



18140 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Cycle: 33, Proposal Category: GO

(Availability Mode: AVAILABLE)

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) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:28.0	yes
02	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:29.0	yes
03	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:30.0	yes
04	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:31.0	yes

Proposal 18140 (STScI Edit Number: 0, Created: Monday, December 15, 2025, 9:00:50AM Eastern Standard Time) - Overview

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
05	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:31.0	yes
06	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:33.0	yes
07	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:34.0	yes
08	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:35.0	yes
09	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:36.0	yes
10	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:37.0	yes
11	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:38.0	yes
12	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:39.0	yes
13	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:40.0	yes
14	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:41.0	yes
15	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:42.0	yes
16	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:42.0	yes
17	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:43.0	yes
18	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:45.0	yes
19	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:46.0	yes
20	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:46.0	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>
21	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:47.0	yes
22	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:48.0	yes
23	(1) NAME-PROXIMA-CENTAURI BIAS	WFC3/UVIS	1	15-Dec-2025 09:00:49.0	yes

23 Total Orbits Used

ABSTRACT

The impacts of flares remain one of the biggest unknowns in the ability of a close-in rocky M dwarf planet to retain its atmosphere. Specifically, understanding the cumulative flare flux incident on a planet over its geologic lifetime relies on quantifying both the flare rate and flare spectral energy distribution (SED). However, we are often limited to using broadband optical flare studies to extrapolate flare rates to other wavelengths, and it is becoming increasingly apparent that UV flare rates extrapolated from optical flares are greatly underestimated. Unfortunately, these studies rely on broadband flares observed across epochs and/or observatories. With HST's WFC3/G280 grism, however, we can for the first time observe NUV-to-optical flare spectra simultaneously. This reveals both the relative NUV and optical rates and the precise NUV SED, which greatly influences planetary atmospheric escape and photochemistry. We target Proxima Centauri, as it is an M-dwarf planet host known to flare frequently, and is also close enough (and therefore bright enough) to be observed in the NUV/optical. We will observe 23 nonconsecutive orbits to observe approximately five flares (95% confidence interval of 2-11 flares). In the case that no flares are detected, we will collect high S/N spectra of an M-dwarf. This is critical for improving M-dwarf models, which are increasingly used to correct for stellar contamination in transmission spectroscopy studies. This is the first study that targets multiwavelength flare observations from a single instrument, and promises to open the door to a new avenue by which to probe flare physics and their impacts on planetary atmospheres.

OBSERVING DESCRIPTION

The goal of this program is to measure the UV-optical spectrum of flares occurring on Proxima Centauri. We estimate Proxima Cen flare rates using the U-band photometry from Walker (1981), which gives a reasonable approximation for NUV flare rates. Walker (1981) finds U-band flares of moderate energy (10^{29} erg s⁻¹) occur once every four hours. We aim to observe for five times this length (20 hours) to account for the stochastic nature of flares, with the goal of observing five flares. Aiming to observe multiple flares is critical to achieve our science goal of characterizing BOTH NUV flare rates and energies. Assuming Poisson statistics, we expect a 95% confidence of catching between 2-11 flares. Observing for 20 science hours translates into about 37 total hours, using the estimated orbital visibility of 52 minutes from APT, which in turn translates into 23

orbits. However, these orbits need not be consecutive, which allows the flexibility required for scheduling observations in reduced gyro mode. In the unlikely event that the NUV flare rates are reflective of the optical flare rates, we would still expect to see one flare in 20 hours given the optical flare rates (1.5-2 flares per day, (Davenport et al. 2016, Vida et al. 2019)).

Orient ranges are required in order to avoid contamination from nearby stars. We estimate our orient ranges by propagating Proxima Centauri's proper motion to about 2026 and inspect the field for contaminants. Using the HST ETC, we estimate exposure times to be 40 seconds to stay within 70% of saturation; this gives $S/N > 30$. Short exposure times are very beneficial for flare studies, as you increase the likelihood of catching the peak of the flare. Walker (1981) found flares with energies of about 10^{28} erg s⁻¹ peaked in 20-30 seconds and had a total duration (including rise and decay) of about 13 minutes. We should therefore be able to catch the full flare evolution with these short exposure times. We will acquire on-target. We will follow Bennett et al. 2025 and utilize a 2250x590 subarray on the second UVIS detector chip by offsetting the y-position target reference system by -50pix.

Proposal 18140 - Visit 01 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

Visit	Proposal 18140, Visit 01, implementation					Mon Dec 15 14:00:50 GMT 2025
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.7409999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

Proposal 18140 - Visit 01 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

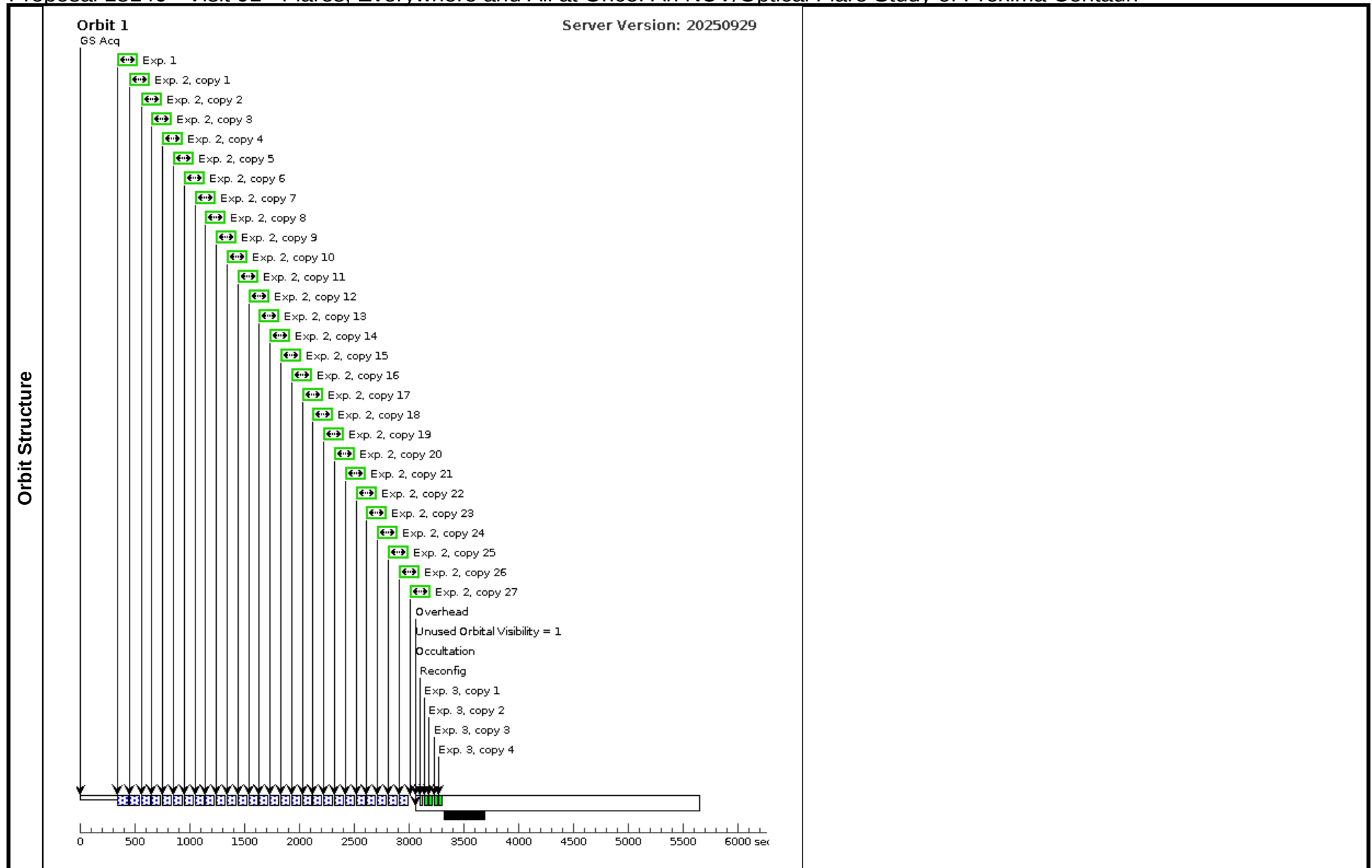
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 01	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

Exposures

Proposal 18140 - Visit 01 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 01	38 Secs X 27 (1026 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)] [==>(Copy 18)] [==>(Copy 19)] [==>(Copy 20)] [==>(Copy 21)] [==>(Copy 22)] [==>(Copy 23)] [==>(Copy 24)] [==>(Copy 25)] [==>(Copy 26)] [==>(Copy 27)]	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3		BIAS	WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 01	0.0 Secs X 4 (0 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]
Comments: We set up the bias frames based on previously successful program 11934, 16039, and 16086 and are using the same Aperture and subarray size and position as the observations for direct calibration.									

Proposal 18140 - Visit 01 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri



Proposal 18140 - Visit 02 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

Visit	Proposal 18140, Visit 02, implementation					Mon Dec 15 14:00:50 GMT 2025
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.7409999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

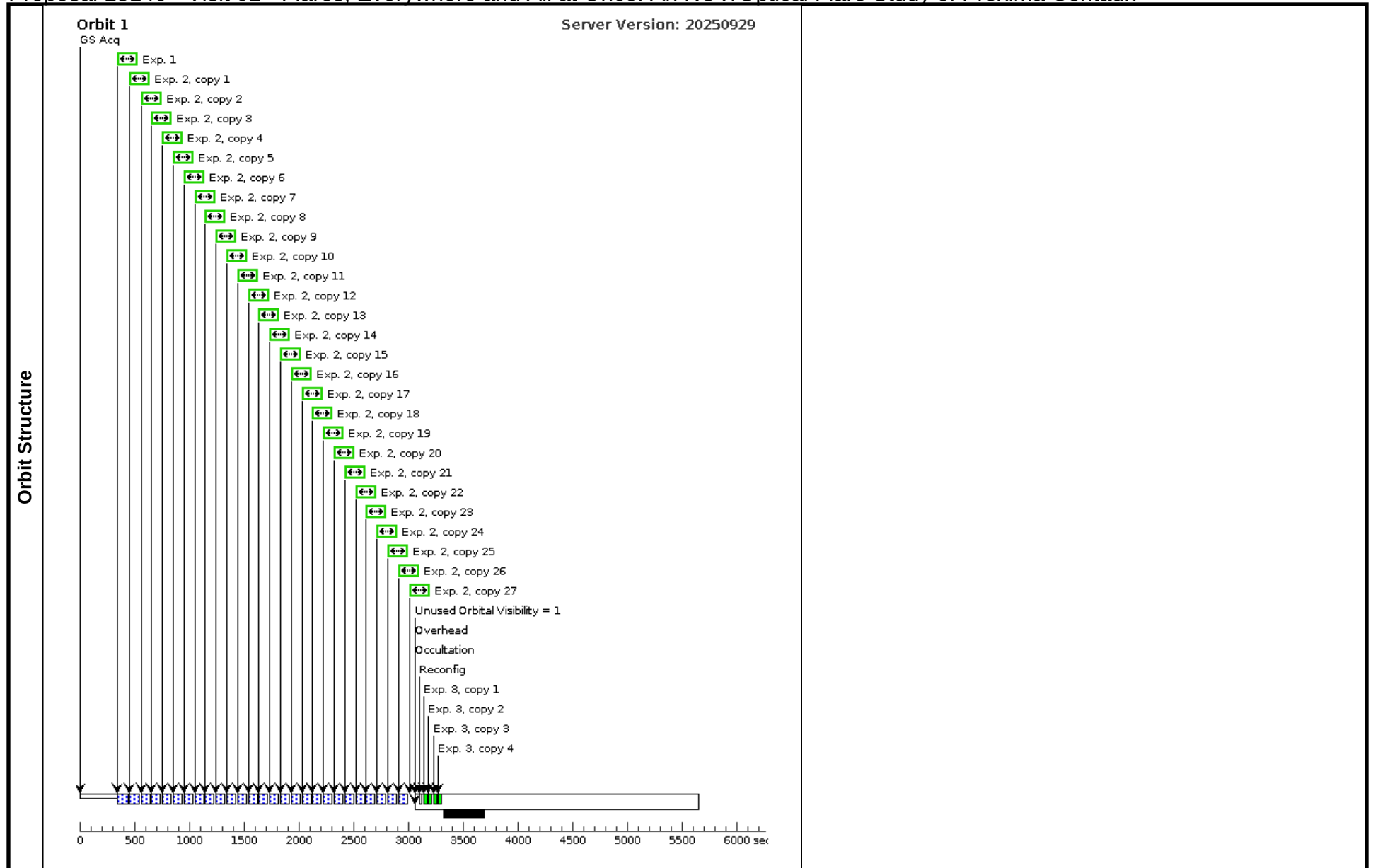
Proposal 18140 - Visit 02 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 02	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

Exposures

Proposal 18140 - Visit 02 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 02	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 02	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 03 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

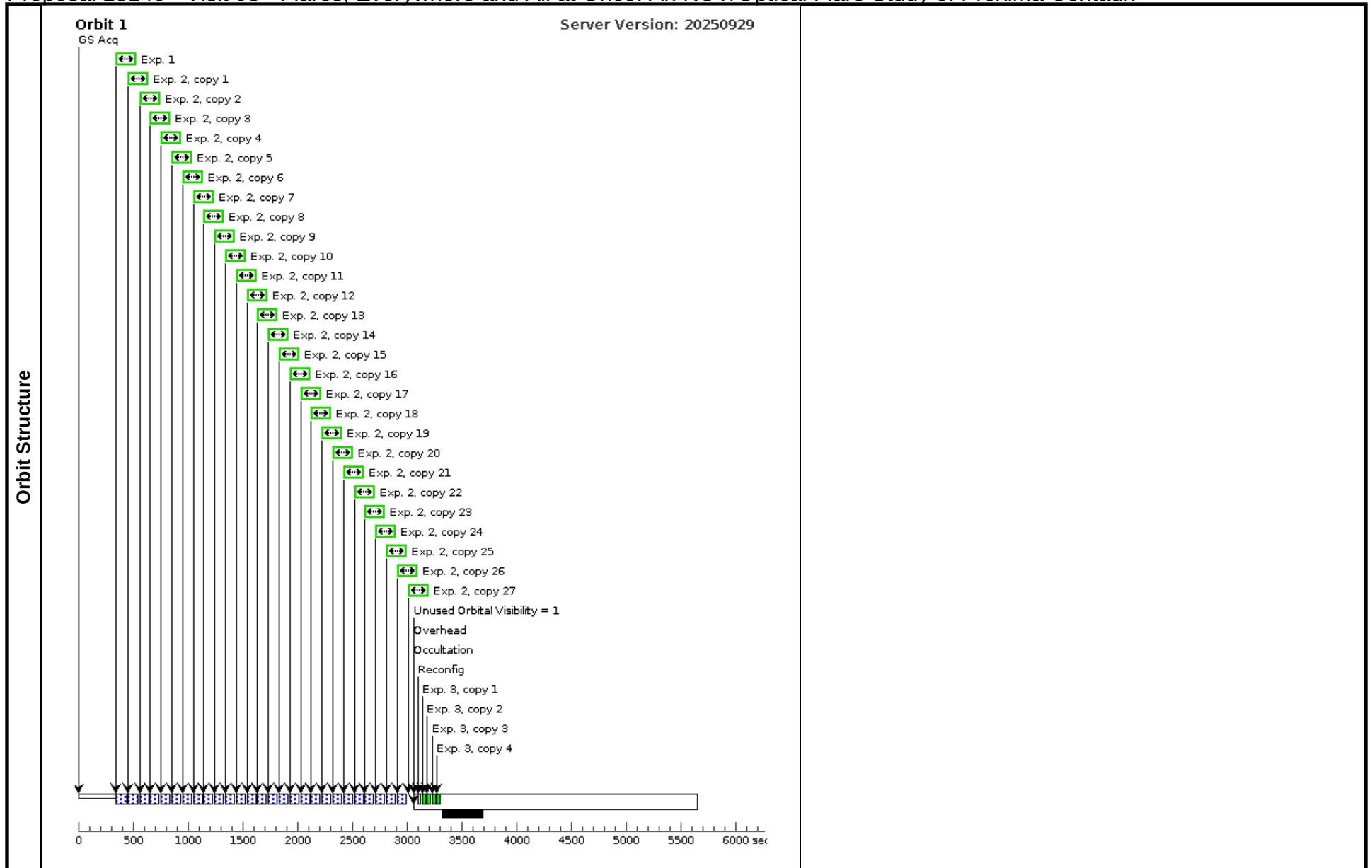
Visit	Proposal 18140, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Alt Name1: PROXIMA-CENTAURI Equinox: J2000 Alt Name2: PROXIMA	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 03 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 03	19 Secs (19 Secs)	[>=>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.										
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).										
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.										
	We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 03 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 03	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 03	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 04 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

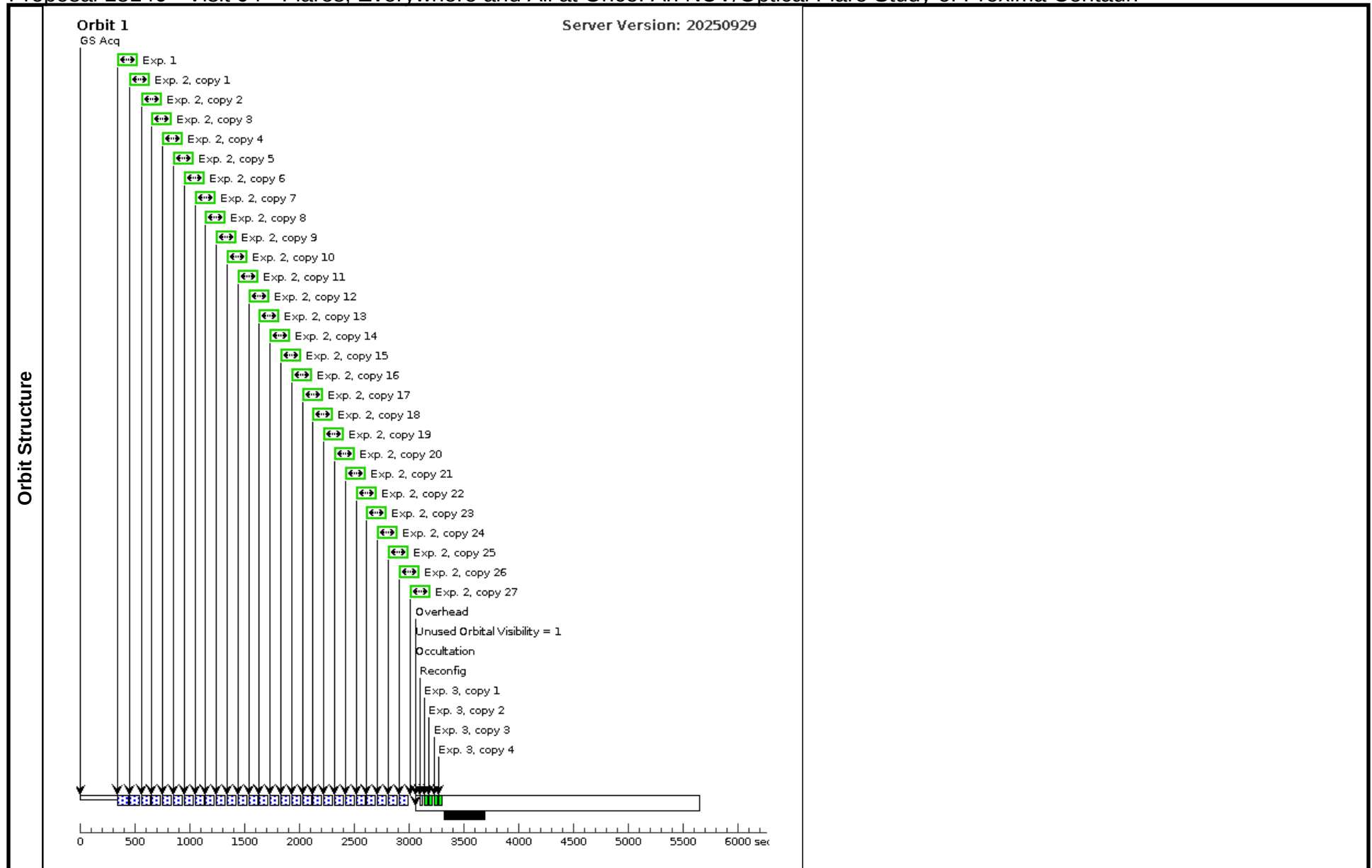
Visit	Proposal 18140, Visit 04, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 04 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 04	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 04 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 04	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 04	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 05 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

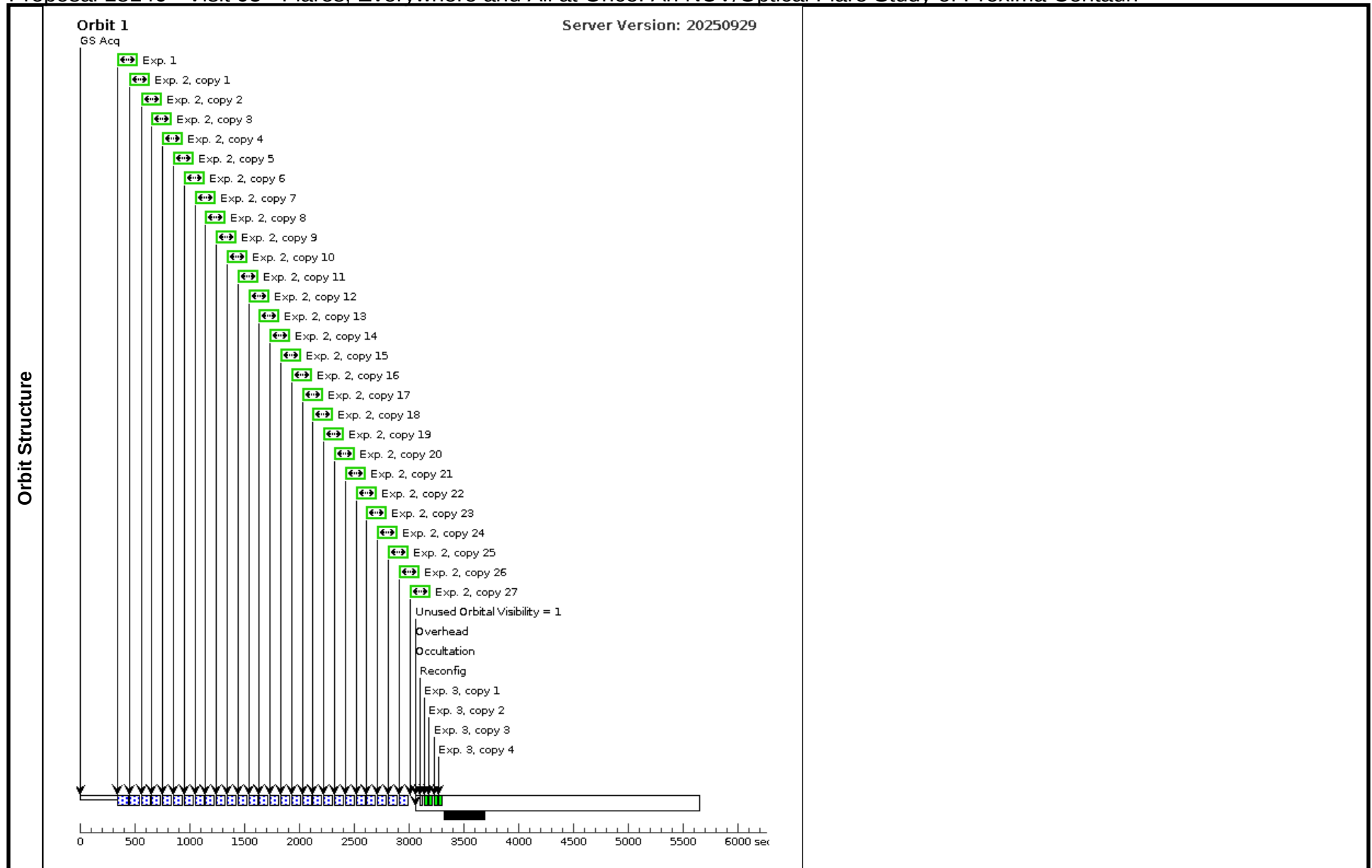
Visit	Proposal 18140, Visit 05, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 05 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 05	19 Secs (19 Secs)	[>=>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.										
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).										
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.										
	We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 05 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 05	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 05	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 06 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

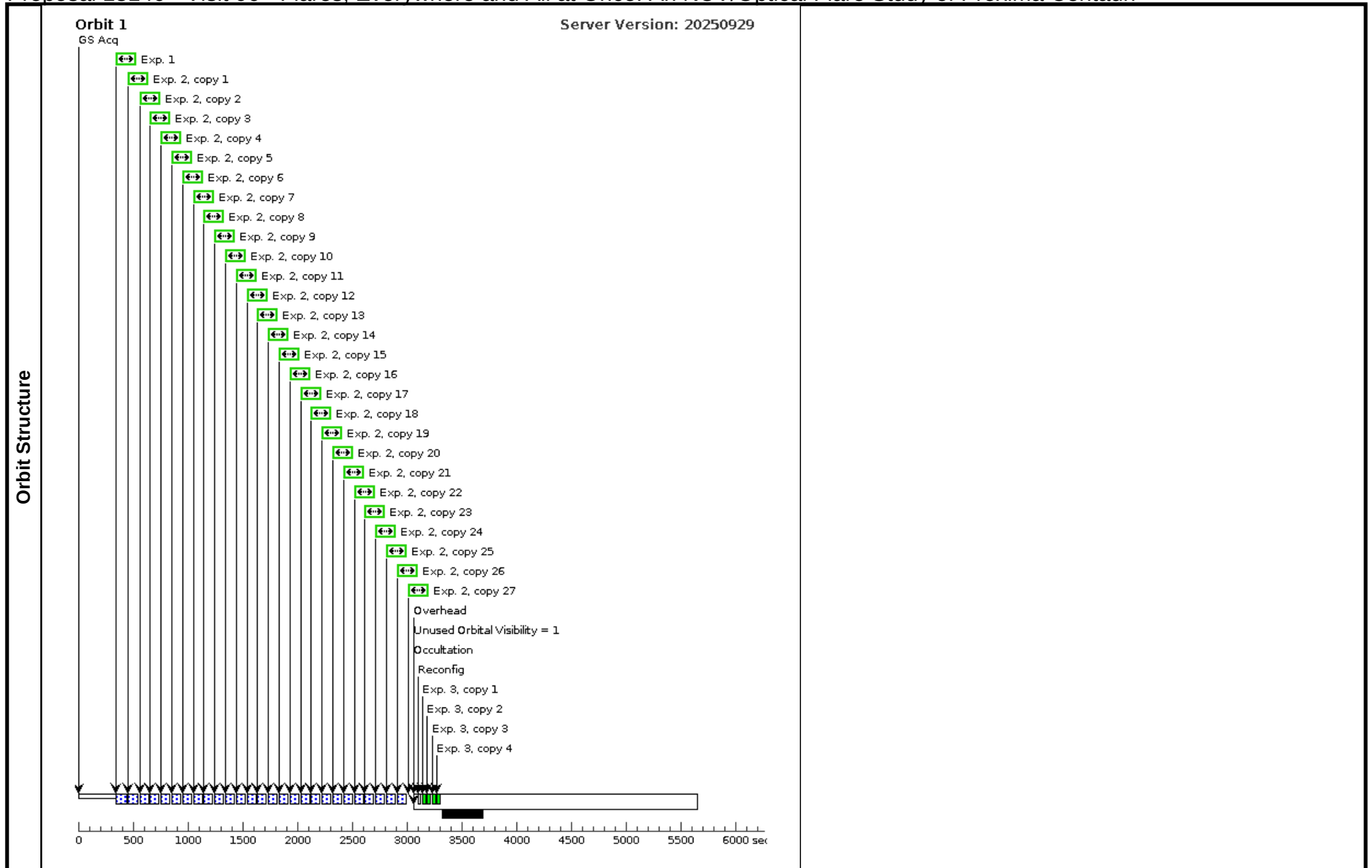
Visit	Proposal 18140, Visit 06, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
	<i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.740999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
Fixed Targets	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 06 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 06	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 06 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 06	38 Secs X 27 (1026 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)] [==>(Copy 18)] [==>(Copy 19)] [==>(Copy 20)] [==>(Copy 21)] [==>(Copy 22)] [==>(Copy 23)] [==>(Copy 24)] [==>(Copy 25)] [==>(Copy 26)] [==>(Copy 27)]	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3		BIAS	WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 06	0.0 Secs X 4 (0 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]



Proposal 18140 - Visit 07 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

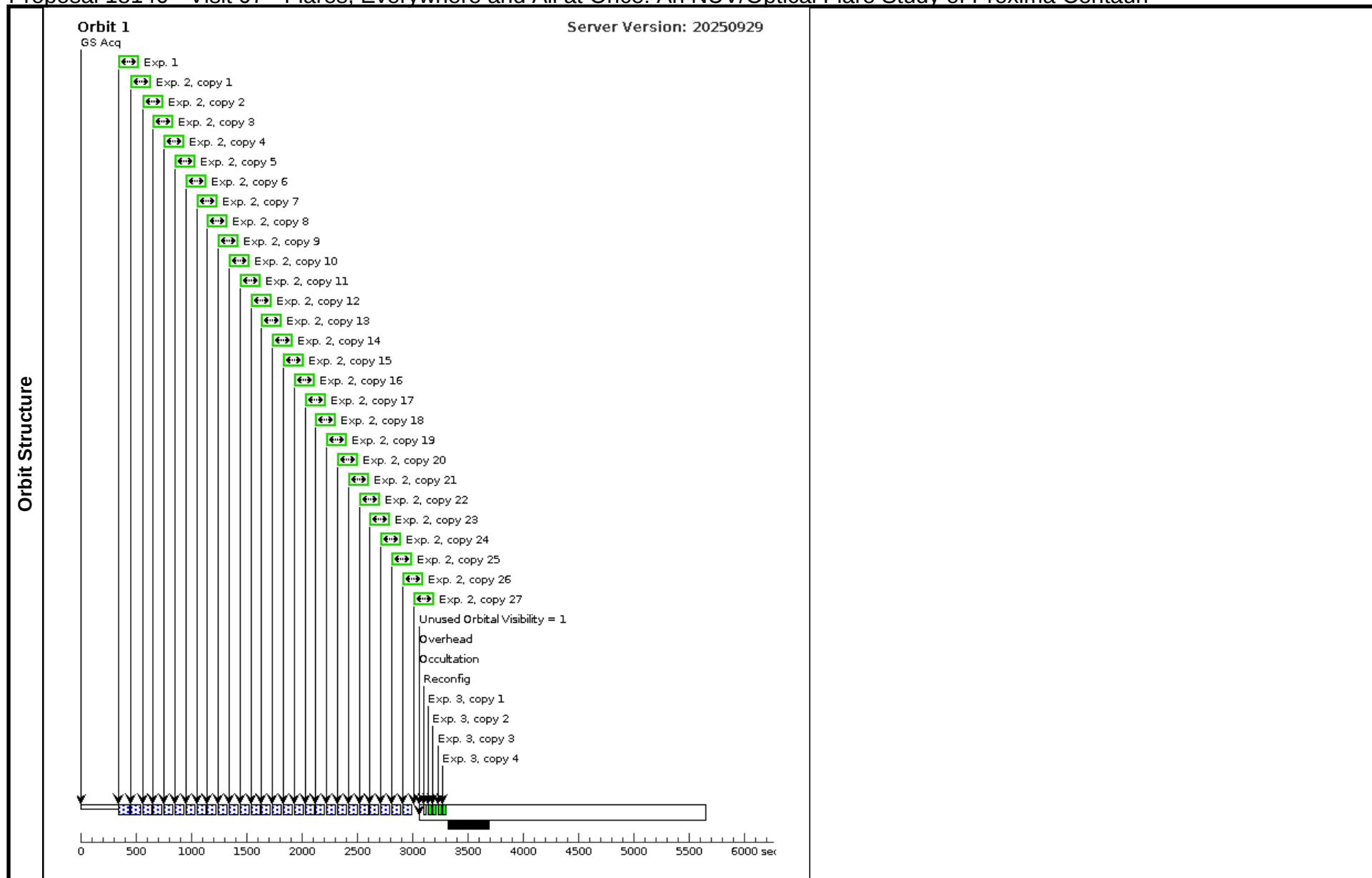
Visit	Proposal 18140, Visit 07, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 07 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 07	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 07 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 07	38 Secs X 27 (1026 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)] [==>(Copy 18)] [==>(Copy 19)] [==>(Copy 20)] [==>(Copy 21)] [==>(Copy 22)] [==>(Copy 23)] [==>(Copy 24)] [==>(Copy 25)] [==>(Copy 26)] [==>(Copy 27)]	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3		BIAS	WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 07	0.0 Secs X 4 (0 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]



Proposal 18140 - Visit 08 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

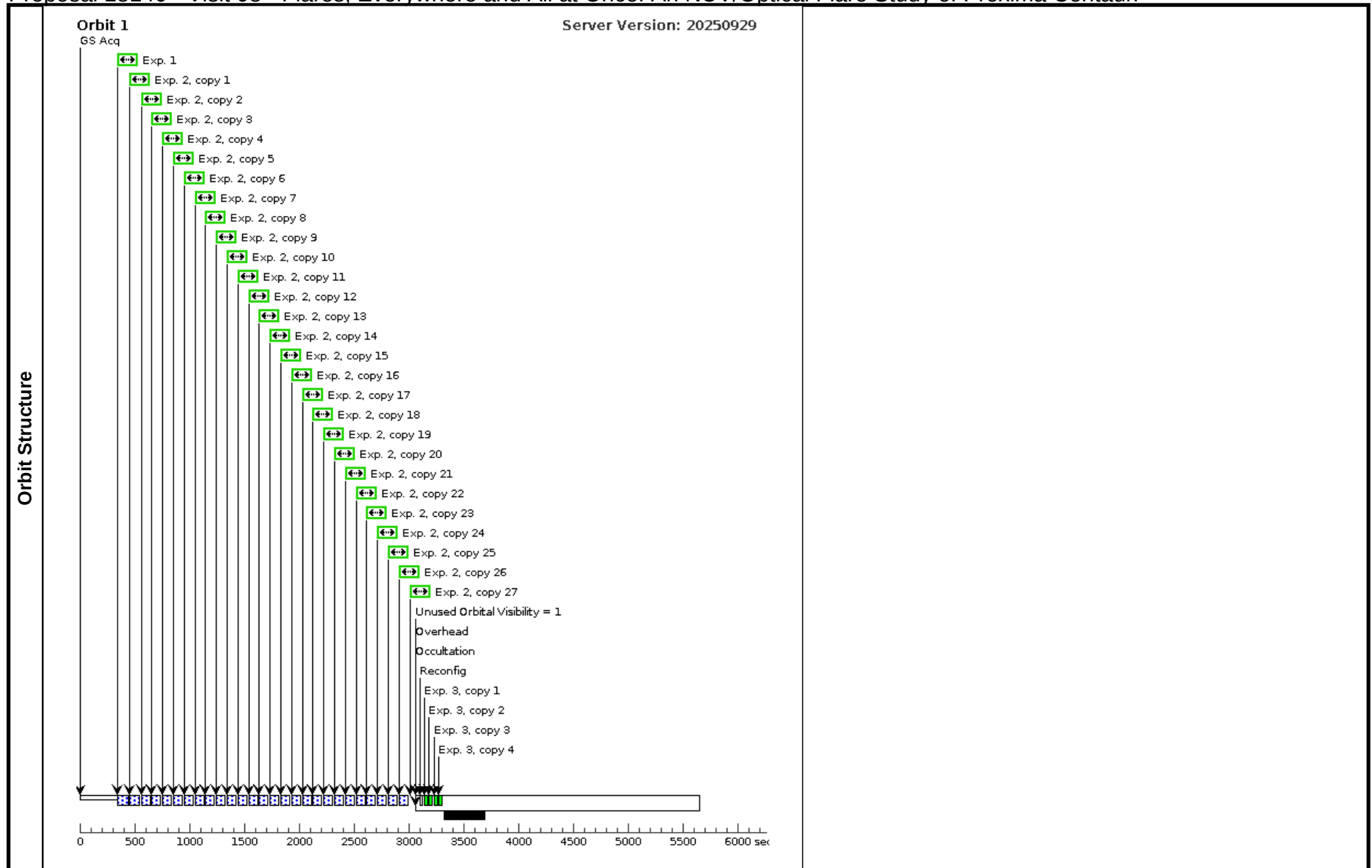
Visit	Proposal 18140, Visit 08, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Alt Name1: PROXIMA-CENTAURI Equinox: J2000 Alt Name2: PROXIMA	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 08 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 08	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 08 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 08	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 08	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 09 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

Visit	Proposal 18140, Visit 09, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

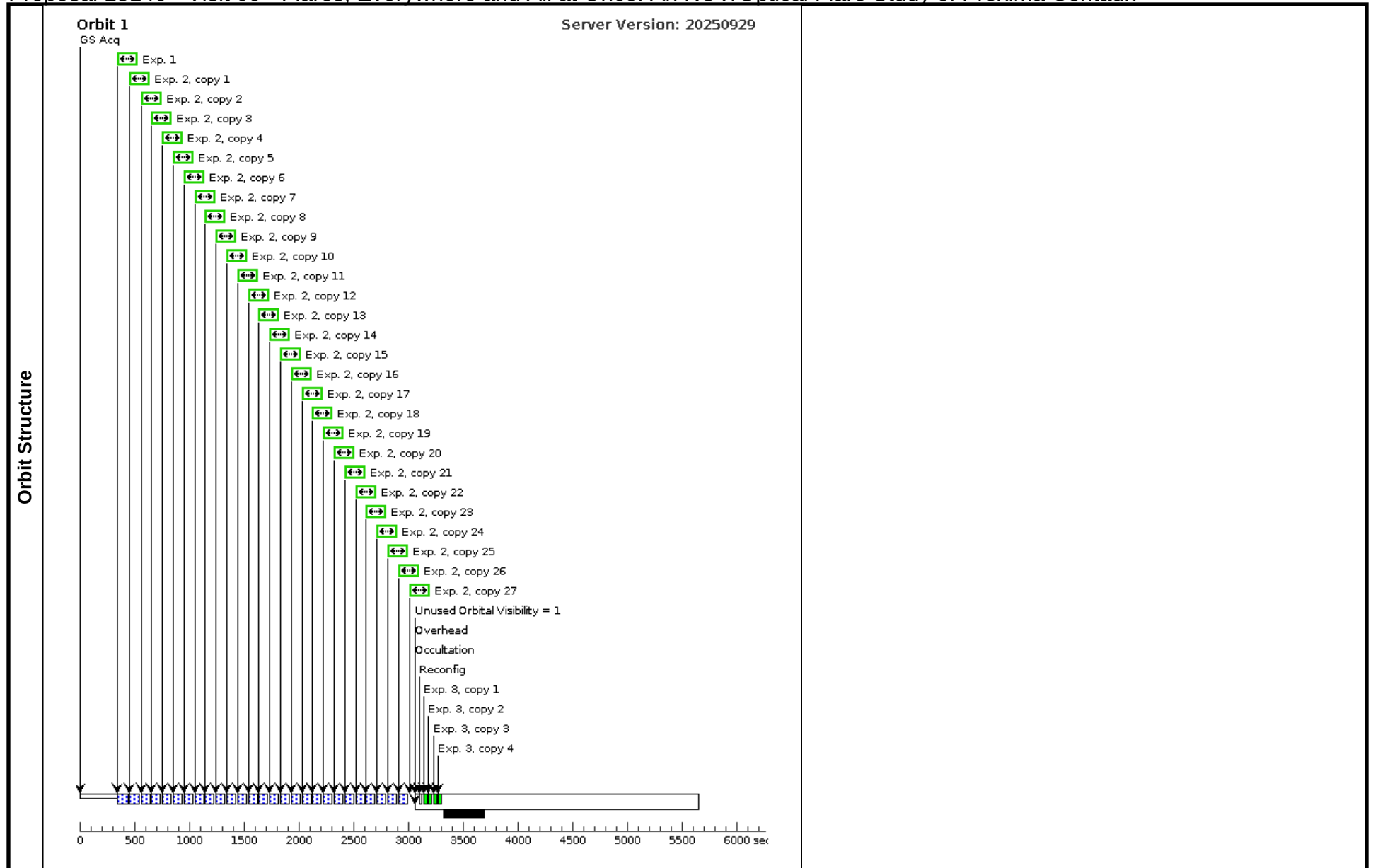
Proposal 18140 - Visit 09 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 09	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

Exposures

Proposal 18140 - Visit 09 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 09	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 09	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 10 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

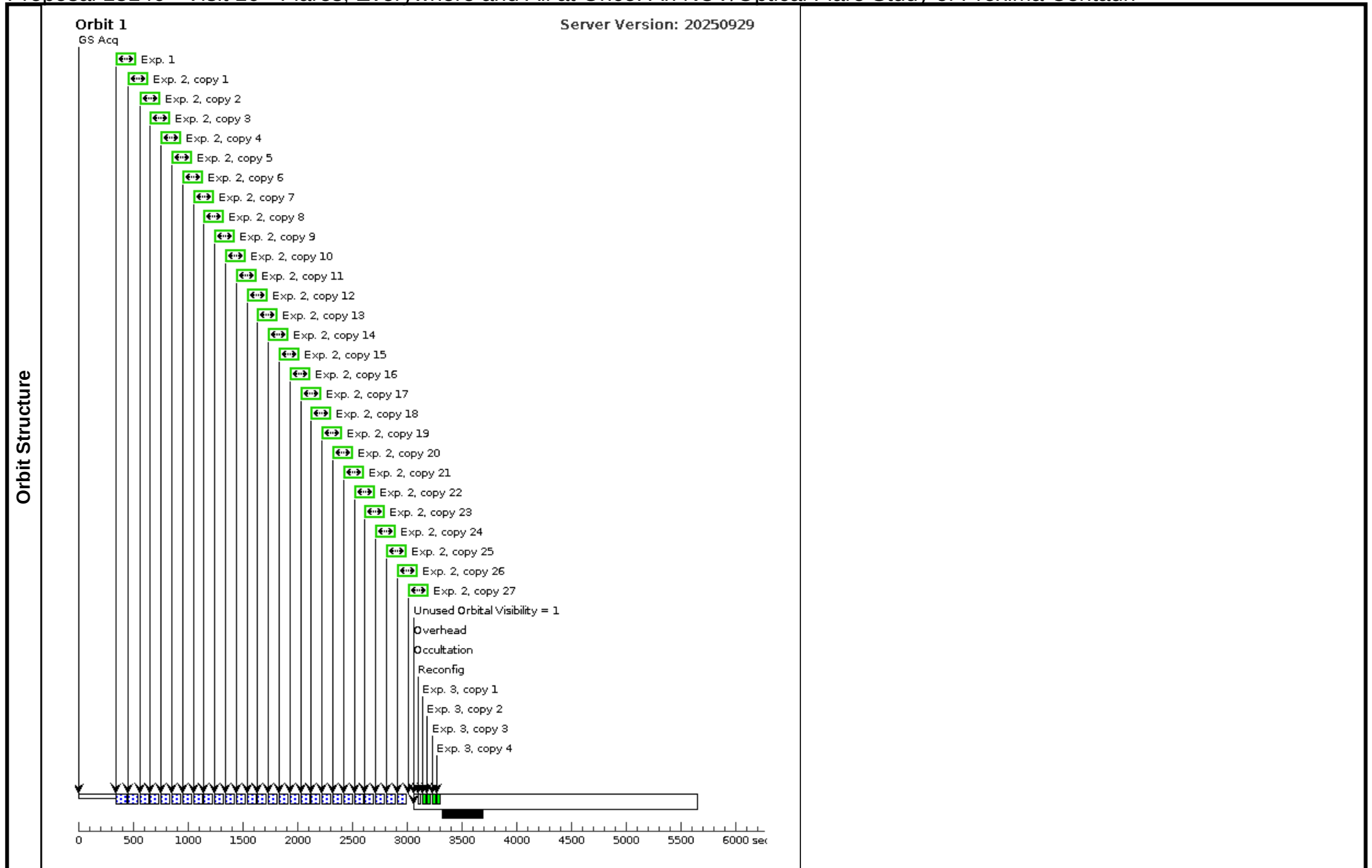
Visit	Proposal 18140, Visit 10, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.740999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 10 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 10	19 Secs (19 Secs) [>=>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 10 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 10	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 10	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 11 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

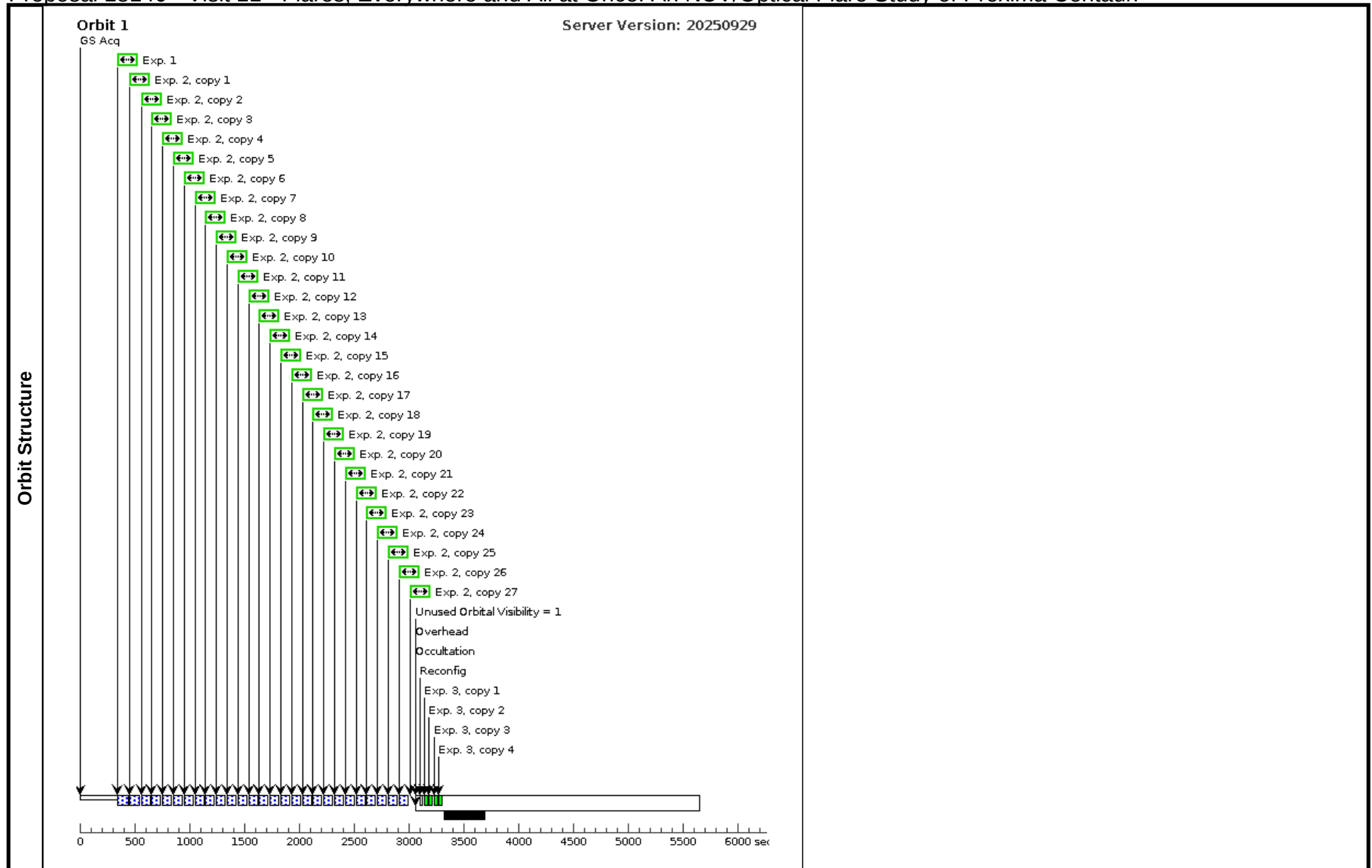
Visit	Proposal 18140, Visit 11, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 11 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 11	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 11 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 11	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 11	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 12 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

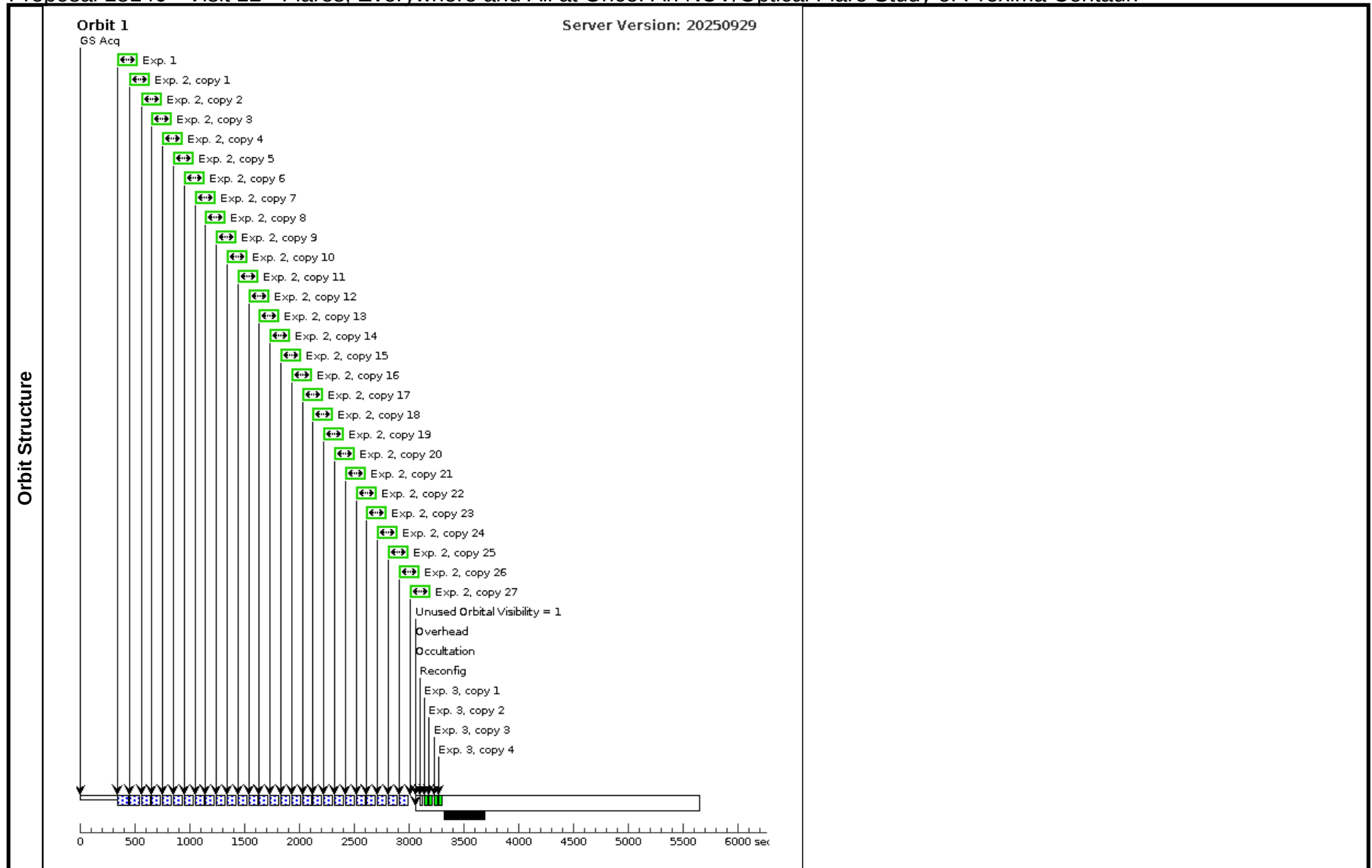
Visit	Proposal 18140, Visit 12, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 12 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 12	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 12 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 12	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 12	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 13 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

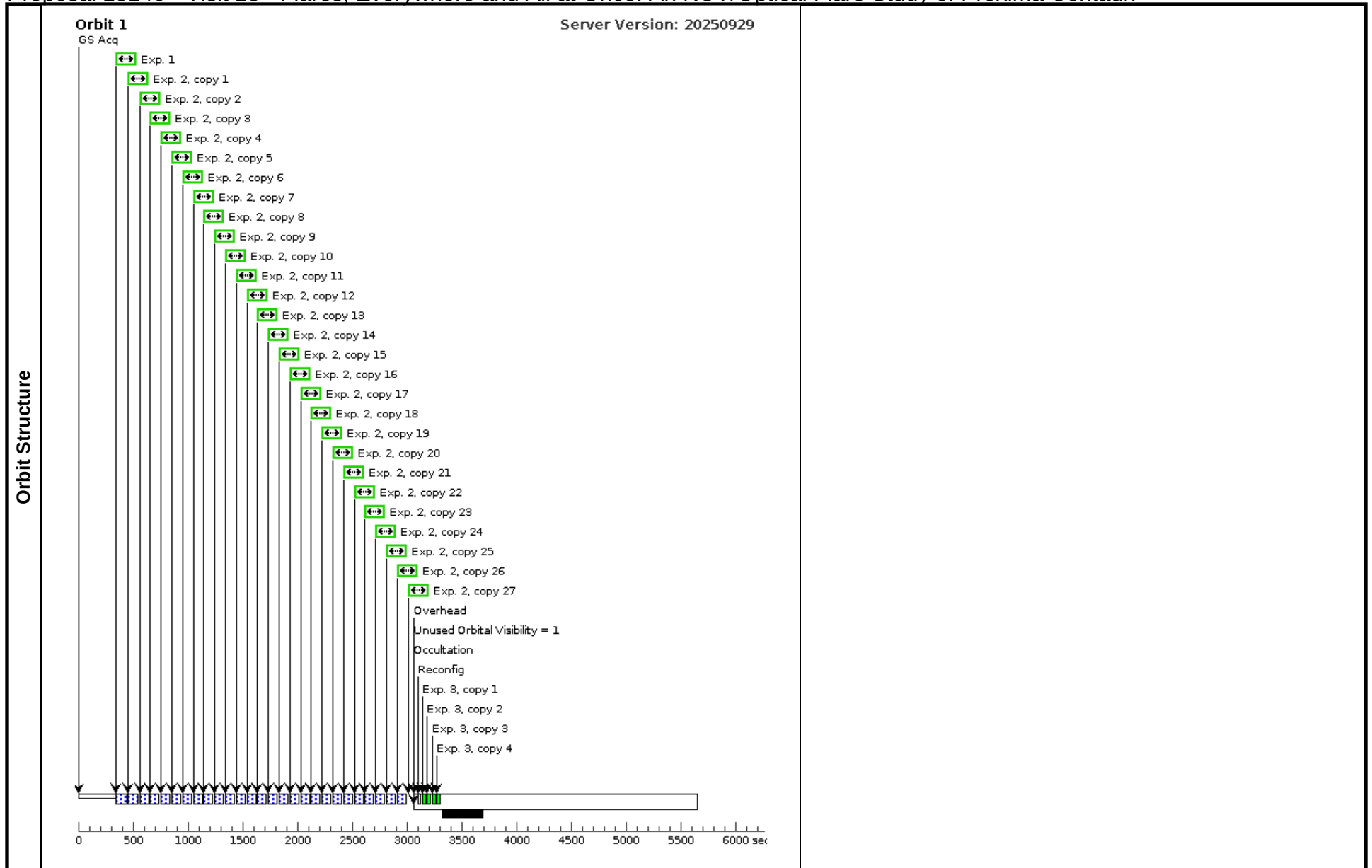
Visit	Proposal 18140, Visit 13, implementation					Mon Dec 15 14:00:50 GMT 2025
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.740999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

Proposal 18140 - Visit 13 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 13	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 13 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 13	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 13	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 14 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

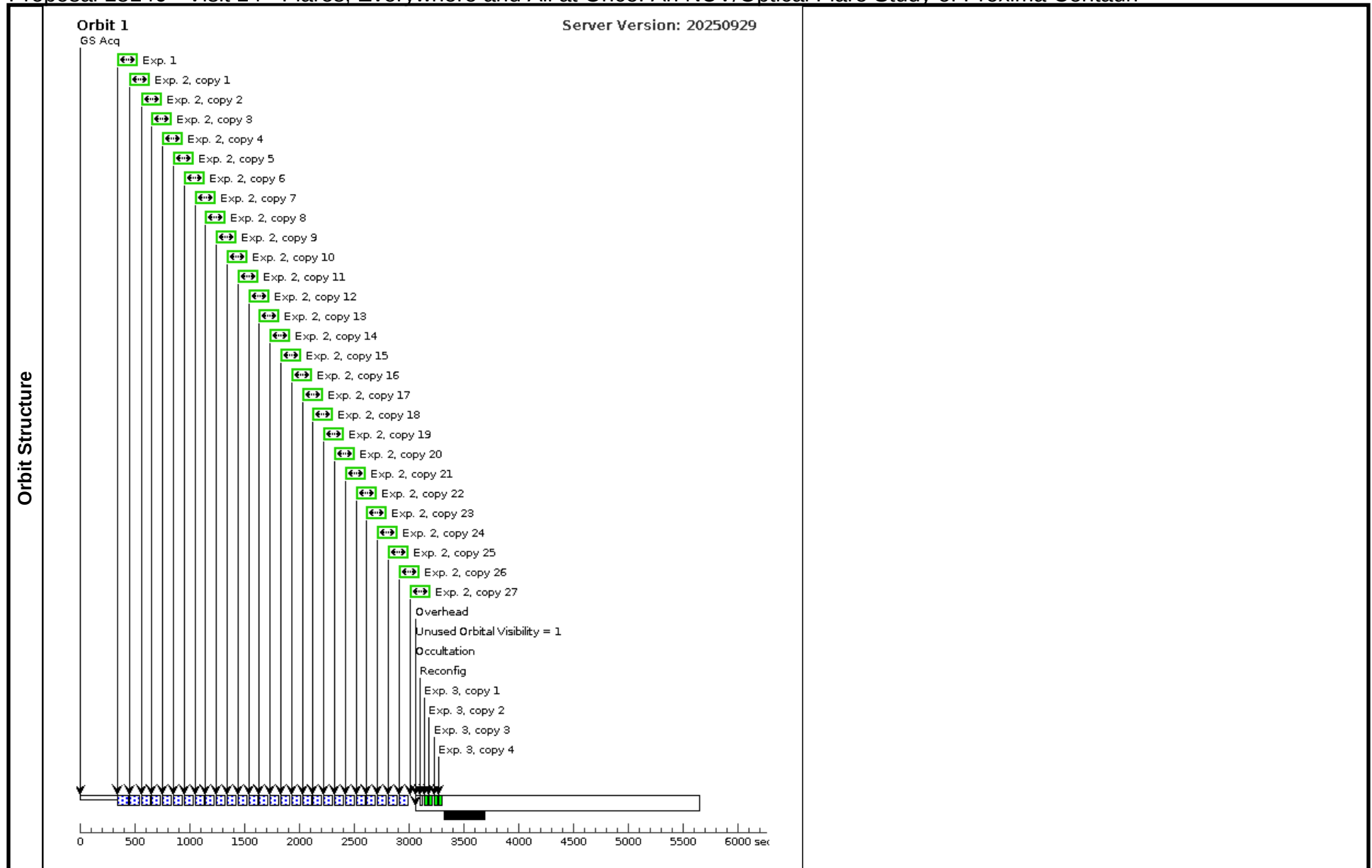
Visit	Proposal 18140, Visit 14, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 14 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 14	19 Secs (19 Secs)	[=>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.										
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).										
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.										
	We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 14 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 14	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 14	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 15 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:50 GMT 2025

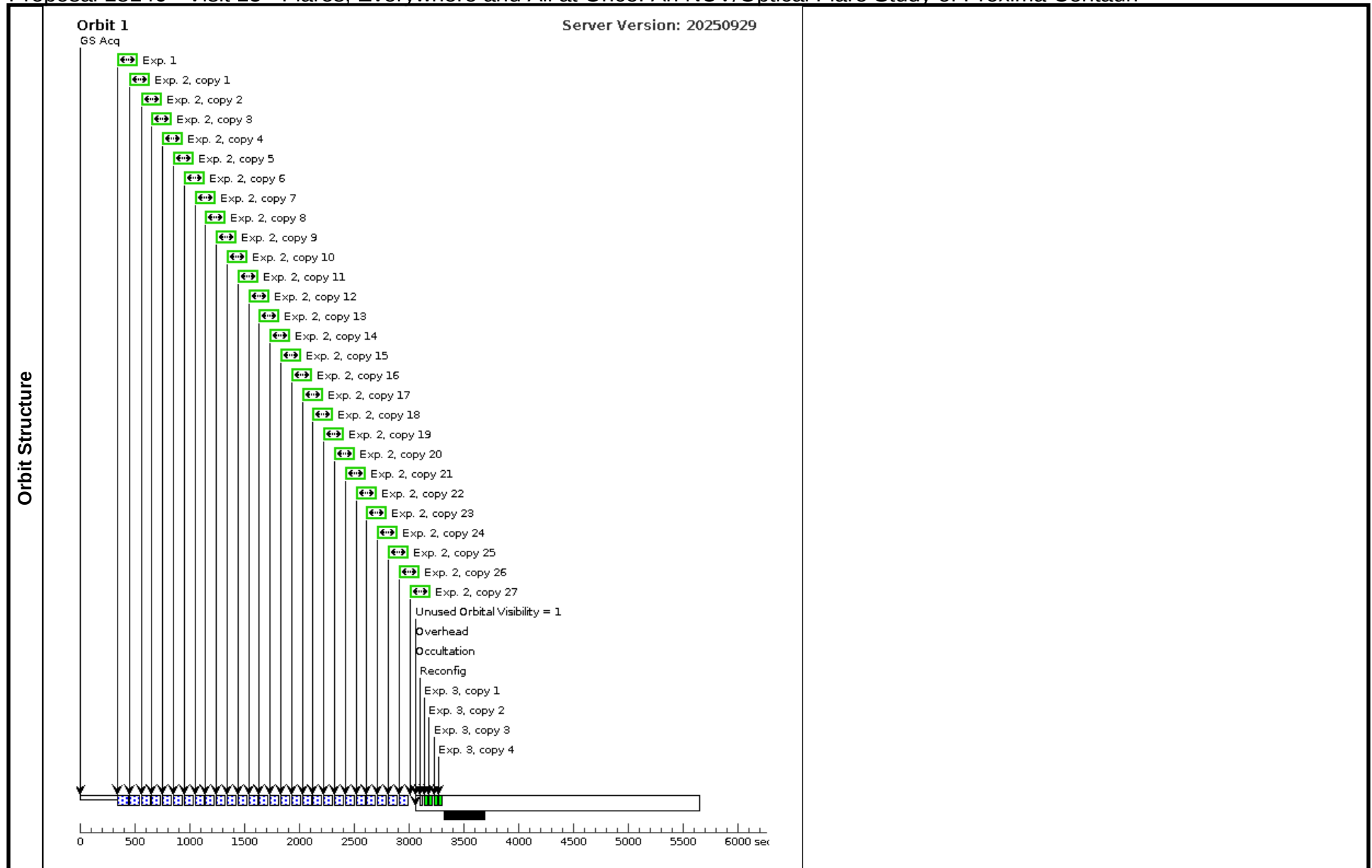
Visit	Proposal 18140, Visit 15, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 15 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 15	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 15 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 15	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 15	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 16 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

Visit	Proposal 18140, Visit 16, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 16 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

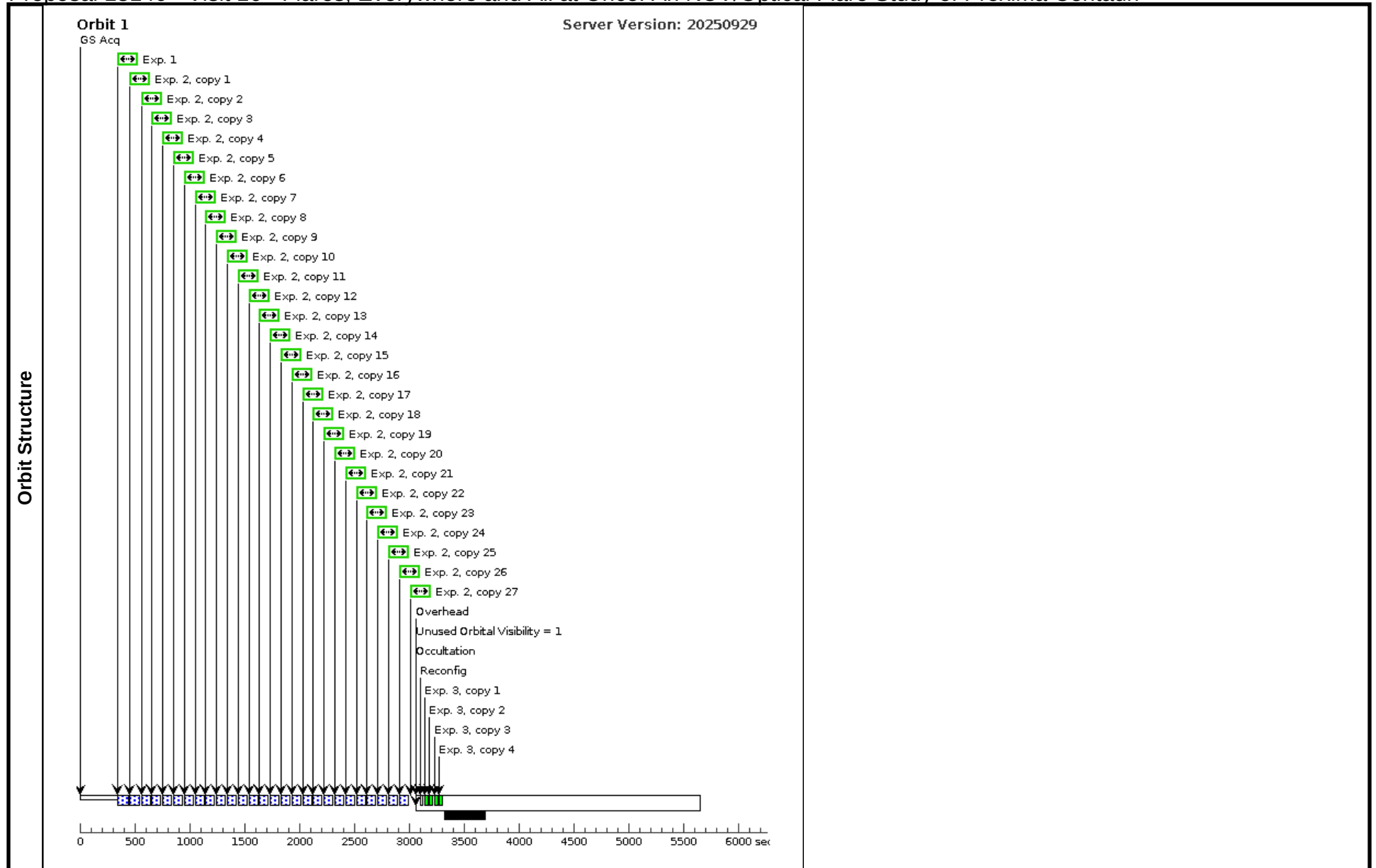
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 16	19 Secs (19 Secs) [=>]	[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.									

Exposures

Proposal 18140 - Visit 16 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 16	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 16	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 17 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

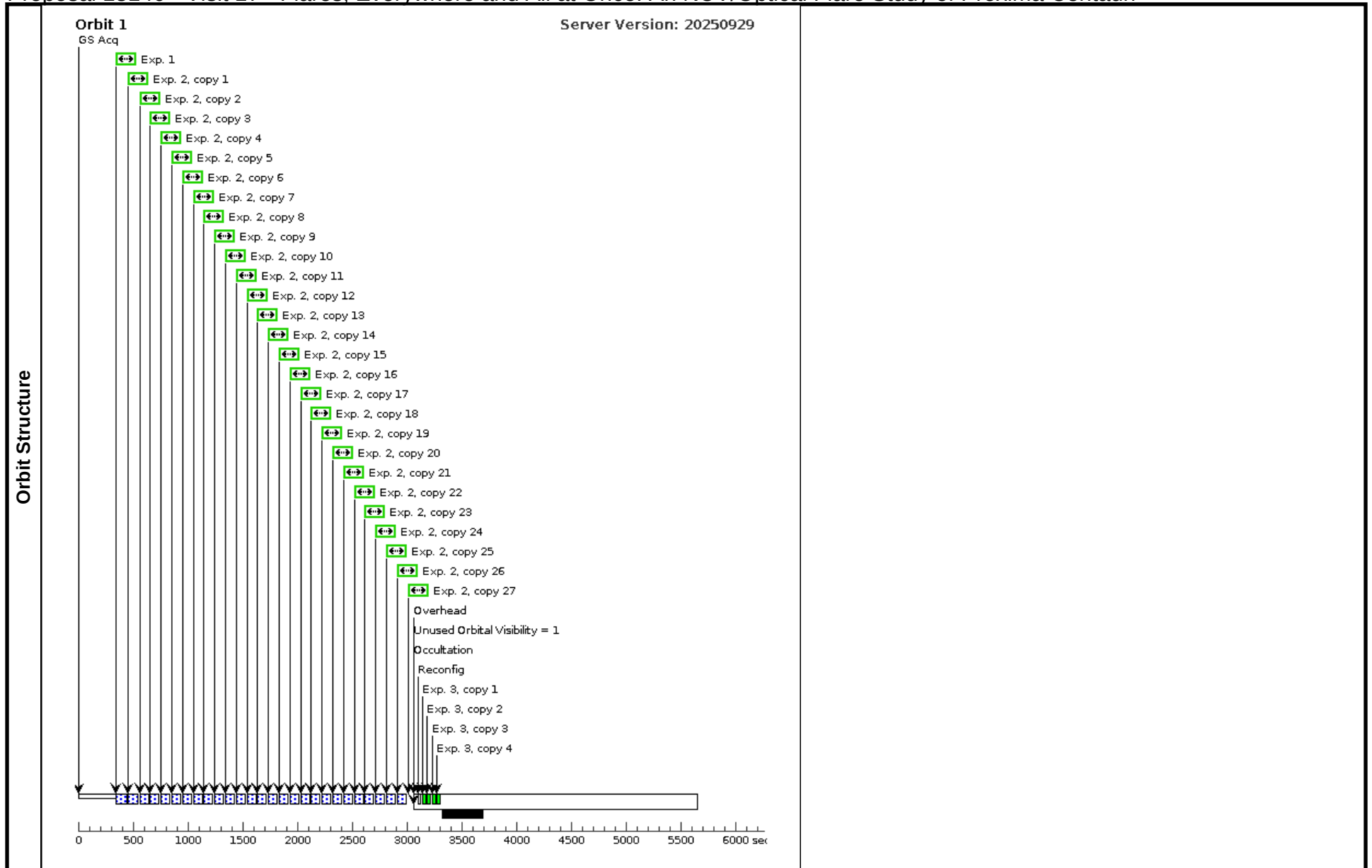
Visit	Proposal 18140, Visit 17, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 17 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 17	19 Secs (19 Secs)	[>=>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.										
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).										
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.										
	We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 17 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 17	38 Secs X 27 (1026 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)] [==>(Copy 11)] [==>(Copy 12)] [==>(Copy 13)] [==>(Copy 14)] [==>(Copy 15)] [==>(Copy 16)] [==>(Copy 17)] [==>(Copy 18)] [==>(Copy 19)] [==>(Copy 20)] [==>(Copy 21)] [==>(Copy 22)] [==>(Copy 23)] [==>(Copy 24)] [==>(Copy 25)] [==>(Copy 26)] [==>(Copy 27)]	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3		BIAS	WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 17	0.0 Secs X 4 (0 Secs)	
								[==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]



Proposal 18140 - Visit 18 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

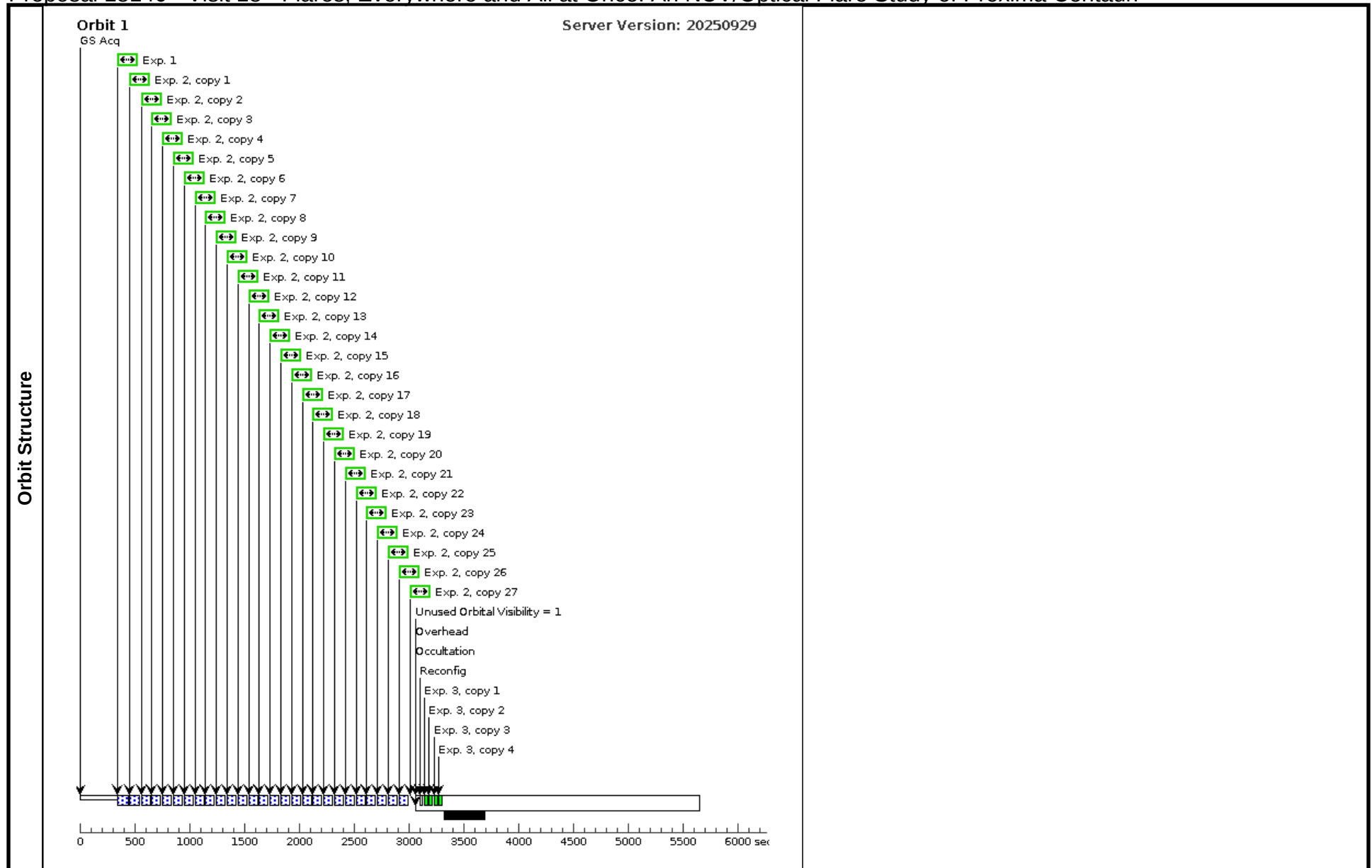
Visit	Proposal 18140, Visit 18, implementation				Mon Dec 15 14:00:51 GMT 2025	
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.7409999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

Proposal 18140 - Visit 18 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 18	19 Secs (19 Secs)			
											[=>]	
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.											
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).											
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.											
	We use FLASH=20 to meet the nominal count level.											

Proposal 18140 - Visit 18 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 18	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 18	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 19 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

Visit	Proposal 18140, Visit 19, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

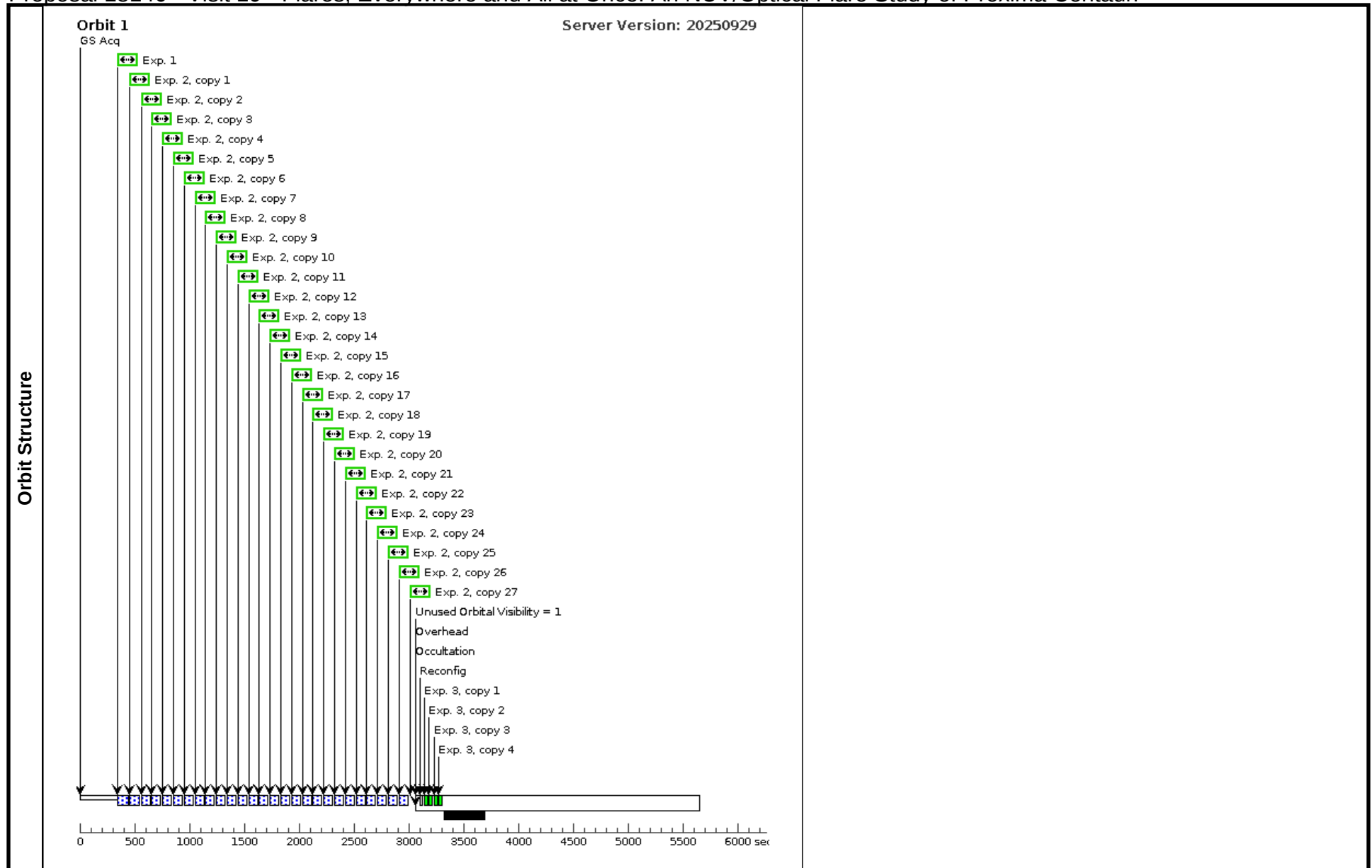
Proposal 18140 - Visit 19 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G280 reference image (WFC3UVIS.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 19	19 Secs (19 Secs) [=>]	[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 19 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 19	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 19	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 20 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

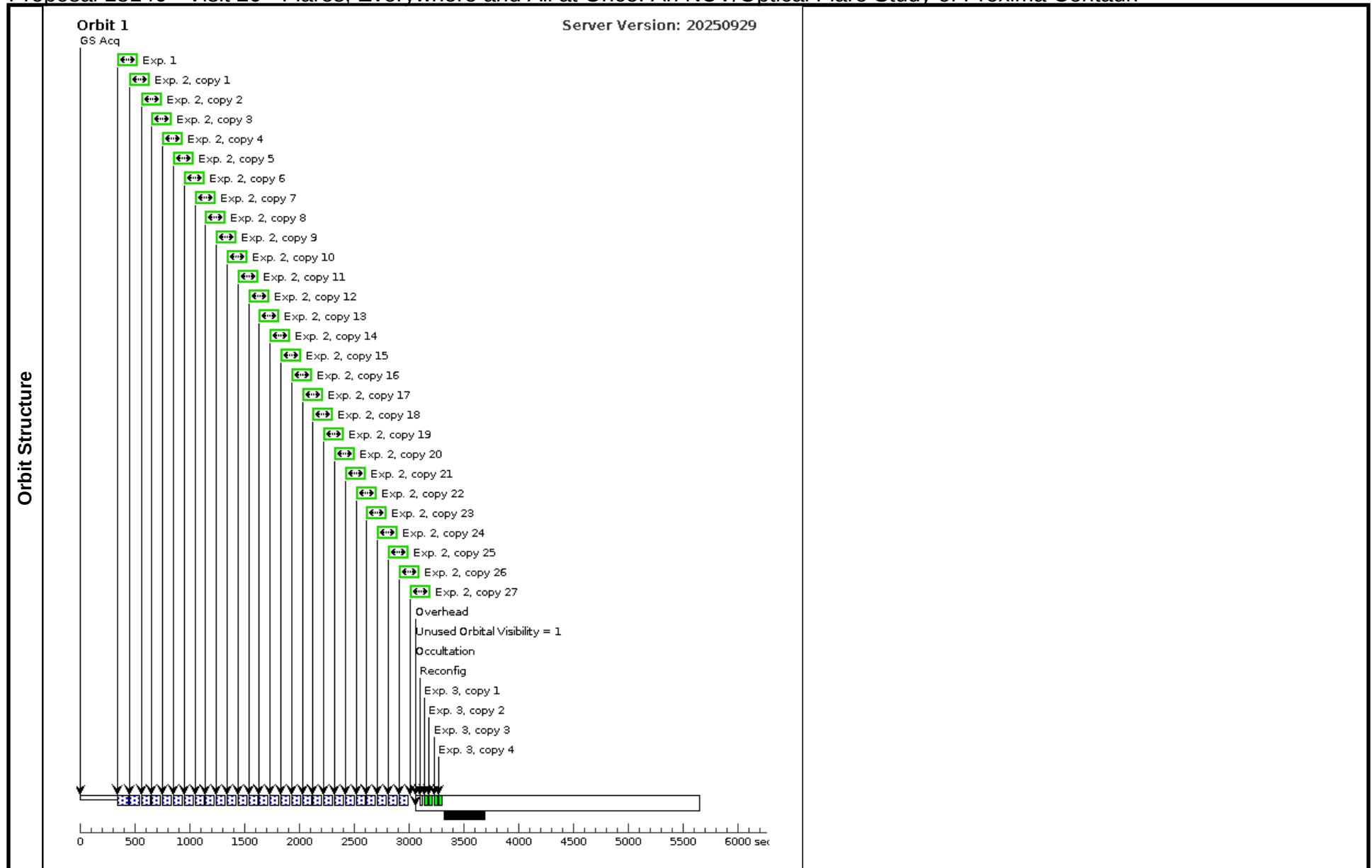
Visit	Proposal 18140, Visit 20, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 20 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 20	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

Proposal 18140 - Visit 20 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 20	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 20	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 21 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

Visit	Proposal 18140, Visit 21, implementation				Mon Dec 15 14:00:51 GMT 2025	
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.7409999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

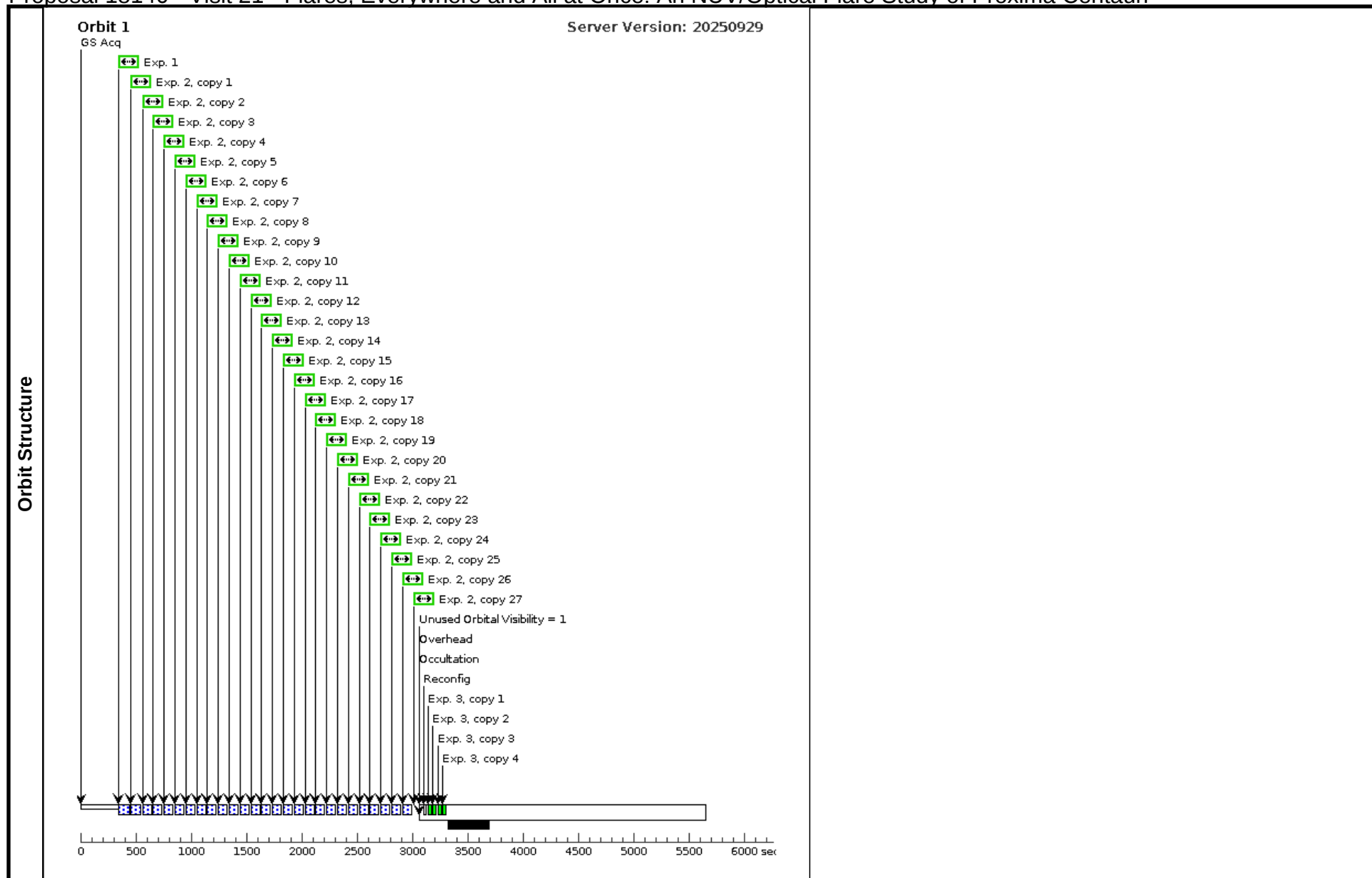
Proposal 18140 - Visit 21 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIMA-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 21	19 Secs (19 Secs) [=>]	[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 21 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 21	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 21	0.0 Secs X 4 (0 Secs)	[1]



Proposal 18140 - Visit 22 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

Visit	Proposal 18140, Visit 22, implementation				Mon Dec 15 14:00:51 GMT 2025	
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: WFC3/UVIS					
	Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D					
	Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum. Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program. For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure. To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d)	Proper Motion RA: -3781.7409999999995 mas/yr	V=11.13	Reference Frame: ICRS
		Alt Name1: PROXIMA-CENTAURI	Dec: -62 40 46.16 (-62.67949d)	Proper Motion Dec: 769.465 mas/yr	U=14.21,	
			Equinox: J2000	Parallax: 0.7680665"	B=12.95	
		Alt Name2: PROXIMA		Epoch of Position: 2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=STAR Description=[M V-IV] Extended=NO						

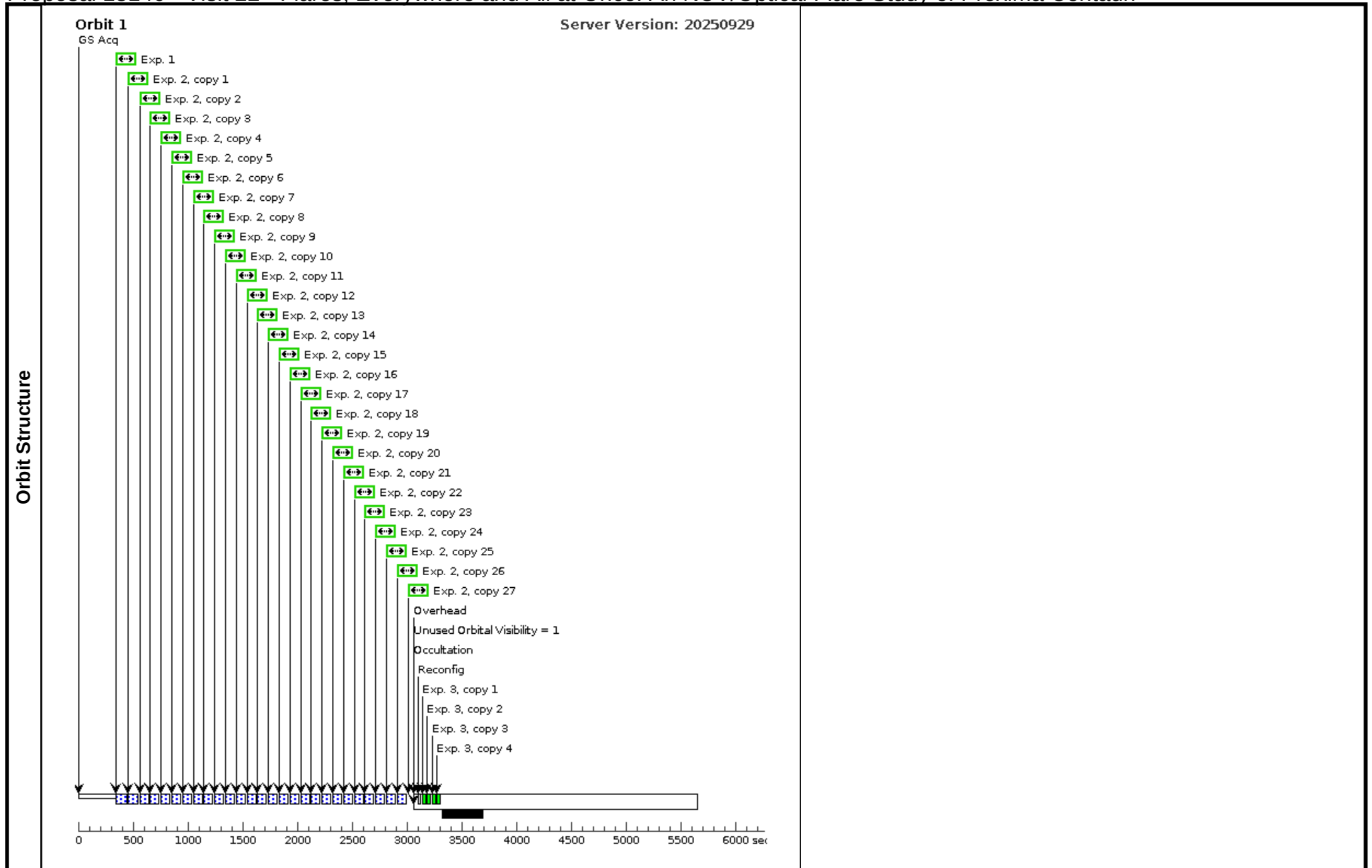
Proposal 18140 - Visit 22 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
								19 Secs	(19 Secs)	
1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 22	[==>]		[1]
Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150. The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024). CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures. We use FLASH=20 to meet the nominal count level.										

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2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 22	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 22	0.0 Secs X 4 (0 Secs)	[1]

Proposal 18140 - Visit 22 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri



Proposal 18140 - Visit 23 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Mon Dec 15 14:00:51 GMT 2025

Visit	Proposal 18140, Visit 23, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 0D TO 20 D; ORIENT 50D TO 120 D; ORIENT 180D TO 200 D; ORIENT 230D TO 300 D <i>Comments: The optional parameters SIZEAXIS1=2000 and SIZEAXIS2=300 are used for all exposures to minimize the data volume and hence time lost to buffer dumps. This is fine for the data that needs to be obtained because the spectrum will occupy only a narrow swath of pixel rows within the field. This also requires the use of optional parameters CENTERAXIS1 and CENTERAXIS2 in order to "steer" the location of the subarray readout so that it is centered on the target spectrum. If we were positioning on chip 1 we could set CENTERAXIS2=TARGET. However, for the field center (nominal "UVIS" aperture) location on chip 2, we cannot center the subarray on the target because this would cause the subarray to extend into the chip gap, so we hardwire CENTERAXIS1=2136 and CENTERAXIS2=1216, which is intended to put the vertical center of the subarray on the zeroth order of the target spectrum.</i> <i>Chip 2 biases are taken at the end of the visit because the grism exposures use custom subarrays, which will not have matching biases from the WFC3 bias calibration program.</i> <i>For each visit we have phase constraints around the event of the planetary transit, both the orbital period of the planet and the phasing needed are placed on the target acq exposure.</i> <i>To avoid any contamination by several dim, nearby stars, we have placed Orient Ranges for the observations to reach our science goals. This results in ~15 transit opportunities for the UVIS observations in the coming months.</i>					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	NAME-PROXIMA-CENTAURI	RA: 14 29 42.9461 (217.4289421d) Dec: -62 40 46.16 (-62.67949d) Equinox: J2000	Proper Motion RA: -3781.7409999999995 mas/yr Proper Motion Dec: 769.465 mas/yr Parallax: 0.7680665" Epoch of Position: 2000	V=11.13 U=14.21, B=12.95	Reference Frame: ICRS
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> <i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i> <i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i>					

Proposal 18140 - Visit 23 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	G280 reference image (WFC3UVI S.im.2022947)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, G280-REF	F300X	FLASH=20; CENTERAXIS1=2136; CENTERAXIS2=1216; SIZEAXIS1=2000; SIZEAXIS2=300	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 23	19 Secs (19 Secs) [==>]	[1]
	Comments: For the reference image ("filter acq"), saturation in 259 seconds. 19.3 seconds gives SNR of 150.									
	The nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2, at an approximate XY position of (2048,1024).									
	CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the target spectrum, which will be displaced from the direct image of the target, in agreement with programs 16039, 16695, and 17082. We match the subarray size of the science exposures.									
	We use FLASH=20 to meet the nominal count level.									

Proposal 18140 - Visit 23 - Flares, Everywhere and All at Once: An NUV/Optical Flare Study of Proxima Centauri

2	(WFC3UVI S.sp.202295 4)	(1) NAME-PROXIM A-CENTAURI	WFC3/UVIS, ACCUM, UVIS	G280	FLASH=16; SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216	POS TARG null,-50	Sequence 1-3 Non-Int in Visit 23	38 Secs X 27 (1026 Secs)	[1]
Comments: With exposure time of 40 second, we remain below 50% saturation (w/ saturation at 103 seconds) (with a maximum SNR of about 500 at about 7500 Angstrom), while remaining short enough for decent time-resolution of the flaring event. We also add a FLASH of 16, which when combined with the natural background of about 4 e- per exposure will result in >20 e- and better CTE. Nominal "UVIS" aperture is ~10" above the chip gap on chip 1; a Y-postarg of about -50" places the target near the center of subarray on chip 2. SIZEAXIS1=2000 and SIZEAXIS2=300 are used to minimize data volume, while CENTERAXIS1 and CENTERAXIS2 are used to center the subarray readout on the zeroth order of G280 spectrum. These parameters are based upon similar observations obtained successfully in GOs 13574 and 15288 but have been adjusted to better center the zeroth order spectrum on the sub-array (as done successfully for 16039).									
3	BIAS		WFC3/UVIS, ACCUM, UVIS	DEF	SIZEAXIS1=2000; SIZEAXIS2=300; CENTERAXIS1=2136; CENTERAXIS2=1216		Sequence 1-3 Non-Int in Visit 23	0.0 Secs X 4 (0 Secs)	[1]

