



## 14104 - The optical-UV extinction law in 30 Doradus

Cycle: 23, Proposal Category: GO

(UV Initiative)

(Availability Mode: AVAILABLE)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Dr. Jesus Maiz Apellaniz (PI) (ESA Member) (Contact)</b>	<b>Centro de Astrobiologia (CSIC/INTA) Inst. Nac. de Tec. Aero.</b>	<b>jmaiz@cab.inta-csic.es</b>
Dr. Christopher J. Evans (CoI) (ESA Member)	Royal Observatory Edinburgh	chris.evans@stfc.ac.uk
Dr. Rodolfo H. Barba (CoI)	Universidad de La Serena	rbarba@dfuls.cl
Ms. K. Azalee Bostroem (CoI) (AdminUSPI)	University of California - Davis	kabostroem@ucdavis.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>
01	(1) 30DOR-SLIT1 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:19.0	yes
02	(2) 30DOR-SLIT2 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:21.0	yes
03	(3) 30DOR-SLIT3 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:23.0	yes
04	(4) 30DOR-SLIT4 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:25.0	yes
05	(5) 30DOR-SLIT5 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:26.0	yes
06	(6) 30DOR-SLIT6 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:28.0	yes

<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	(7) 30DOR-SLIT7 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:30.0	yes
08	(8) 30DOR-SLIT8 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:31.0	yes
09	(9) 30DOR-SLIT9 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:33.0	yes
10	(10) 30DOR-SLIT10 CCDFLAT	STIS/CCD	1	13-Aug-2015 21:23:35.0	yes

10 Total Orbits Used

## ABSTRACT

We propose 1700-10 200 Å STIS spectroscopy of over 30 stars in 30 Doradus to derive a detailed (~100 Å resolution) family of UV-optical extinction laws. We will extend our previous optical study into the critical UV regime and we will significantly improve on past studies by increasing the wavelength resolution in the optical. Our proposed observations will provide the largest sample of UV spectra ever obtained along sightlines with large total-to-selective extinction ratios ( $R_{5495}$ ), enabling robust analysis of such extinction laws for the first time. The coverage of a wide parameter space in  $R_{5495}$  range and ISM physical conditions will shed new light on debates regarding the origins of differences in extinction laws, such as the intensity of the 2175 Å feature (e.g. the relative roles of metallicity vs. environmental conditions). In addition to the UV spectroscopy, the increased resolution in the optical region will improve the accuracy of the dereddening of stellar photometry and the analysis of the extinction in H II regions as measured by Balmer and Paschen lines. Regarding the latter, we will extract the hydrogen lines in emission in regions adjacent to the stars and compute their ratios. The variation in the strength of these hydrogen emission lines allows a direct comparison between stellar and gas extinction over a large wavelength range. This study is only possible with HST due to the spatial resolution required in the optical and the UV wavelength coverage (making it part of the UV initiative). With only 10 orbits it will produce detailed extinction laws vital for the realistic dereddening of objects located in distant star-forming galaxies.

## OBSERVING DESCRIPTION

The observations planned for this proposal follow the same strategy of a previous successful series of HST programs, the Next Generation Spectral Library or NGSL. The NGSL obtained 1700-10 200 Å,  $R \sim 1000$ , flux-calibrated spectroscopy of several hundred stars using a combination of G230LB+G430L+G750L exposures within a single HST orbit. Here we detail some of the characteristics of that

approach and we specify some differences between our observations and those of the NGSL:

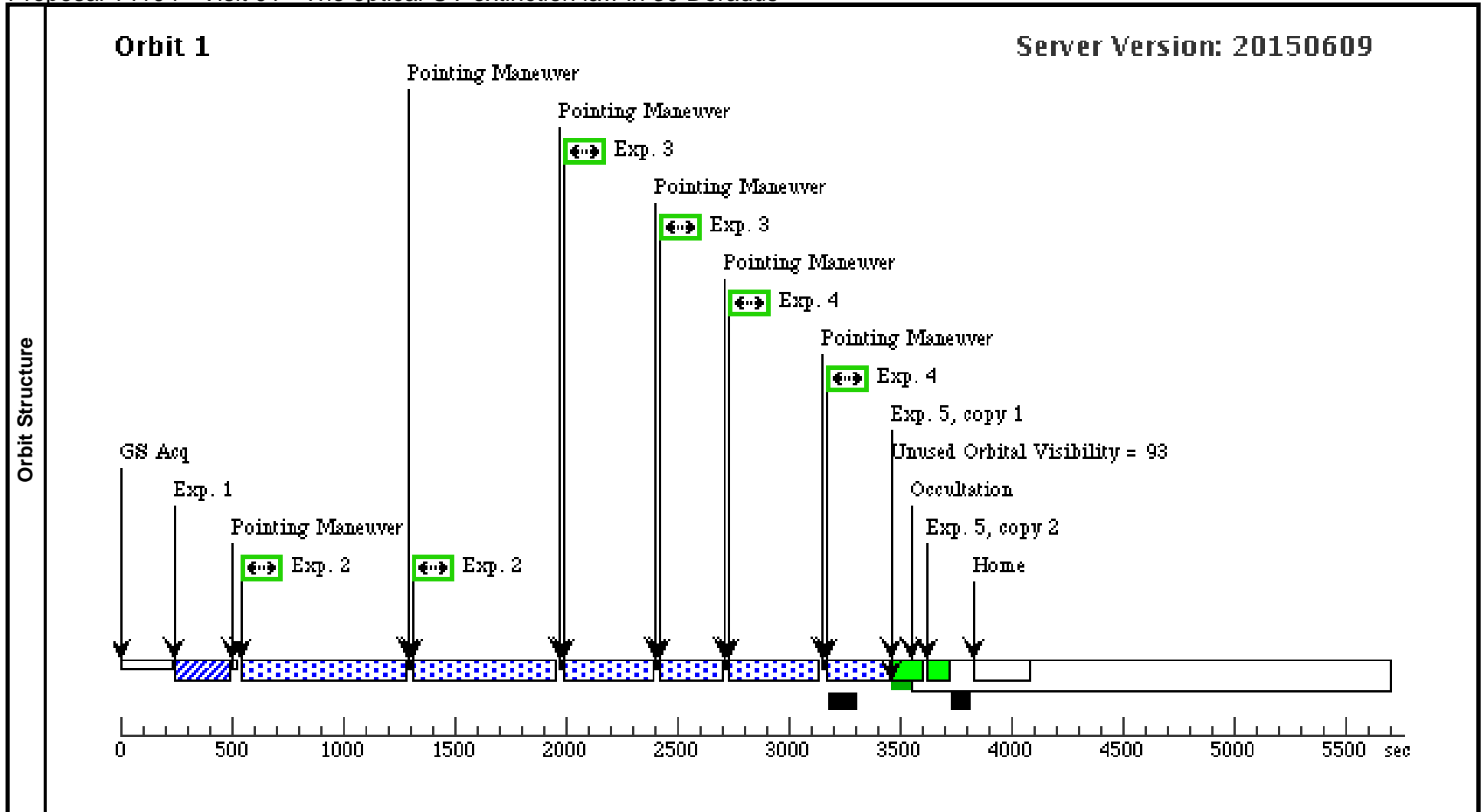
- G230L cannot be used instead of G230LB because of the prohibitive cost of switching detectors within an orbit. G230LB also has the advantages of having a 52" slit instead of a 25" one (see next point) and of not having bright object issues. The G230LB disadvantage (slightly lower S/N) is relatively unimportant.
- As opposed to the NGSL (which were three SNAPSHOT programs), we request ORIENTs in order to include several stars per slit and, in that way, maximize the use of STIS.
- For each grating, we will split the exposures into two with a small dithering pattern in order to eliminate hot pixels and cosmic rays.
- We have used the ETC and APT (phase 2 version) to calculate the exposure times and to test that all observations fit within a single orbit. Our required S/N (per spectral element) is lower than for the NGSL because our goal is not to build a detailed stellar library but to measure the extinction law i.e. we are interested in a good flux calibration (1% or better) but only after binning the data in  $\sim 100$  Angstrom bins. The reason for the difference in S/N between the NGSL observations and ours is that our stars are fainter due to distance and extinction.
- WAVECALs have to be turned off in order to fit all exposures within a single orbit (both for the NGSL and here). In our case, wavelength calibration can be easily done with our ground-based spectra and the overlap regions between gratings.
- With the conditions above, the optimal exposure times as calculated with the ETC are 20 m, 8 m, and 8 m (in each case split into two) for G230LB, G430L, and G750L, respectively. Once the spectra are binned into 100 Angstrom bins, we obtain a S/N of 100 or better in 90% of the wavelength bins in the 1700-10 200 Angstrom range (and slightly lower values for the rest), which is our required target to derive a precise extinction law for each star.
- One of the issues with the NGSL data was flux calibration due to the use of the narrow 52x0.2 slit. We will avoid that problem by using the wider 52x2 slit, which will also allow us to include more stars. Note also that we have multiband WFC3 photometry to allow us to perform an independent flux calibration. In any case, absolute UV-to-IR spectrophotometric calibrations are relatively easy to do with HST (as opposed to similar ground-based calibrations).
- Another difference with the NGSL data is the stronger CTI effect due to the aging of the STIS CCD detector. To correct this, we will use an adaptation to STIS of the ACS code that yields a pixel-based CTI correction. We have successfully tested this code with the STIS CCD data we obtained in GO 12 465.

In summary, this approach is a highly efficient use of STIS: we will obtain flux-calibrated 1700-10 200 Angstrom spectroscopy of over 30 stars in only 10 orbits.

Proposal 14104 - Visit 01 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:36 GMT 2015

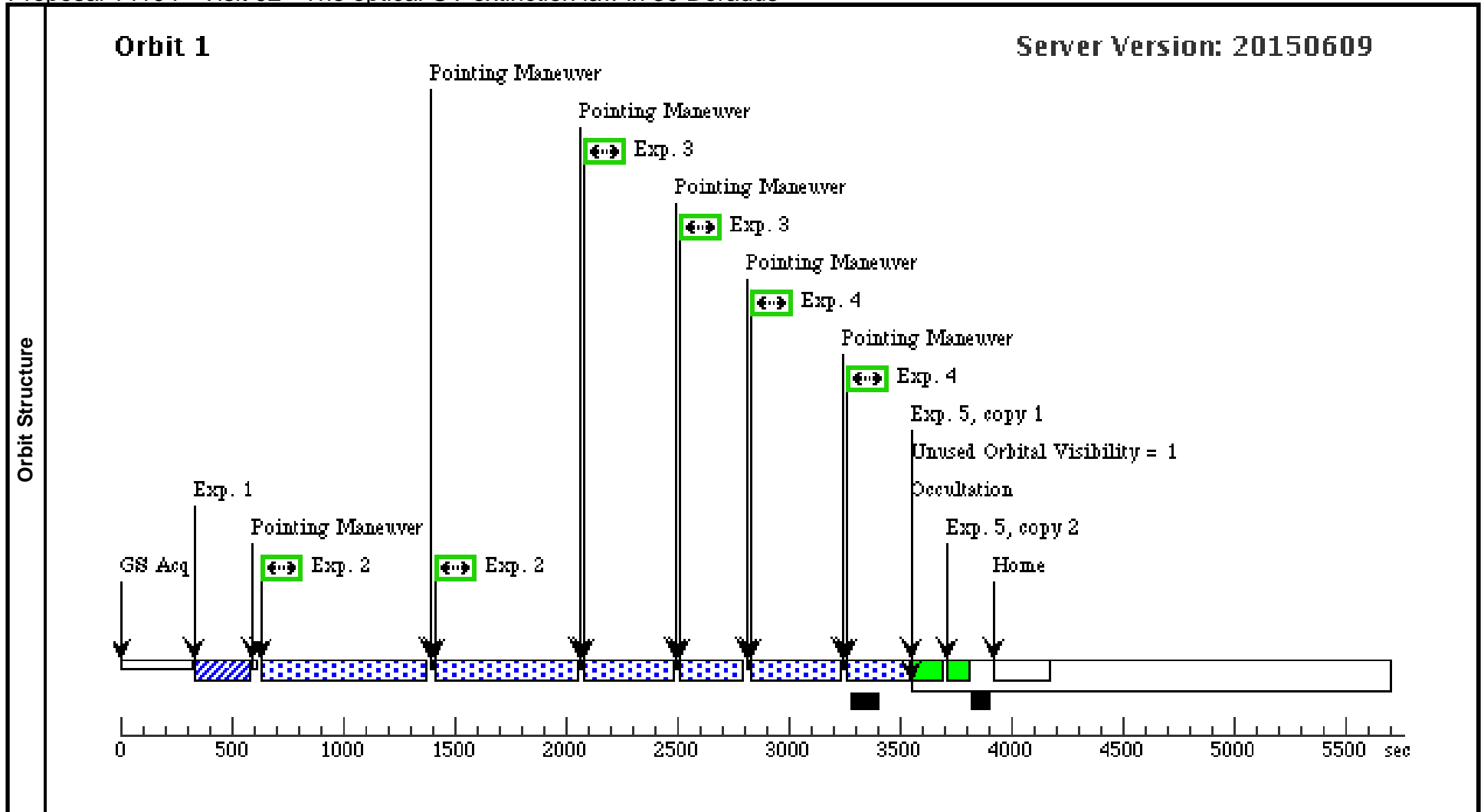
Visit	<b>Proposal 14104, Visit 01, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 264.1D TO 264.1 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	30DOR-SLIT1	RA: 05 38 56.9300 (84.7372083d) Dec: -69 06 39.20 (-69.11089d) Equinox: J2000		V=16.2 PA=39.1+180	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) 30DOR-SLIT1		STIS/CCD, ACQ, 50CCD	MIRROR		GS ACQ SCENARI O SINGLE		2 Secs (2 Secs) [==>]	[1]
	2	(1) 30DOR-SLIT1		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Visit 01 (1)	600 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(1) 30DOR-SLIT1		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 i n Visit 01 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	(1) 30DOR-SLIT1		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 i n Visit 01 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)] [==>(Copy 2)]	[1]



Proposal 14104 - Visit 02 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:36 GMT 2015

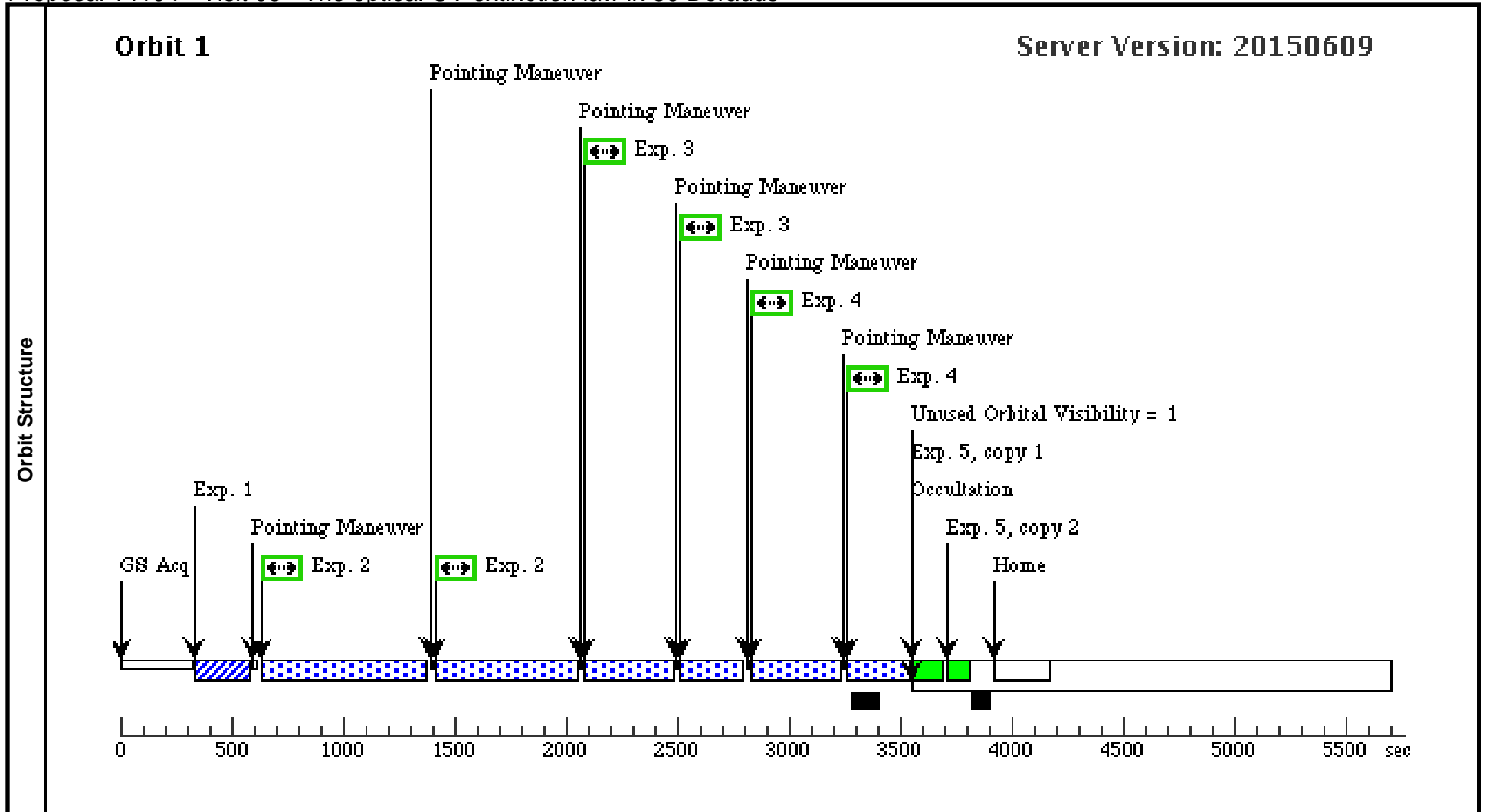
Visit	<b>Proposal 14104, Visit 02, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 269.3D TO 269.3 D									
	#	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	30DOR-SLIT2	RA: 05 38 38.5000 (84.6604167d) Dec: -69 06 29.90 (-69.10831d) Equinox: J2000		V=16.3 PA=43.4+180	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(2) 30DOR-SLIT2	STIS/CCD, ACQ, 50CCD	MIRROR		GS ACQ SCENARI O BASE1B3		2 Secs (2 Secs)	
									[==>]	[1]
	2		(2) 30DOR-SLIT2	STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Visit 02 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
3		(2) 30DOR-SLIT2	STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 i n Visit 02 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
4		(2) 30DOR-SLIT2	STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 i n Visit 02 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
5		CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)]	[1]	
								[==>(Copy 2)]		



Proposal 14104 - Visit 03 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:36 GMT 2015

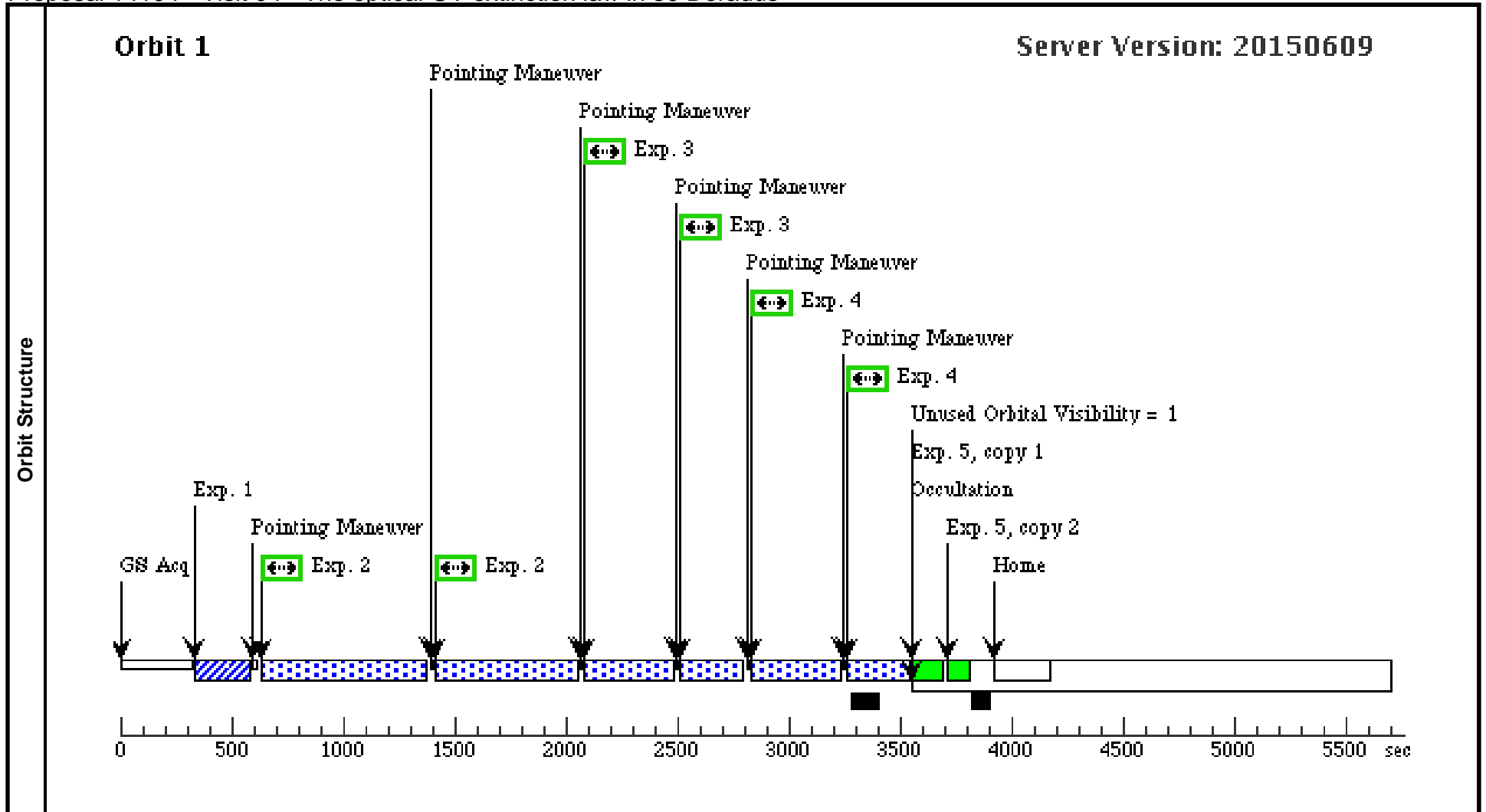
Visit	<b>Proposal 14104, Visit 03, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 50.5D TO 50.5 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=0.25 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2), (3), (4)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	30DOR-SLIT3	RA: 05 38 39.6700 (84.6652917d) Dec: -69 05 32.20 (-69.09228d) Equinox: J2000		V=16.0 PA=5.5	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(3) 30DOR-SLIT3		STIS/CCD, ACQ, 50CCD	MIRROR				2 Secs (2 Secs)	
									[==>]	[1]
	2	(3) 30DOR-SLIT3		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 in Visit 03 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(3) 30DOR-SLIT3		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 in Visit 03 (1)	240 Secs (480 Secs)	
								[==>(Pattern 1)] [==>(Pattern 2)]	[1]	
4	(3) 30DOR-SLIT3		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 in Visit 03 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)] [==>(Pattern 2)]	[1]	
5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)] [==>(Copy 2)]	[1]	



Proposal 14104 - Visit 04 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

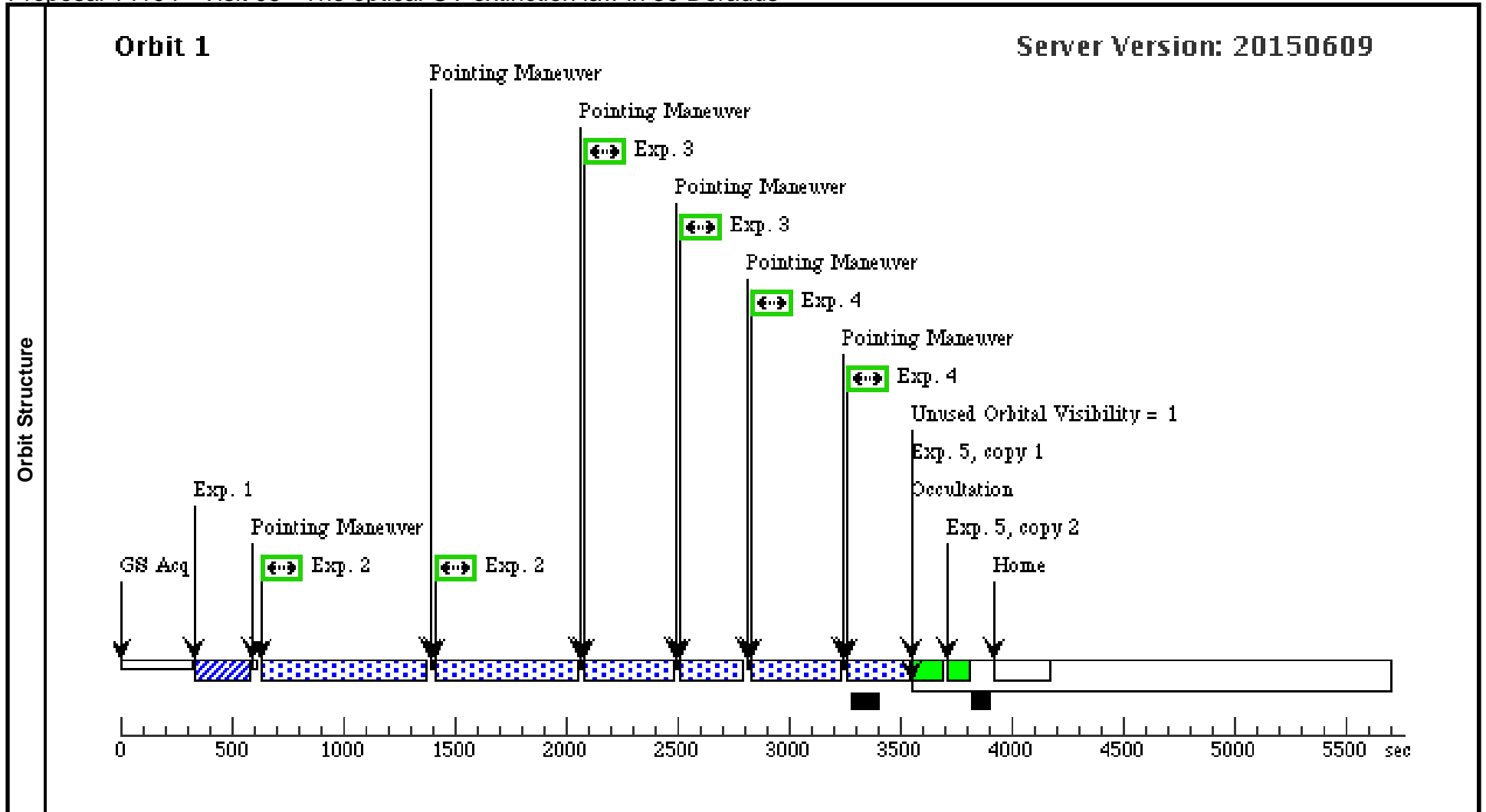
Visit	<b>Proposal 14104, Visit 04, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 8.4D TO 8.4 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=0.25 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2), (3), (4)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	30DOR-SLIT4	RA: 05 38 34.6000 (84.6441667d) Dec: -69 06 5.70 (-69.10158d) Equinox: J2000		V=16.0 PA=143.4+180	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(4) 30DOR-SLIT4	STIS/CCD, ACQ, 50CCD	MIRROR			GS ACQ SCENARI O BASE1B3		2 Secs (2 Secs) [==>]	[1]
	2	(4) 30DOR-SLIT4	STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 2-2 i n Visit 04 (1)	600 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(4) 30DOR-SLIT4	STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 3-3 i n Visit 04 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	(4) 30DOR-SLIT4	STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 4-4 i n Visit 04 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A					[==>(Copy 1)] [==>(Copy 2)]	[1]



Proposal 14104 - Visit 05 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

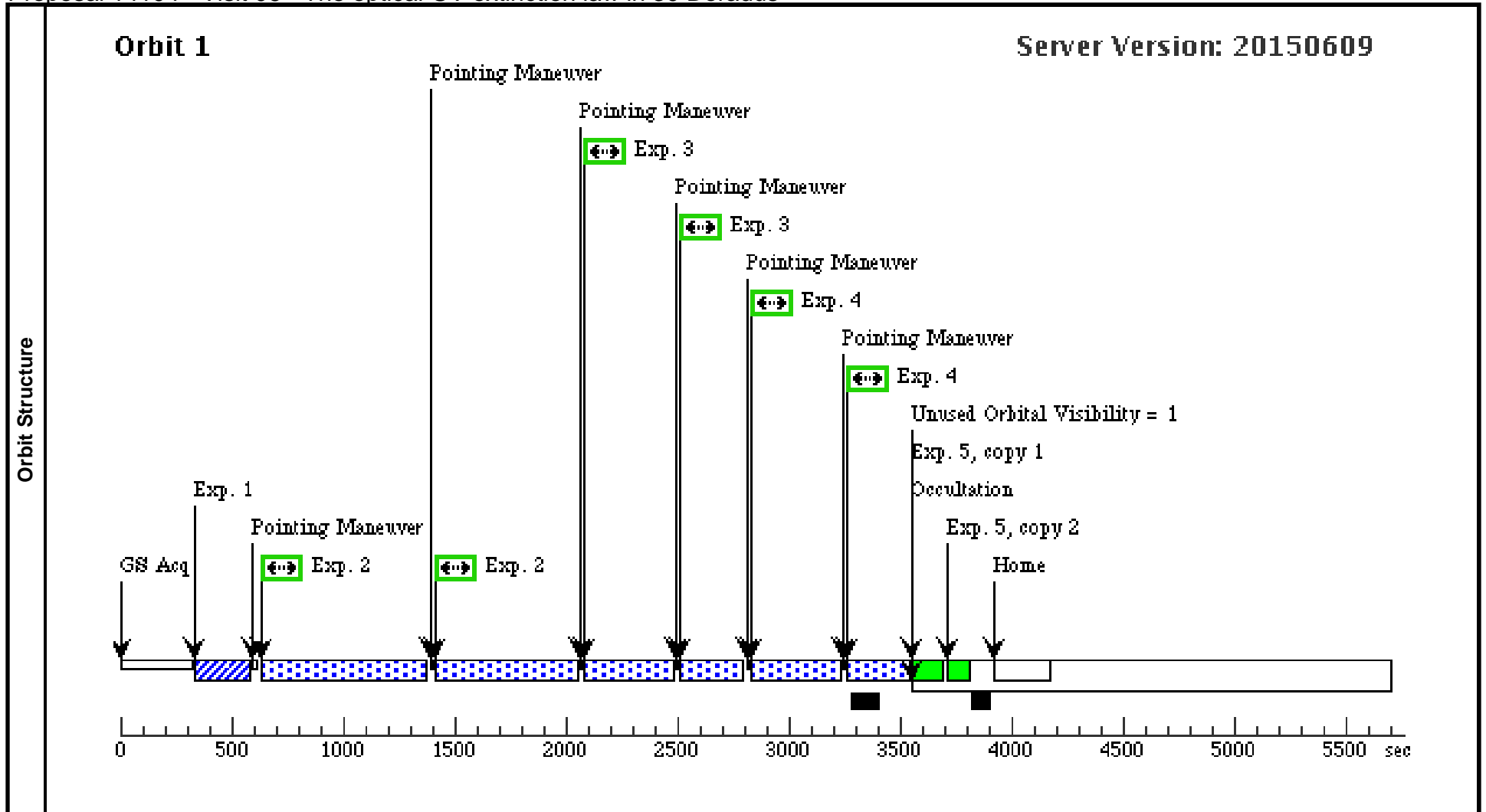
Visit	<b>Proposal 14104, Visit 05, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 188.9D TO 188.9 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(5)	30DOR-SLIT5	RA: 05 38 48.4900 (84.7020417d) Dec: -69 05 32.80 (-69.09244d) Equinox: J2000		V=13.6 PA=143.9	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(5) 30DOR-SLIT5		STIS/CCD, ACQ, 50CCD	MIRROR		GS ACQ SCENARI O BASE1B3		2 Secs (2 Secs) [==>]	[1]
	2	(5) 30DOR-SLIT5		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Visit 05 (1)	600 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(5) 30DOR-SLIT5		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 i n Visit 05 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	(5) 30DOR-SLIT5		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 i n Visit 05 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)] [==>(Copy 2)]	[1]



Proposal 14104 - Visit 06 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

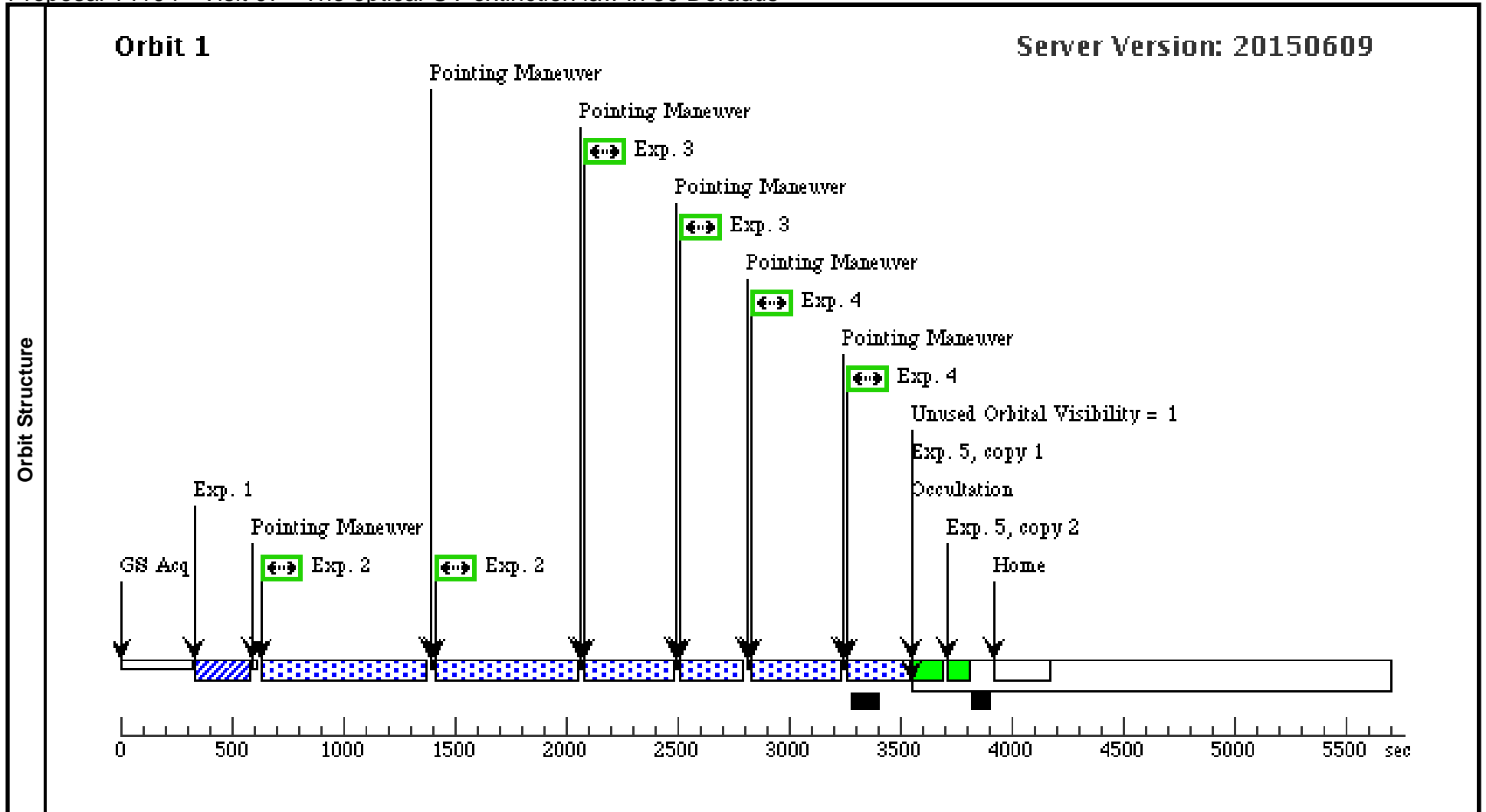
Visit	<b>Proposal 14104, Visit 06, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 154.7D TO 154.7 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(6)	30DOR-SLIT6	RA: 05 38 54.6600 (84.7277500d) Dec: -69 04 55.10 (-69.08197d) Equinox: J2000		V=16.5 PA=109.7	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(6) 30DOR-SLIT6	(6) 30DOR-SLIT6	STIS/CCD, ACQ, 50CCD	MIRROR				2 Secs (2 Secs)	
									[==>]	[1]
	2	(6) 30DOR-SLIT6	(6) 30DOR-SLIT6	STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 in Visit 06 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
3	(6) 30DOR-SLIT6	(6) 30DOR-SLIT6	STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 in Visit 06 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
4	(6) 30DOR-SLIT6	(6) 30DOR-SLIT6	STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 in Visit 06 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
5	CCDFLAT	CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)]	[1]	
								[==>(Copy 2)]		



Proposal 14104 - Visit 07 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

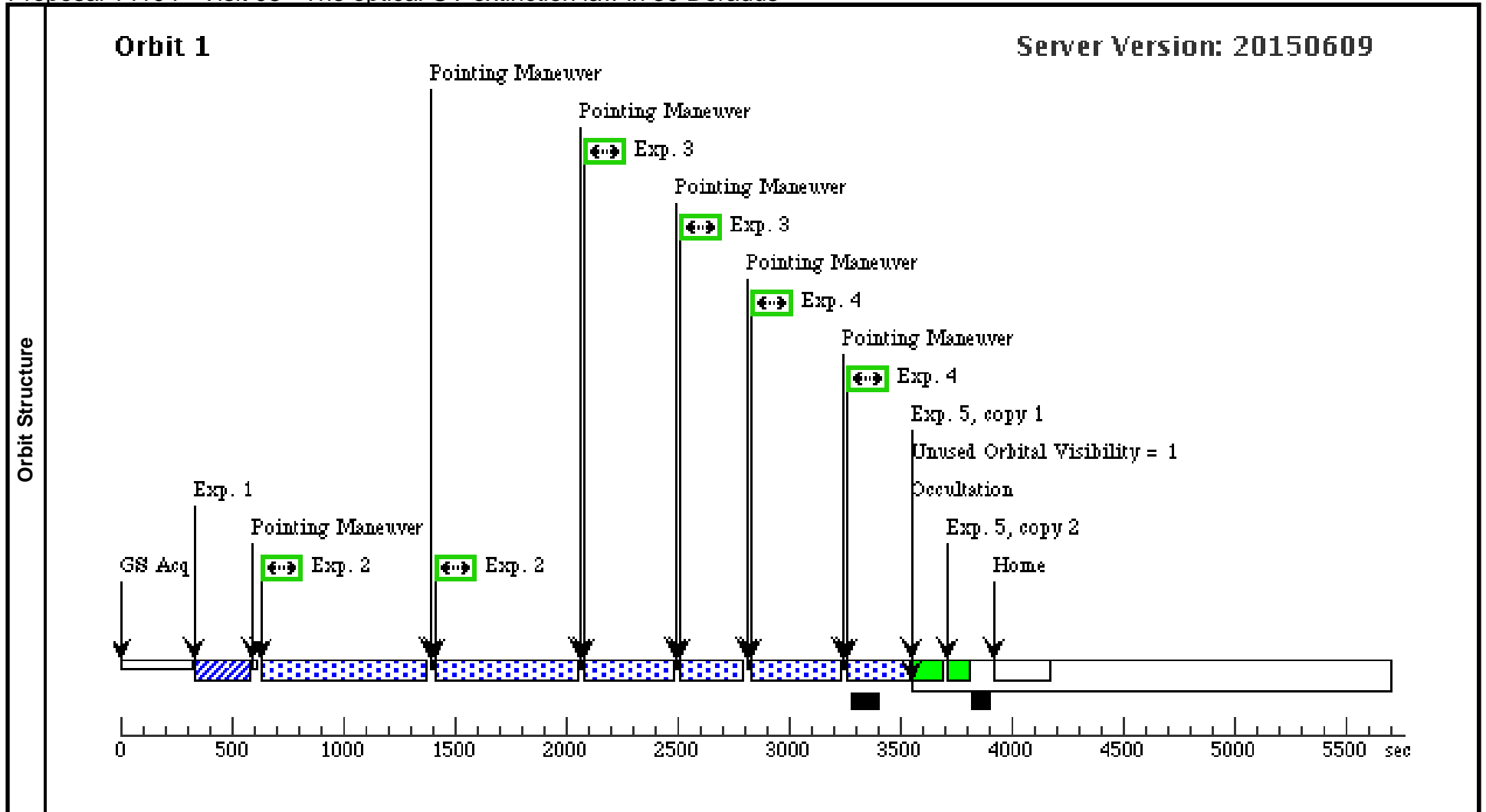
Visit	<b>Proposal 14104, Visit 07, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 325D TO 325 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=0.25 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2), (3), (4)				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(7)	30DOR-SLIT7	RA: 05 38 36.3900 (84.6516250d) Dec: -69 06 57.40 (-69.11594d) Equinox: J2000		V=13.8 PA=100.0+180	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(7) 30DOR-SLIT7		STIS/CCD, ACQ, 50CCD	MIRROR				2 Secs (2 Secs)	
									[==>]	[1]
	2	(7) 30DOR-SLIT7		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 in Visit 07 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
3	(7) 30DOR-SLIT7		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 in Visit 07 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
4	(7) 30DOR-SLIT7		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 in Visit 07 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)]	[1]	
								[==>(Copy 2)]		



Proposal 14104 - Visit 08 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

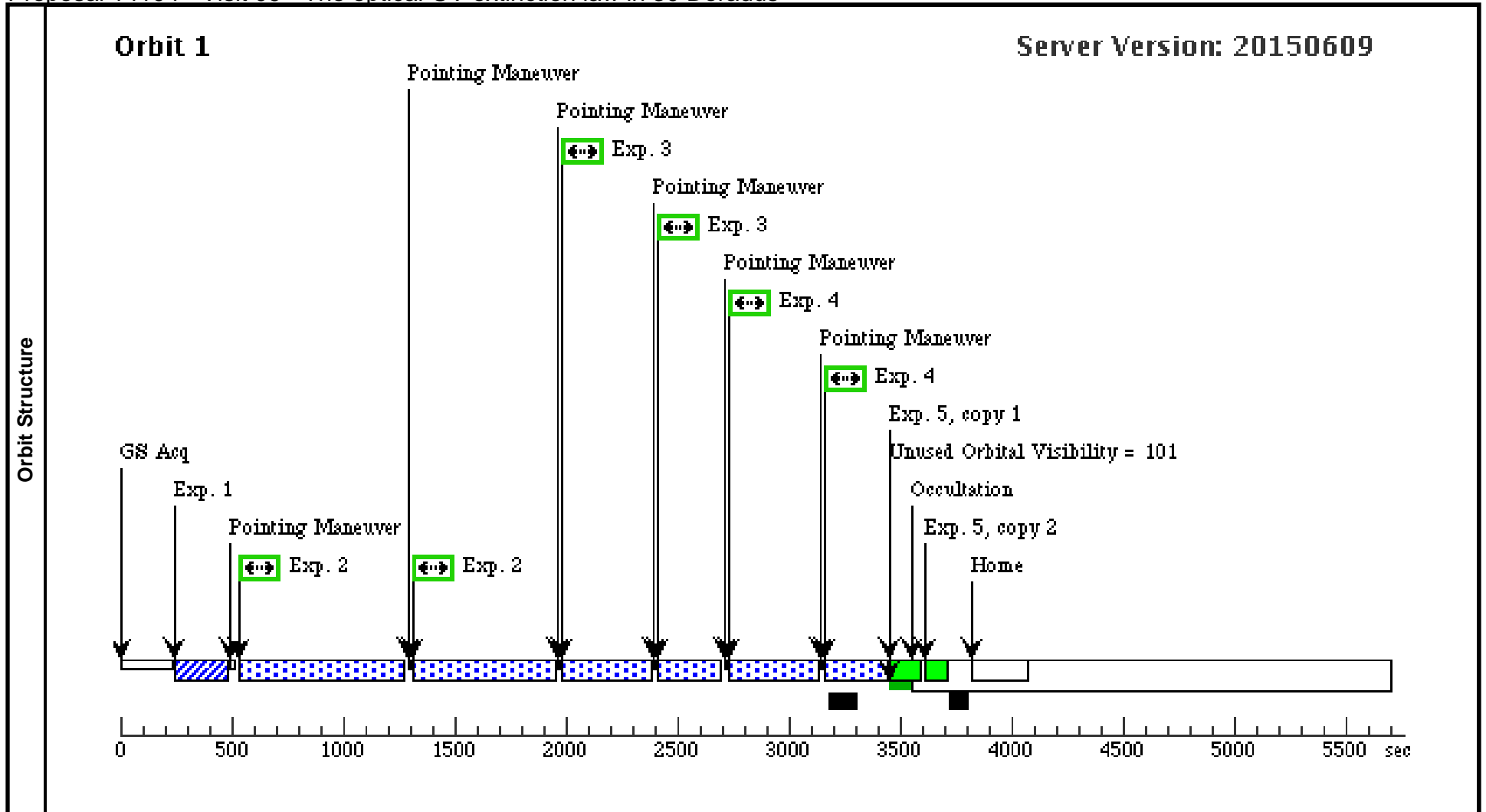
Visit	<b>Proposal 14104, Visit 08, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 195.3D TO 195.3 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(8)	30DOR-SLIT8	RA: 05 38 47.2080 (84.6967000d) Dec: -69 05 54.11 (-69.09836d) Equinox: J2000		V=15.8 PA=150.3	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(8) 30DOR-SLIT8		STIS/CCD, ACQ, 50CCD	MIRROR		GS ACQ SCENARI O BASE1B3		2 Secs (2 Secs)	
									[==>]	[1]
	2	(8) 30DOR-SLIT8		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Visit 08 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
3	(8) 30DOR-SLIT8		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 i n Visit 08 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
4	(8) 30DOR-SLIT8		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 i n Visit 08 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)]	[1]	
								[==>(Copy 2)]		



Proposal 14104 - Visit 09 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

Visit	<b>Proposal 14104, Visit 09, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 142.8D TO 142.8 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
	(1)	Pattern Type=STIS-ALONG-SLIT      Coordinate Frame=POS-TARG Purpose=DITHER                      Pattern Orientation=90.0 Number Of Points=2                  Angle Between Sides= Point Spacing=0.25                  Center Pattern=false Line Spacing=		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(9)	30DOR-SLIT9	RA: 05 38 45.6000 (84.6900000d) Dec: -69 05 47.90 (-69.09664d) Equinox: J2000		V=12.5 PA=97.8	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(9) 30DOR-SLIT9		STIS/CCD, ACQ, 50CCD	MIRROR		GS ACQ SCENARI O SINGLE		0.1 Secs (0.1 Secs)	
									[==>]	[1]
	2	(9) 30DOR-SLIT9		STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 2-2 i n Visit 09 (1)	600 Secs (1200 Secs)	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
3	(9) 30DOR-SLIT9		STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 3-3 i n Visit 09 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
4	(9) 30DOR-SLIT9		STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO		Pattern 1, Exps 4-4 i n Visit 09 (1)	240 Secs (480 Secs)		
								[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]		
5	CCDFLAT		STIS/CCD, ACCUM, 52X0.1	G750L 7751 A				[==>(Copy 1)]	[1]	
								[==>(Copy 2)]		



Proposal 14104 - Visit 10 - The optical-UV extinction law in 30 Doradus

Fri Aug 14 01:23:37 GMT 2015

Visit	<b>Proposal 14104, Visit 10, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD Special Requirements: ORIENT 152.5D TO 152.5 D									
	Patterns	Primary Pattern	Secondary Pattern	Exposures						
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=0.25 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2), (3), (4)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
(10)	30DOR-SLIT10	RA: 05 38 45.8400 (84.6910000d) Dec: -69 06 21.00 (-69.10583d) Equinox: J2000			V=14.0 PA=107.5	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(10) 30DOR-SLIT10	STIS/CCD, ACQ, 50CCD	MIRROR			GS ACQ SCENARI O SINGLE		2 Secs (2 Secs) [==>]	[1]
	2	(10) 30DOR-SLIT10	STIS/CCD, ACCUM, 52X2E1	G230LB 2375 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 2-2 i n Visit 10 (1)	600 Secs (1200 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	3	(10) 30DOR-SLIT10	STIS/CCD, ACCUM, 52X2E1	G430L 4300 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 3-3 i n Visit 10 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	4	(10) 30DOR-SLIT10	STIS/CCD, ACCUM, 52X2E1	G750L 7751 A	WAVECAL=NO; CR-SPLIT=NO			Pattern 1, Exps 4-4 i n Visit 10 (1)	240 Secs (480 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	5	CCDFLAT	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A					[==>(Copy 1)] [==>(Copy 2)]	[1]

