



18382 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Cycle: 34, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Dr. Yuta Notsu (PI) (Contact)	University of Colorado at Boulder
Dr. Isaiah I. Tristan (CoI)	Rice University
Dr. Rachel A. Osten (CoI)	Space Telescope Science Institute
Dr. Adam F. Kowalski (CoI)	University of Colorado at Boulder

VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) V-YZ-CMI	COS/FUV COS/NUV	4	11-Aug-2026 11:00:16.0	yes
02	(1) V-YZ-CMI	COS/FUV COS/NUV	4	11-Aug-2026 11:00:18.0	yes
03	(1) V-YZ-CMI	COS/FUV COS/NUV	4	11-Aug-2026 11:00:21.0	yes
04	(1) V-YZ-CMI	COS/FUV COS/NUV	4	11-Aug-2026 11:00:23.0	yes

16 Total Orbits Used

ABSTRACT

Stellar X-ray and extreme UV (XEUV) radiation from active M-dwarfs controls planetary atmospheric escape and photochemistry. The exoplanet community currently relies on archival flare templates like the 1985 Great Flare of AD Leo. However, these canonical datasets suffer from non-simultaneous coverage, NUV saturation, and lack of accompanying X-ray measurements. Because chromospheric and coronal energetics are tightly coupled, lacking simultaneous X-ray and UV data prevents self-consistent physical modeling, leaving the total XUV radiative output highly uncertain.

We propose a strictly coordinated campaign targeting the highly active M-dwarf YZ CMi. While YZ CMi has a rich archival history with both observatories, our specific combination of HST/COS G130M/1222 and XMM-Newton X-ray+Optical Monitor modes has never been utilized simultaneously on this target. Capturing simultaneous, time-resolved X-ray, FUV, and NUV flare spectra will directly link impulsive chromospheric heating with gradual coronal evaporation. By combining these data with modern Radiative-Hydrodynamic (RHD) models, we will constrain the entire wavelength range between a few $\text{\AA}$ and $6000\text{\AA}$. This is necessary for a comprehensive understanding of optically thin and thick flare-induced XEUV emissions, breaking theoretical degeneracies and accurately constraining the unobservable EUV flux.

We will deliver these synchronized multi-wavelength templates as High-Level Science Products (HLSPs). This provides the highest-fidelity quantification of stellar flaring XUV radiation to date, establishing a crucial foundation for interpreting future exoplanet spectra in the Habitable Worlds Observatory (HWO) era.

OBSERVING DESCRIPTION

We request the coordinated simultaneous HST - XMM observations of the highly active, nearby M4.5 dwarf YZ CMi (M4.5Ve, $V=11.2$, $d = 5.99$ pc). The high flare frequency of this star, which is well-quantified by previous optical (TESS), UV (Swift & HST), and X-ray (XMM) make it an ideal and highly reliable target for capturing a major stochastic flaring event within a limited coordinated observing window.

We request 16 HST orbits (4 HST visits $\times$ 4 orbits to ease scheduling constraints), with which we can statistically expect to capture 5 flares. XMM time will be requested to simultaneously cover these HST orbits. With HST in a low-Earth orbit, 4 orbits (12 ks on target) corresponds to ≈ 20 ks of elapsed time of XMM (so $20\text{ks} \times 4$ visits = 80ks are approved for XMM). XMM's uninterrupted continuous viewing can help us to track the complete coronal evolution and bridge the unavoidable Earth-occultation gaps inherent to HST's orbit. (In stead of 4 orbits per each visit, having 3 orbits per each visit (but more visits so that the total orbits are still 16) would be an option if the scheduling is tough. But in that case, XMM scheduling needs to be splitted into also the same number of visits.)

We require coordinated observations with XMM-Newton. On the basis of HST and XMM visibility information, there are periods of 5--6 weeks when simultaneous observations with XMM and HST are possible from early Oct. -- early Nov. 2026 and 2027. This is indicated using BETWEEN restrictions in the APT file to ensure proper scheduling. To maximize the scientific return, we request the XMM-Newton observations to be synchronized such that its continuous viewing begins prior to the first HST orbit's target acquisition, ensuring no flare onset or precursor emission is missed during the observatory setup.

The HST FUV data analysis will proceed by making use of time-resolved spectral data of COS. So Time-Tag mode of COS is requested. We identify flaring times, and then separately analyze the time-evolution of the emission lines and continua, and compare them with model inputs. Our choice of the COS G130M/1222 configuration provides coverage from approximately 1060--1360 Å with a detector gap from 1210--1225 Å. Beyond avoiding the geocoronal Lyman- α emission to ensure detector safety during extreme flares, this setup provides access to crucial transition region and chromospheric diagnostics, including various N V, Si III, C II, C III lines. Furthermore, the TIME-TAG operating mode will allow us to extract spectra at custom temporal cadences retrospectively (e.g., 10s bins during the impulsive rise and 60s bins during the gradual decay), perfectly matching the dynamic timescales of the chromospheric heating.

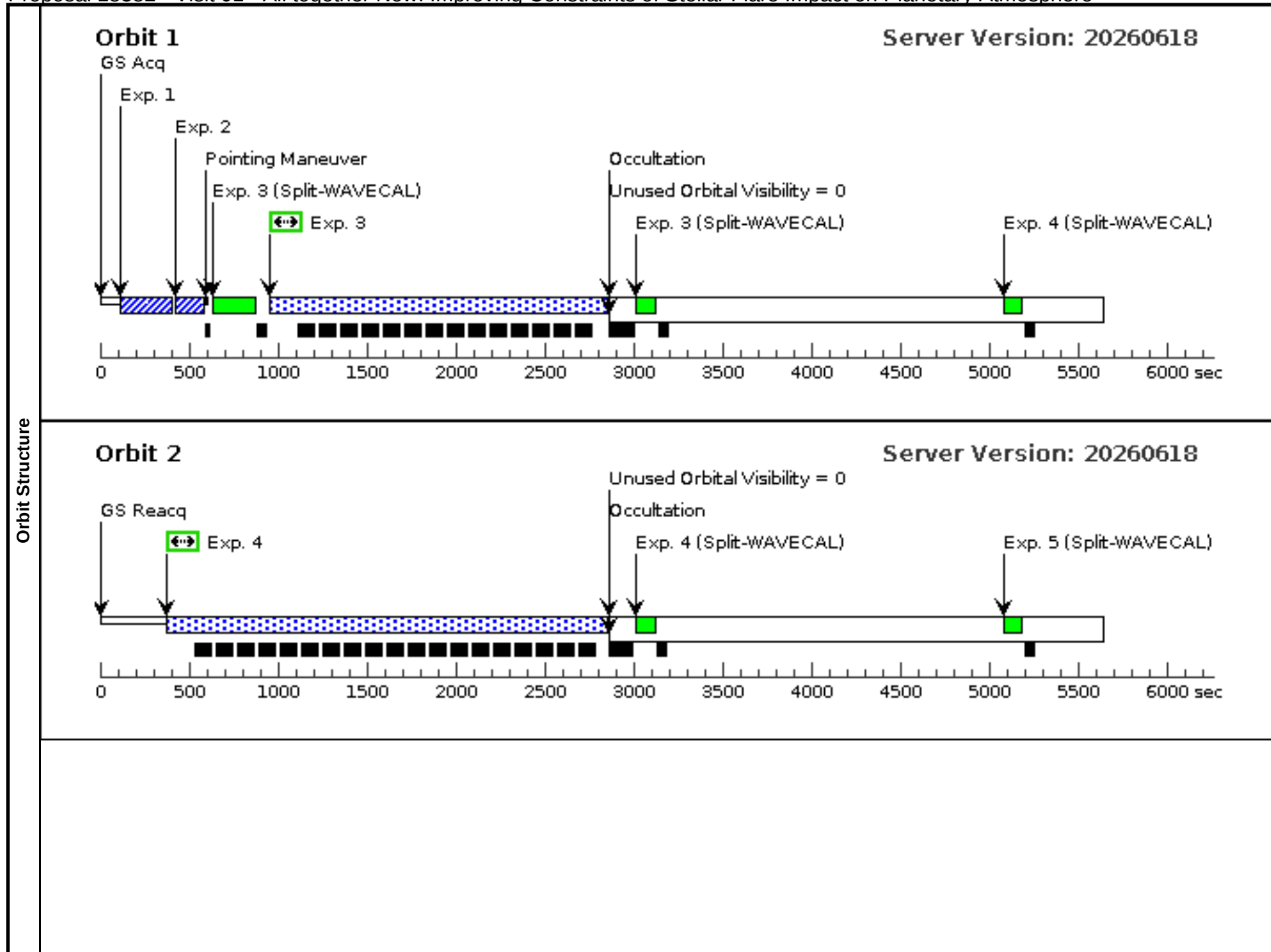
The proposed observations will not exceed the COS lifetime usage restrictions. We utilize data from PID 17428 which observed YZ CMi in the same COS/FUV G130M/1222 setting. The spectra with the highest (1f71z9hiq; COS.sp.2148236), which corresponds to the largest flare, and lowest (1f7109asq; COS.sp.2148308) fluxes bound the lifetime usage. COS ETC calculations give brightest pixel count rates of 0.014 (0.008 cps); multiplying by the total exposure time per visit (~ 12 ks) gives 168 (96) photons, which are well below the 2% or 540 counts per visit limit. These previous data of YZ CMi with the same setup also ensure that the proposed program is free from Bright Object Protection (BOP) violation. The exposure setups described in this APT also basically follow the same observation from PID 17428.

Proposal 18382 - Visit 01 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Visit	Proposal 18382, Visit 01					Tue Aug 11 15:00:24 GMT 2026
	Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: SCHED 100%; BETWEEN 02-OCT-2026:11:55:00 AND 03-OCT-2026:17:27:00; BETWEEN 04-OCT-2026:11:47:00 AND 05-OCT-2026:14:58:00; BETWEEN 06-OCT-2026:11:40:00 AND 07-OCT-2026:17:12:00; BETWEEN 08-OCT-2026:11:32:00 AND 09-OCT-2026:17:04:00; BETWEEN 10-OCT-2026:11:24:00 AND 11-OCT-2026:16:56:00; BETWEEN 12-OCT-2026:11:16:00 AND 13-OCT-2026:16:48:00; BETWEEN 14-OCT-2026:11:07:00 AND 15-OCT-2026:16:39:00; BETWEEN 16-OCT-2026:10:57:00 AND 17-OCT-2026:16:32:00; BETWEEN 18-OCT-2026:10:47:00 AND 19-OCT-2026:16:24:00; BETWEEN 20-OCT-2026:10:38:00 AND 21-OCT-2026:16:16:00; BETWEEN 22-OCT-2026:10:28:00 AND 23-OCT-2026:16:09:00; BETWEEN 24-OCT-2026:10:17:00 AND 25-OCT-2026:16:01:00; BETWEEN 26-OCT-2026:10:07:00 AND 27-OCT-2026:15:52:00; BETWEEN 28-OCT-2026:09:58:00 AND 29-OCT-2026:15:44:00; BETWEEN 30-OCT-2026:09:46:00 AND 31-OCT-2026:15:33:00; BETWEEN 01-NOV-2026:09:36:00 AND 02-NOV-2026:15:17:00; BETWEEN 03-NOV-2026:09:27:00 AND 04-NOV-2026:15:06:00; BETWEEN 05-NOV-2026:09:19:00 AND 06-NOV-2026:14:56:00; BETWEEN 07-NOV-2026:09:11:00 AND 08-NOV-2026:14:44:00; BETWEEN 09-NOV-2026:08:59:00 AND 10-NOV-2026:14:33:00; BETWEEN 02-OCT-2027:11:54:00 AND 03-OCT-2027:17:39:00; BETWEEN 04-OCT-2027:11:49:00 AND 05-OCT-2027:17:31:00; BETWEEN 06-OCT-2027:11:44:00 AND 07-OCT-2027:17:23:00; BETWEEN 08-OCT-2027:11:36:00 AND 09-OCT-2027:17:16:00; BETWEEN 10-OCT-2027:11:23:00 AND 11-OCT-2027:17:08:00; BETWEEN 12-OCT-2027:11:10:00 AND 13-OCT-2027:16:56:00; BETWEEN 14-OCT-2027:10:57:00 AND 15-OCT-2027:16:41:00; BETWEEN 16-OCT-2027:10:43:00 AND 17-OCT-2027:16:26:00; BETWEEN 18-OCT-2027:10:28:00 AND 19-OCT-2027:16:13:00; BETWEEN 20-OCT-2027:10:18:00 AND 21-OCT-2027:15:59:00; BETWEEN 22-OCT-2027:10:08:00 AND 23-OCT-2027:12:01:00; BETWEEN 24-OCT-2027:09:58:00 AND 25-OCT-2027:15:35:00; BETWEEN 26-OCT-2027:09:50:00 AND 27-OCT-2027:15:25:00; BETWEEN 28-OCT-2027:09:41:00 AND 29-OCT-2027:15:13:00; BETWEEN 30-OCT-2027:09:31:00 AND 31-OCT-2027:15:05:00; BETWEEN 01-NOV-2027:09:20:00 AND 02-NOV-2027:14:55:00; BETWEEN 03-NOV-2027:09:10:00 AND 04-NOV-2027:14:43:00; BETWEEN 05-NOV-2027:08:56:00 AND 06-NOV-2027:14:32:00; BETWEEN 07-NOV-2027:08:40:00 AND 08-NOV-2027:14:22:00; BETWEEN 09-NOV-2027:08:24:00 AND 10-NOV-2027:14:13:00					
Diagnostics	(Visit 01) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.					
	(Visit 01) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS					
	(Visit 01) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	V-YZ-CMI	RA: 07 44 40.1723 (116.1673846d) Dec: +03 33 8.88 (3.55247d) Equinox: J2000	Proper Motion RA: -347.782 mas/yr Proper Motion Dec: -445.70199997906457 mas/yr Parallax: 0.1669769" Epoch of Position: 2000	V=11.225	Reference Frame: ICRS
	Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad).					
	We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 83.5 mas. This is to ensure that it is less than 0.4 arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.0302 mas and 0.0233 mas, respectively).					
	Category=STAR Description=[M V-IV] Extended=NO					

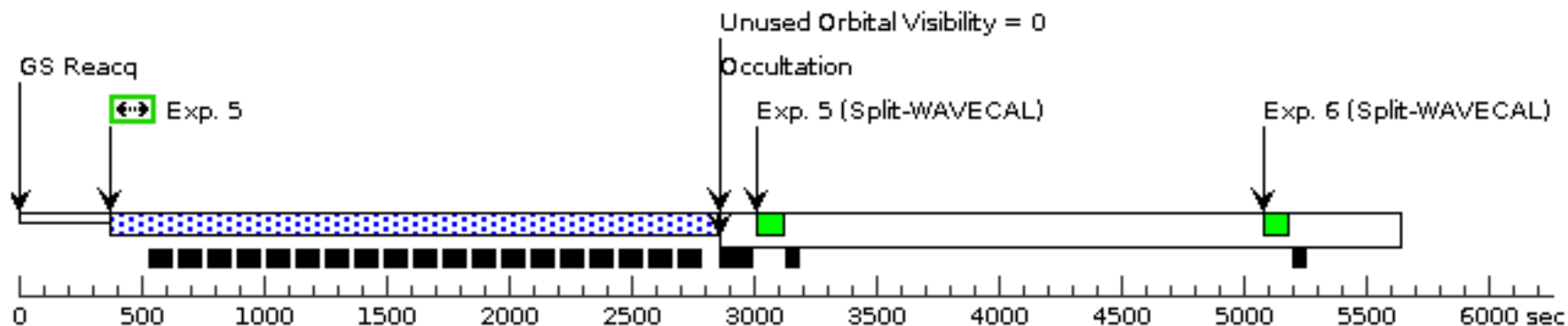
Proposal 18382 - Visit 01 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1452138)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKXD, PSA	G230L 3000 A	STRIPE=MEDIUM			3.3 Secs (3.3 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	2	(1452139)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKD, PSA	G230L 3000 A	STEP-SIZE=.9; NUM-POS=5; CENTER=FLUX-W T-FLR			2.8 Secs (2.8 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	3	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			1848.0 Secs (1848 Secs) [==>]	[1]
Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.										
Exposures	4	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[2]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	5	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[3]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	6	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[4]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									



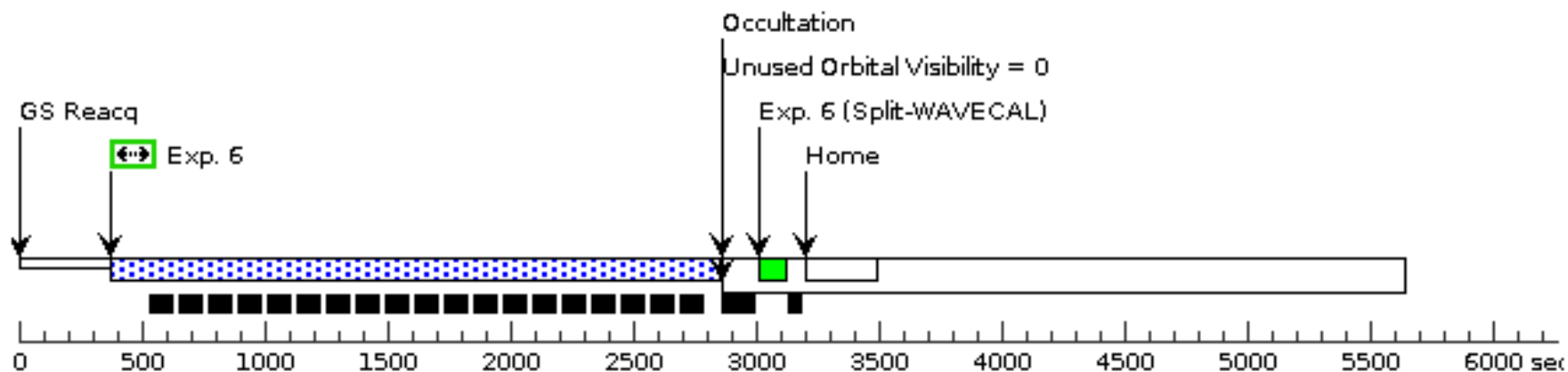
Orbit 3

Server Version: 20260618



Orbit 4

Server Version: 20260618



Proposal 18382 - Visit 02 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

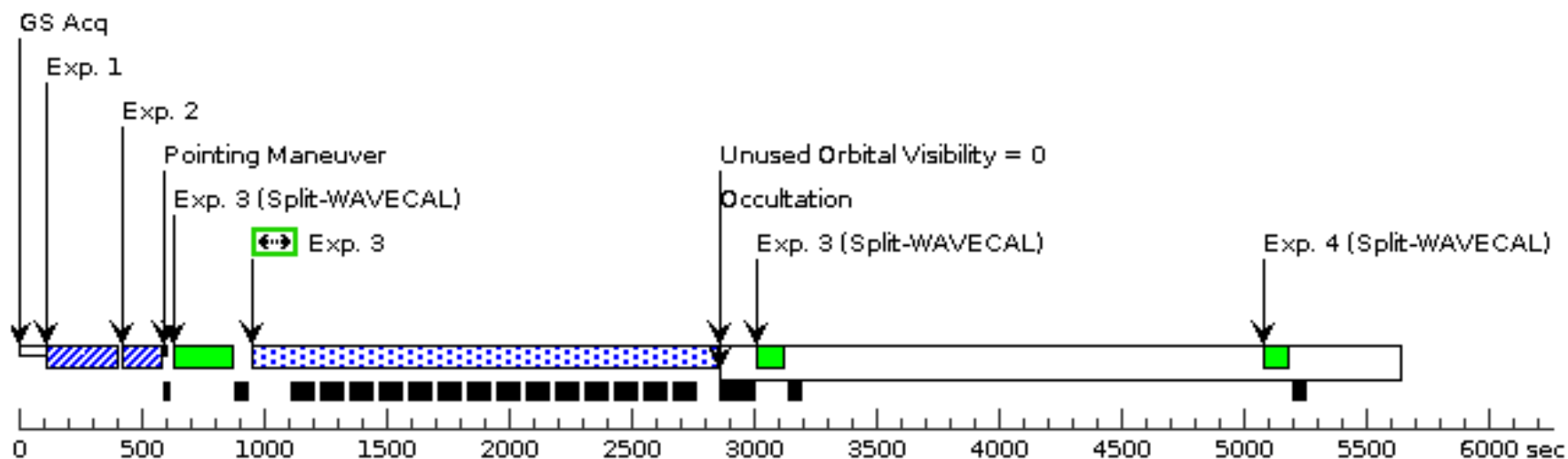
Visit	Proposal 18382, Visit 02 Tue Aug 11 15:00:24 GMT 2026				
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Diagnostics	(Visit 02) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser. (Visit 02) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS (Visit 02) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	V-YZ-CMI	RA: 07 44 40.1723 (116.1673846d) Dec: +03 33 8.88 (3.55247d) Equinox: J2000	Proper Motion RA: -347.782 mas/yr Proper Motion Dec: -445.70199997906457 mas/yr Parallax: 0.1669769" Epoch of Position: 2000	V=11.225
	Miscellaneous Reference Frame: ICRS				
	Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad). We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 83.5 mas. This is to ensure that it is less than 0.4 arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.0302 mas and 0.0233 mas, respectively). Category=STAR Description=[M V-IV] Extended=NO				

Proposal 18382 - Visit 02 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1452138)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKXD, PSA	G230L 3000 A	STRIPE=MEDIUM			3.30 Secs (3.3 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	2	(1452139)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKD, PSA	G230L 3000 A	STEP-SIZE=.9; NUM-POS=5; CENTER=FLUX-W T-FLR			2.80 Secs (2.8 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	3	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			1848.0 Secs (1848 Secs) [==>]	[1]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	4	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[2]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	5	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[3]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
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	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									

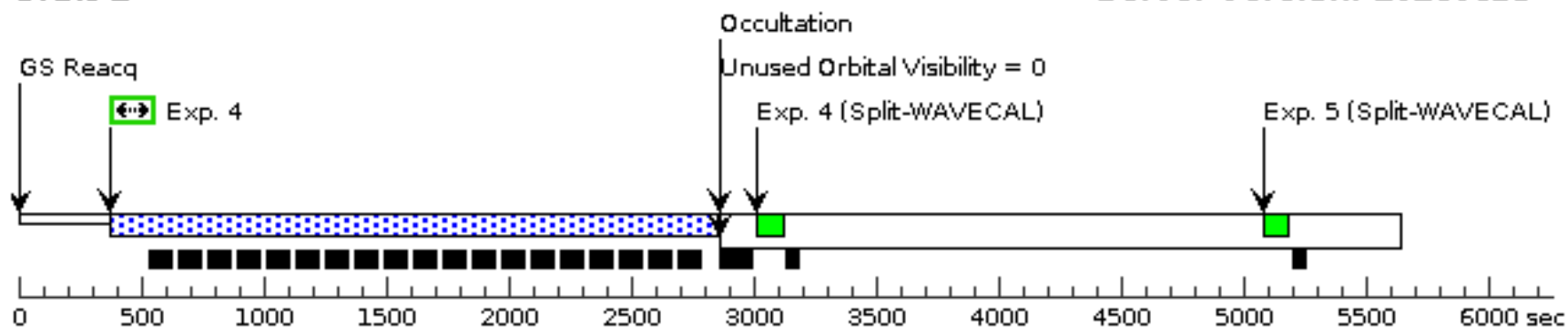
Orbit 1

Server Version: 20260618



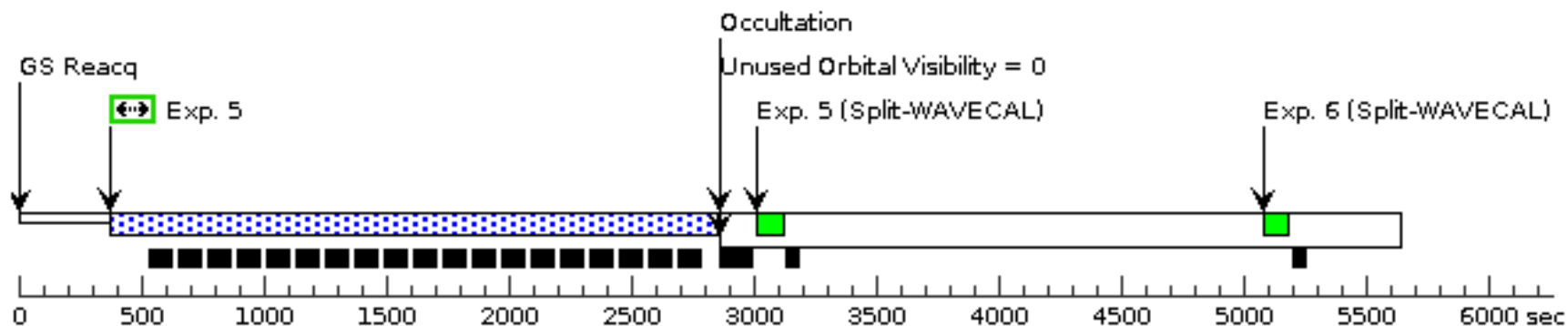
Orbit 2

Server Version: 20260618



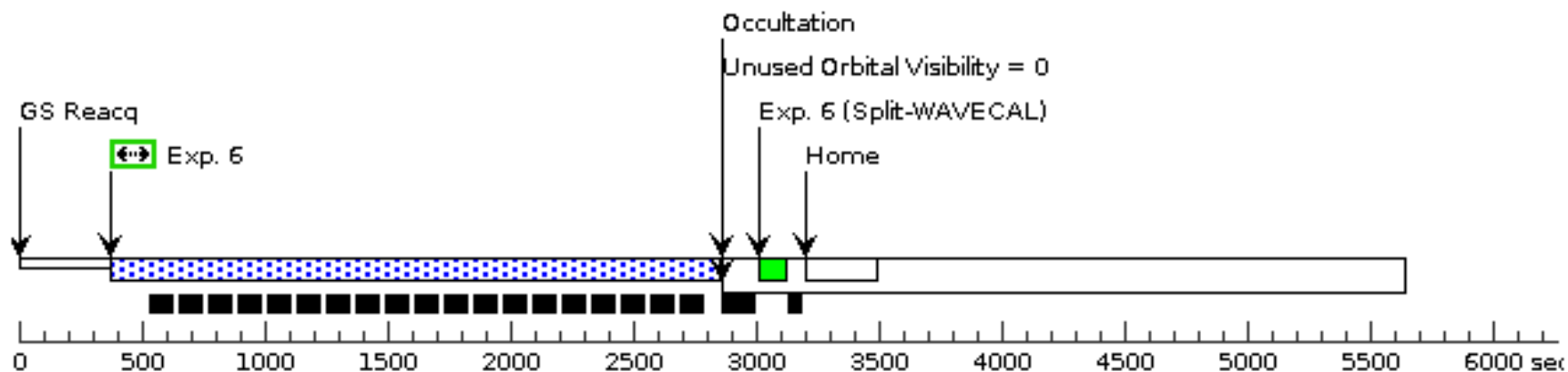
Orbit 3

Server Version: 20260618



Orbit 4

Server Version: 20260618

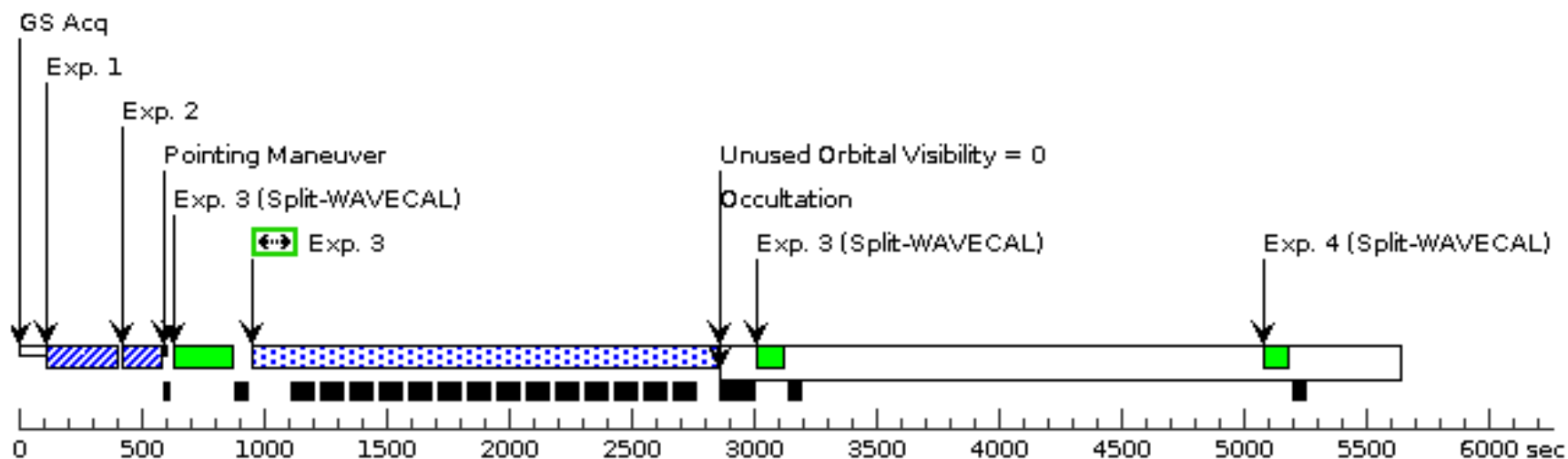


Proposal 18382 - Visit 03 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1452138)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKXD, PSA	G230L 3000 A	STRIPE=MEDIUM			3.30 Secs (3.3 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	2	(1452139)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKD, PSA	G230L 3000 A	STEP-SIZE=.9; NUM-POS=5; CENTER=FLUX-W T-FLR			2.80 Secs (2.8 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	3	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			1848.0 Secs (1848 Secs) [==>]	[1]
Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.										
Exposures	4	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[2]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	5	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[3]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	6	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[4]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									

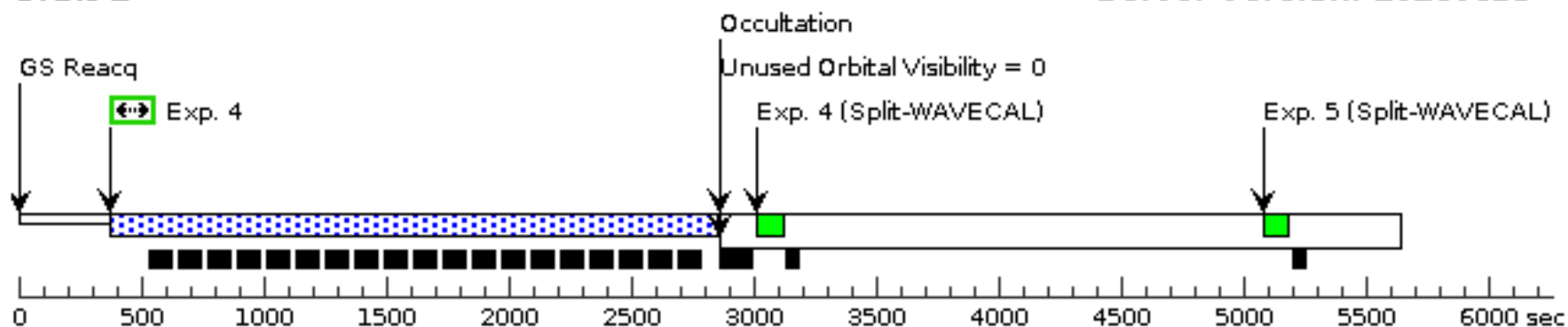
Orbit 1

Server Version: 20260618



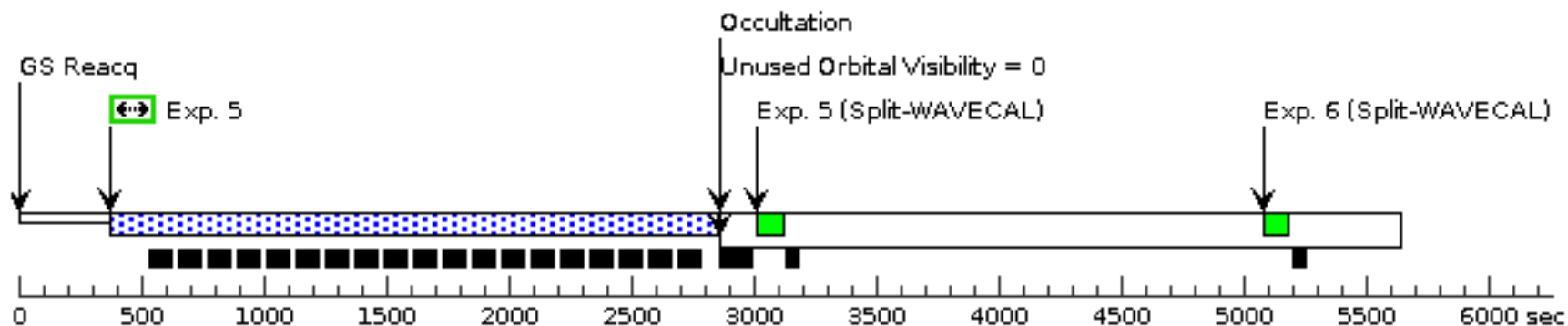
Orbit 2

Server Version: 20260618



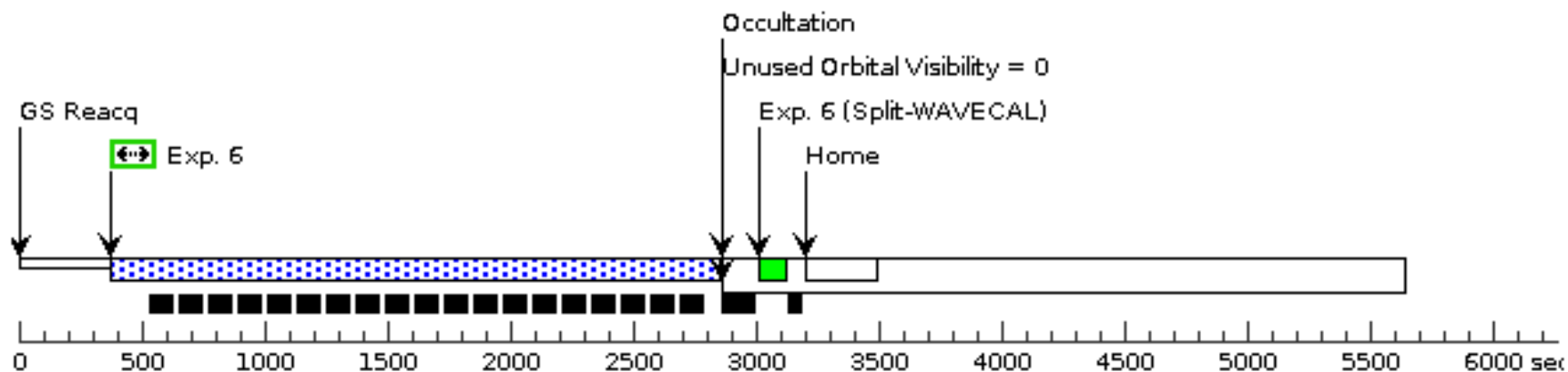
Orbit 3

Server Version: 20260618



Orbit 4

Server Version: 20260618

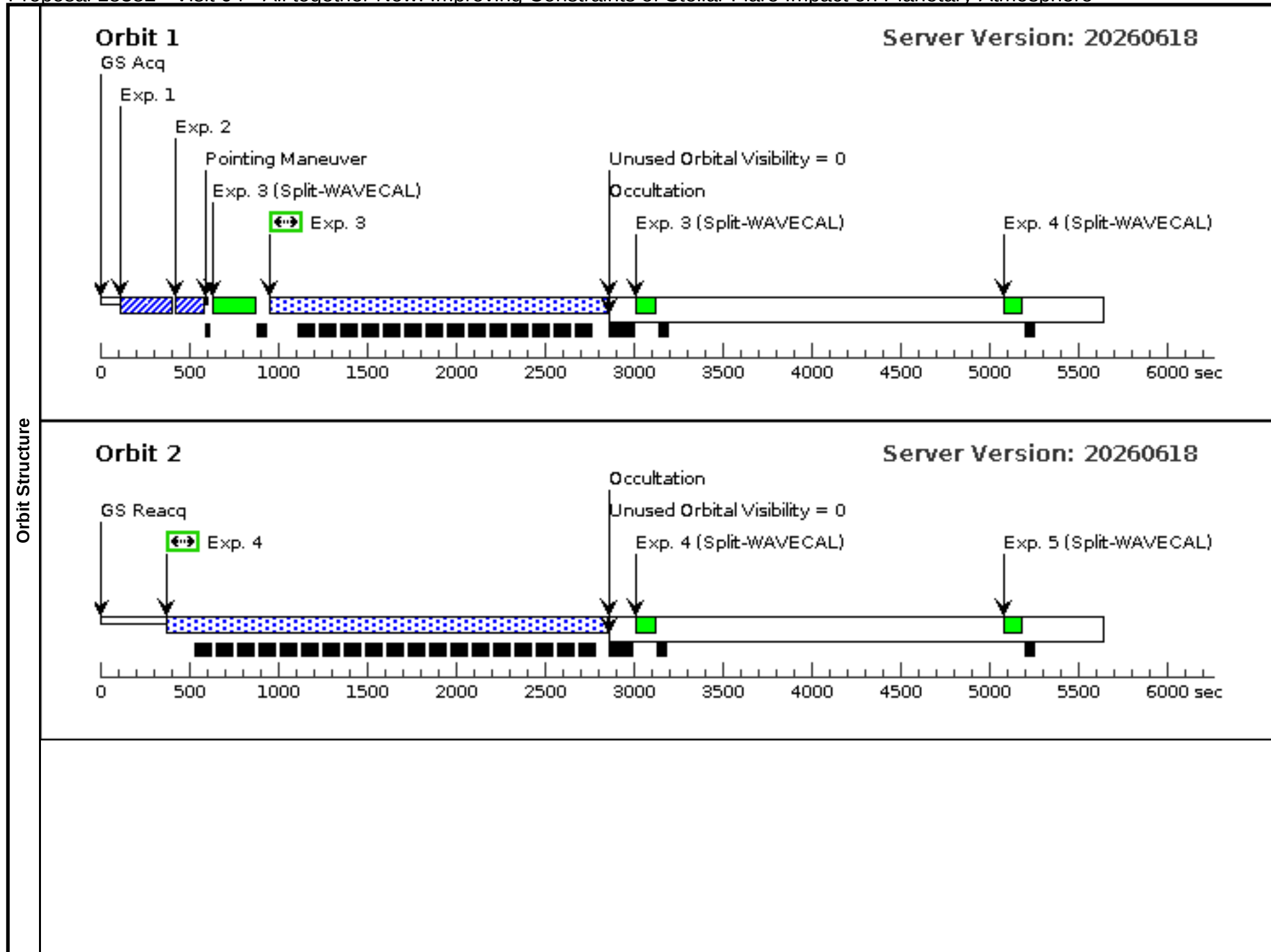


Proposal 18382 - Visit 04 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Visit	Proposal 18382, Visit 04				Tue Aug 11 15:00:25 GMT 2026
	Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: SCHED 100%; BETWEEN 02-OCT-2026:11:55:00 AND 03-OCT-2026:17:27:00; BETWEEN 04-OCT-2026:11:47:00 AND 05-OCT-2026:14:58:00; BETWEEN 06-OCT-2026:11:40:00 AND 07-OCT-2026:17:12:00; BETWEEN 08-OCT-2026:11:32:00 AND 09-OCT-2026:17:04:00; BETWEEN 10-OCT-2026:11:24:00 AND 11-OCT-2026:16:56:00; BETWEEN 12-OCT-2026:11:16:00 AND 13-OCT-2026:16:48:00; BETWEEN 14-OCT-2026:11:07:00 AND 15-OCT-2026:16:39:00; BETWEEN 16-OCT-2026:10:57:00 AND 17-OCT-2026:16:32:00; BETWEEN 18-OCT-2026:10:47:00 AND 19-OCT-2026:16:24:00; BETWEEN 20-OCT-2026:10:38:00 AND 21-OCT-2026:16:16:00; BETWEEN 22-OCT-2026:10:28:00 AND 23-OCT-2026:16:09:00; BETWEEN 24-OCT-2026:10:17:00 AND 25-OCT-2026:16:01:00; BETWEEN 26-OCT-2026:10:07:00 AND 27-OCT-2026:15:52:00; BETWEEN 28-OCT-2026:09:58:00 AND 29-OCT-2026:15:44:00; BETWEEN 30-OCT-2026:09:46:00 AND 31-OCT-2026:15:33:00; BETWEEN 01-NOV-2026:09:36:00 AND 02-NOV-2026:15:17:00; BETWEEN 03-NOV-2026:09:27:00 AND 04-NOV-2026:15:06:00; BETWEEN 05-NOV-2026:09:19:00 AND 06-NOV-2026:14:56:00; BETWEEN 07-NOV-2026:09:11:00 AND 08-NOV-2026:14:44:00; BETWEEN 09-NOV-2026:08:59:00 AND 10-NOV-2026:14:33:00; BETWEEN 02-OCT-2027:11:54:00 AND 03-OCT-2027:17:39:00; BETWEEN 04-OCT-2027:11:49:00 AND 05-OCT-2027:17:31:00; BETWEEN 06-OCT-2027:11:44:00 AND 07-OCT-2027:17:23:00; BETWEEN 08-OCT-2027:11:36:00 AND 09-OCT-2027:17:16:00; BETWEEN 10-OCT-2027:11:23:00 AND 11-OCT-2027:17:08:00; BETWEEN 12-OCT-2027:11:10:00 AND 13-OCT-2027:16:56:00; BETWEEN 14-OCT-2027:10:57:00 AND 15-OCT-2027:16:41:00; BETWEEN 16-OCT-2027:10:43:00 AND 17-OCT-2027:16:26:00; BETWEEN 18-OCT-2027:10:28:00 AND 19-OCT-2027:16:13:00; BETWEEN 20-OCT-2027:10:18:00 AND 21-OCT-2027:15:59:00; BETWEEN 22-OCT-2027:10:08:00 AND 23-OCT-2027:12:01:00; BETWEEN 24-OCT-2027:09:58:00 AND 25-OCT-2027:15:35:00; BETWEEN 26-OCT-2027:09:50:00 AND 27-OCT-2027:15:25:00; BETWEEN 28-OCT-2027:09:41:00 AND 29-OCT-2027:15:13:00; BETWEEN 30-OCT-2027:09:31:00 AND 31-OCT-2027:15:05:00; BETWEEN 01-NOV-2027:09:20:00 AND 02-NOV-2027:14:55:00; BETWEEN 03-NOV-2027:09:10:00 AND 04-NOV-2027:14:43:00; BETWEEN 05-NOV-2027:08:56:00 AND 06-NOV-2027:14:32:00; BETWEEN 07-NOV-2027:08:40:00 AND 08-NOV-2027:14:22:00; BETWEEN 09-NOV-2027:08:24:00 AND 10-NOV-2027:14:13:00				
Diagnosics	(Visit 04) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser. (Visit 04) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS (Visit 04) Warning (Orbit Planner): COS EXPOSURE TIME ROUNDED DOWN TO NEAREST 0.1 SECONDS				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	V-YZ-CMI	RA: 07 44 40.1723 (116.1673846d) Dec: +03 33 8.88 (3.55247d) Equinox: J2000	Proper Motion RA: -347.782 mas/yr Proper Motion Dec: -445.70199997906457 mas/yr Parallax: 0.1669769" Epoch of Position: 2000	V=11.225
	Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad). We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 83.5 mas. This is to ensure that it is less than 0.4 arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.0302 mas and 0.0233 mas, respectively). Category=STAR Description=[M V-IV] Extended=NO				

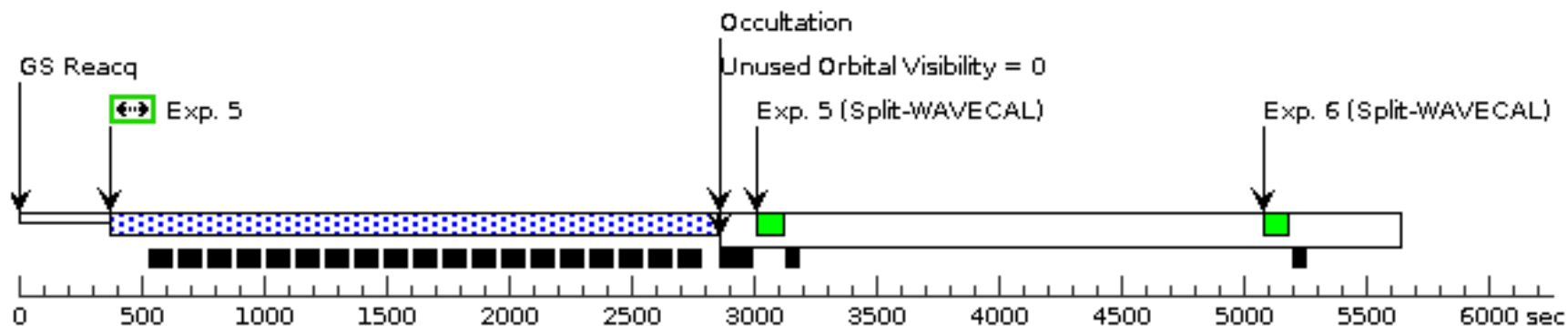
Proposal 18382 - Visit 04 - All together Now: Improving Constraints of Stellar Flare Impact on Planetary Atmosphere

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1452138)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKXD, PSA	G230L 3000 A	STRIPE=MEDIUM			3.30 Secs (3.3 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	2	(1452139)	(1) V-YZ-CMI	COS/NUV, ACQ/PEAKD, PSA	G230L 3000 A	STEP-SIZE=.9; NUM-POS=5; CENTER=FLUX-W T-FLR			2.80 Secs (2.8 Secs) [==>]	[1]
	Comments: This is the same setup from PID#17428 (Visit Z9), which observed the same star.									
	3	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			1848.0 Secs (1848 Secs) [==>]	[1]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	4	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[2]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	5	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[3]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									
	6	(COS.sp.168 5957)	(1) V-YZ-CMI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=LP 7; FP-POS=2; BUFFER-TIME=12 0; SEGMENT=BOTH			2427.0 Secs (2427 Secs) [==>]	[4]
	Comments: This is bascially the same setup from PID#17428 (Visit Z9), which observed the same star. FP-POS=2 is selected to cover the Si III 120.65 nm but still avoid the Ly-alpha line center emission. We choose a conservative buffer-time of 120 sec, based on our previous observation PID#17464.									



Orbit 3

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Orbit 4

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