Normal Standard Candle

Cycle: 24, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. Peter J. Brown (PI) (Contact)	Texas A & M University	pbrown@physics.tamu.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>
05	(2) SN2017ERP	STIS/CCD STIS/NUV-MAMA	3	26-Jun-2017 21:02:54.0	yes
06	(2) SN2017ERP	STIS/CCD STIS/NUV-MAMA	3	26-Jun-2017 21:02:56.0	yes
07	(2) SN2017ERP	STIS/CCD STIS/NUV-MAMA	3	26-Jun-2017 21:02:58.0	yes
08	(2) SN2017ERP	STIS/CCD STIS/NUV-MAMA	5	26-Jun-2017 21:03:00.0	yes

14 Total Orbits Used

ABSTRACT

Type Ia Supernovae (SNe Ia) are important tools in the study of our universe, but are not fully understood at rest-frame ultraviolet (UV) wavelengths. High quality spectra in the mid-UV (<2500 Angstroms) are scarce because of the need for space based observations and the faint flux levels in the UV due to the absorption of iron peak elements. While bad for flux levels, the iron line blanketing makes the UV spectrum very sensitive to

differences in the temperature, density, and metallicity--important ingredients for SN modeling. An explosion of ultraviolet observations of type Ia Supernovae (SNe Ia) has revealed a diversity in the UV properties of even optically normal SNe. HST has recently obtained several excellent UV spectra reaching mid-UV wavelengths for examples of SNe that are "UV-blue" or have broad or moderately narrow optical light curves. Yet we are still lacking a good UV spectrum of an UV and optically normal SN Ia. Dozens of UV light curves from Swift/UVOT and dozens of rest-frame UV observations of high redshift SNe observed from the ground and HST will benefit from the physical insight gained from high quality UV spectra. These spectra will be crucial to modelling the varied behavior we observe in the UV. We propose target of opportunity observations with HST to provide mid-UV photometry and spectroscopy of a normal SN Ia this cycle. These will serve as benchmarks against which to compare photometry, other spectroscopy, and theoretical models.

OBSERVING DESCRIPTION

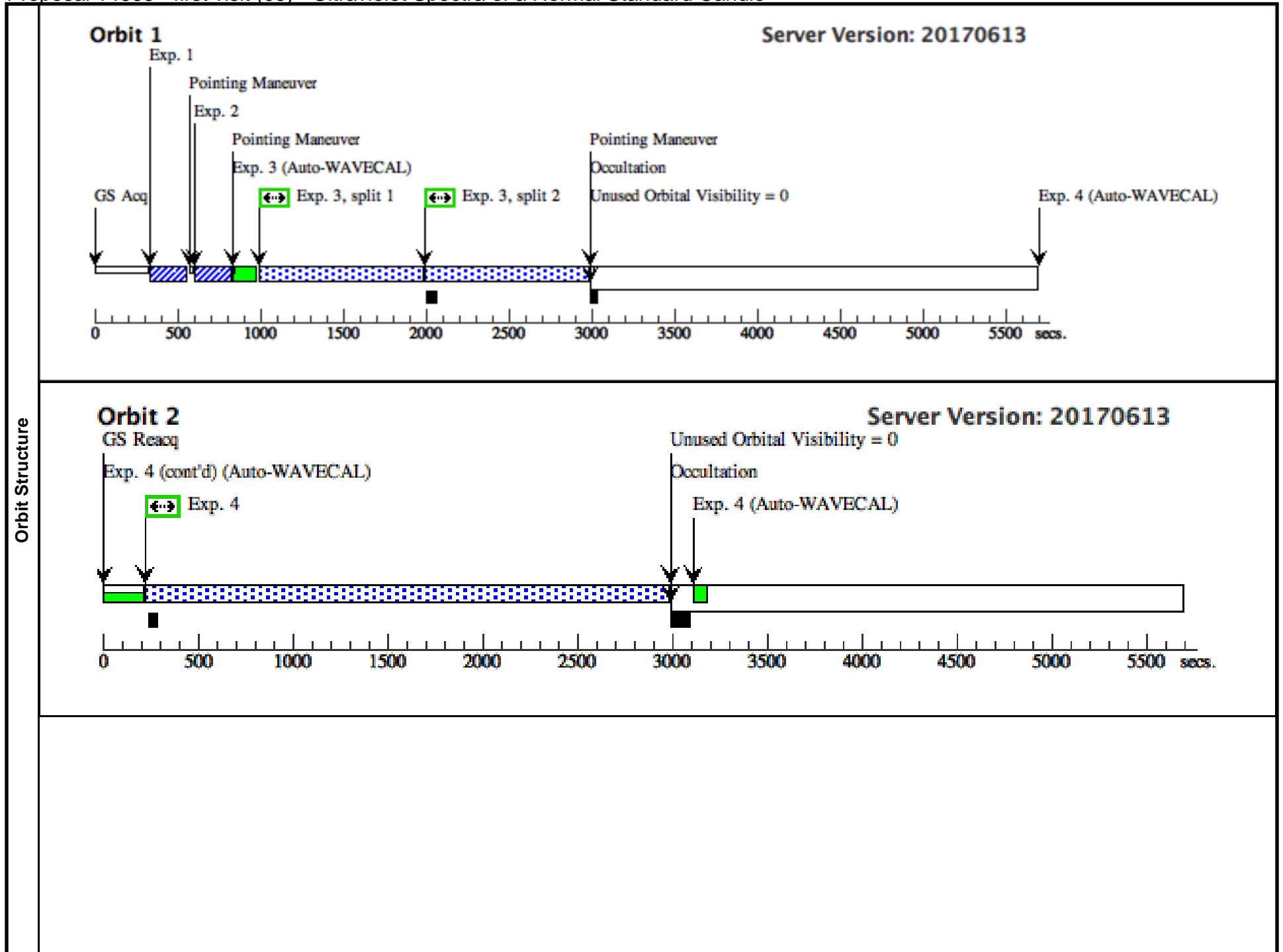
This is a target of opportunity program for UV observations of one type Ia supernova to be discovered during cycle 24. We will observe at four epochs spaced by five days for 3,3,3, and 5 orbits each for our nominal target.

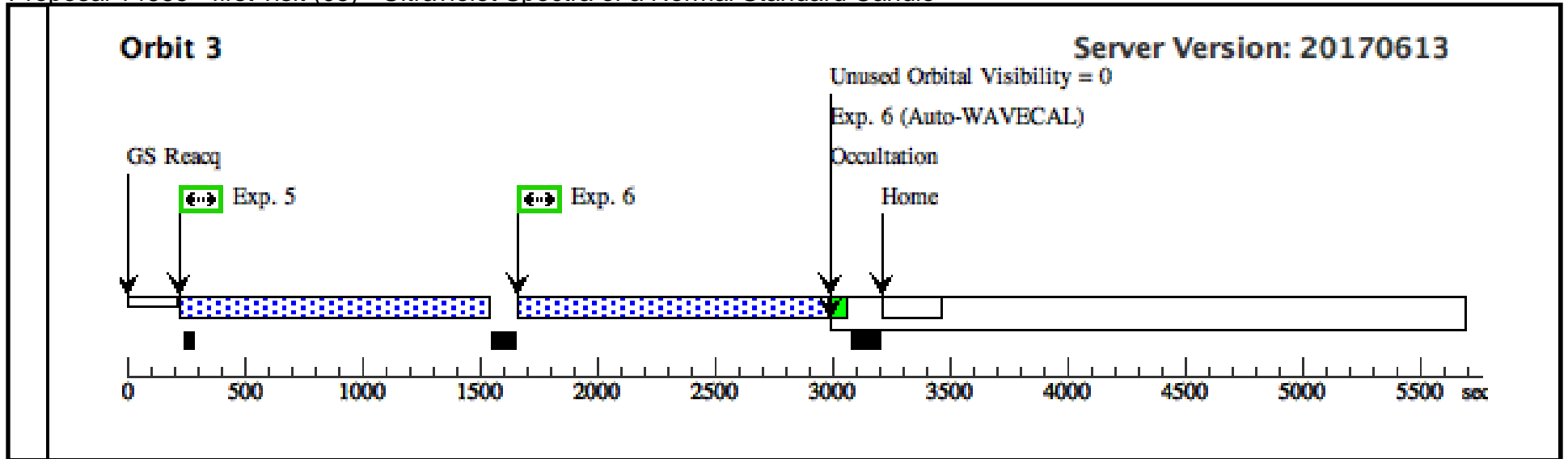
Swift UV observations will have been performed prior to triggering and will be used to perform the STIS-MAMA safety checks. Some modifications might be required once we trigger based on the brightness of the object. For example, a brighter object might have 6 visits with fewer orbits per visit.

Proposal 14665 - first visit (05) - Ultraviolet Spectra of a Normal Standard Candle

Tue Jun 27 01:03:02 GMT 2017

Visit	Proposal 14665, first visit (05), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: SCHED 90%; BETWEEN 26-JUN-2017:00:00:00 AND 01-JUL-2017:00:00:00; ON HOLD ; TOO RESPONSE TIME 3.0D <i>On Hold Comments: ToO trigger</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	SN2017ERP	RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000	Redshift: 0.006	V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2	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	acq (1003285)	(2) SN2017ERP	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	2	acq/peak (1003285)	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	3	(1003287)	(2) SN2017ERP	STIS/CCD, ACCUM, 52X0.2E1	G430L 4300 A				500 Secs (1912 Secs) [==>956.0 Secs (Split 1)] [==>956.0 Secs (Split 2)]	[1]
	4	nuv-mama (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				1500 Secs (2749 Secs) [==>2749.0 Secs]	[2]
	5	nuv-mama2 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (1307 Secs) [==>1307.0 Secs]	[3]
	6	nuv-mama3 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (1307 Secs) [==>1307.0 Secs]	[3]

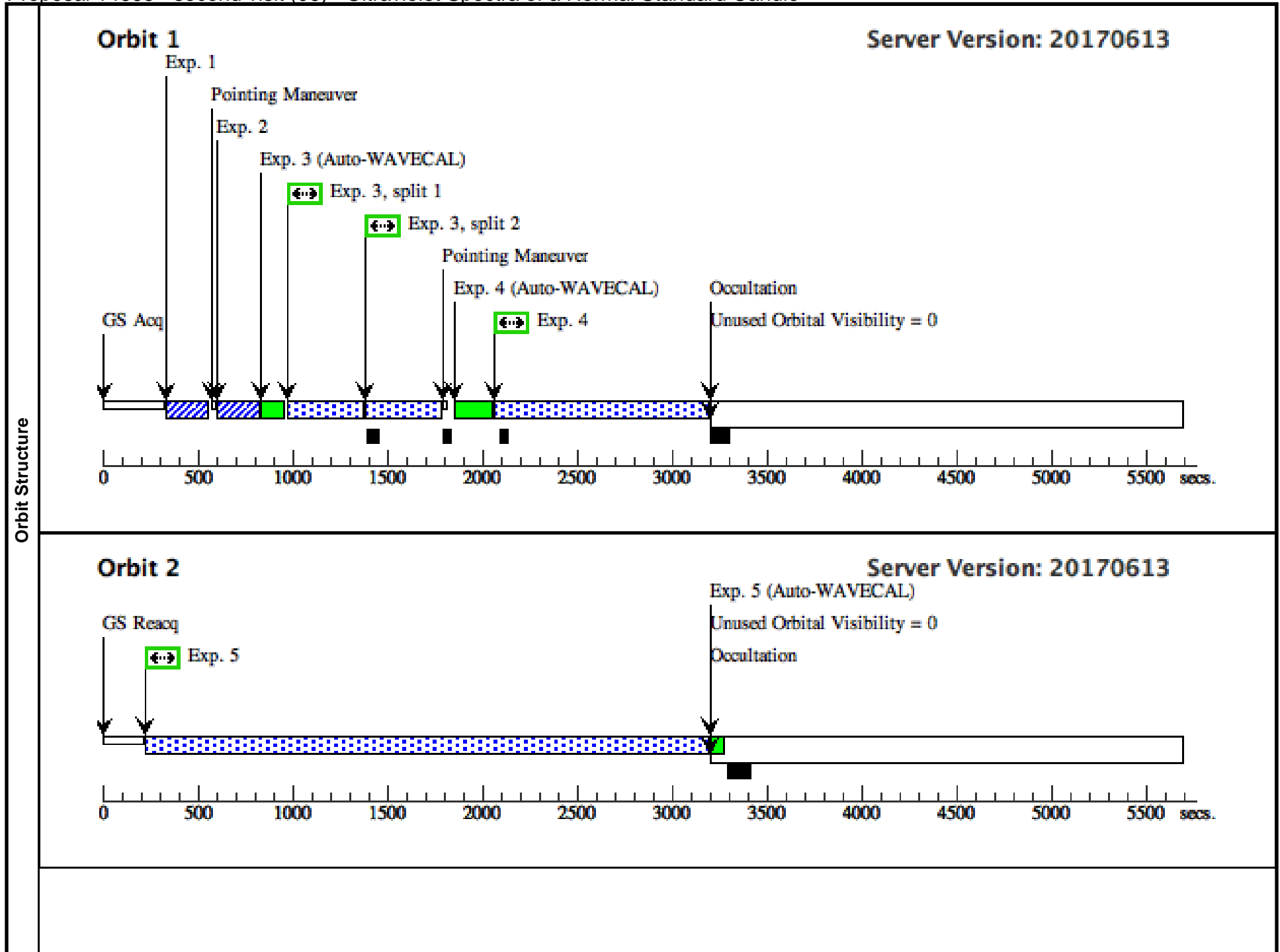


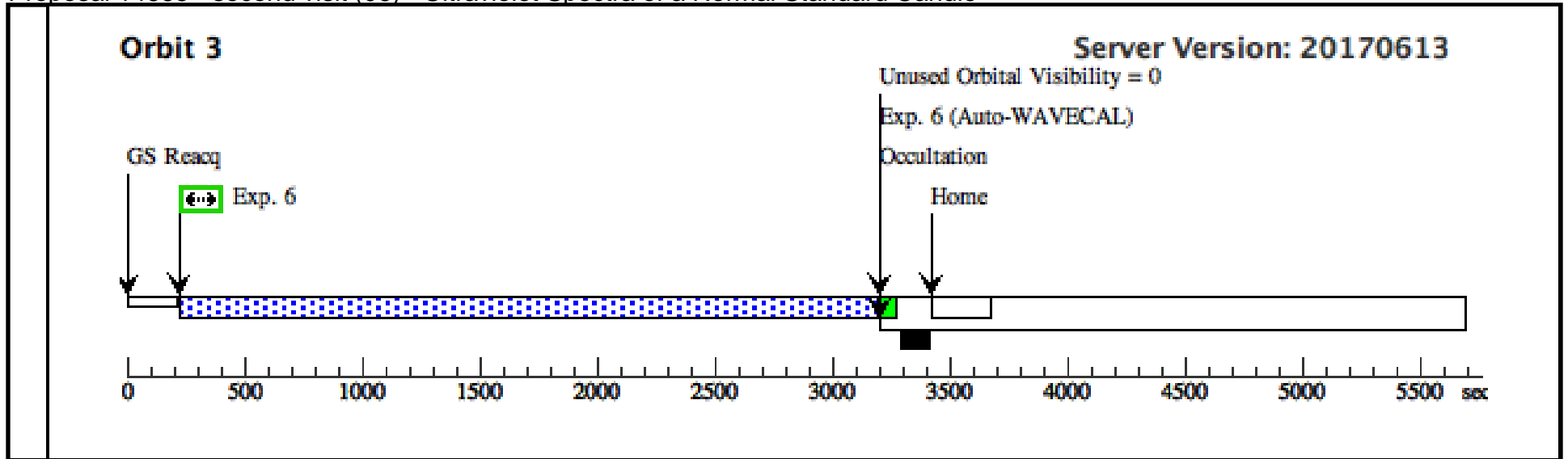


Proposal 14665 - second visit (06) - Ultraviolet Spectra of a Normal Standard Candle

Tue Jun 27 01:03:02 GMT 2017

Visit	Proposal 14665, second visit (06), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: AFTER 05 BY 2 D TO 5 D; ON HOLD ; TOO RESPONSE TIME 3.0D <i>On Hold Comments: ToO trigger</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	SN2017ERP	RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000	Redshift: 0.006	V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2	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	acq (1003285)	(2) SN2017ERP	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	2	acq/peak (1003285)	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	3	(1003287)	(2) SN2017ERP	STIS/CCD, ACCUM, 52X0.1E1	G430L 4300 A				500 Secs (726 Secs) [==>363.0 Secs (Split 1)] [==>363.0 Secs (Split 2)]	[1]
	4	nuv-mama (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				1000 Secs (1113 Secs) [==>1113.0 Secs]	[1]
	5	nuv-mama2 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[2]
	6	nuv-mama3 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[3]

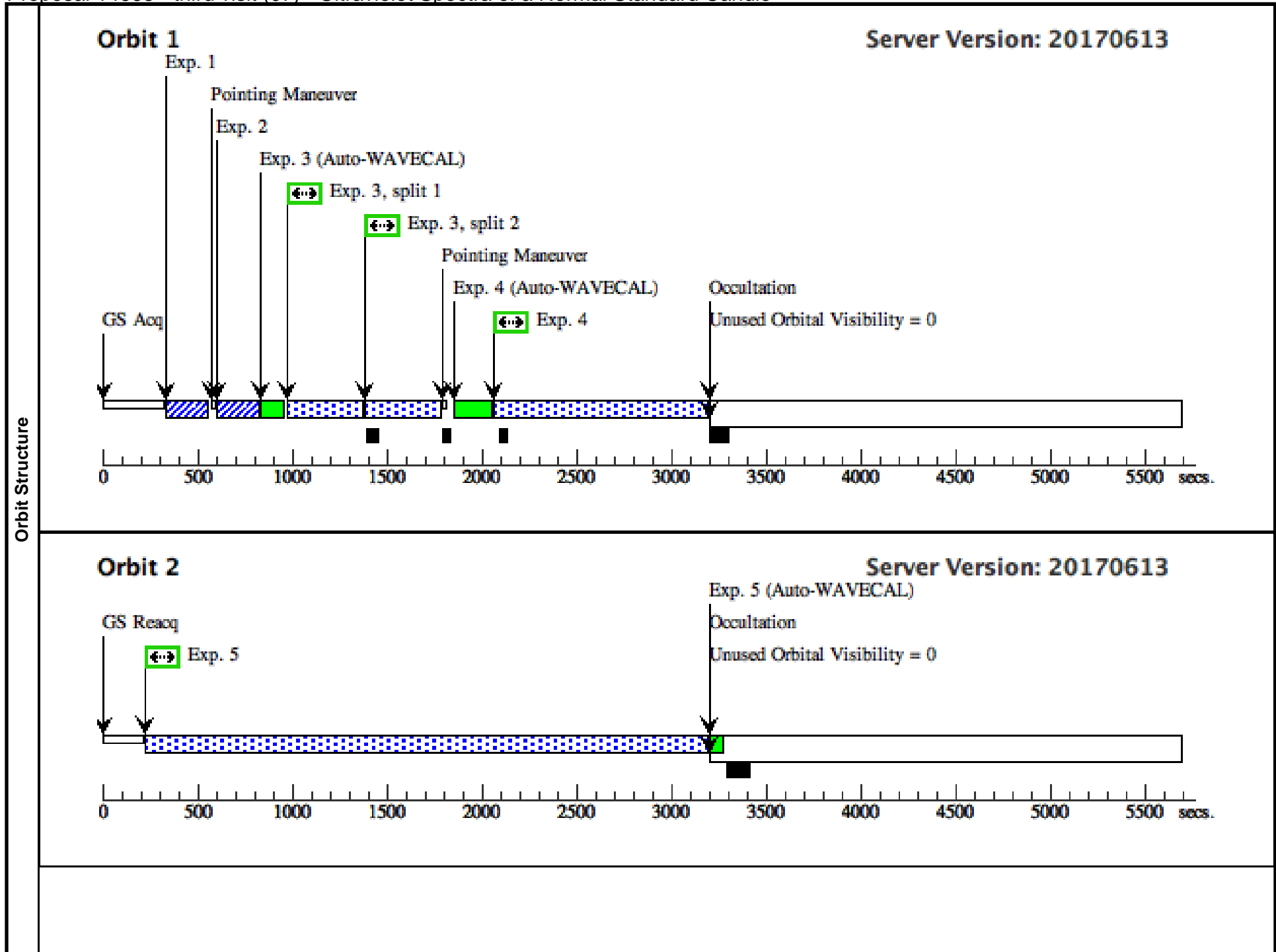


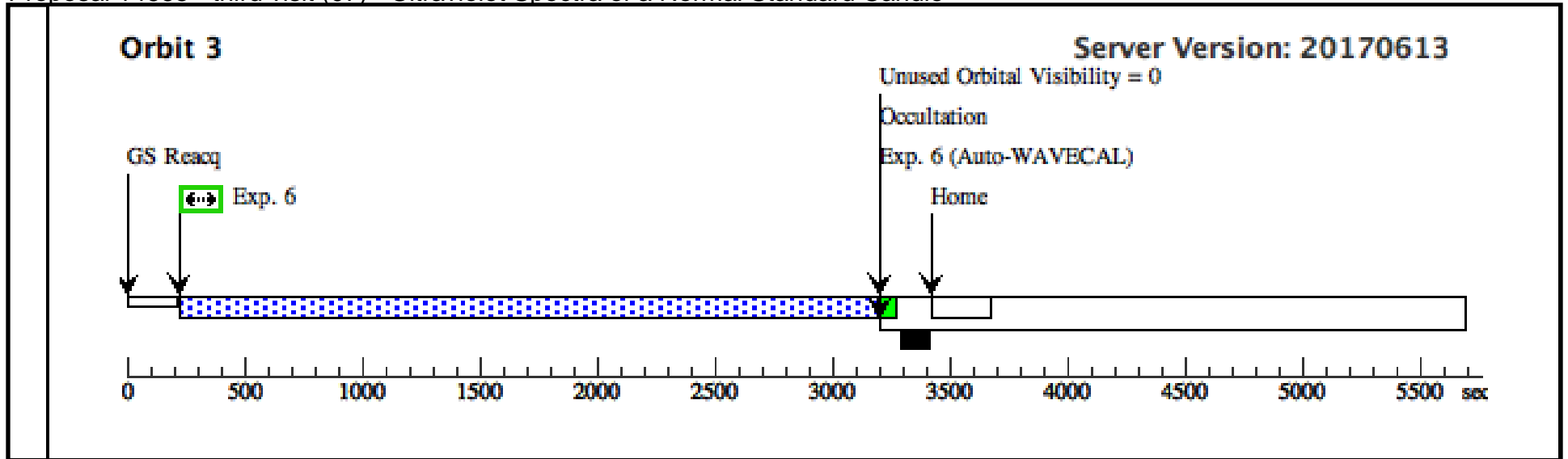


Proposal 14665 - third visit (07) - Ultraviolet Spectra of a Normal Standard Candle

Tue Jun 27 01:03:02 GMT 2017

Visit	Proposal 14665, third visit (07), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: AFTER 06 BY 4 D TO 6 D; ON HOLD ; TOO RESPONSE TIME 3.0D On Hold Comments: ToO trigger									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(2)	SN2017ERP	RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000	Redshift: 0.006	V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2	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	acq (1003286)	(2) SN2017ERP	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs (0.2 Secs) [==>]	[1]
	2	acq/peak (1003285)	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	3		(2) SN2017ERP	STIS/CCD, ACCUM, 52X0.1E1	G430L 4300 A				500 Secs (726 Secs) [==>363.0 Secs (Split 1)] [==>363.0 Secs (Split 2)]	[1]
	4	nuv-mama (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				1000 Secs (1113 Secs) [==>1113.0 Secs]	[1]
	5	nuv-mama2 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[2]
	6	nuv-mama3 (1003279)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[3]

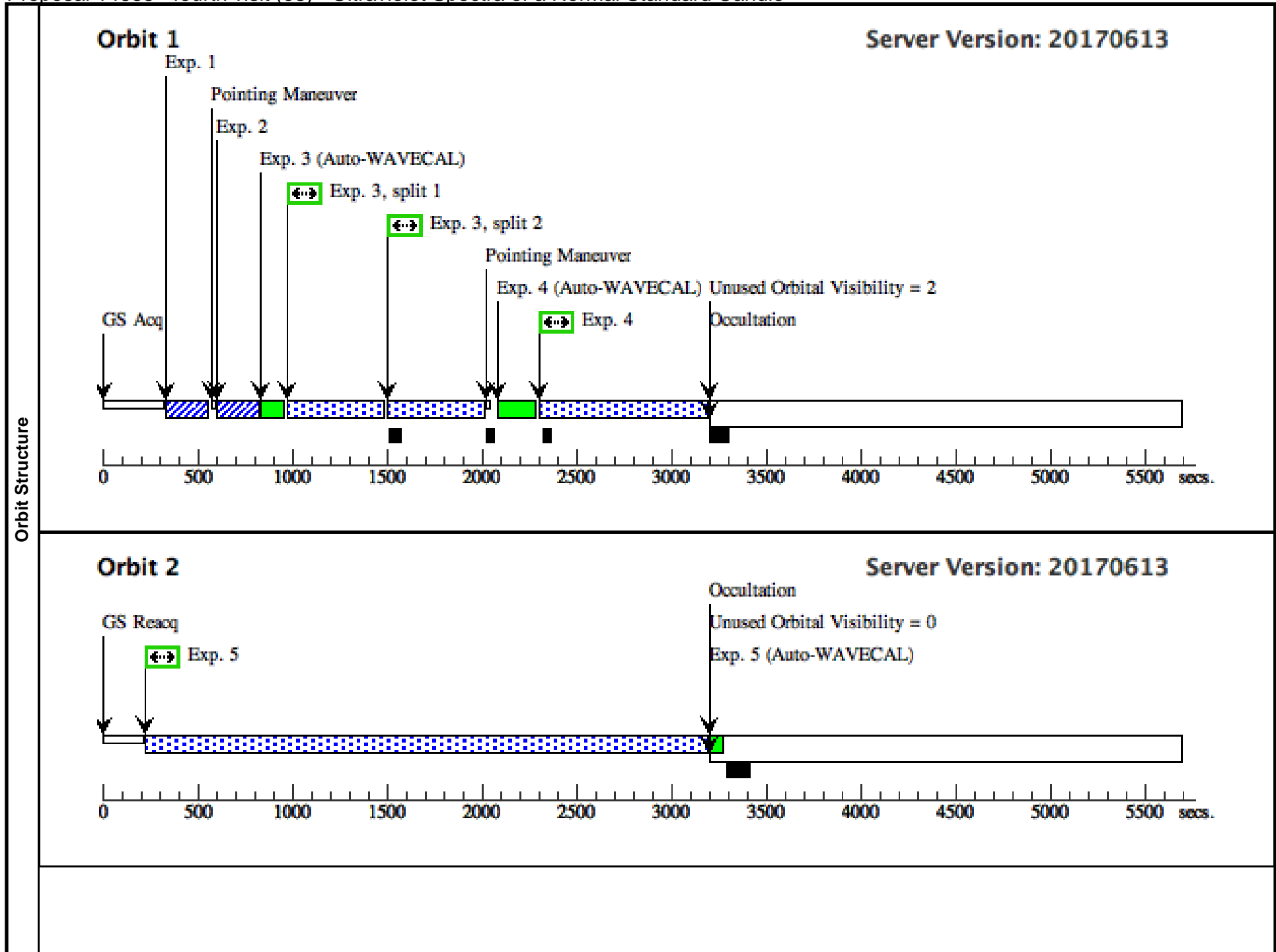




Proposal 14665 - fourth visit (08) - Ultraviolet Spectra of a Normal Standard Candle

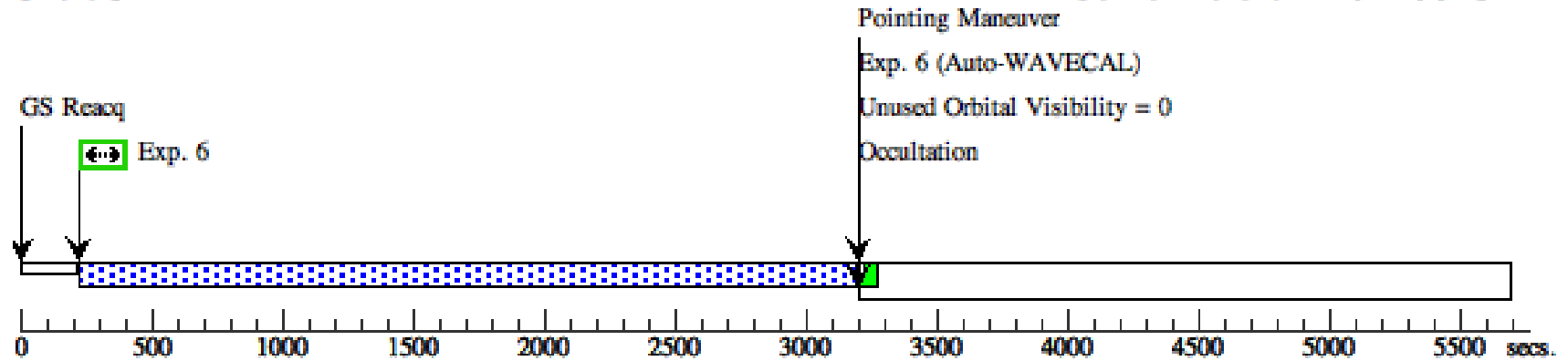
Tue Jun 27 01:03:02 GMT 2017

Visit	Proposal 14665, fourth visit (08), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: AFTER 07 BY 4 D TO 8 D; ON HOLD ; TOO RESPONSE TIME 3.0D <i>On Hold Comments: ToO trigger</i>																		
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>SN2017ERP</td> <td>RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000</td> <td>Redshift: 0.006</td> <td>V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"><i>Comments: Extended=NO</i></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	SN2017ERP	RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000	Redshift: 0.006	V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2	Reference Frame: ICRS	<i>Comments: Extended=NO</i>				
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous														
(2)	SN2017ERP	RA: 15 09 14.8220 (227.3117583d) Dec: -11 20 3.06 (-11.33418d) Equinox: J2000	Redshift: 0.006	V=13.6+/-0.1 uvw1=15.3 +/- 0.1, uvm2=18.5 +/- 0.2	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	acq (1003284)	(2) SN2017ERP	STIS/CCD, ACQ, F28X50LP	MIRROR				0.3 Secs (0.3 Secs) [==>]	[1]									
	2	acq/peak (1003285)	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]									
	3	(1003290)	(2) SN2017ERP	STIS/CCD, ACCUM, 52X0.1E1	G430L 4300 A				800 Secs (958 Secs) [==>479.0 Secs (Split 1)] [==>479.0 Secs (Split 2)]	[1]									
	4	nuv-mama (1003282)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				800 Secs (879 Secs) [==>879.0 Secs]	[1]									
	5	nuv-mama2 (1003282)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[2]									
	6	nuv-mama3 (1003282)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				3000 Secs (2959 Secs) [==>2959.0 Secs]	[3]									
	7	reacq	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				1 Secs (1 Secs) [==>]	[4]									
	8	acq/peak (1003285)	(2) SN2017ERP	STIS/CCD, ACQ/PEAK, 52X0.1E1	MIRROR				0.1 Secs (0.1 Secs) [==>]	[4]									
	9	nuv-mama4 (1003282)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				1200 Secs (2113 Secs) [==>2113.0 Secs]	[4]									
	10	nuv-mama5 (1003282)	(2) SN2017ERP	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				2500 Secs (2959 Secs) [==>2959.0 Secs]	[5]									



Orbit 3

Server Version: 20170613



Orbit 4

Server Version: 20170613

