



# 15651 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Cycle: 26, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

## INVESTIGATORS

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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) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:13:58.0	yes

Proposal 15651 (STScI Edit Number: 3, Created: Thursday, May 16, 2019 at 5:14:30 PM Eastern Standard Time) - Overview

<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>
12	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:01.0	yes
13	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:03.0	yes
02	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:05.0	yes
03	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:08.0	yes
04	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:10.0	yes
05	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:13.0	yes
06	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:15.0	yes
07	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:17.0	yes
08	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:19.0	yes
09	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:21.0	yes
10	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:23.0	yes
11	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:26.0	yes
59	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	3	16-May-2019 18:14:27.0	yes
60	(1) V-V645-CEN	STIS/CCD STIS/FUV-MAMA	4	16-May-2019 18:14:29.0	yes

59 Total Orbits Used

## **ABSTRACT**

At a distance of only 1.3 pc, Proxima Cen is the closest extrasolar planetary system, and has long been known as a flare star, making it a benchmark case for exploring the potential effects of variability on the planet's properties. After the detection of a large millimeter flare was reported by MacGregor et al. (2018), the team was awarded 36 more hours of observations (project 2018.1.00470.S) to monitor the Proxima Cen system in 2019 with ALMA. In order to determine how stellar flaring emission correlates across the electromagnetic spectrum, simultaneous observations with other facilities across a broad range of wavelengths should be obtained along with the ALMA project. With the UV being the most critical wavelength to understand planet photochemistry and habitability, we propose to obtain simultaneous UV spectroscopy with HST in order to better constrain the properties of detected flares and their potential impact on planetary habitability. By undertaking this comprehensive, multi-wavelength monitoring campaign of Proxima Cen, we will execute the first truly panchromatic analysis of M dwarf flaring activity.

## **OBSERVING DESCRIPTION**

At a distance of only 1.3 pc, Proxima Cen is the closest extrasolar planetary system, and has long been known as a flare star, making it a benchmark case for exploring the potential effects of variability on the planet's properties. In order to determine how stellar flaring emission correlates across the electromagnetic spectrum, we require simultaneous observations with HST and other facilities across a broad range of wavelengths. To monitor the star in the sub-mm, 41 hours of ACA/ALMA time was allocated in Cycle 6 under proposal 2018.1.00470.S to be executed in spring 2019. TESS will observe Proxima Cen in its Sector 11 between 2019 April 22 and May 21. We require simultaneous HST observations to measure far-UV flare properties. By undertaking this comprehensive, multi-wavelength monitoring campaign of Proxima Cen, we will execute the first truly panchromatic analysis of M dwarf flaring activity.

The UV observations from HST/STIS will provide the most important wavelength for understanding planet photochemistry and habitability. We will also use the UV data to measure the flare frequency distribution for Proxima to assess whether the frequent but low-energy flares or the infrequent large flares are most important to the total far-UV emission.

We will observe Proxima Cen for 11 visits of 4 orbits each with the STIS E140M grating in the 0.2 x 0.2 arcsec slit, covering 1150 - 1700 Ang. The observations are time critical to ensure simultaneity between ALMA/ACA, TESS, and HST. We therefore constrain the timing of these STIS observations first, to the TESS observations, which are inflexible, and will take place from 2019 April 22 - May 21. Second, we constrain the HST

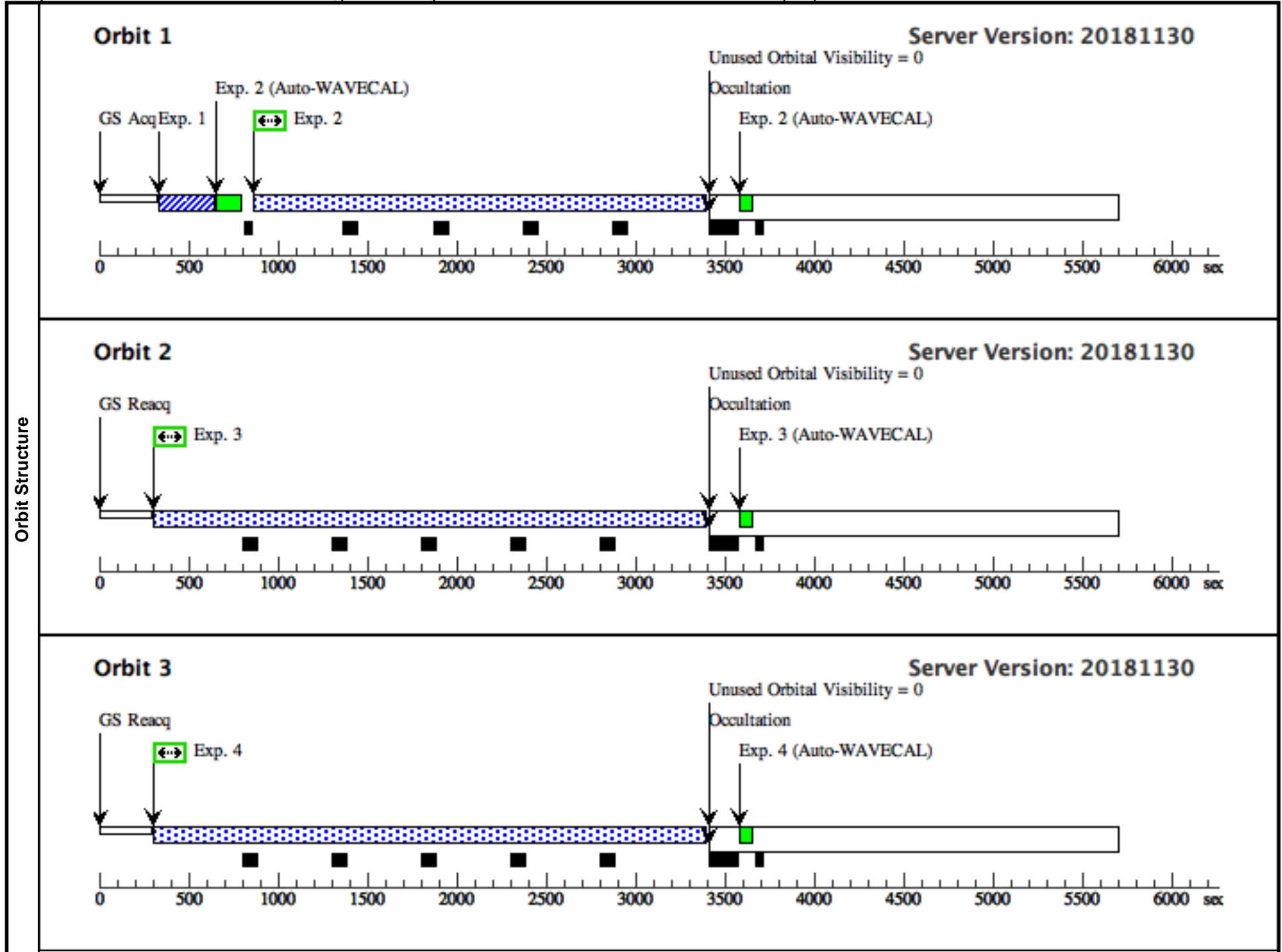
Proposal 15651 (STScI Edit Number: 3, Created: Thursday, May 16, 2019 at 5:14:30 PM Eastern Standard Time) - Overview  
visits to take place at night in Chile so that ALMA can obtain simultaneous data. Other ground-based optical observations in Chile can then take place including white-light photometry from Evryscope and H-alpha spectroscopic monitoring at Las Campanas Observatory.

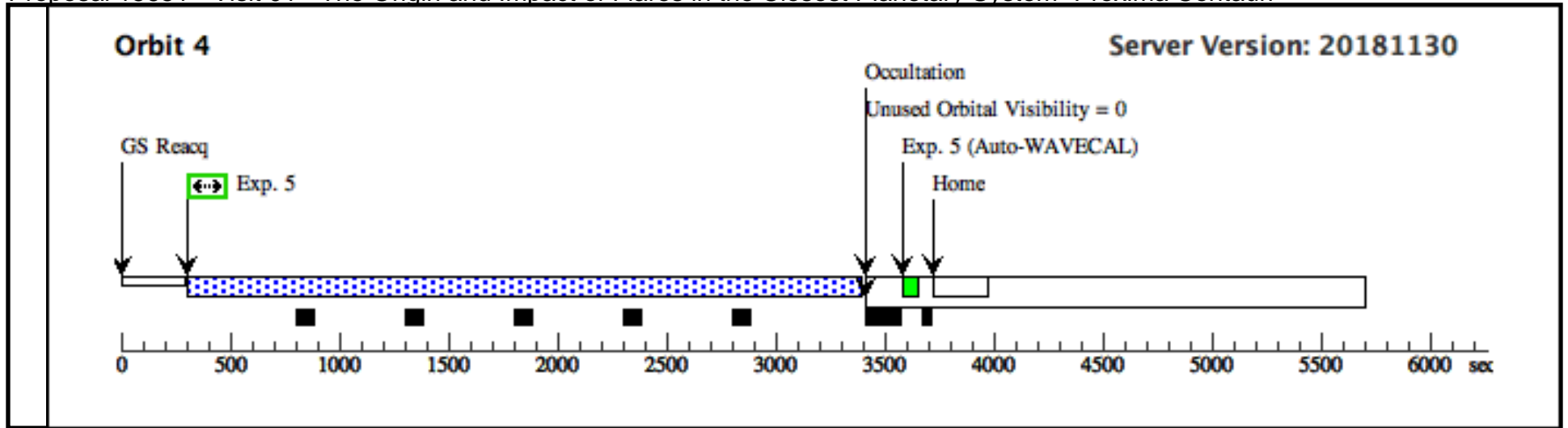
The total integration time in each HST visit will be 205 min (3.4 hour). Although the gaps will not be identical to those of the ACA/ALMA observations, this is the best we can do to ensure simultaneity.

Proposal 15651 - Visit 01 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:30 GMT 2019

Visit	<b>Proposal 15651, Visit 01, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	





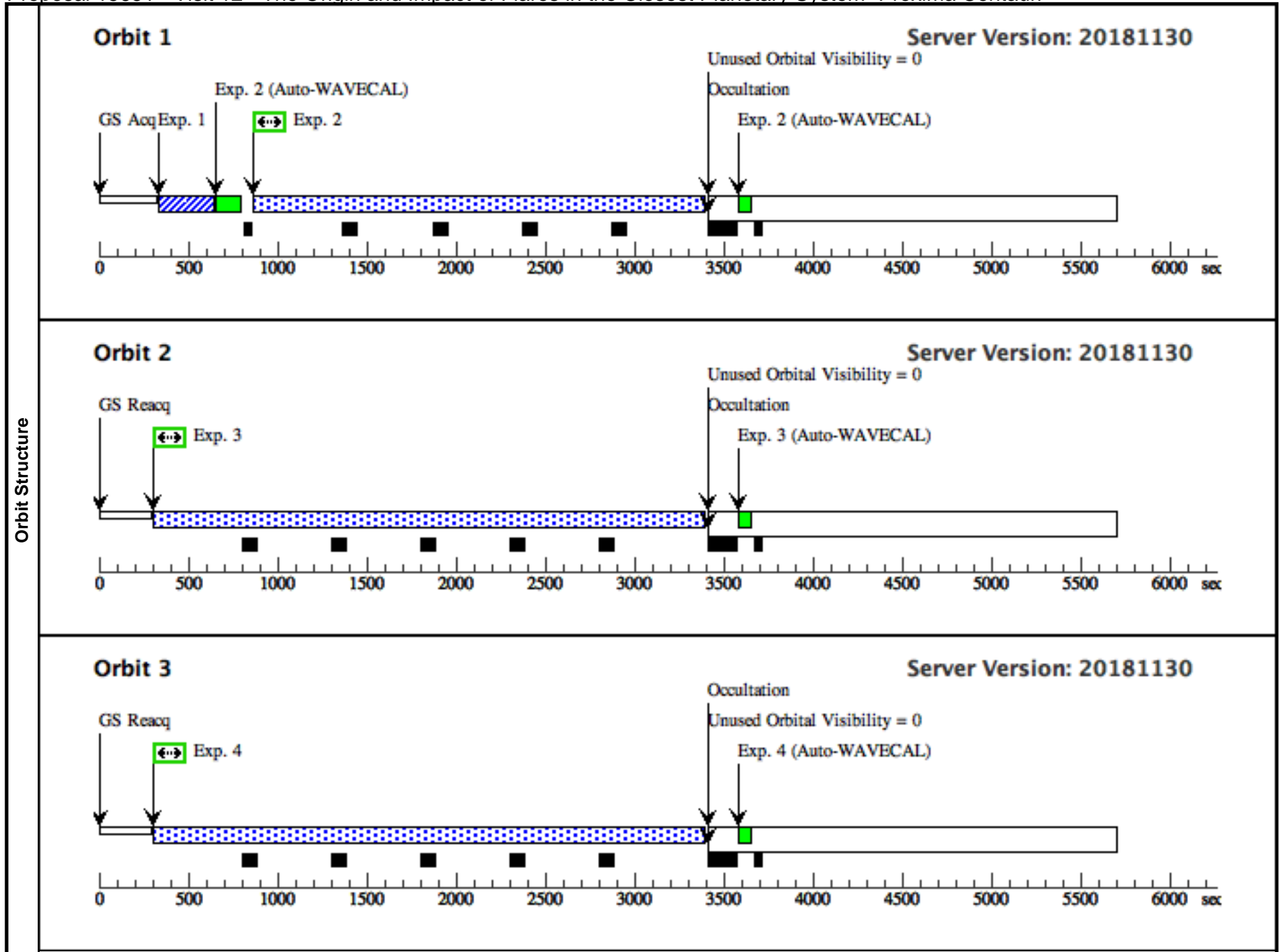
Proposal 15651 - Visit 12 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

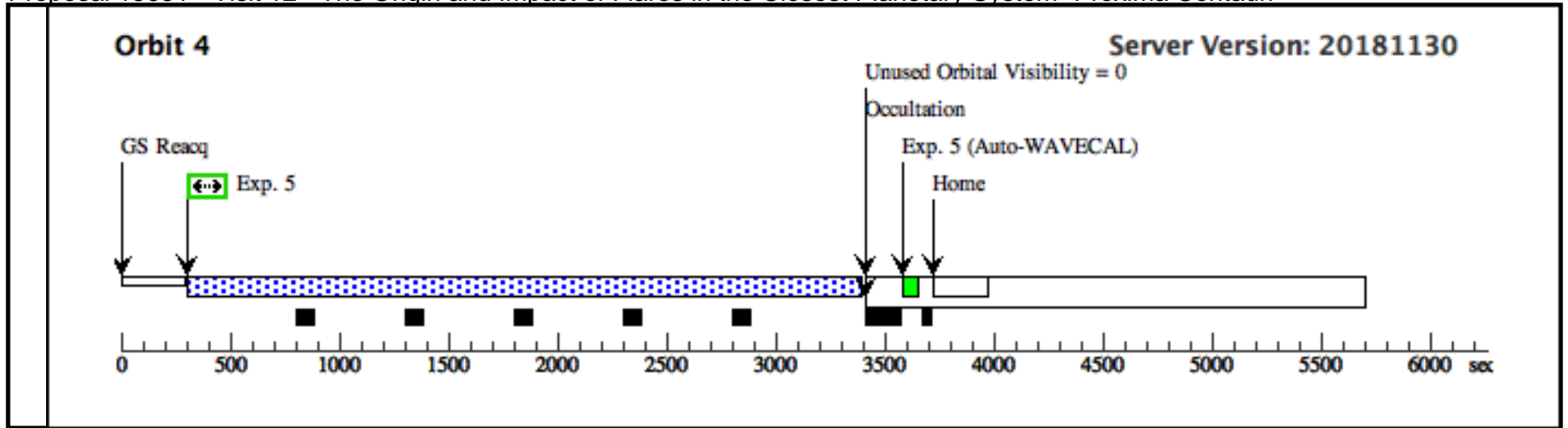
Thu May 16 22:14:30 GMT 2019

<b>Visit</b>	<b>Proposal 15651, Visit 12, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 12-MAY-2019:00:00:00 AND 19-JUN-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458649.45 Comments: New visit for repeat of failed Visit 7.				

<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>	<b>Targ. Coord. Corrections</b>	<b>Fluxes</b>	<b>Miscellaneous</b>
	(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS
Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000 Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO						

<b>Exposures</b>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs)		
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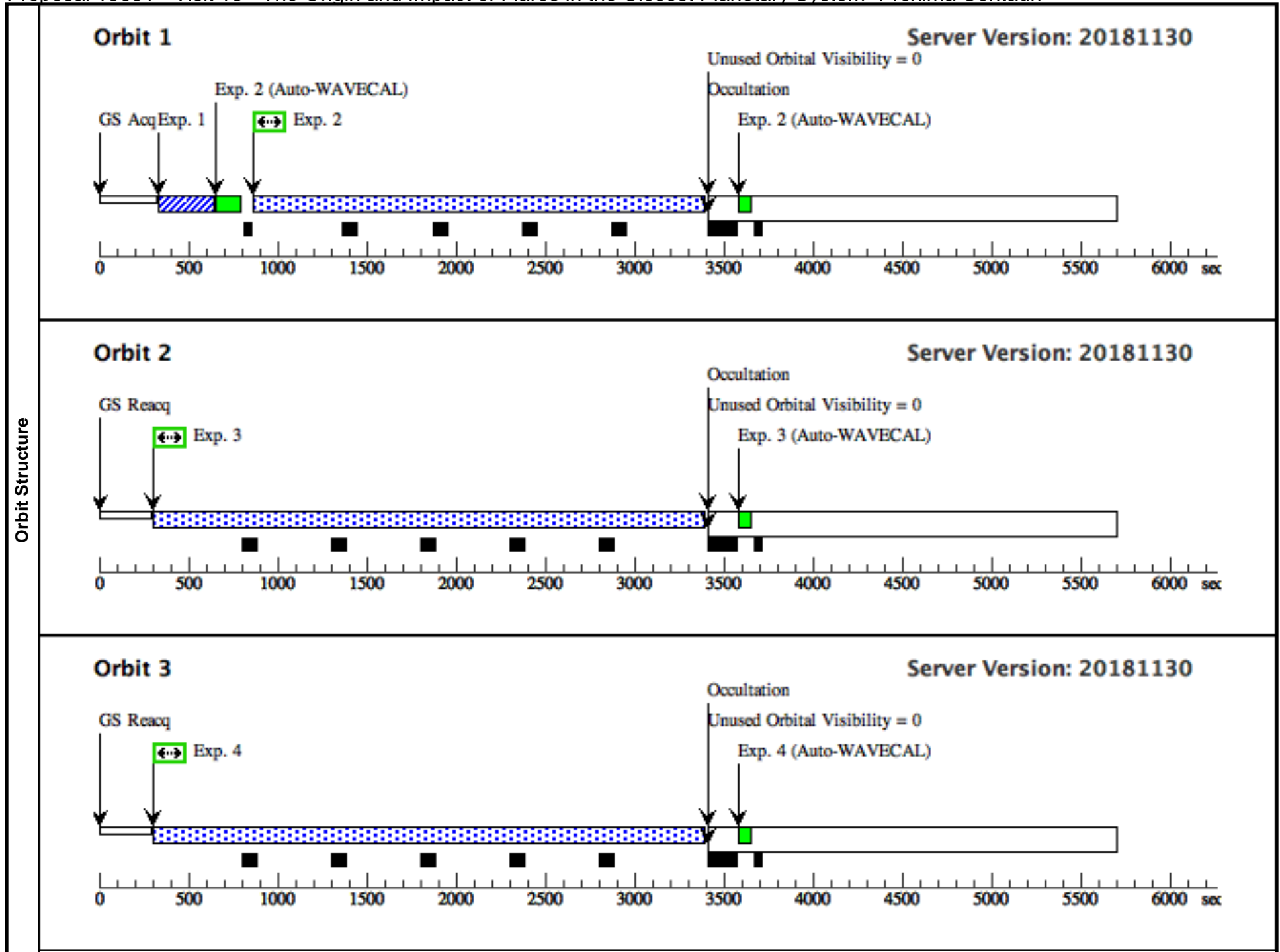


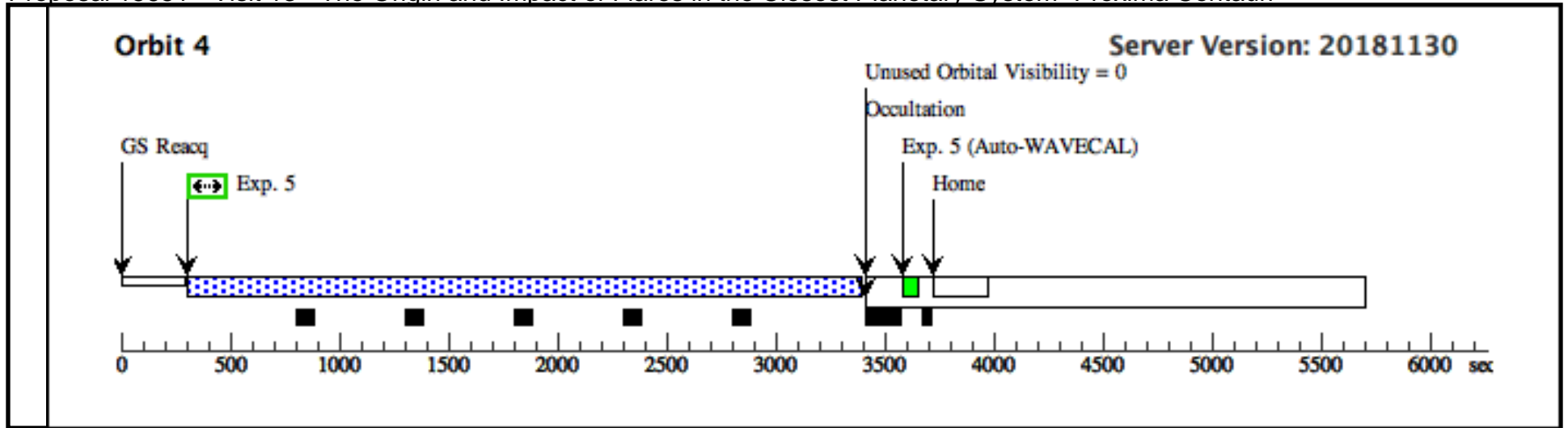


Proposal 15651 - Visit 13 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:30 GMT 2019

Visit	<b>Proposal 15651, Visit 13, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 12-MAY-2019:00:00:00 AND 19-JUN-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458649.45 Comments: New visit for repeat of failed visit 8																																																																																									
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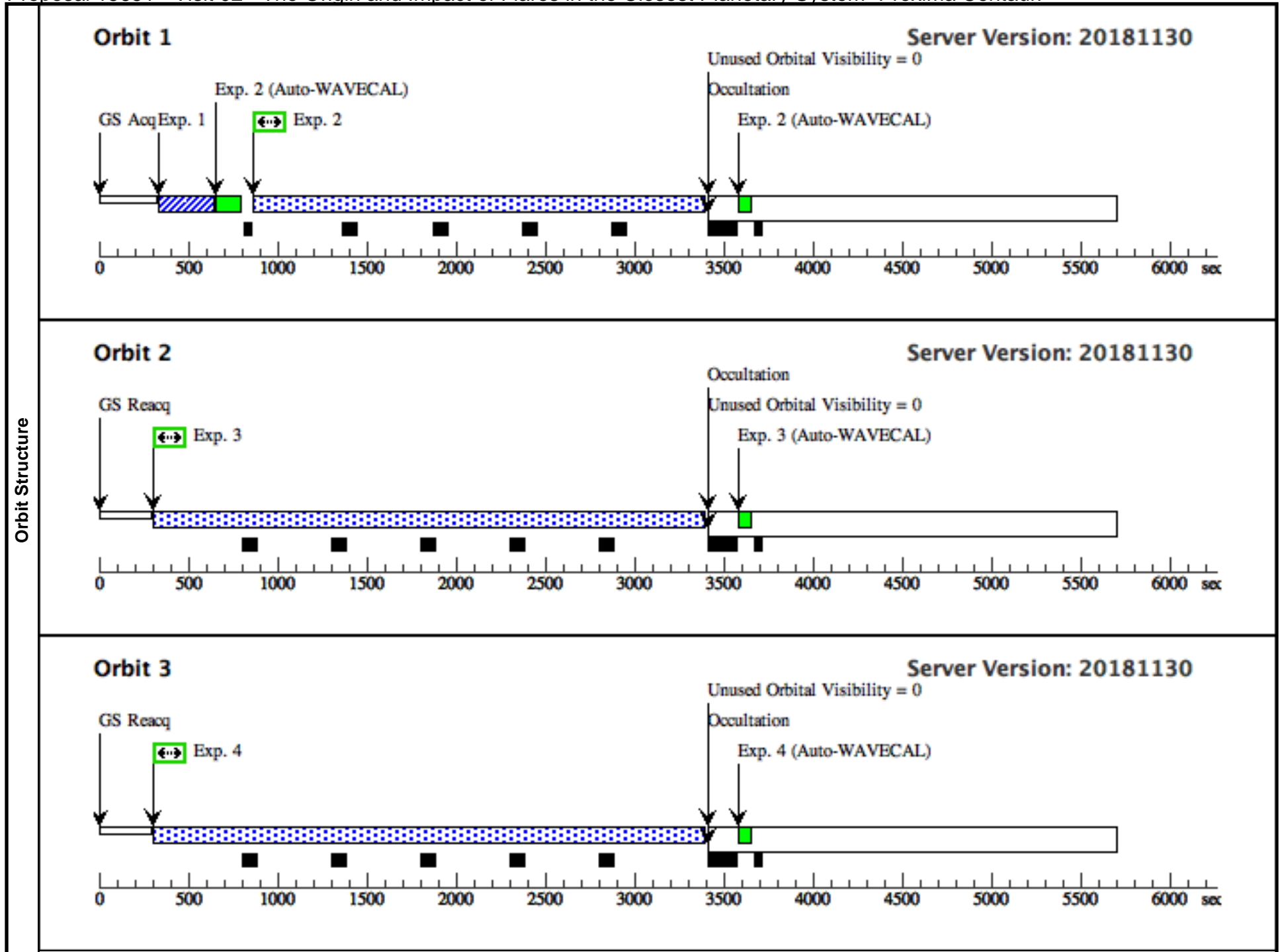


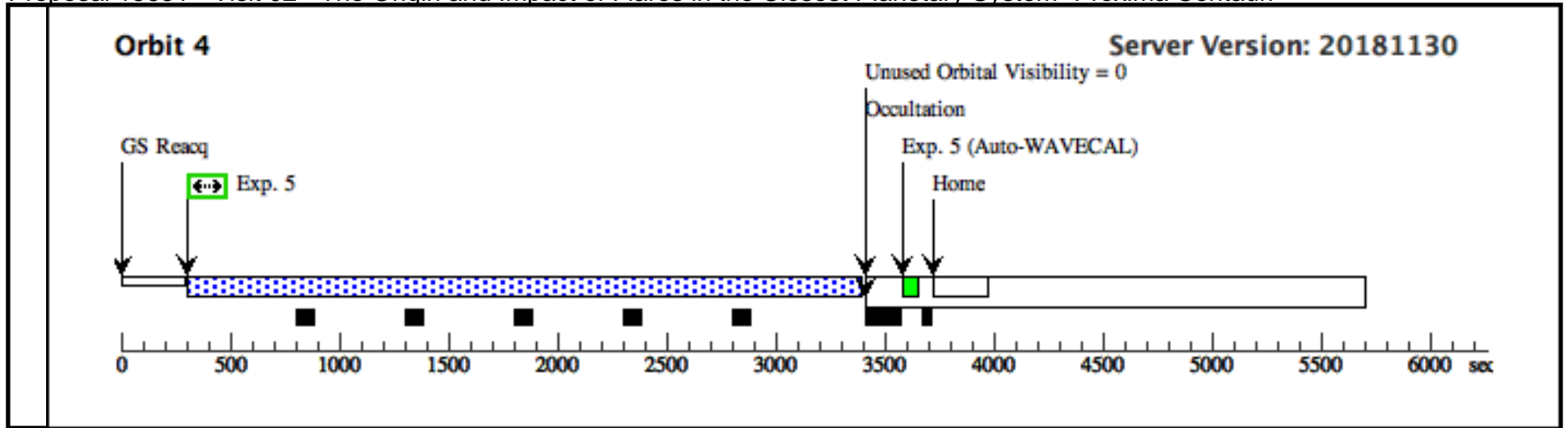


Proposal 15651 - Visit 02 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:30 GMT 2019

Visit	<b>Proposal 15651, Visit 02, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
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	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

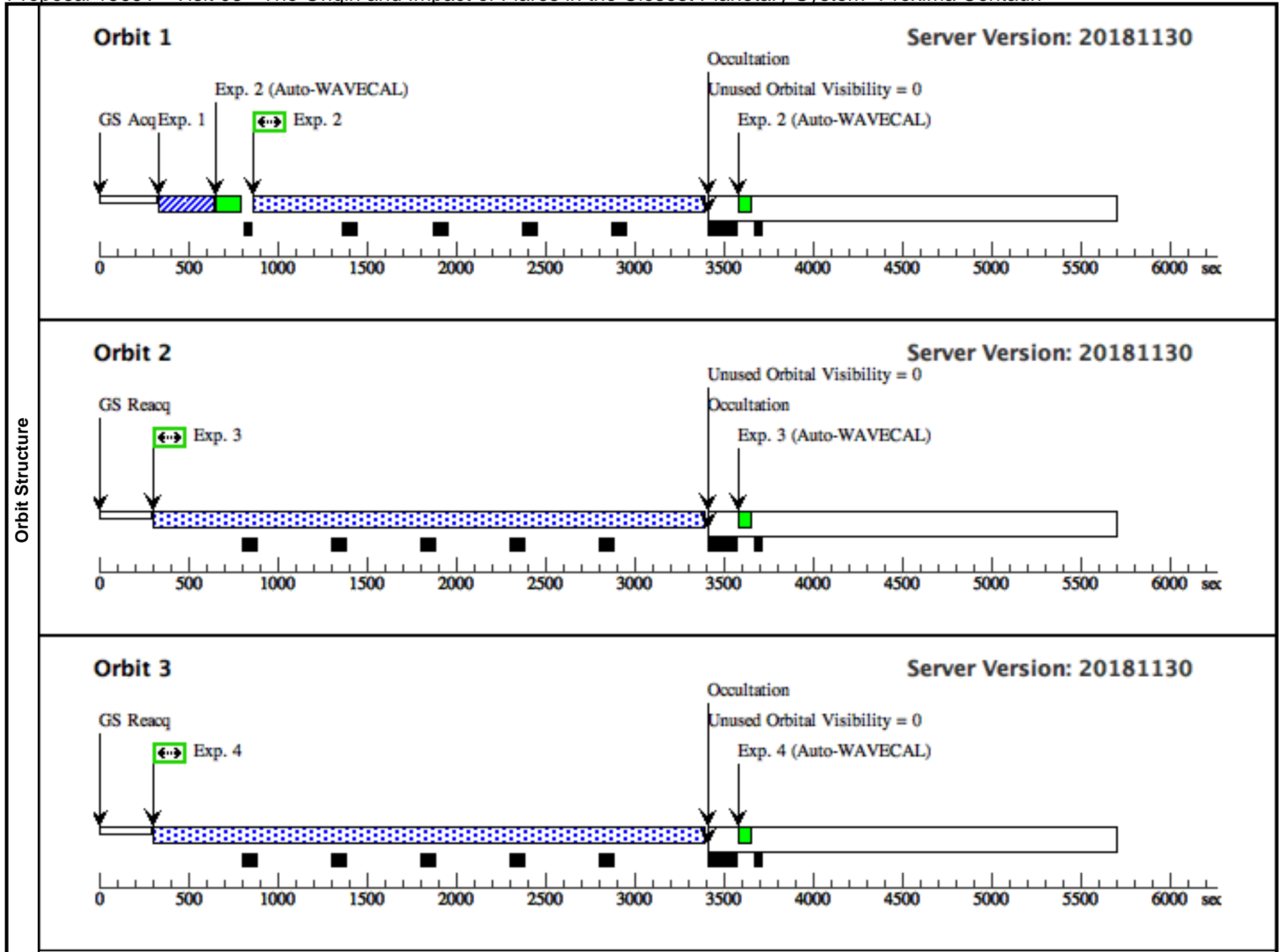


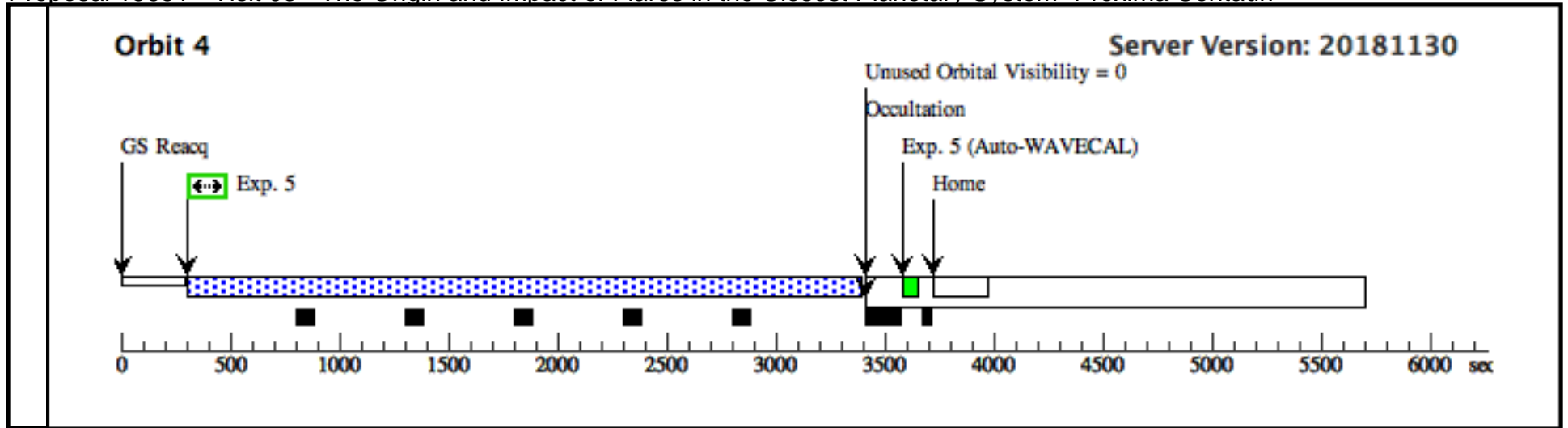


Proposal 15651 - Visit 03 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 03, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

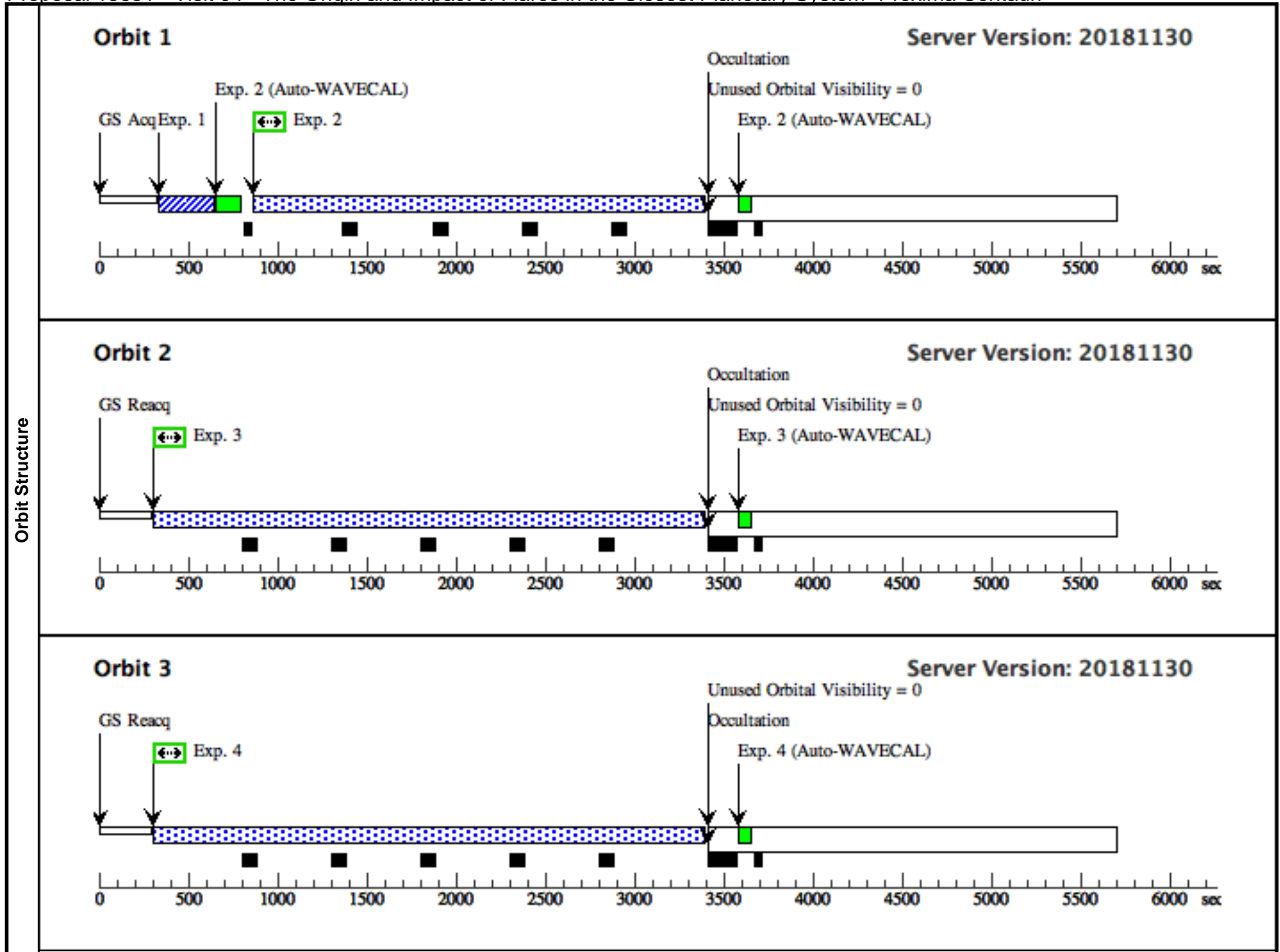


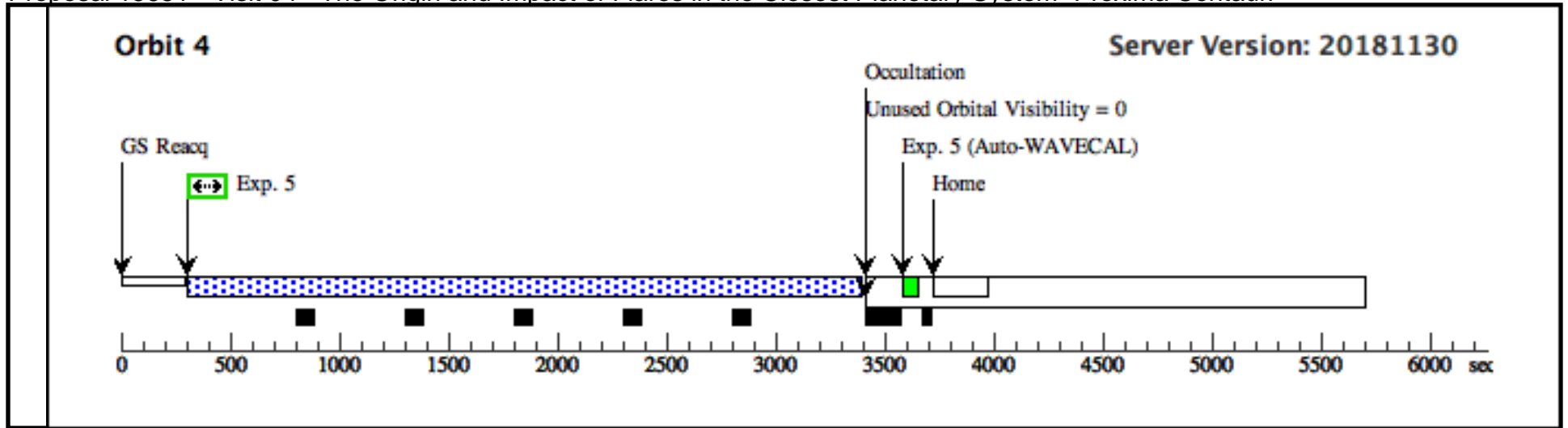


Proposal 15651 - Visit 04 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 04, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

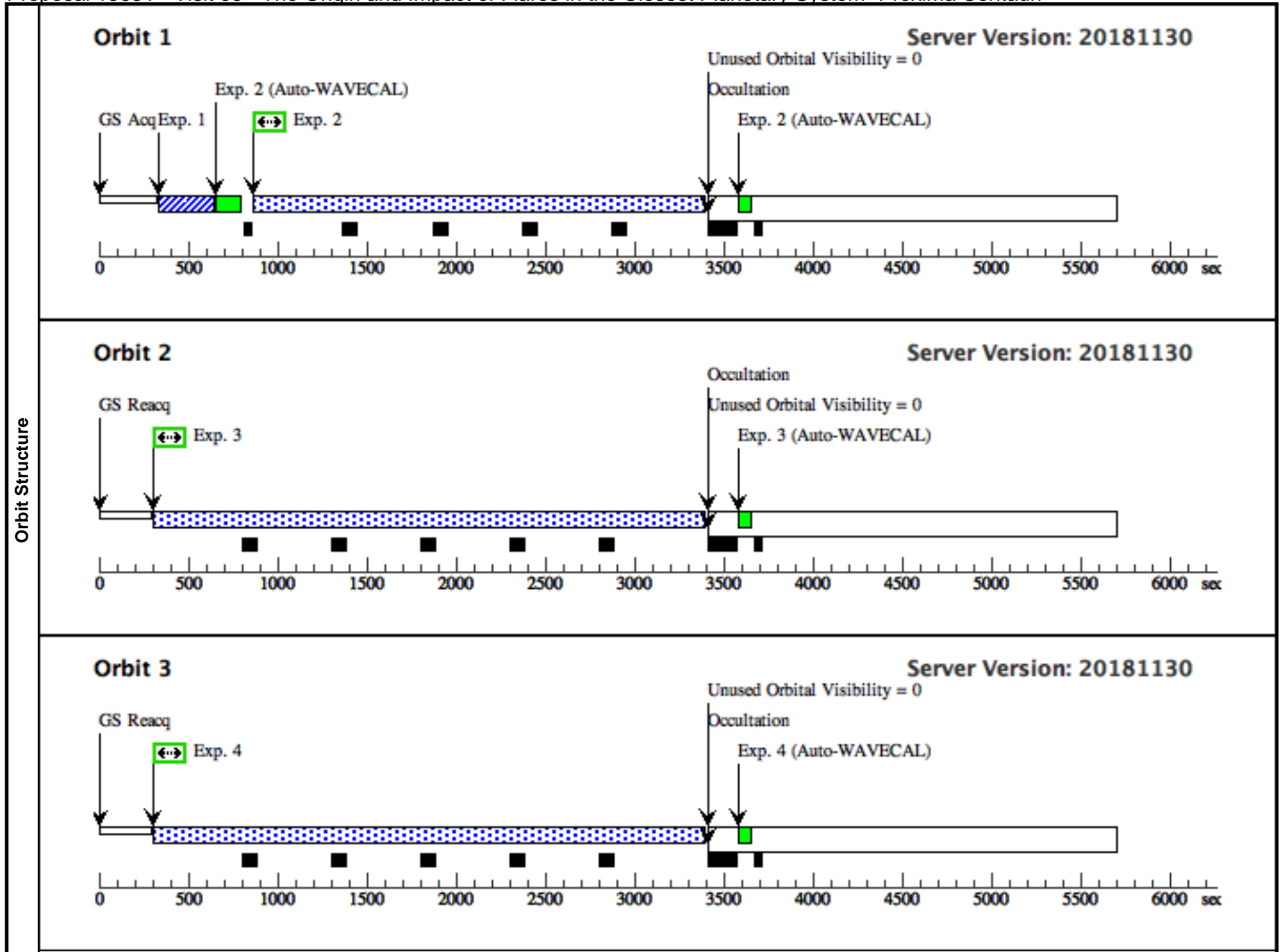


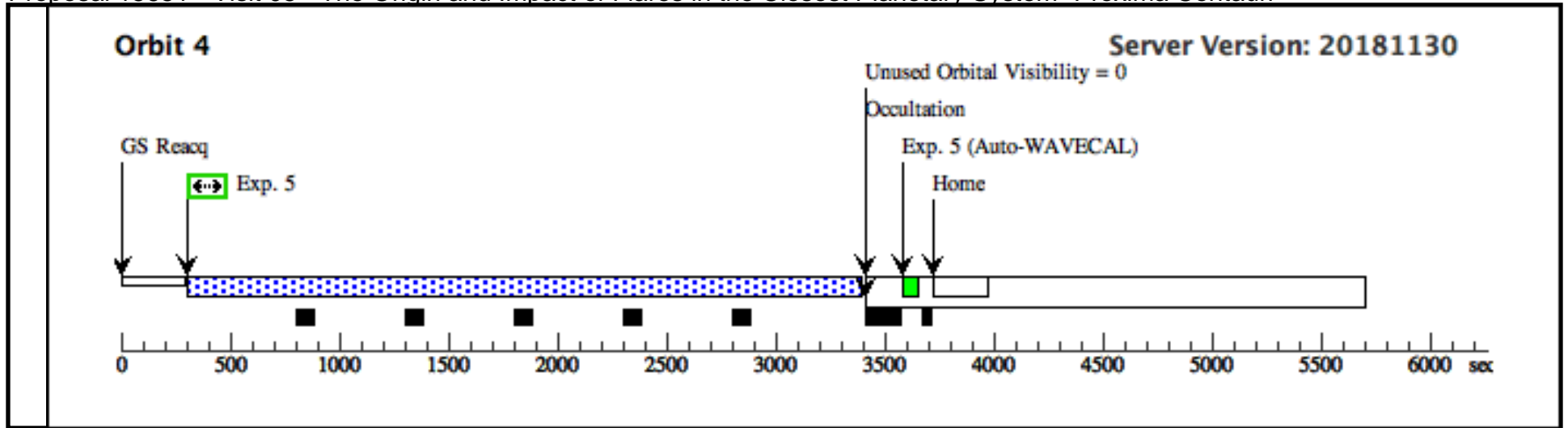


Proposal 15651 - Visit 05 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 05, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

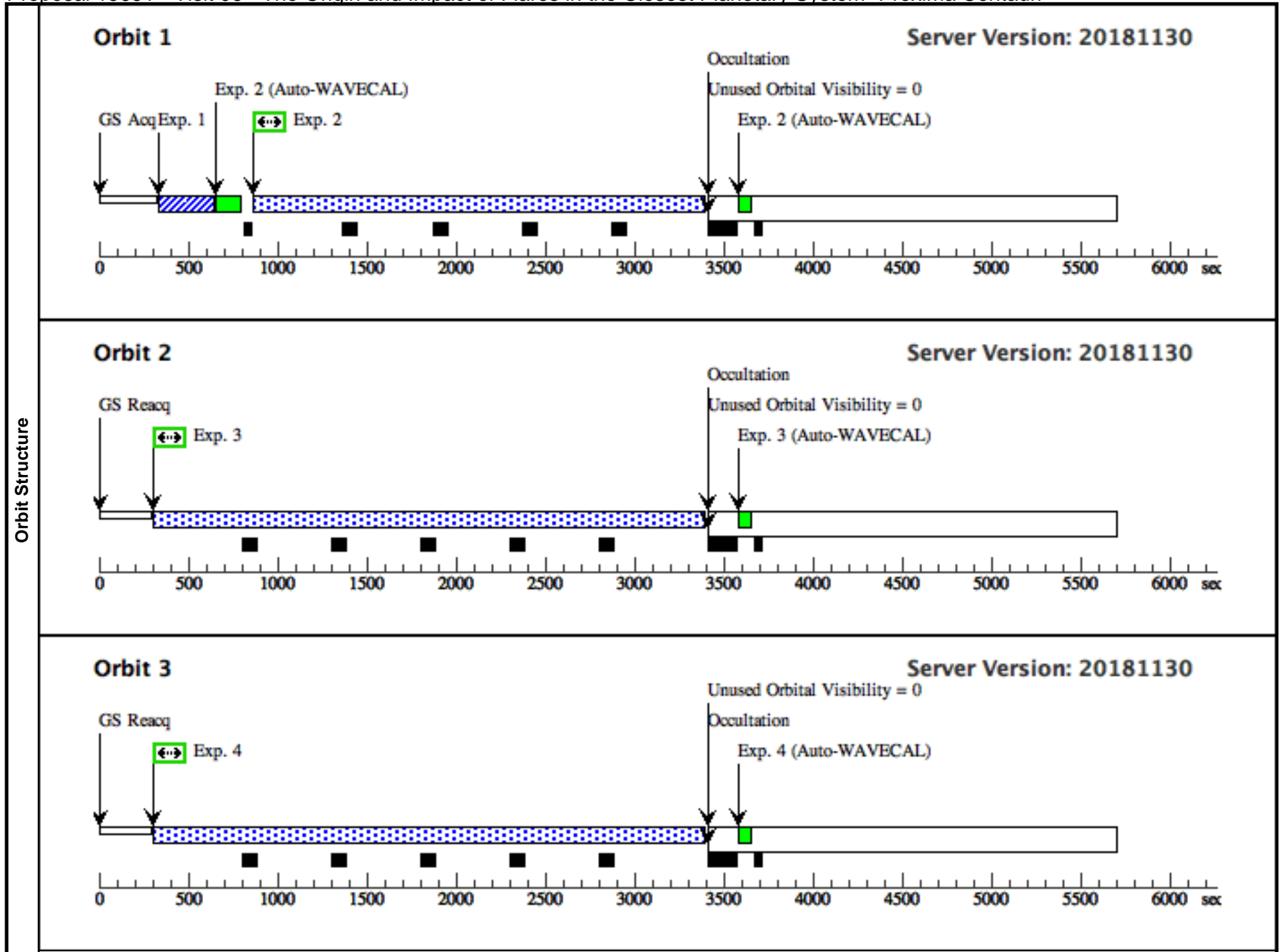


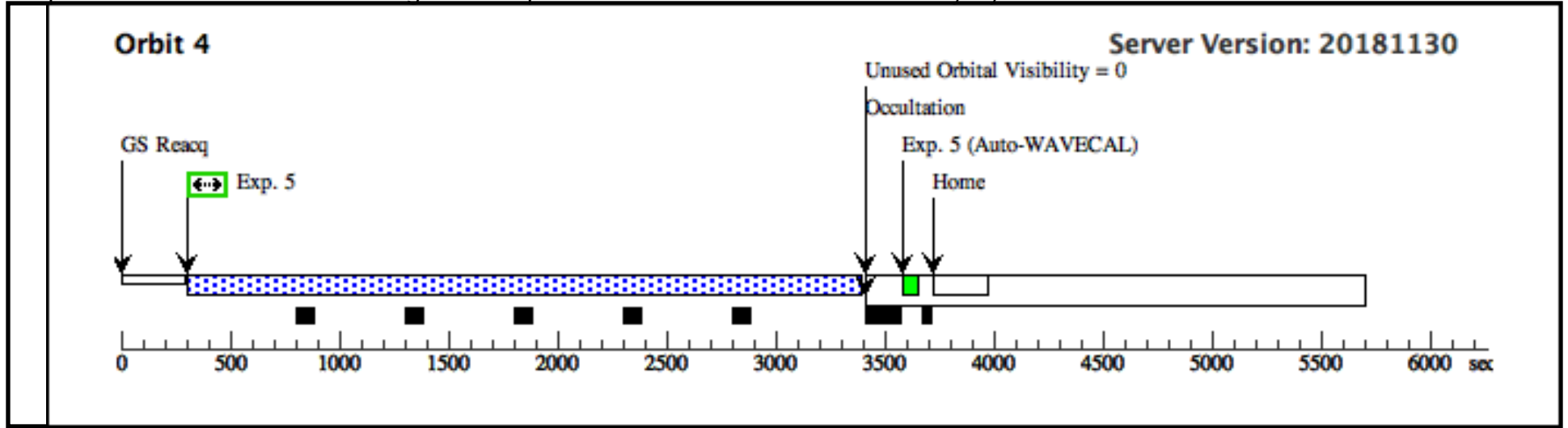


Proposal 15651 - Visit 06 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 06, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

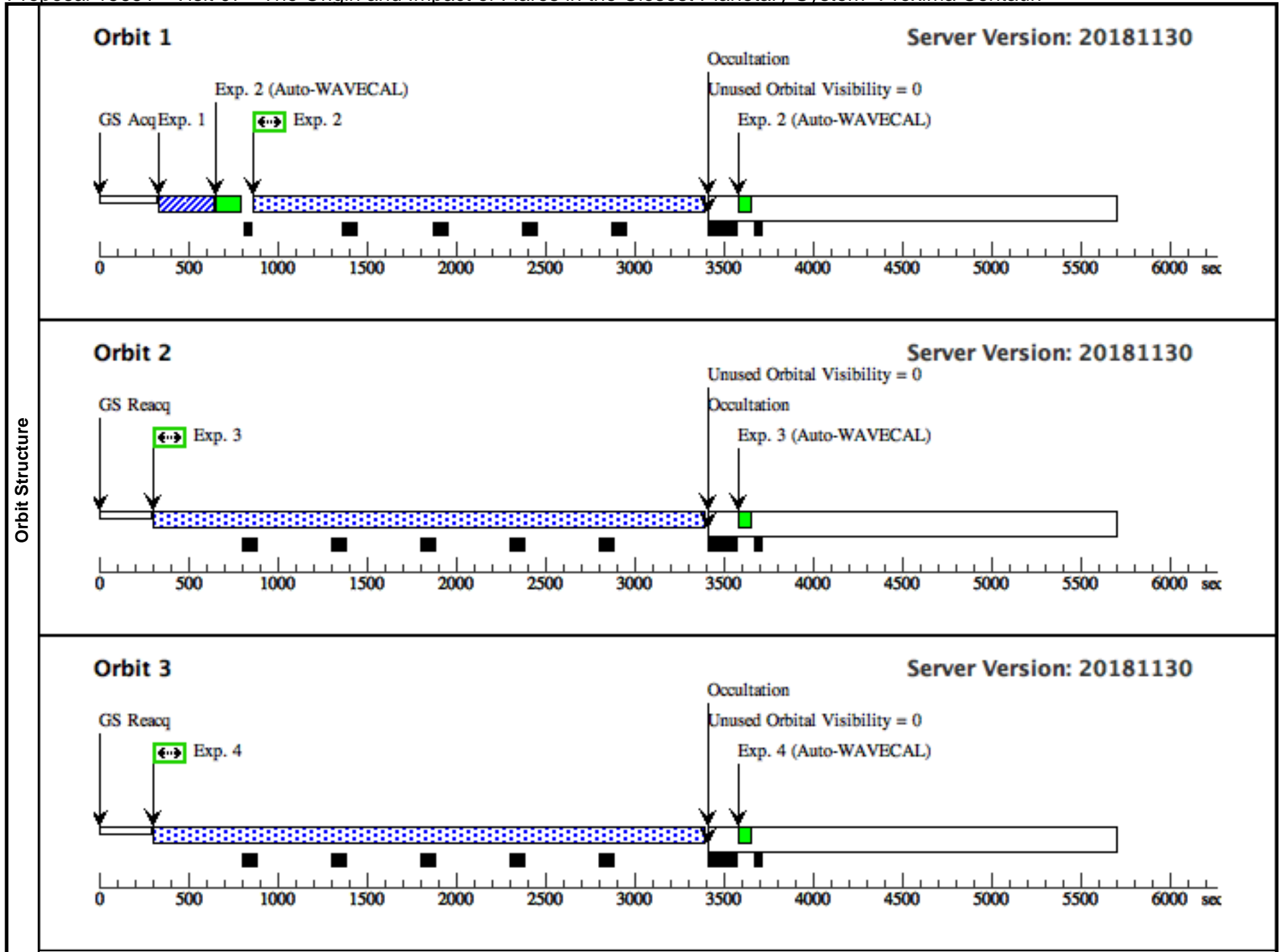


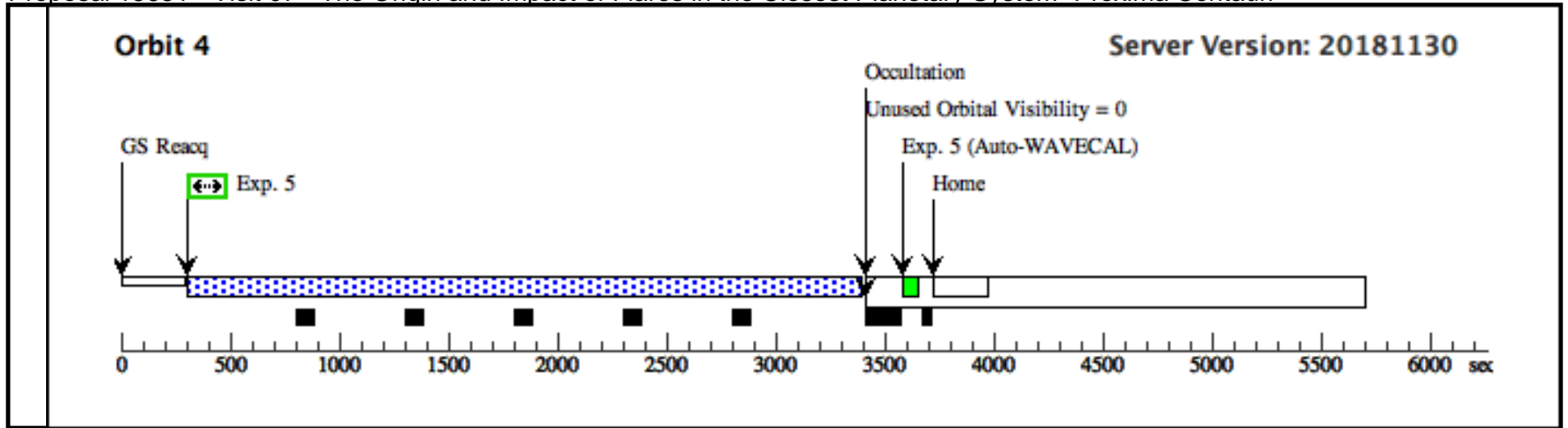


Proposal 15651 - Visit 07 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 07, failed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

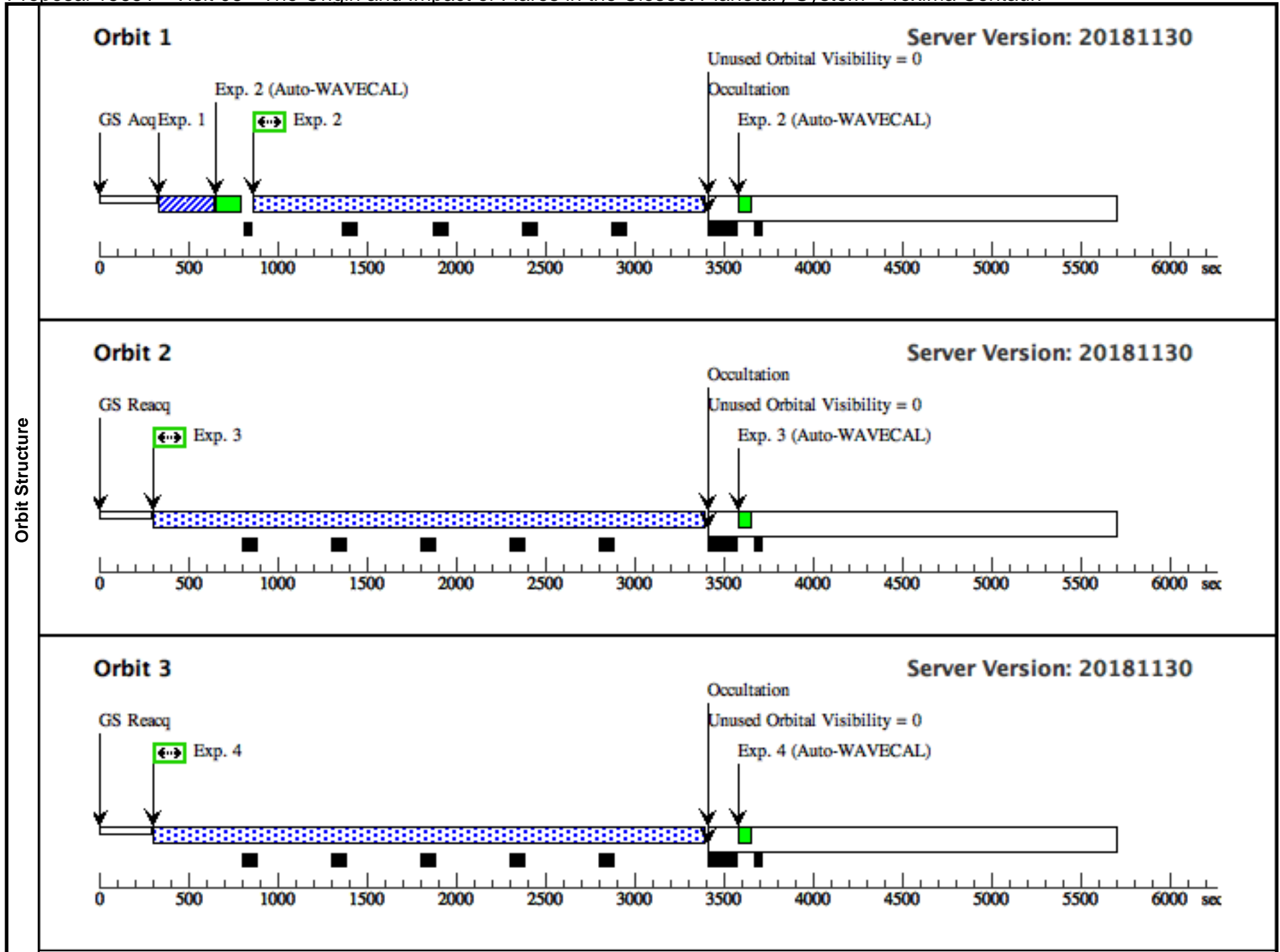


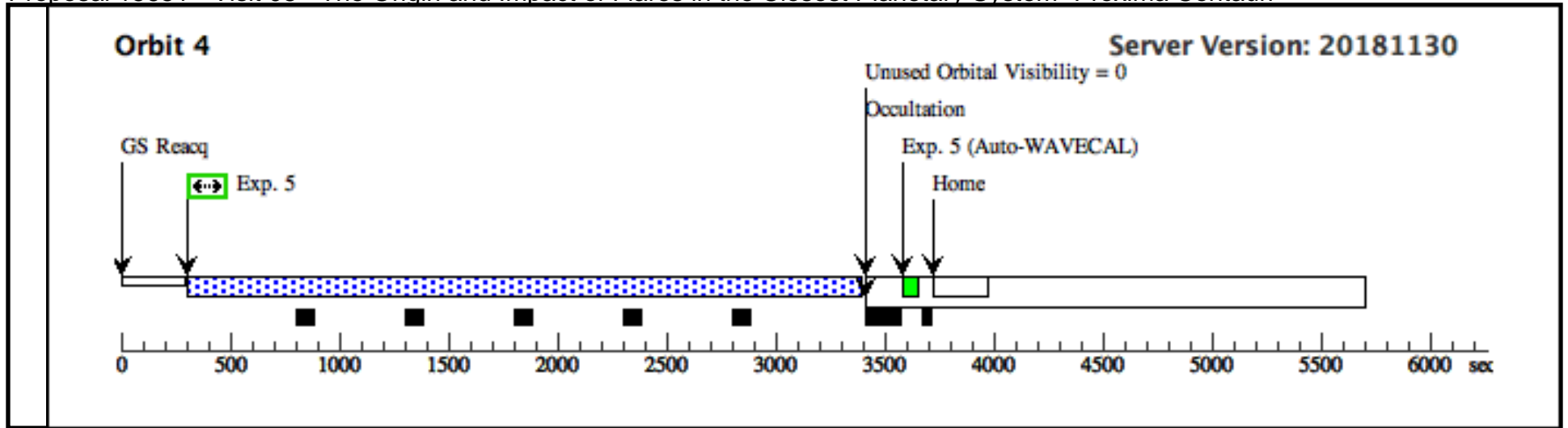


Proposal 15651 - Visit 08 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 08, failed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs)	
									[==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs)	
									[==>]	[1]
<i>Comments: Set up the same as in GO-14860</i>										
3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs)		
								[==>]	[2]	
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs)		
								[==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs)		
								[==>]	[4]	

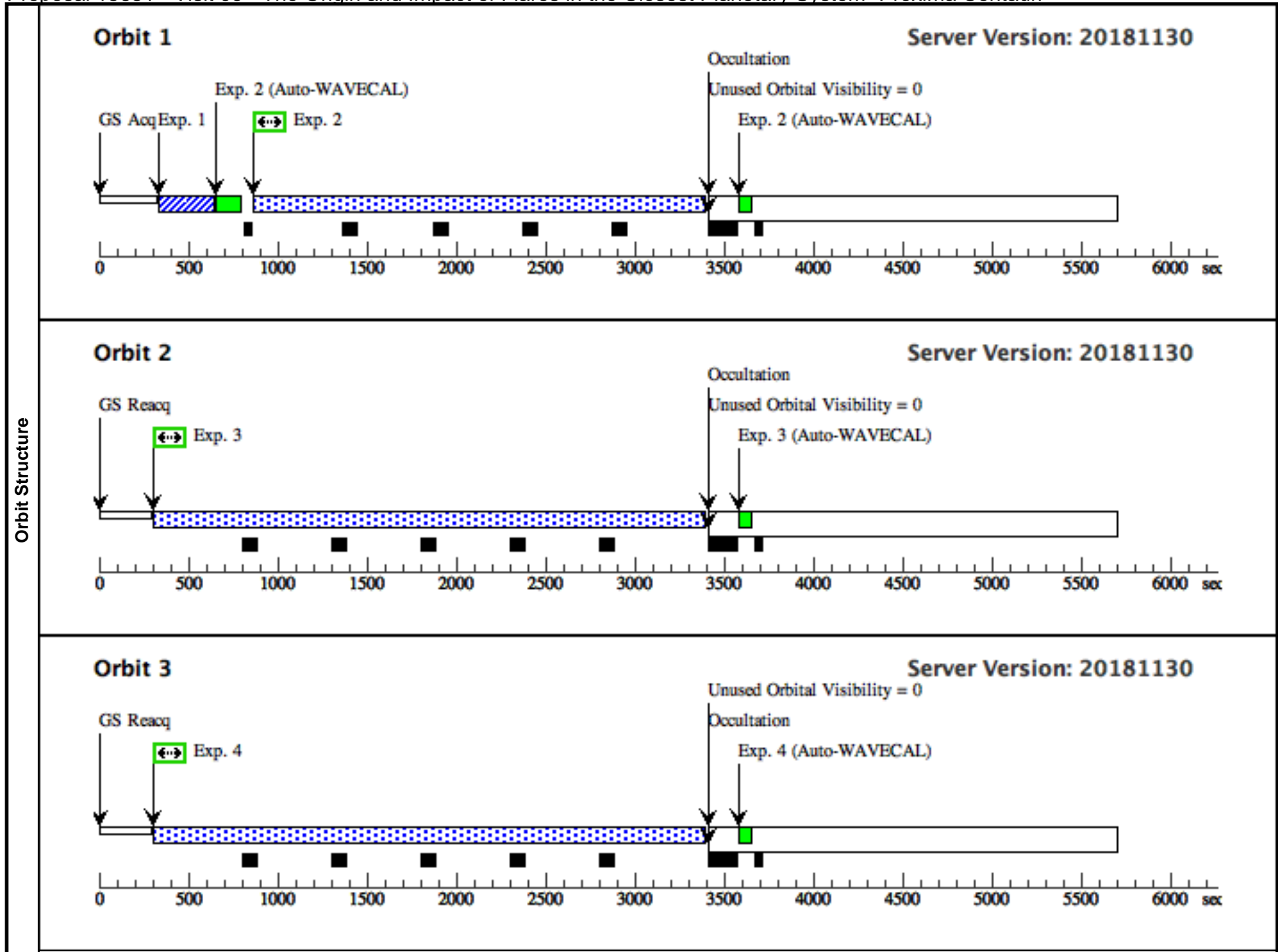


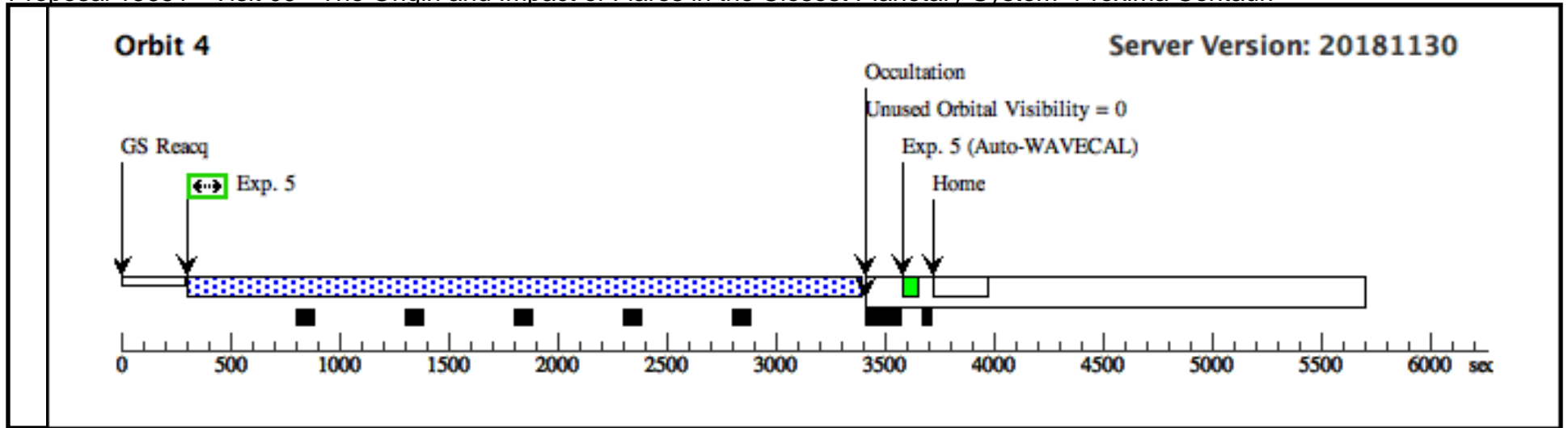


Proposal 15651 - Visit 09 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 09, failed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

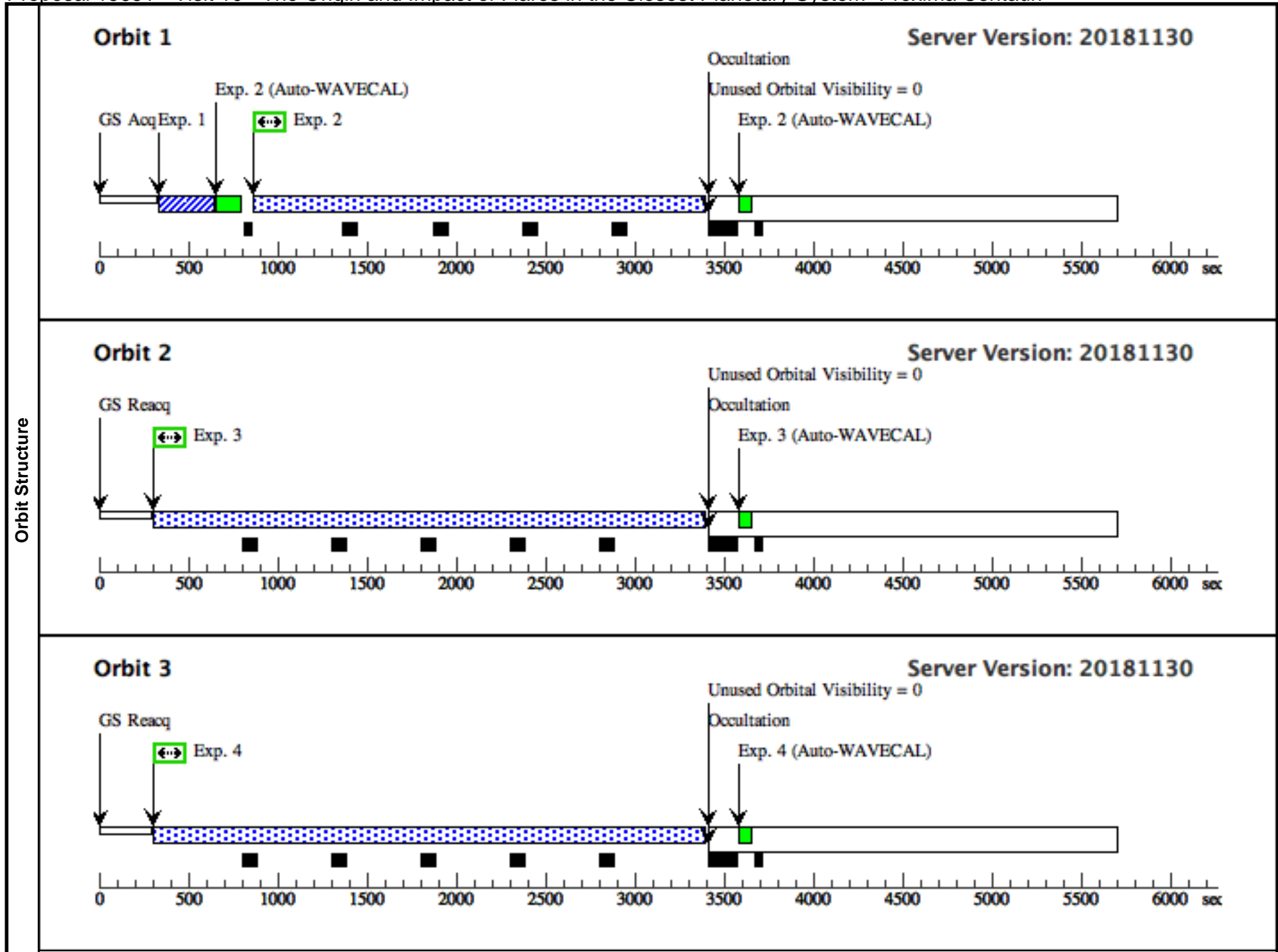


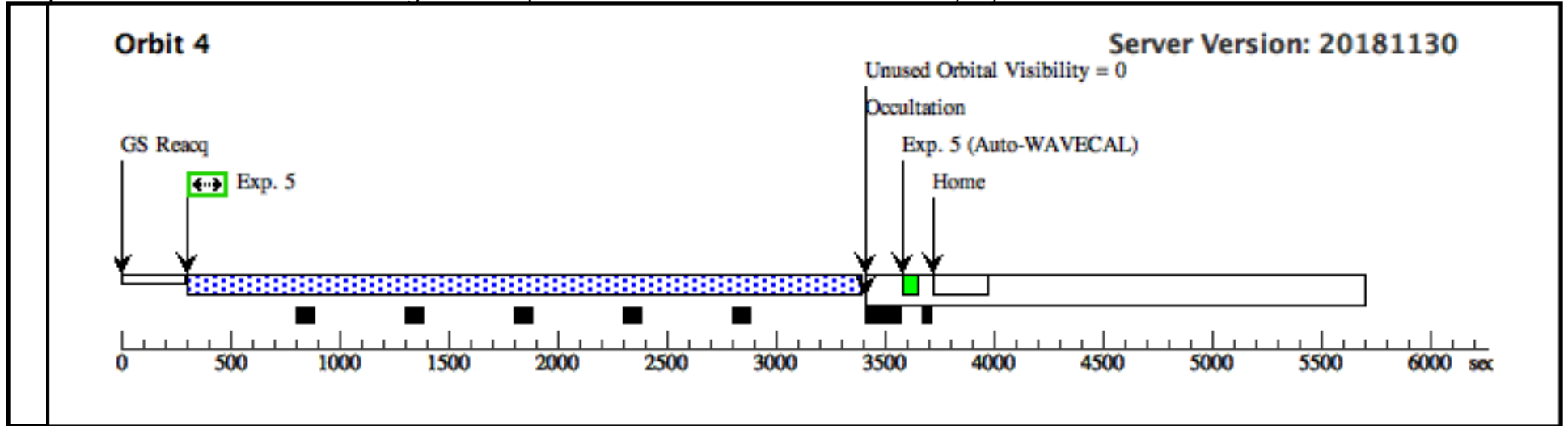


Proposal 15651 - Visit 10 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:31 GMT 2019

Visit	<b>Proposal 15651, Visit 10, failed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS			
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X50OIII	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs) [==>]	[1]
	<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]
	<i>Comments: Set up the same as in GO-14860</i>									
	3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]	

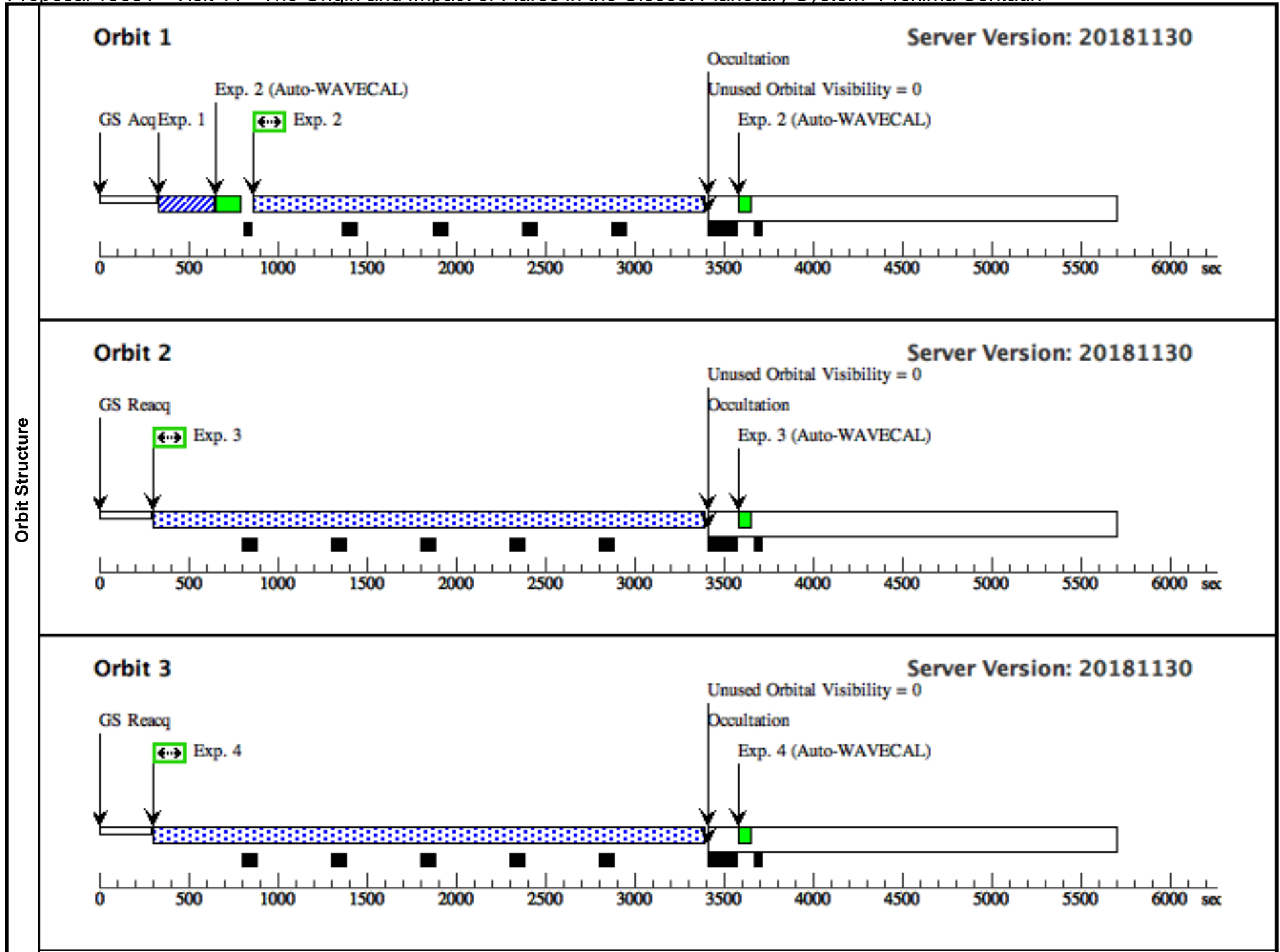


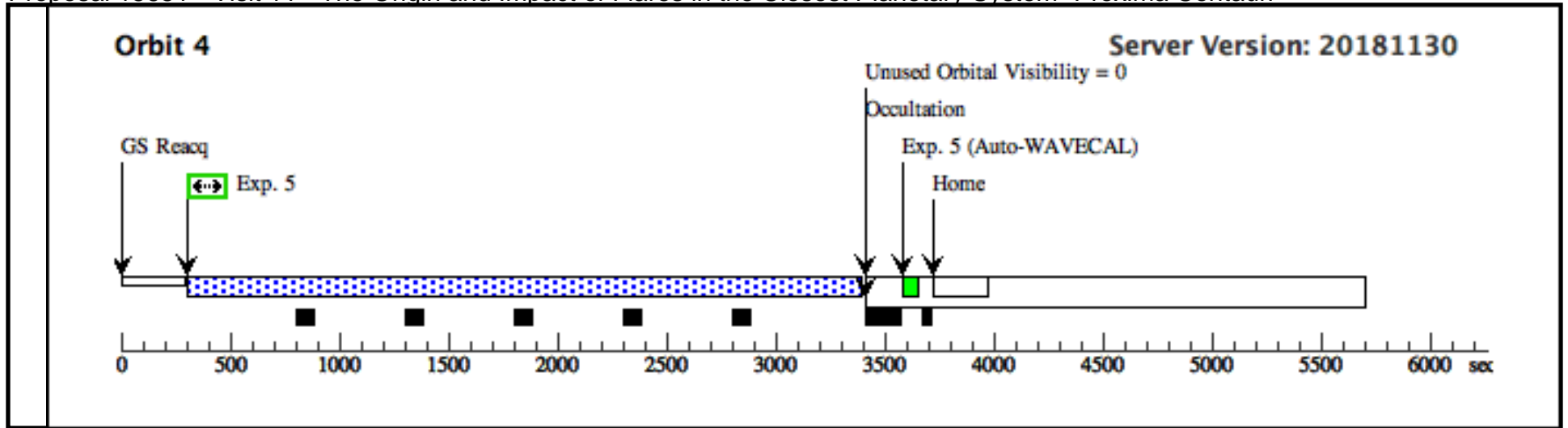


Proposal 15651 - Visit 11 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:32 GMT 2019

Visit	<b>Proposal 15651, Visit 11, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: BETWEEN 23-APR-2019:00:00:00 AND 17-MAY-2019:00:00:00; Period 1.0 D AND ZERO-PHASE HJD2458596.5																																																																																									
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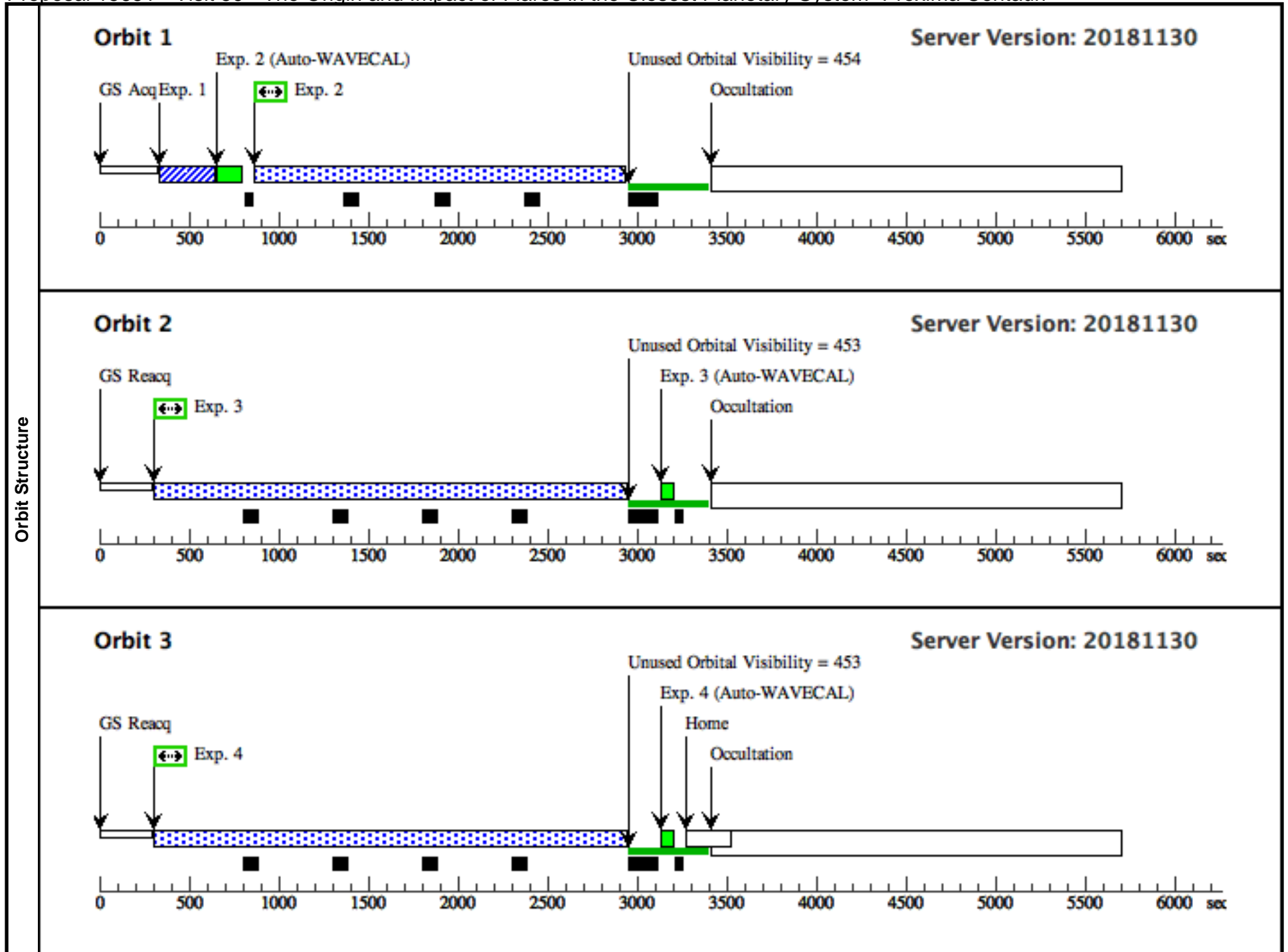




Proposal 15651 - Visit 59 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:32 GMT 2019

Visit	<b>Proposal 15651, Visit 59, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: Period 1.0 D AND ZERO-PHASE HJD2458657.45										
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
		(1)	V-V645-CEN	RA: 14 29 42.9451 (217.4289379d) Dec: -62 40 46.17 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.306 mas/yr Proper Motion Dec: 769.766 mas/yr Parallax: 0.7685" Epoch of Position: 2000 Radial Velocity: -22.4 km/sec	V=11.1 U=14.2	Reference Frame: ICRS				
	<i>Comments: Coordinates from Gaia DR2, as retrieved in Vizier, FK5, Equinox J2000.0 at Epoch J2000, proper motions taken into account - these match what Simbad quotes as ICRS coordinates at epoch J2000</i> Category=STAR Description=[EMISSION LINE STAR, EXTRA-SOLAR PLANETARY SYSTEM, M V-IV] Extended=NO										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
	1		(1) V-V645-CEN	STIS/CCD, ACQ, F28X500III	MIRROR	ACQTYPE=POINT	PHASE 0.958 TO 0.20		10 Secs (10 Secs)		
									[==>]	[1]	
		<i>Comments: Copied setup from GO-14860 visit 01. Acquisition in [O III] to avoid saturation in 28x50LP</i>									
	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2058 Secs (2058 Secs)		
								[==>]	[1]		
	<i>Comments: Set up the same as in GO-14860</i>										
3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2626 Secs (2626 Secs)			
								[==>]	[2]		
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2626 Secs (2626 Secs)			
								[==>]	[3]		



Proposal 15651 - Visit 60 - The Origin and Impact of Flares in the Closest Planetary System- Proxima Centauri

Thu May 16 22:14:32 GMT 2019

Visit	<b>Proposal 15651, Visit 60, implementation</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: STIS/CCD, STIS/FUV-MAMA Special Requirements: Period 1.0 D AND ZERO-PHASE HJD2458657.45 <i>Comments: New visit for repeat of failed visit 8</i>																																																																																									
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	2	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			2512 Secs (2512 Secs) [==>]	[1]																																																																																
	<i>Comments: Set up the same as in GO-14860</i>																																																																																									
3	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[2]																																																																																	
4	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[3]																																																																																	
5	(STIS.sp.12 97728)	(1) V-V645-CEN	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	BUFFER-TIME=50 0			3079 Secs (3079 Secs) [==>]	[4]																																																																																	

