



17416 - Wind Structure of 31 Cygni from UV Eclipse Mapping

Cycle: 31, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Dr. Philip D. Bennett (PI) (CSA Member) (Contact)	Dalhousie University
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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) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:05.0	yes
02	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:06.0	yes
03	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:07.0	yes
04	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:09.0	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>
05	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:10.0	yes
06	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:11.0	yes
07	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:12.0	yes
08	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:14.0	yes
09	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:15.0	yes
10	(1) -31-CYG WAVE	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	1	16-Aug-2024 14:01:16.0	yes

10 Total Orbits Used

ABSTRACT

Observing the stellar wind of a mass-losing red supergiant in an eclipsing binary system in absorption against the ultraviolet continuum of a hot companion provides an elegant way of mapping the structure of the supergiant's wind with high spatial resolution. Repeated observations near eclipse allow the wind to be mapped as the line of sight to the hot companion sweeps through the wind. The bright eclipsing binary 31 Cygni (K4 Ib + B3 V) is ideal for this work. It is bright enough for high-resolution UV spectroscopy with well-separated components and an orbital period of 10.34 years. In the ultraviolet, the hot early-type companion dominates the flux, thereby avoiding the complexities of analyzing a composite spectrum. We propose to map the wind structure of the 31 Cyg red supergiant by observing the FUV spectrum near and during the March 2024 eclipse at 10 visits with HST/STIS. These UV observations can only be done with HST.

OBSERVING DESCRIPTION

We propose to observe the FUV spectrum of the red supergiant eclipsing binary 31 Cygni (K5 Ib + B3 V) from 1150 - 3050 Å using the E140M echelle grating, 2 prime tilts of the E230M echelle grating (at central wavelengths of 1978 and 2707 Å), and 1 tilt of the E230H echelle grating (at a central wavelength of 2912 Å) at 10 epochs (HST visits) during the ingress, totality, and egress phases of the Feb-Apr 2024 eclipse of 31 Cygni. In this event, the red supergiant primary will eclipse the hot B-type companion. The duration of total eclipse is 57 days (2024 Feb 21 through Apr 18), with mid-eclipse on 2024 Mar 22. The proposed UV echelle observations at each observation epoch (HST visit) will fit into a single HST orbit, so the entire program can be carried out in just 10 orbits. Three visits (1,8,9) will provide observations of the RSG wind away from eclipse. Two visits (2,7) will sample atmospheric eclipse when the line of sight to the hot companion passes deep into the extended outer atmosphere of the red supergiant. Two visits (3,6) will sample deep atmospheric eclipse at times just prior to the onset (ingress) of total eclipse, and just after emergence (egress) from totality. Two visits (4,5) will observe the FUV spectrum during total eclipse, when the B-type continuum is occulted and an emission line spectrum seen due to the scattering of hot star photons by the wind of the RSG star. One final visit (10) will observe the intrinsic FUV spectrum of the hot companion even further from eclipse, when circumstellar absorption from the red supergiant's wind should be minimal. This final visit is to provide a baseline stellar spectrum of the hot companion for analyses of the additional circumstellar absorption seen at phases closer to eclipse, as well as yielding an additional radial velocity point to refine the secondary orbit. The dates of the proposed 10 visits are shown in Table 1 below.

Table 1. Summary of Proposed Visits Near & During the Eclipse of 31 Cygni

Visit	Start Date	Window	End Date	Window	Eclipse Stage
1	2023 Dec 21	2024 Jan 16	Wind absorption	-	ingress
2	2024 Feb 13	2024 Feb 15	Atmospheric eclipse	-	ingress
3	2024 Feb 16	2024 Feb 19	Partial eclipse	-	ingress
4	2024 Mar 10	2024 Mar 21	Total eclipse	- 1st visit	wind scattered emission line spectrum
5	2024 Mar 23	2024 Apr 04	Total eclipse	- 2nd visit	wind scattered emission line spectrum
6	2024 Apr 20	2024 Apr 23	Partial eclipse	-	egress
7	2024 Apr 24	2024 Apr 26	Atmospheric eclipse	-	egress
8	2024 May 10	2024 May 22	Wind absorption	-	egress
9	2024 Jun 10	2024 Jun 19	Far wind absorption	-	egress

10 2024 Sep 09 2024 Sep 26 Out of eclipse - intrinsic B star spectrum

These observation dates have been constrained by use of BETWEEN dates for each visit, and AFTER constraints to ensure that each visit is executed after the preceding visit. For Visits 4, 5 & 8, about 150 s of "unused" orbit visibility (according to the Orbit Planner) has been left at the end of the science program to allow schedulability at the requested dates of those visits. The orbit duration shown in the Orbit planner is apparently an average value of the actual orbit visibility. If unused time is left at the end of the orbit, then the available range of schedulable dates shown in the Visit Planner expands. Therefore, we have added a block of unused time at the ends of those 3 visits, as needed to permit those visits to be scheduled during the windows set by the BETWEEN constraints for those visits. Removing any of this "unused" orbit time impacts the schedulability of these 3 visits, according to the APT Visit Planner.

The following two ephemerii were used to predict times of the March 2024 eclipse:

1. Gyldenkerne & Johansen 1970 A&AS,1,129 based on the 1962 eclipse [GJ70], and
2. Stencel et al. 1984 ApJ, 281, 751, based on the 1982 eclipse [S84].

The GJ70 ephemeris predicts a 2024 mid-eclipse on JD 2460391.69, while S84 yields a 2024 mid-eclipse time of JD 2460391.75. These values only differ by 0.06 days or 86 minutes, and so the average mid-eclipse time of JD 2460391.72 = 2024 Mar 22 at 05:17 UT has been used for this work. The predicted length of totality is 57.66 days. Totality begins on JD 2460361.70 (2024 Feb 21) and ends on JD 2460419.36 (2024 Apr 18), with partial eclipse phases lasting about 4-5 days before and after these dates, respectively. The two mid-eclipse visits (Visit 4 & 5) are planned to bracket the 12 day periods prior to and immediately following mid-eclipse respectively. Both Visit 4 & 5 will occur within the central half of the total eclipse period, to avoid possible exposure of the MAMA detectors to the hot star's UV-bright continuum.

Observations for each visit will begin with acquiring the target in the visible in the F25D5 aperture, and then performing a peakup using the neutral density 0.3X0.05ND aperture (to avoid saturating the CCD due to the brightness of the target in the visible). These acquisitions and peakups will be carried out in the visible spectral region (where the flux is dominated by the red supergiant primary) for each visit because the hot companion will be faint & variable in the UV during eclipse, and peakups in the UV might be problematic at those times. Four science exposures will be carried for each visit using E140M (at the fixed central wavelength, or cenwave, of 1425 Å), E230M at the 2 cenwaves of 1978 and 2707 Å, and E230H at the cenwave of 2912 Å (see Table 2 below for details). The B-type secondary star in 31 Cygni is UV-bright (out of eclipse), with FUV fluxes near 2.0×10^{-10} ergs/cm²/s/Å from 1240-1300Å, decreasing to 5.0×10^{-11} erg/cm²/s/Å at 2350 Å and to 3.0×10^{-11} ergs/cm²/s/Å at 3000 Å. The maximum global count rate of ~150,000 counts/s occurs for the E230H/2912 exposure with the 0.2X0.09 aperture. The other medium-resolution STIS echelle exposures use the 31X0.05NDB neutral density aperture to reduce the bright continuum flux, except for Visit 4 & 5 during total eclipse (when the B

star's UV-bright continuum is absent), which use the bare 0.2X0.06 aperture. The hot star in 31 Cygni is a B-type main-sequence star, and its continuum flux is not expected to vary, and has never been observed to vary (except for occultation of the flux during eclipse). None of these STIS/MAMA echelle observations exceed the bright limits for a non-variable source (except during elcipse, when that source is occulted). The investigators have observed 31 Cyg with a similar observational setup before without problems or violation of the UV/MAMA bright limits.

Each of the 10 planned visits will be 1 orbit in length, and will contain a similar sequence of planned STIS UV spectroscopic exposures. The exposure lengths and setup for all but 3 of the 10 visits are identical. The only differences are for the total eclipse visits (visits 4 & 5), which will observe the spectrum with the E140M & E230M gratings with longer exposures using the bare 0.2X0.06 aperture (instead of the neutral density 31X0.05NDB slit) because the hot star's UV-bright continuum will be absent during eclipse, and only a (much) weaker emission line spectrum will be present. Visit 8 will observe circumstellar absorption from the red supergiant's wind, along a sightline about 1 month after egress, using slightly shorter exposure times than the other visits (Table 2 below) in order to allow scheduling this observation during the preferred mid-May period. Otherwise, the only difference between the out-of-eclipse visits is the planned observation date, which will be constrained by BETWEEN timing requirements to lie between specified dates chosen to sample key events near and during the eclipse.

Table 2. Summary of STIS Spectroscopic Grating Configurations, Exposure Times, ETC IDs and S/N Estimates

Detector/Grating	Observation Type	Aperture	Cenwave	ETC ID	Exp Time (s)	S/N		
CCD/ACQ	All	F25ND5	1892621	2	135			
CCD/ACQ/PEAK	All	0.3X0.05ND	1892619	0.1	140			
GO-WAVECAL/E140M	Calibration Lamp	0.2X0.06	1425		20			
STIS/E140M	Out-of-eclipse	31X0.05NDB	1425	1891728	240	20-40		
STIS/E140M	Total eclipse	0.2X0.06	1425	1893440	180	20-30 (em lines)		
GO-WAVECAL/E230M	Calibration Lamp			0.2X0.06	1978	20		
STIS/E230M	Out-of-eclipse	31X0.05NDB	1978	1891736	195	25-40		
STIS/E230M	Total eclipse			0.2X0.06	1978	1893441	155	30-50 (em lines)
STIS/E230M	Out-of-eclipse	31X0.05NDB	2707	1891738	101	25-30		
STIS/E230M	Total eclipse			0.2X0.06	2707	1893442	80	30-50 (em lines)
GO-WAVECAL/E230M	Calibration Lamp			0.2X0.06	2707	20		
STIS/E230H	Out-of-eclipse	0.2X0.09	2912	1891754	68	20-30		

STIS/E230H Total eclipse 0.2X0.09 2912 1893443 240 30-40 (Mg II h&k lines)

GO-WAVECAL/E230H Calibration Lamp 0.2X0.09 2912 20

The ETC calculations shown here used a user-supplied input file based on a composite of FUSE, HST & IUE/LSA UV and visible fluxes of 31 Cyg. Acquisition and peakup using the CCD visible flux used a Pickles K4I (3990K) model normalized to a flux $F_{\lambda} = 1.184e-10$ ergs/cm²/s/Å at 5500 Å, consistent with the above user-supplied input file in this region. (That user input spectrum only extends longward to 5685 Å, so Pickles model fluxes are used to model the extension of the observed spectrum into the red and IR regions, as observed by the CCD detector during acquisition and peakup). Total eclipse ETC calculations used a combination of UV total eclipse observations from FUSE Program D123 Visits 3 & 4 (June-July 2003), and IUE SWP18108 & LWR 14262 LSA images (Sept 1982).

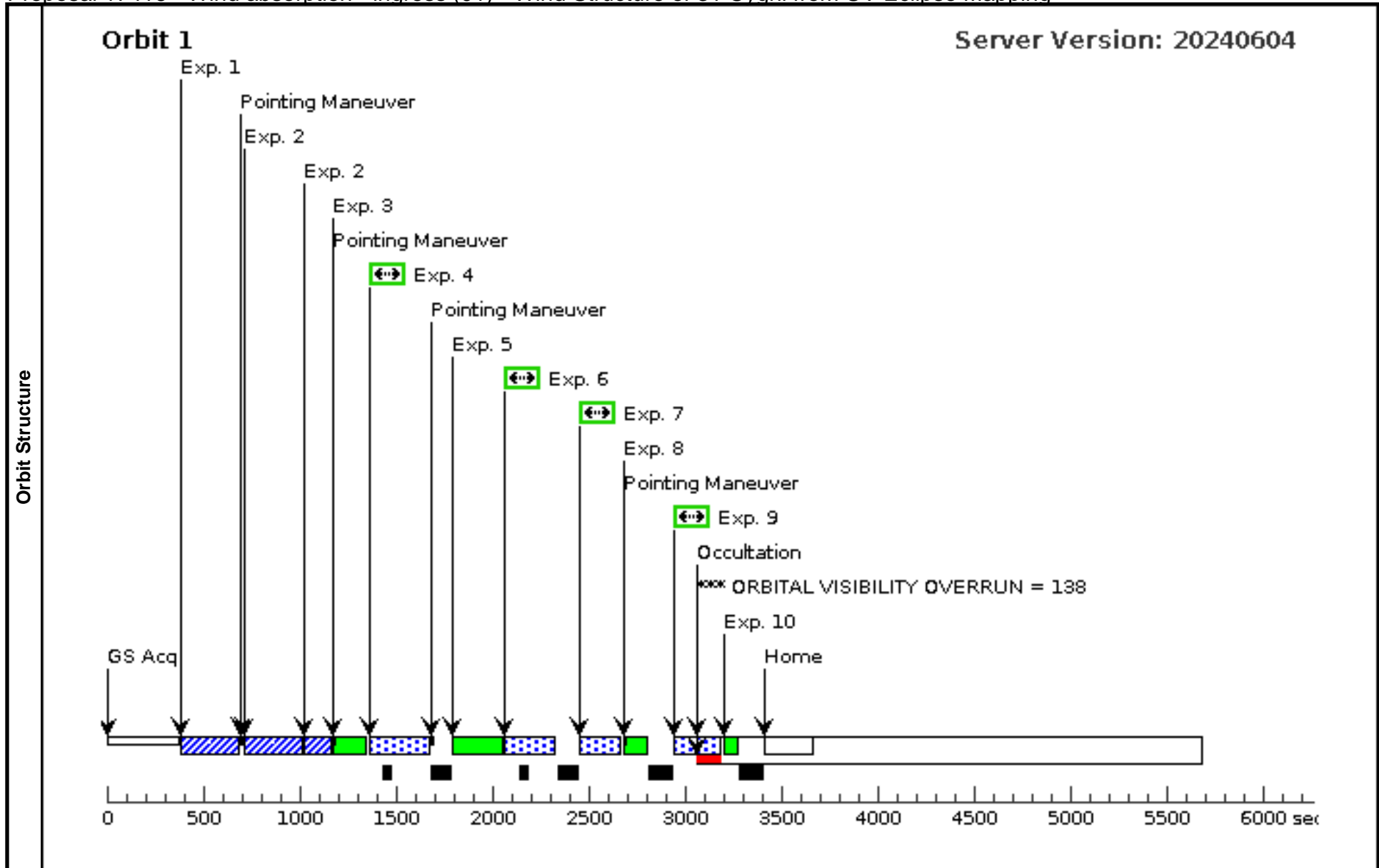
To optimize packing of the science observations into each a single orbit's visibility period, we have turned off default wavecal (WAVECAL=NO), and specified user GO wavecal with each science exposure. This allows the final GO wavecal to be done during Earth occultation, which optimizes the available time for science exposures. The GO exposure times are the default 20 seconds for all 4 calibration lamp exposures.

Proposal 17416 - Wind absorption - ingress (01) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Visit	Proposal 17416, Wind absorption - ingress (01), completed Fri Aug 16 18:01:16 GMT 2024 Diagnostic Status: Warning Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 21-DEC-2023:00:00:00 AND 16-JAN-2024:00:00:00 <i>Comments: Visit 1 will observe the UV continuum of the hot companion of 31 Cyg, with circumstellar absorption from the stellar wind of the red supergiant primary superimposed, about 2.5 months prior to ingress into eclipse.</i>																	
	Diagnosics (Wind absorption - ingress (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																	
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>(1)</td> <td>-31-CYG</td> <td>RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000</td> <td>Proper Motion RA: 1.743999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec</td> <td>V=3.8+/-0.1 F_{lam}(1270 Å)= 1.9e-10 ergs/cm²/s. FUV flux is from main sequence B star and is NOT variable (except during eclipse)</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.743999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{lam} (1270 Å)= 1.9e-10 ergs/cm ² /s. FUV flux is from main sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS
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<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]																		

Proposal 17416 - Wind absorption - ingress (01) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 38.54 sec.</i>										
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 1.15 sec.</i>										
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 A				[==>]	[1]	
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 A	WAVECAL=NO			240 Secs (240 Secs) [==>]	[1]	
	<i>Comments: Total count rate 89138 counts/sec.</i>										
	5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 A				[==>]	[1]	
	6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 A				195 Secs (195 Secs) [==>]	[1]	
<i>Comments: Total count rate 66,830 count/sec.</i>											
7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 A				101 Secs (101 Secs) [==>]	[1]		
<i>Comments: Total count rate 98791 counts/sec.</i>											
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 A				[==>]	[1]		
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				68 Secs (68 Secs) [==>]	[1]		
<i>Comments: Total count rate 149654 counts/sec.</i>											
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				[==>]	[1]		

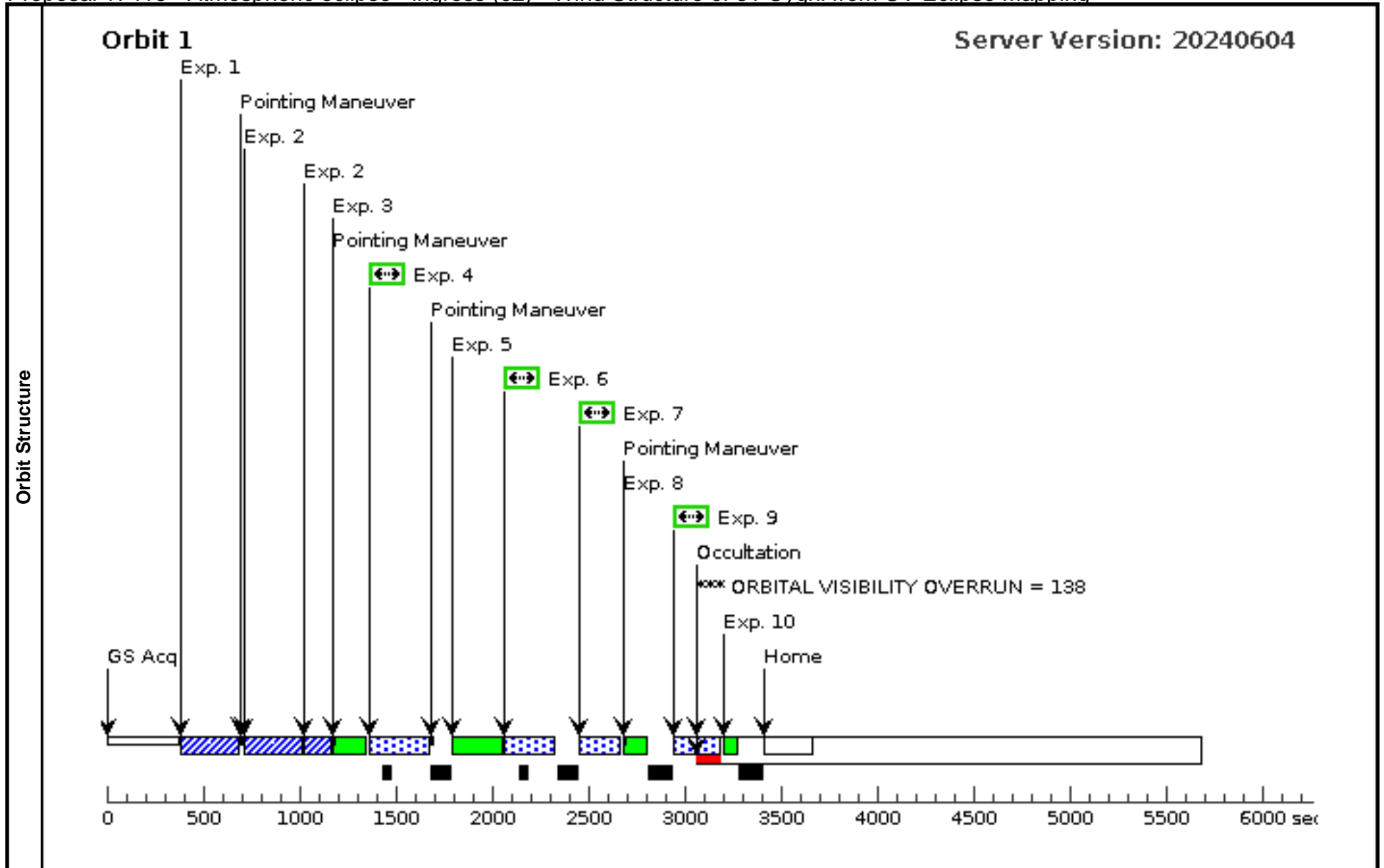


Proposal 17416 - Atmospheric eclipse - ingress (02) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Visit	Proposal 17416, Atmospheric eclipse - ingress (02), completed Fri Aug 16 18:01:17 GMT 2024 Diagnostic Status: Warning Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: AFTER 01; BETWEEN 13-FEB-2024:00:00:00 AND 15-FEB-2024:00:00:00 <i>Comments: Visit 2 will observe the UV continuum of the hot companion of 31 Cyg, seen through the extended outer atmosphere of the supergiant approaching ingress into eclipse.</i>																	
	Diagnosics (Atmospheric eclipse - ingress (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																	
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	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.743999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F_lam(1270 A)= 1.9e-10 ergs/cm ² /s. FUV flux is from main sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS													

Proposal 17416 - Atmospheric eclipse - ingress (02) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 38.54 sec.</i>										
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 1.15 sec.</i>										
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 A				[==>]	[1]	
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 A	WAVECAL=NO			240 Secs (240 Secs) [==>]	[1]	
	<i>Comments: Total count rate 89138 counts/sec.</i>										
	5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 A				[==>]	[1]	
	6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 A				195 Secs (195 Secs) [==>]	[1]	
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7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 A				101 Secs (101 Secs) [==>]	[1]		
<i>Comments: Total count rate 98791 counts/sec.</i>											
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 A				[==>]	[1]		
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				68 Secs (68 Secs) [==>]	[1]		
<i>Comments: Total count rate 149654 counts/sec.</i>											
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				[==>]	[1]		



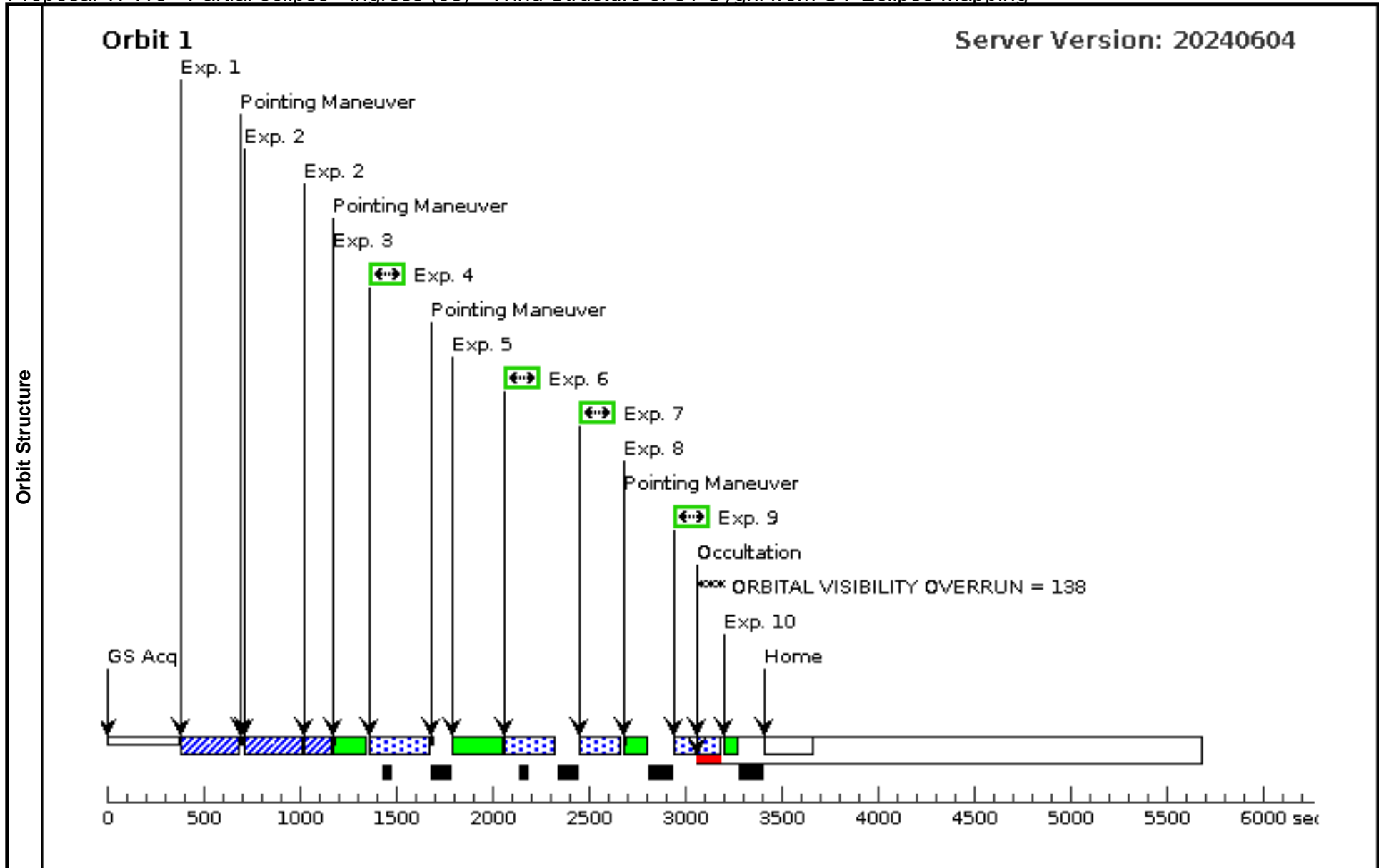
Proposal 17416 - Partial eclipse - ingress (03) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Fri Aug 16 18:01:17 GMT 2024

Visit	<p>Proposal 17416, Partial eclipse - ingress (03), completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA</p> <p>Special Requirements: AFTER 02; BETWEEN 16-FEB-2024:00:00:00 AND 19-FEB-2024:00:00:00</p> <p><i>Comments: Visit 3 will observe the UV continuum of the hot companion of 31 Cyg during the partial eclipse ingress phase.</i></p>					
	<p>(Partial eclipse - ingress (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN</p>					
Diagnostics						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F_lam(1270 A)= 1.9e-10 ergs/cm ² /s/A. FUV flux is from main sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>Category=STAR</i></p> <p><i>Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]</i></p>						

Proposal 17416 - Partial eclipse - ingress (03) - Wind Structure of 31 Cygni from UV Eclipse Mapping

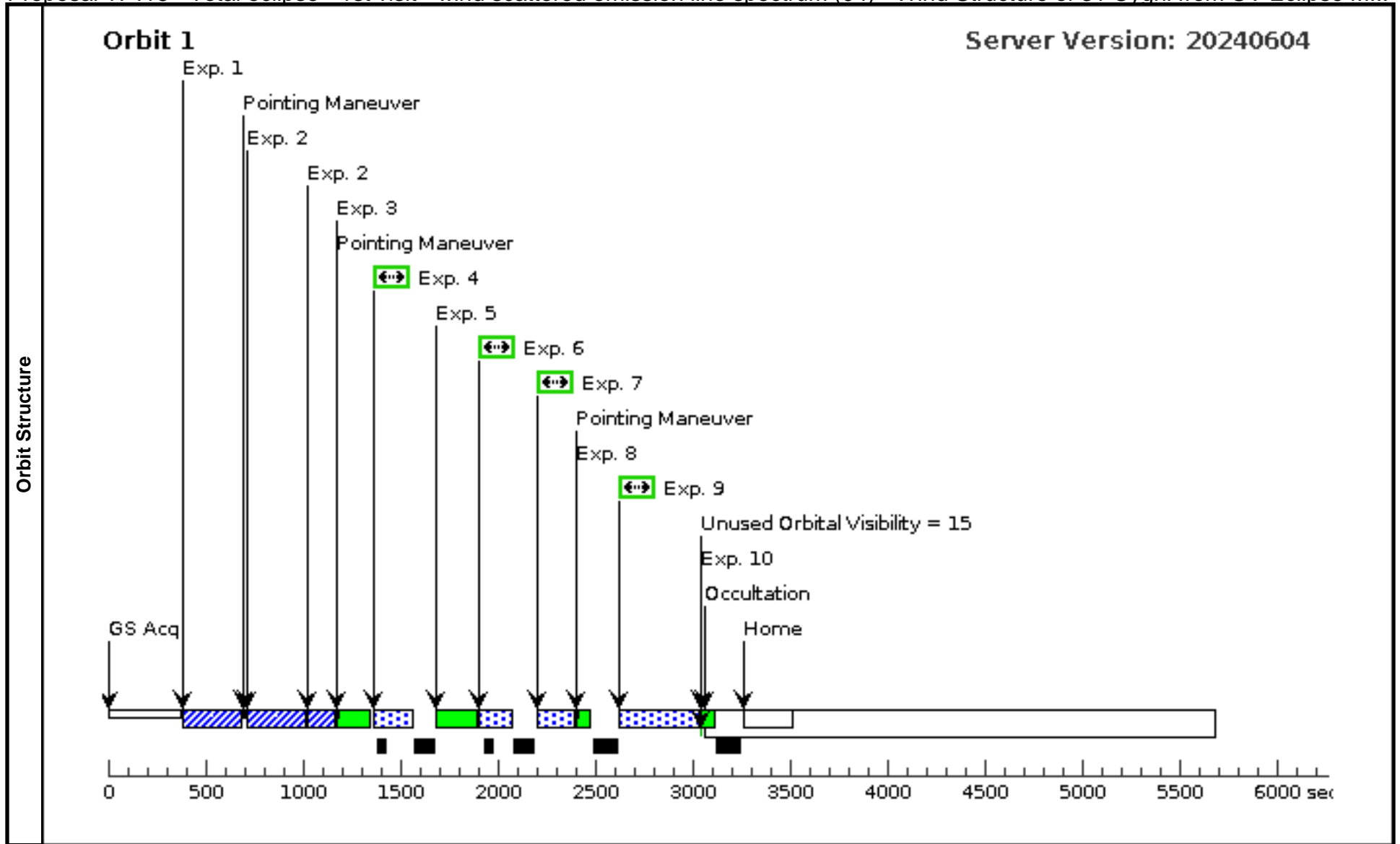
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs)		
									[==>]	[1]	
	<i>Comments: Exposure saturates in 38.54 sec.</i>										
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs)		
									[==>]	[1]	
	<i>Comments: Exposure saturates in 1.15 sec.</i>										
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 A				[==>]	[1]	
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 A	WAVECAL=NO			240 Secs (240 Secs)		
									[==>]	[1]	
<i>Comments: Total count rate 89138 counts/sec.</i>											
5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 A				[==>]	[1]		
6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 A				195 Secs (195 Secs)			
								[==>]	[1]		
<i>Comments: Total count rate 66,830 count/sec.</i>											
7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 A				101 Secs (101 Secs)			
								[==>]	[1]		
<i>Comments: Total count rate 98791 counts/sec.</i>											
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 A				[==>]	[1]		
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				68 Secs (68 Secs)			
								[==>]	[1]		
<i>Comments: Total count rate 149654 counts/sec.</i>											
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				[==>]	[1]		



Proposal 17416 - Total eclipse - 1st visit - wind scattered emission line spectrum (04) - Wind Structure of 31 Cygni from UV Eclipse M...

Fri Aug 16 18:01:17 GMT 2024

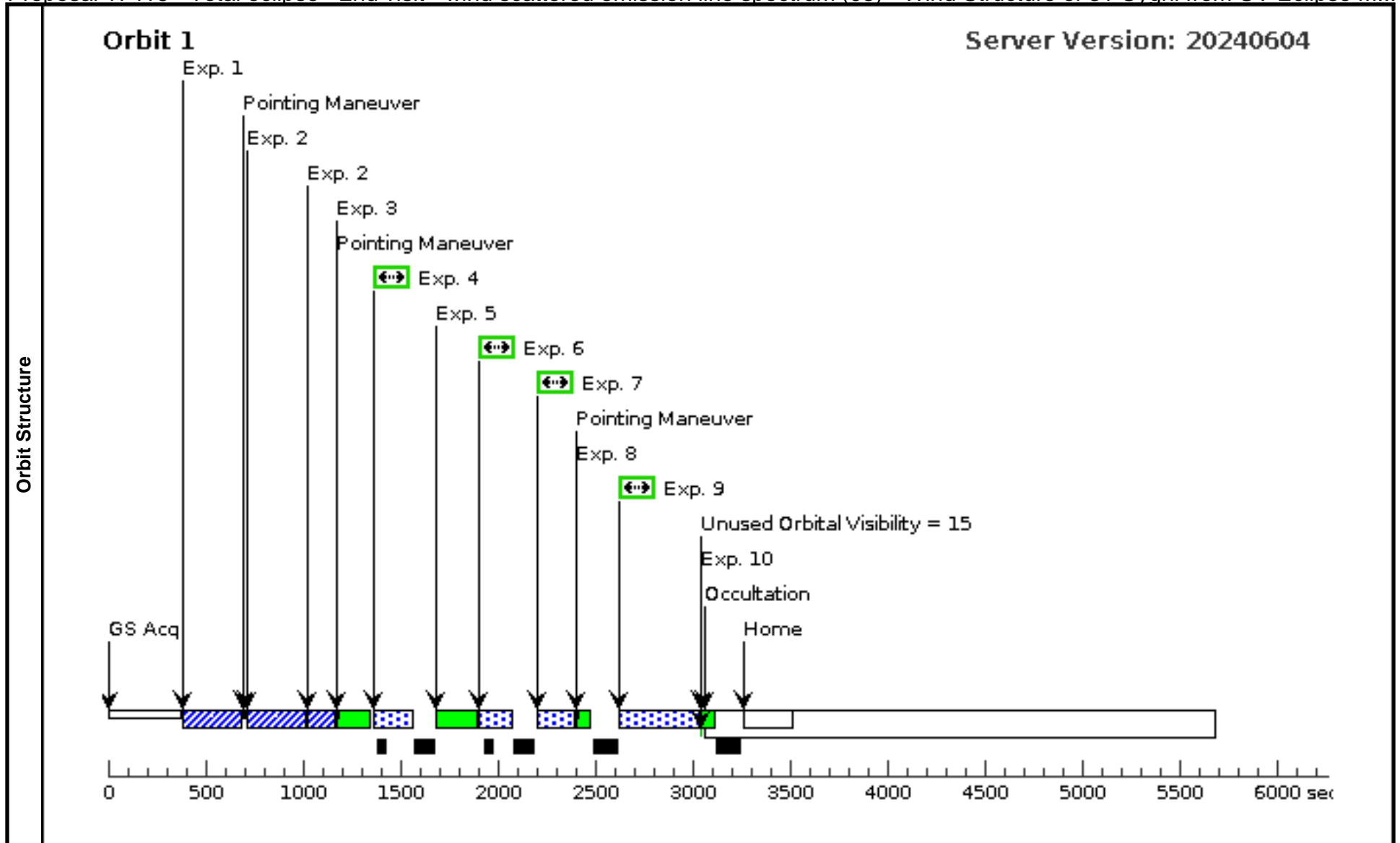
Visit	Proposal 17416, Total eclipse - 1st visit - wind scattered emission line spectrum (04), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: AFTER 03; BETWEEN 10-MAR-2024:00:00:00 AND 21-MAR-2024:00:00:00 Comments: Visit 4 will observe the UV emission line spectrum seen in total eclipse. This spectrum is formed by B-star continuum photons scattered by the wind of the red supergiant. This is the 1st visit in total eclipse, with a window from mid-eclipse - 12 days to mid-eclipse (Mar 22).																																																																																																																																																																									
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Proposal 17416 - Total eclipse - 2nd visit - wind scattered emission line spectrum (05) - Wind Structure of 31 Cygni from UV Eclipse M...

Fri Aug 16 18:01:17 GMT 2024

Visit	Proposal 17416, Total eclipse - 2nd visit - wind scattered emission line spectrum (05), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: AFTER 04; BETWEEN 23-MAR-2024:00:00:00 AND 04-APR-2024:00:00:00 Comments: Visit 5 will observe the UV emission line spectrum seen in total eclipse. This spectrum is formed by B-star continuum photons scattered by the wind of the red supergiant. This is the 2nd visit in total eclipse, with a window from mid-eclipse (Mar 22) to mid-eclipse + 12 days.																																																																																																																																																											
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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>CCD ACQ (1892621)</td> <td>(1) -31-CYG</td> <td>STIS/CCD, ACQ, F25ND5</td> <td>MIRROR</td> <td></td> <td></td> <td></td> <td>2.0 Secs (2 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td colspan="9">Comments: Exposure saturates in 38.54 sec.</td> </tr> <tr> <td>2</td> <td>ACQ/PEAK in 0.3X0.05 ND (1892619)</td> <td>(1) -31-CYG</td> <td>STIS/CCD, ACQ/PEAK, 0.3X0.05ND</td> <td>MIRROR</td> <td></td> <td></td> <td></td> <td>0.1 Secs (0.1 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td colspan="9">Comments: Exposure saturates in 1.15 sec.</td> </tr> <tr> <td>3</td> <td>GO Wavecal E140M</td> <td>WAVE</td> <td>STIS/FUV-MAMA, ACCUM, 0.2X0.06</td> <td>E140M 1425 Å</td> <td></td> <td></td> <td></td> <td>[==>]</td> <td>[1]</td> </tr> <tr> <td>4</td> <td>E140M (1893440)</td> <td>(1) -31-CYG</td> <td>STIS/FUV-MAMA, ACCUM, 0.2X0.06</td> <td>E140M 1425 Å</td> <td></td> <td>WAVECAL=NO</td> <td></td> <td>180 Secs (180 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td colspan="9">Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.</td> </tr> <tr> <td>5</td> <td>GO Wavecal E230M 1978</td> <td>WAVE</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.06</td> <td>E230M 1978 Å</td> <td></td> <td></td> <td></td> <td>[==>]</td> <td>[1]</td> </tr> <tr> <td>6</td> <td>E230M 1978 (1893441)</td> <td>(1) -31-CYG</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.06</td> <td>E230M 1978 Å</td> <td></td> <td></td> <td></td> <td>155 Secs (155 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td colspan="9">Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.</td> </tr> <tr> <td>7</td> <td>E230M 2707 (1893442)</td> <td>(1) -31-CYG</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.06</td> <td>E230M 2707 Å</td> <td></td> <td></td> <td></td> <td>80 Secs (80 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td colspan="9">Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.</td> </tr> <tr> <td>8</td> <td>GO Wavecal E230M 2707</td> <td>WAVE</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.06</td> <td>E230M 2707 Å</td> <td></td> <td></td> <td></td> <td>[==>]</td> <td>[1]</td> </tr> <tr> <td>9</td> <td>E230H 2912 (1893443)</td> <td>(1) -31-CYG</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.09</td> <td>E230H 2912 Å</td> <td></td> <td></td> <td></td> <td>240 Secs (240 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>10</td> <td>GO Wavecal E230H 2912</td> <td>WAVE</td> <td>STIS/NUV-MAMA, ACCUM, 0.2X0.09</td> <td>E230H 2912 Å</td> <td></td> <td></td> <td></td> <td>[==>]</td> <td>[1]</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	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]	Comments: Exposure saturates in 38.54 sec.									2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]	Comments: Exposure saturates in 1.15 sec.									3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 Å				[==>]	[1]	4	E140M (1893440)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 Å		WAVECAL=NO		180 Secs (180 Secs) [==>]	[1]	Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.									5	GO Wavecal E230M 1978	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 Å				[==>]	[1]	6	E230M 1978 (1893441)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 Å				155 Secs (155 Secs) [==>]	[1]	Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.									7	E230M 2707 (1893442)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 Å				80 Secs (80 Secs) [==>]	[1]	Comments: Use bare 0.2X0.06 aperture when B star is in total eclipse, and UV continuum absent.									8	GO Wavecal E230M 2707	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 Å				[==>]	[1]	9	E230H 2912 (1893443)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				240 Secs (240 Secs) [==>]	[1]	10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				[==>]	[1]
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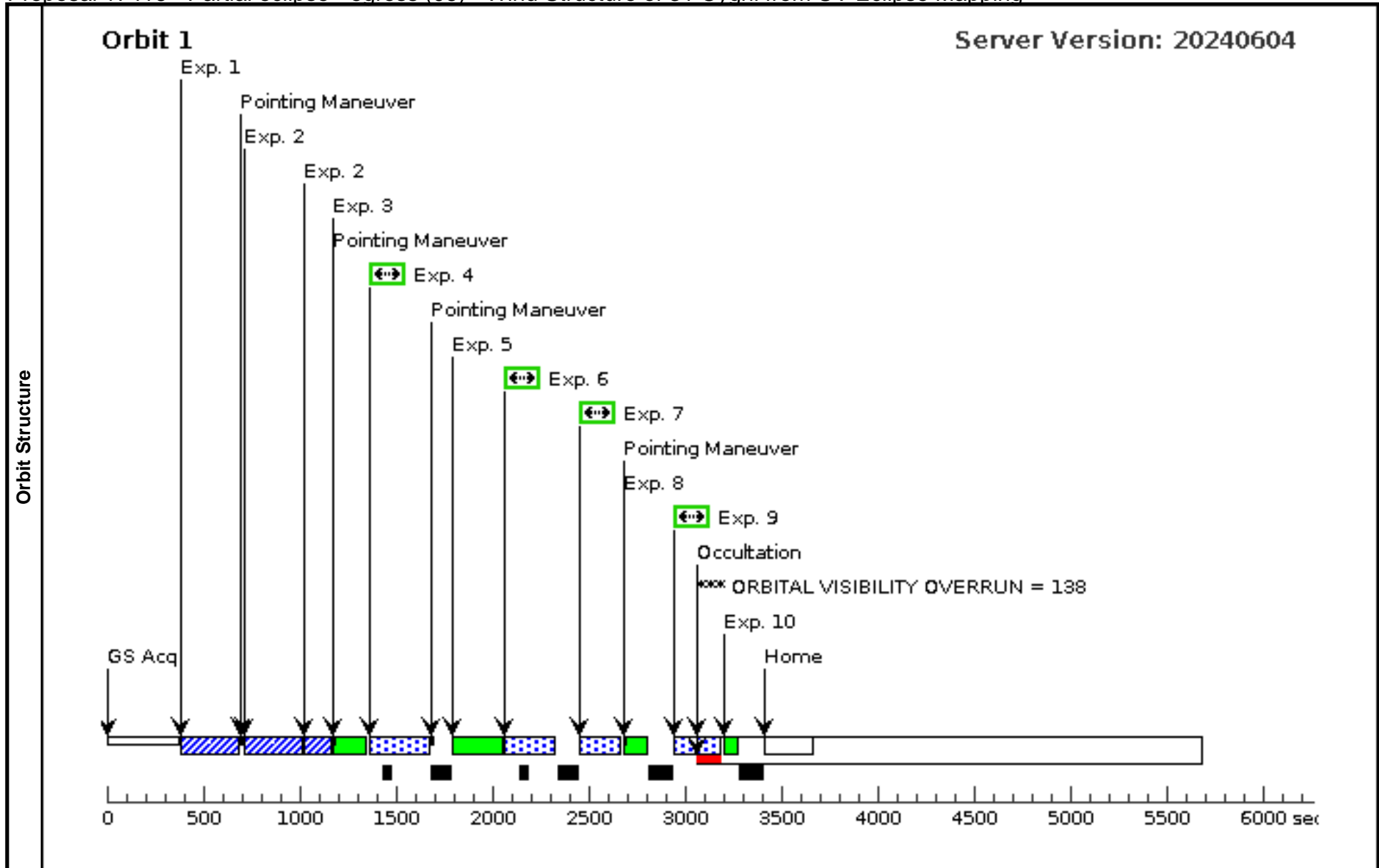
Proposal 17416 - Partial eclipse - egress (06) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Fri Aug 16 18:01:17 GMT 2024

Visit	<p>Proposal 17416, Partial eclipse - egress (06), completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA</p> <p>Special Requirements: AFTER 05; BETWEEN 20-APR-2024:00:00:00 AND 23-APR-2024:00:00:00</p> <p><i>Comments: Visit 6 will observe the UV continuum of the hot companion of 31 Cyg during the partial eclipse egress phase.</i></p>					
Diagnostics	(Partial eclipse - egress (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.743999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{lam} (1270 Å)= 1.9e-10 ergs/cm ² /s. FUV flux is from main-sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS
	<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p>Category=STAR</p> <p>Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]</p>					

Proposal 17416 - Partial eclipse - egress (06) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]
	<i>Comments: Exposure saturates in 38.54 sec.</i>									
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	<i>Comments: Exposure saturates in 1.15 sec.</i>									
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 A				[==>]	[1]
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 A	WAVECAL=NO			240 Secs (240 Secs) [==>]	[1]
	<i>Comments: Total count rate 89138 counts/sec.</i>									
	5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 A				[==>]	[1]
	6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 A				195 Secs (195 Secs) [==>]	[1]
<i>Comments: Total count rate 66,830 count/sec.</i>										
7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 A				101 Secs (101 Secs) [==>]	[1]	
<i>Comments: Total count rate 98791 counts/sec.</i>										
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 A				[==>]	[1]	
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				68 Secs (68 Secs) [==>]	[1]	
<i>Comments: Total count rate 149654 counts/sec.</i>										
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A				[==>]	[1]	

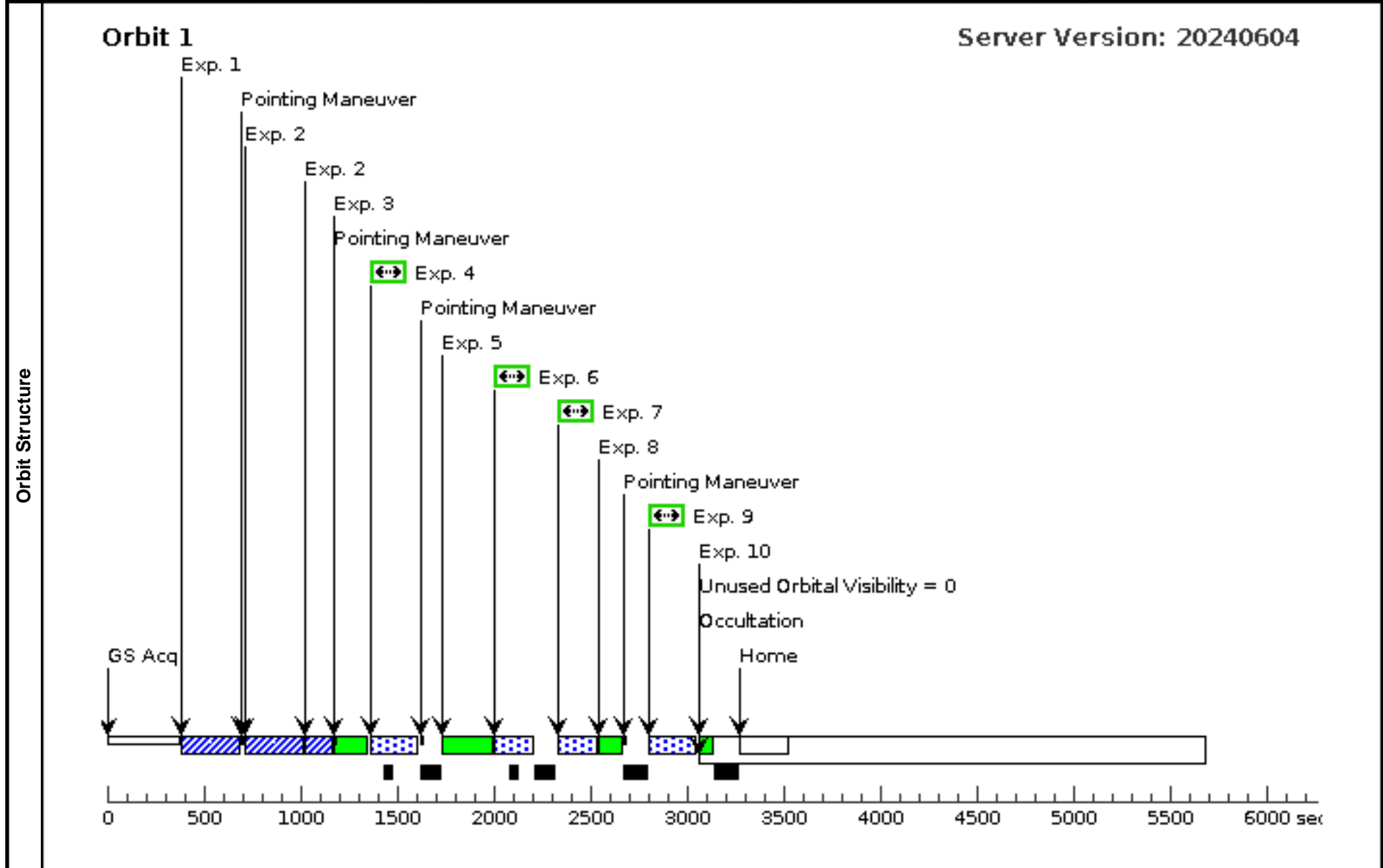


Proposal 17416 - Atmospheric eclipse - egress (07) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Visit	Proposal 17416, Atmospheric eclipse - egress (07), scheduled Fri Aug 16 18:01:17 GMT 2024 Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: (none) <i>Comments: Visit 7 will observe the UV continuum of the hot companion of 31 Cyg, seen through the extended outer atmosphere of the supergiant following egress from eclipse.</i>					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(1)		-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{Jam} (1270 Å)= 1.9e-10 ergs/cm ² /s/Å. FUV flux is from main sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]						

Proposal 17416 - Atmospheric eclipse - egress (07) - Wind Structure of 31 Cygni from UV Eclipse Mapping

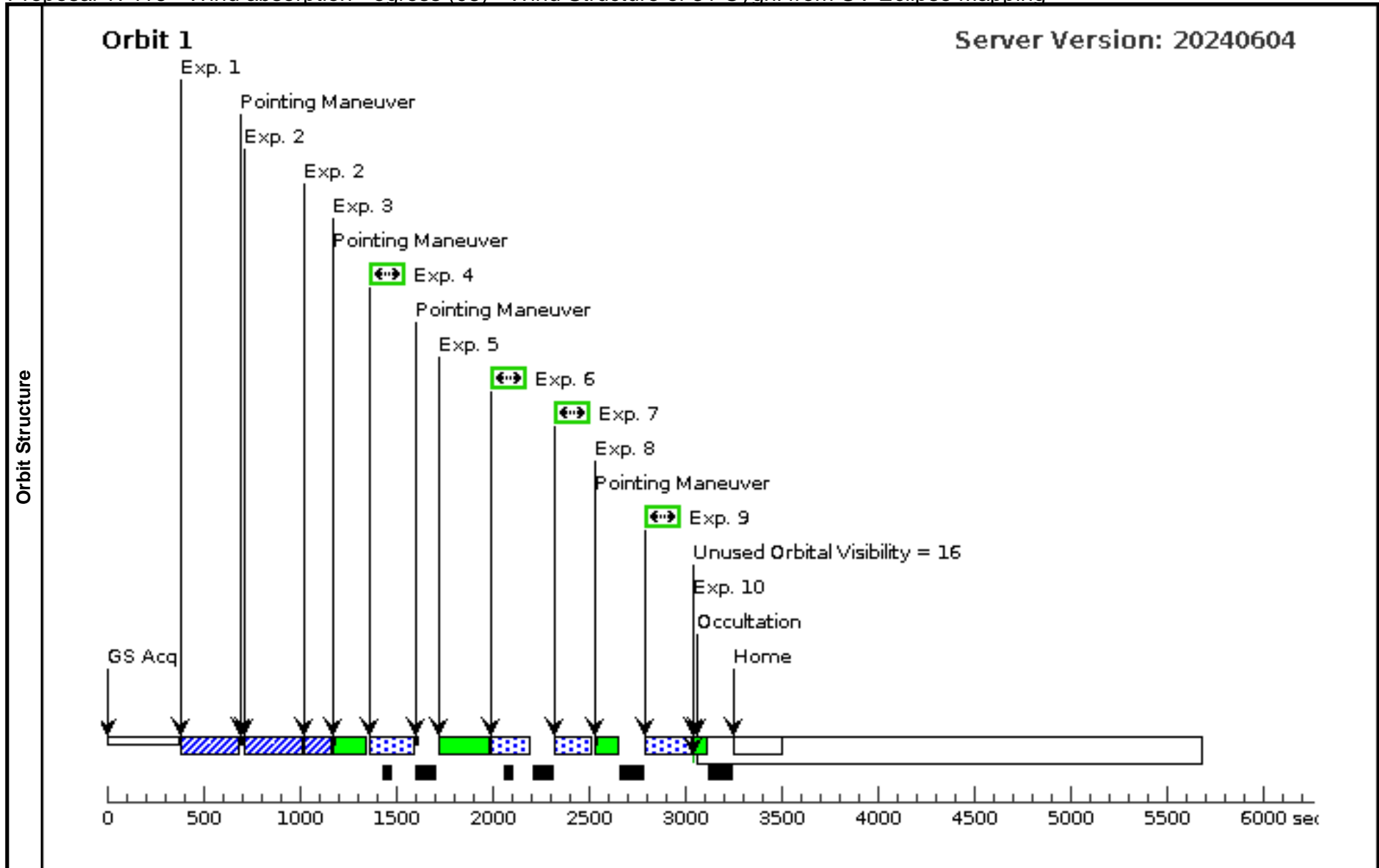
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	2.0 Secs (2 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 38.54 sec.</i>									
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	0.1 Secs (0.1 Secs) [==>]	[1]	
	<i>Comments: Exposure saturates in 1.15 sec.</i>									
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	[==>]	[1]	
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 A	WAVECAL=NO	Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	178 Secs (178 Secs) [==>]	[1]	
	<i>Comments: Total count rate 89138 counts/sec.</i>									
	5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	[==>]	[1]	
	6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	135 Secs (135 Secs) [==>]	[1]	
	<i>Comments: Total count rate 66,830 count/sec.</i>									
7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	85 Secs (85 Secs) [==>]	[1]		
<i>Comments: Total count rate 98791 counts/sec.</i>										
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	[==>]	[1]		
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	68 Secs (68 Secs) [==>]	[1]		
<i>Comments: Total count rate 149654 counts/sec.</i>										
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 A		Sequence 1-10 Non-I nt in Atmospheric ec lipse - egress (07)	[==>]	[1]		



Proposal 17416 - Wind absorption - egress (08) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Fri Aug 16 18:01:17 GMT 2024

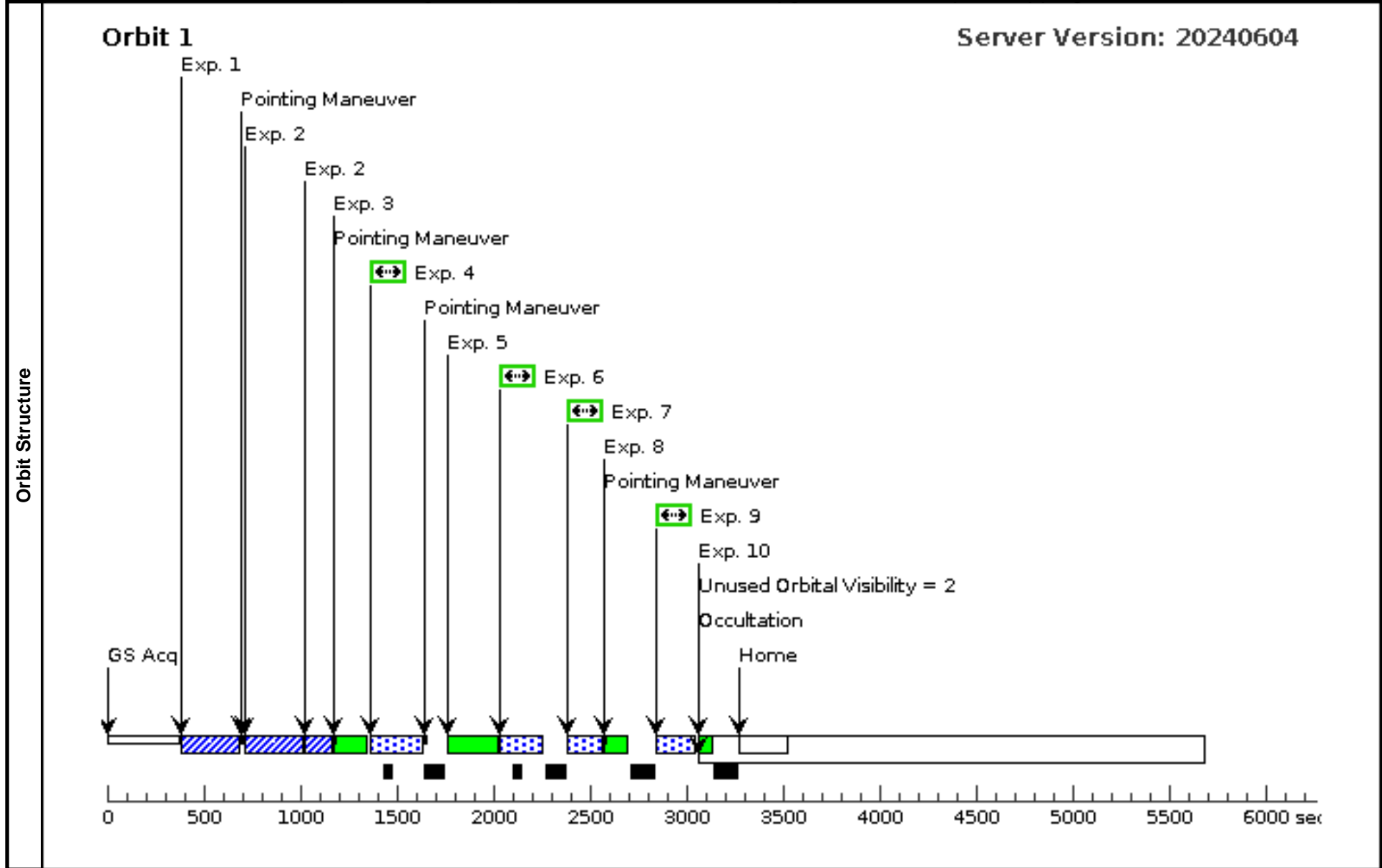
Visit	Proposal 17416, Wind absorption - egress (08), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 01-NOV-2024:00:00:00 AND 12-DEC-2024:00:00:00 Comments: Visit 8 will observe the UV continuum of the hot companion of 31 Cyg, with circumstellar absorption from the supergiant's stellar wind following egress from eclipse. This is a special setup with reduced exposure times for Visit 8 to allow schedulability in May 2024.																					
	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>(1)</td> <td>-31-CYG</td> <td>RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000</td> <td>Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec</td> <td>V=3.8+/-0.1 F_{lam}(1270 Å)= 1.9e-10 ergs/cm²/s/Å. FUV flux is from main sequence B star and is NOT variable (except during eclipse)</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STAR Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]</p>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{lam} (1270 Å)= 1.9e-10 ergs/cm ² /s/Å. FUV flux is from main sequence B star and is NOT variable (except during eclipse)
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																	
(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{lam} (1270 Å)= 1.9e-10 ergs/cm ² /s/Å. FUV flux is from main sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS																	
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit												
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]												
	Comments: Exposure saturates in 38.54 sec.																					
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]												
	Comments: Exposure saturates in 1.15 sec.																					
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 Å				[==>]	[1]												
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 Å		WAVECAL=NO		165 Secs (165 Secs) [==>]	[1]												
	Comments: Total count rate 89138 counts/sec.																					
	5	GO Wavecal E230M 1978	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 Å				[==>]	[1]												
	6	E230M 1978 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 Å				140 Secs (140 Secs) [==>]	[1]												
Comments: Total count rate 66,830 count/sec.																						
7	E230M 2707 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 Å				80 Secs (80 Secs) [==>]	[1]													
Comments: Total count rate 98791 counts/sec.																						
8	GO Wavecal E230M 2707	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 Å				[==>]	[1]													
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				65 Secs (65 Secs) [==>]	[1]													
Comments: Total count rate 149654 counts/sec.																						
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				[==>]	[1]													



Proposal 17416 - Far wind absorption - egress (09) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Fri Aug 16 18:01:17 GMT 2024

Visit	Proposal 17416, Far wind absorption - egress (09), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 01-MAR-2025:00:00:00 AND 03-APR-2025:00:00:00 Comments: Visit 9 will observe the UV continuum of the hot companion of 31 Cyg, with circumstellar absorption from the supergiant's stellar wind about 3 months post-eclipse.																																																																																																																																																																																			
	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>(1)</td> <td>-31-CYG</td> <td>RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000</td> <td>Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec</td> <td>V=3.8+/-0.1 F_{Jam}(1270 Å)= 1.9e-10 ergs/cm²/s/Å. FUV flux is from main-sequence B star and is NOT variable (except during eclipse)</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database. Category=STAR Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]</p>										#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{Jam} (1270 Å)= 1.9e-10 ergs/cm ² /s/Å. FUV flux is from main-sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS																																																																																																																																																													
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Proposal 17416 - Out of eclipse - intrinsic B star spectrum (10) - Wind Structure of 31 Cygni from UV Eclipse Mapping

Fri Aug 16 18:01:17 GMT 2024

Visit	Proposal 17416, Out of eclipse - intrinsic B star spectrum (10), implementation Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA Special Requirements: AFTER 01-NOV-2025:00:00:00; AFTER 09 <i>Comments: Visit 10 will observe the intrinsic spectrum of the B-star companion, out-of-eclipse and (relatively) uncontaminated by circumstellar absorption from the supergiant's wind about 6 months post-eclipse.</i>									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	-31-CYG	RA: 20 13 37.9082 (303.4079508d) Dec: +46 44 28.76 (46.74132d) Equinox: J2000	Proper Motion RA: 1.7439999999999998 mas/yr Proper Motion Dec: 3.39 mas/yr Parallax: 0.0029617" Epoch of Position: 2000 Radial Velocity: -7.24 km/sec	V=3.8+/-0.1 F _{Jam} (1270 Å)= 1.9e-10 ergs/cm ² /s/Å. FUV flux is from main-sequence B star and is NOT variable (except during eclipse)	Reference Frame: ICRS			
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=STAR Description=[B3-B5 V-IV, CIRCUMSTELLAR MATTER, INTERACTING BINARY, WIND]									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	CCD ACQ (1892621)	(1) -31-CYG	STIS/CCD, ACQ, F25ND5	MIRROR				2.0 Secs (2 Secs) [==>]	[1]
	<i>Comments: Exposure saturates in 38.54 sec.</i>									
	2	ACQ/PEAK in 0.3X0.05 ND (1892619)	(1) -31-CYG	STIS/CCD, ACQ/PEAK, 0.3X0.05ND	MIRROR				0.1 Secs (0.1 Secs) [==>]	[1]
	<i>Comments: Exposure saturates in 1.15 sec.</i>									
	3	GO Wavecal E140M	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.06	E140M 1425 Å				[==>]	[1]
	4	E140M (1891728)	(1) -31-CYG	STIS/FUV-MAMA, ACCUM, 31X0.05NDB	E140M 1425 Å		WAVECAL=NO		240 Secs (205 Secs) [==>205.0 Secs]	[1]
	<i>Comments: Total count rate 89138 counts/sec.</i>									
	5	GO Wavecal E230M 197 8	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 1978 Å				[==>]	[1]
	6	E230M 197 8 (1891736)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 1978 Å				195 Secs (160 Secs) [==>160.0 Secs]	[1]
<i>Comments: Total count rate 66,830 count/sec.</i>										
7	E230M 270 7 (1891738)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 31X0.05NDB	E230M 2707 Å				101 Secs (66 Secs) [==>66.0 Secs]	[1]	
<i>Comments: Total count rate 98791 counts/sec.</i>										
8	GO Wavecal E230M 270 7	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.06	E230M 2707 Å				[==>]	[1]	
9	E230H 2912 (1893450)	(1) -31-CYG	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				68 Secs (33 Secs) [==>33.0 Secs]	[1]	
<i>Comments: Total count rate 149654 counts/sec.</i>										
10	GO Wavecal E230H 2912	WAVE	STIS/NUV-MAMA, ACCUM, 0.2X0.09	E230H 2912 Å				[==>]	[1]	

