



17464 - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra as the Fulcrum for a Comprehensive Understanding of Flaring M Dwarf Systems

Cycle: 31, Proposal Category: GO

(UV Initiative, Treasury)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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Dr. Yuta Notsu (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	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:18.0	yes
03	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:22.0	yes
04	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:25.0	yes
05	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:28.0	yes
06	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:31.0	yes
07	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:34.0	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>
08	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:37.0	yes
12	(2) GJ1243	COS/NUV	7	16-Jul-2024 07:00:40.0	yes
02	(1) CRDRA	COS/NUV	8	16-Jul-2024 07:00:44.0	yes
09	(1) CRDRA	COS/NUV	8	16-Jul-2024 07:00:48.0	yes
10	(1) CRDRA	COS/NUV	8	16-Jul-2024 07:00:52.0	yes
11	(1) CRDRA	COS/NUV	8	16-Jul-2024 07:00:56.0	yes

88 Total Orbits Used

ABSTRACT

Stellar flares are the most dramatic examples of energy release that non-degenerate stars undergo while on the main sequence. In our search for habitable zone planets around M dwarf stars, characterizing the flare activity of M dwarfs is a key ingredient to understanding the impact the star can have on its near stellar environment. Recent results have also demonstrated that particle acceleration in the stellar atmosphere plays a crucial role in the shape and amount of UV and optical radiation released during M dwarf flares. The NUV range is unequivocally a "fulcrum" between the optical and shorter wavelength FUV continua but has been woefully undersampled in observations. We propose a HST Treasury program to characterize the NUV continuum and emission lines in M dwarf stellar flares. Only HST can empirically constrain the spectral peak and slope in the NUV and thus physically explain the origin of the flare in the low stellar atmosphere through the heating by accelerated particles. Our strategy spans a 4.5x greater spectral range in the NUV than previous studies and will provide flux-calibrated, time-resolved flare spectra just below the atmospheric cutoff ($\lambda < 3200 \text{ \AA}$). The flare and quiescent data will have broad legacy value for characterizing the high-energy radiation environment of exoplanets, comparing to IRIS data of solar flares, and interpreting archival broadband NUV photometry of magnetically active stars. The science products -- time-resolved NUV spectra along with best-fit models to the NUV spectra calculated on a wider wavelength range from FUV through red-optical wavelengths -- will also benefit multiple communities.

OBSERVING DESCRIPTION

The immediate goal is to provide a comprehensive empirical survey of the NUV continuum and line radiation in several moderate-to-large stellar flares from CR Dra and GJ 1243 (M4Ve). Both stars have high and well-quantified flare rates from Kepler and TESS. CR Dra is a non-interacting, spectroscopic M-dwarf binary, and GJ 1243 has been observed by COS before (HST GO 13323; G230L, $\lambda_{\text{c}} = 2650$) for eight contiguous orbits in

Proposal 17464 (STScI Edit Number: 3, Created: Tuesday, July 16, 2024 at 6:00:57 AM Eastern Standard Time) - Overview
one visit.

The proposed program will use the G230L grating (central wavelength 2950 Ang) of HST/COS in Time-Tag mode. The present strategy with COS will provide new information on the 1650-2050Ang to 2750-3150A continuum ratios in these flares and direct comparisons among flares. We will measure continuum slopes within each Stripe, between the two Stripes, as well as Mg II h and k wavelength-integrated line fluxes as a function of time. So, we will need absolute flux calibration. The GOS G230L spectra from GO 13323 resulted in a S/N per resel of ~ 3 in a time-tag 60s extraction. These data allowed characterization of the flare continuum level and slope to a S/N ≥ 20 in each of four $\Delta\lambda = 25\text{-}50\text{Ang}$ wide continuum windows.

Visits of eight contiguous orbits are preferred to maximize on-star flare monitoring and to capture the full evolution of the flares (which can last for several hours). Because one of the targets (GJ 1243) is very faint in quiescence in the NUV, up to 85% of an orbit per visit is required for target acquisition. The previous HST/GO 13323 observations have demonstrated the feasibility for scheduling eight-orbit visits.

For GJ 1243 (56 orbits, U=15.5, V = 12.8, M4 star), we use the strategy employed in HST GO 13323 (same grating, different wavelength center) for target acquisition (PEAKXD + PEAKD) and target acquisition exposure times. For CR Dra (32 orbits, U=12.0, V=9.5, M1 spec binary), we use the same target acquisition strategy as GJ 1243, but we scale the exposure times of the target acquisition by the U-band magnitude difference.

We were awarded TESS observations at 20s cadence for these two targets. We do not know the TESS allocation yet for CR Dra, but GJ 1243 will be definitely observed in all sectors (through a separate TESS GO program). We have limited our "Between" windows for the visits to the dates with TESS Cycle 6 observations of each target:

[GJ1243]

Sector 74: 01/04/2024 - 01/29/2024

Sector 75: 01/31/2024 - 02/25/2024

Sector 81: 07/16/2024 - 08/09/2024

Sector 82: 08/11/2024 - 09/04/2024

[CR Dra]

Sector 76: 02/27/2024 - 03/25/2024

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Sector 77: 03/27/2024 - 04/22/2024

Sector 78: 04/24/2024 - 05/20/2024

Sector 79: 05/22/2024 - 06/17/2024

Where we have avoided the first and last date of each sector due to issues/artifacts associated with data downlink on these days.

If the visits are not able to be scheduled within the TESS visibility windows in Cycle 6, then the preference is to schedule them at any time throughout Cycle 31, rather than forego any HST observations (e.g., the Visit Planner suggests that there is HST visibility in September 2024 for both targets). We are open to a discussion with the planners if 8 visits x 7 orbits (for GJ 1243) and 4 visits x 7 orbits + 1 visit x 4 orbits (for CR Dra) give better planning capabilities.

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Tue Jul 16 11:00:57 GMT 2024

Visit	<p>Proposal 17464, GJ1243-vis1 (01), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 11-AUG-2024:00:00:00 AND 01-JAN-2025:00:00:00</p> <p>Comments: First visit of GJ 1243.</p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																								
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIADR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIADR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec			<p>Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</p> <p>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</p> <p>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = $\cos(dec) * \mu_{RA}$) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>		
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Proposal 17464 - GJ1243-vis1 (01) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

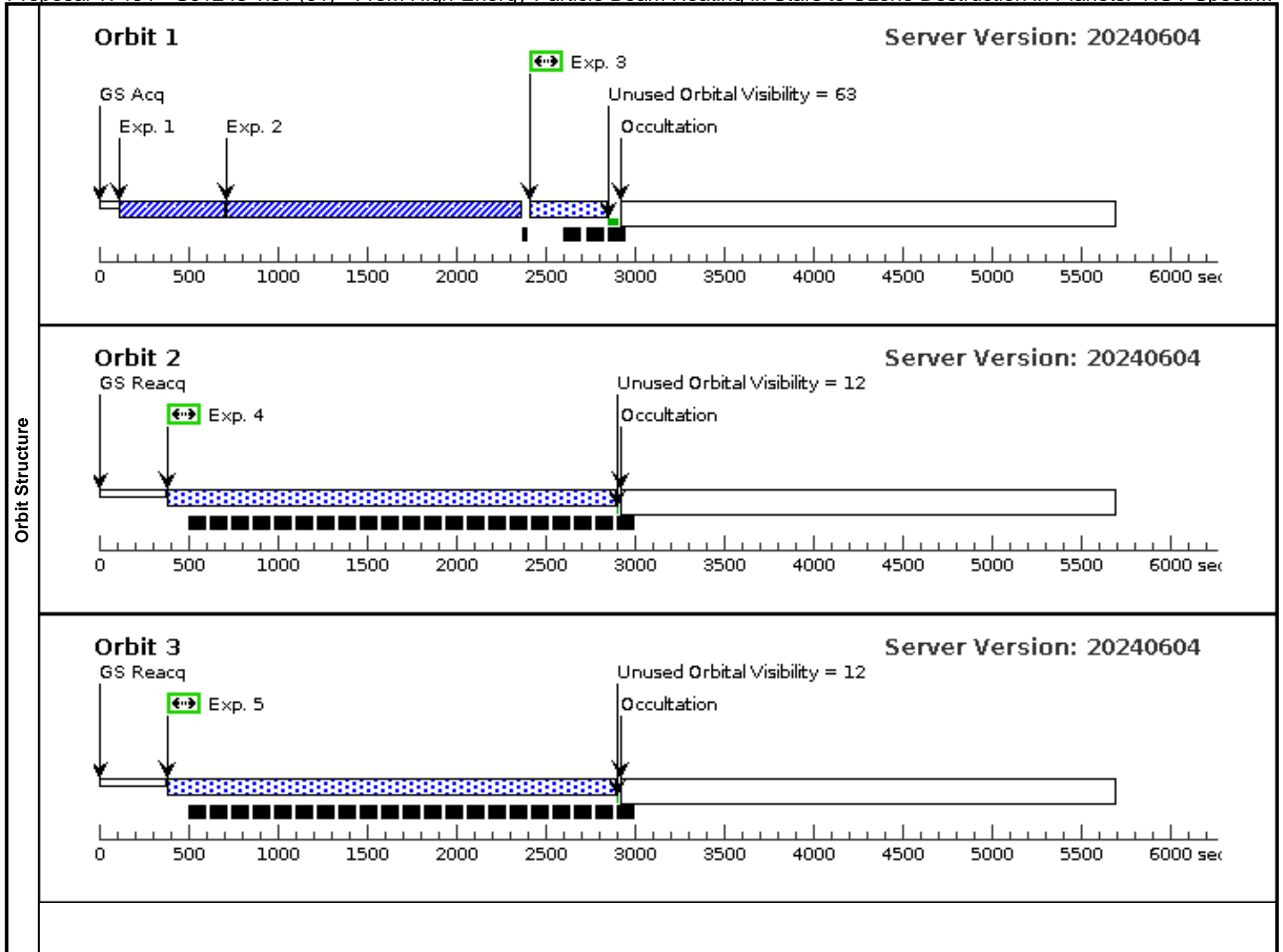
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis1orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is1orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis1orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis1orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

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5	Sci-GJ1243- (2) GJ1243 vis1orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis1orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis1orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis1orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						

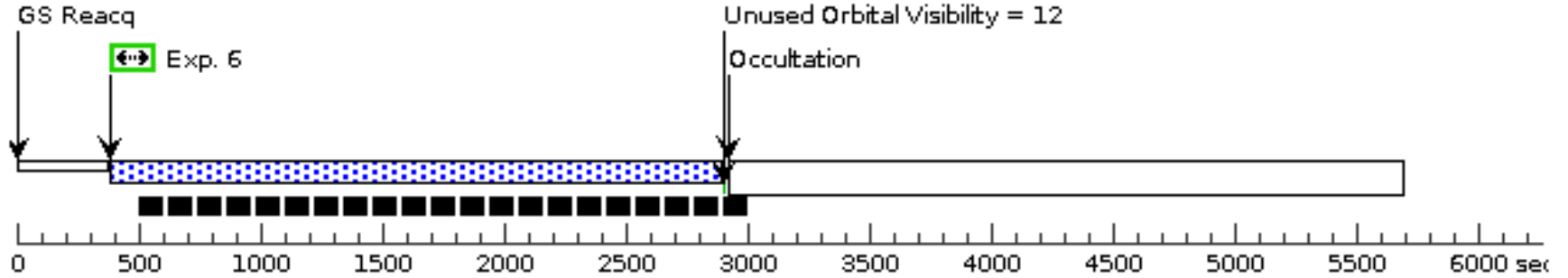
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9	Sci-GJ1243- (2) GJ1243 vis1orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_{flare}=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



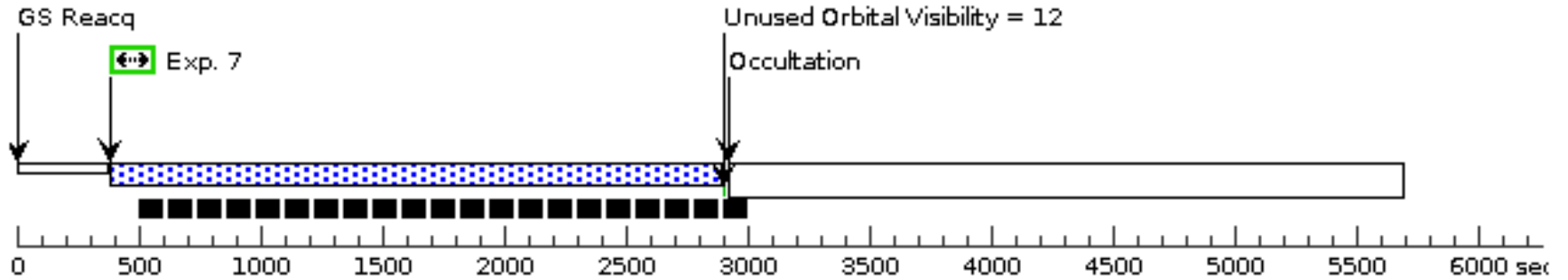
Orbit 4

Server Version: 20240604



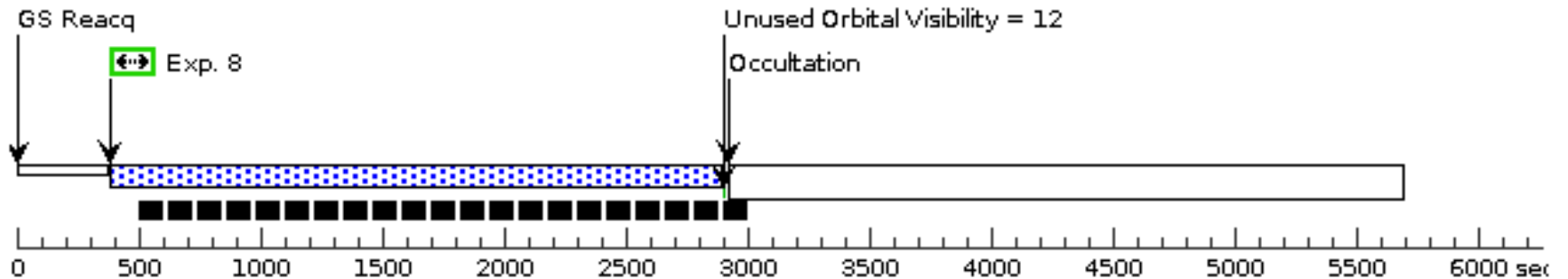
Orbit 5

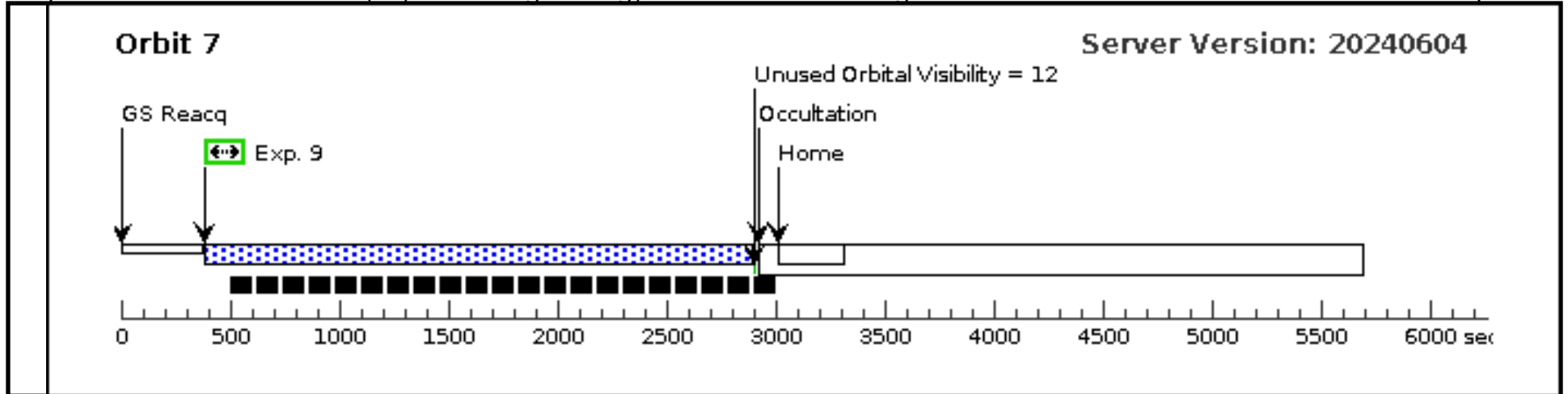
Server Version: 20240604



Orbit 6

Server Version: 20240604





Proposal 17464 - GJ1243-vis2 (03) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

Tue Jul 16 11:00:57 GMT 2024

Visit	<p>Proposal 17464, GJ1243-vis2 (03), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 11-AUG-2024:00:00:00 AND 01-JAN-2025:00:00:00</p> <p>Comments: <i>Second visit of GJ 1243.</i></p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																								
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIADR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIADR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec			<p>Comments: <i>We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</i></p> <p><i>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = $\cos(dec) * \mu_{RA}$) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>		
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Proposal 17464 - GJ1243-vis2 (03) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

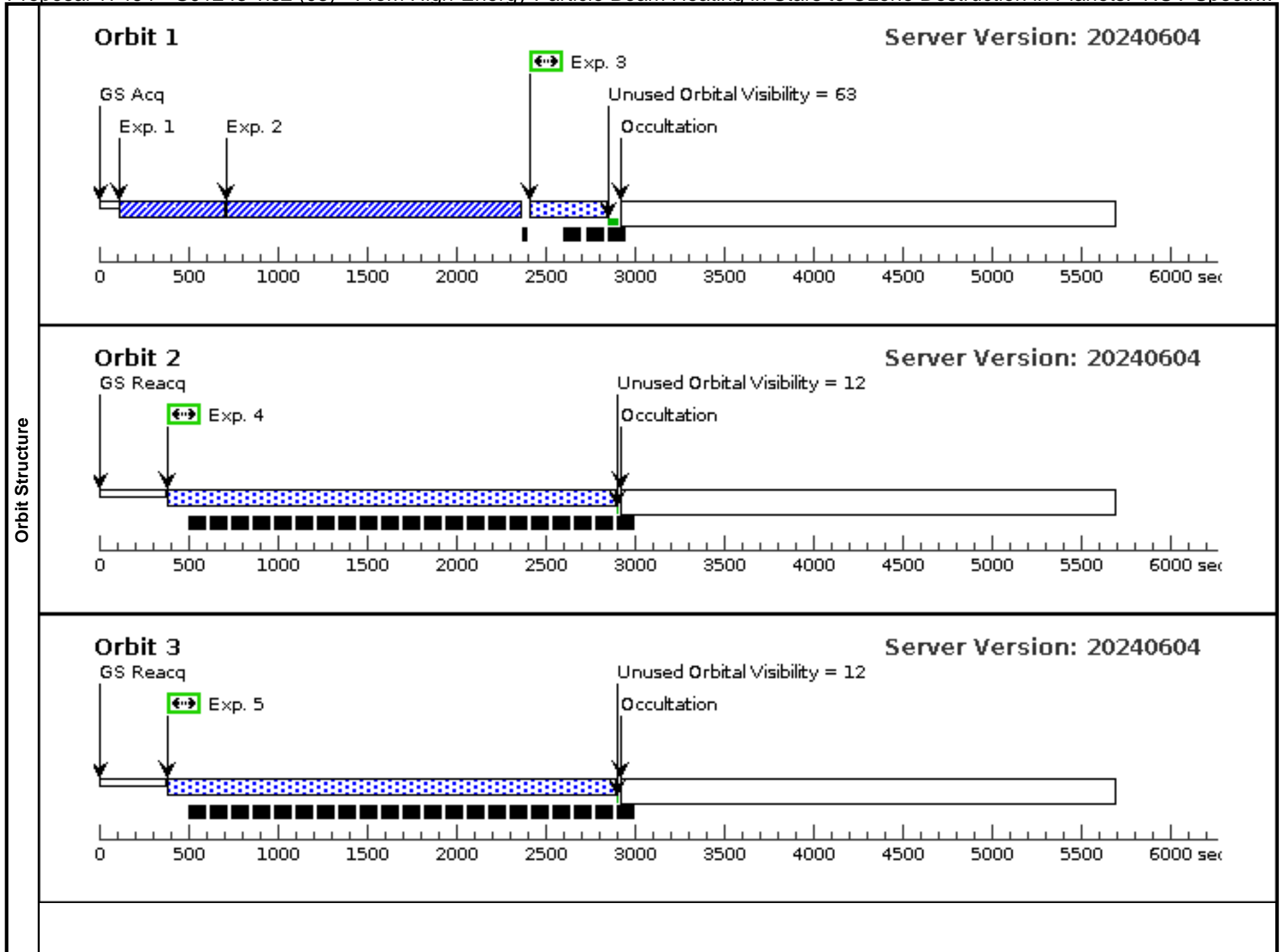
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis2orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is2orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis2orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis2orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

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5	Sci-GJ1243- (2) GJ1243 vis2orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis2orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis2orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis2orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						

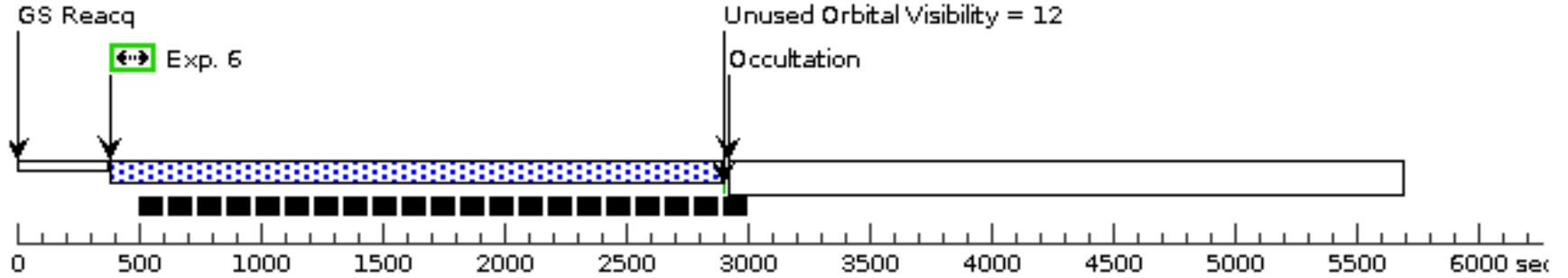
Proposal 17464 - GJ1243-vis2 (03) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis2orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



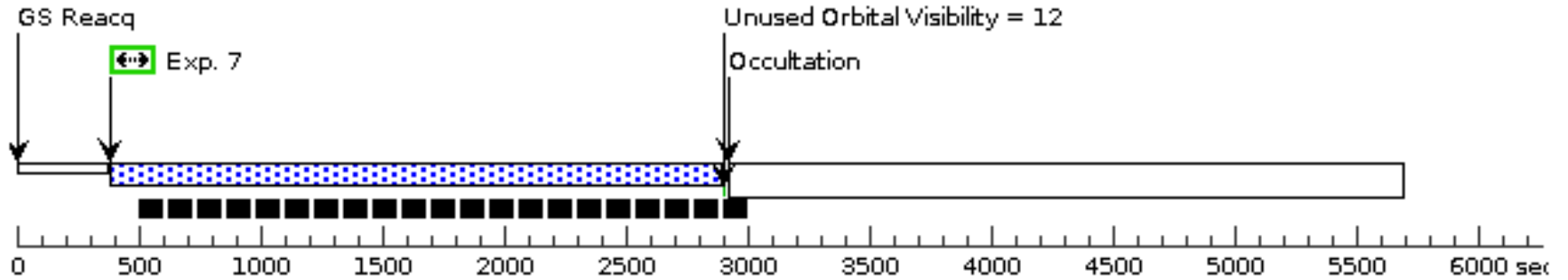
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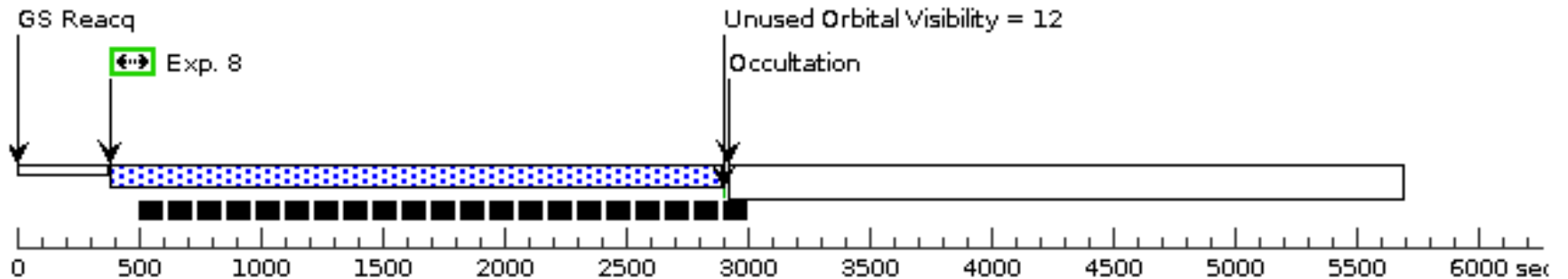
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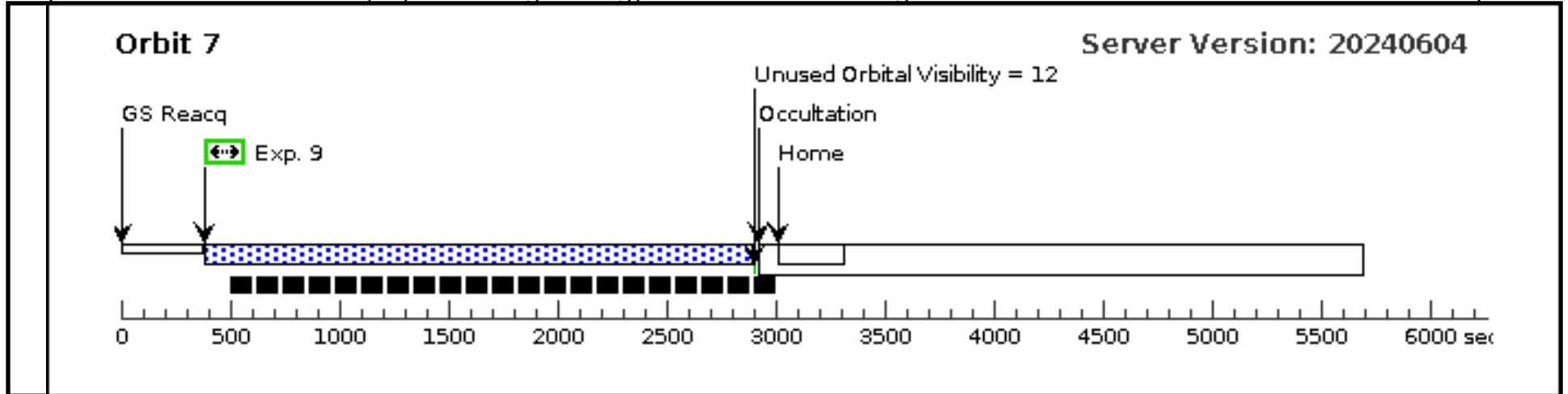
Server Version: 20240604



Orbit 6

Server Version: 20240604





Visit	<p>Proposal 17464, GJ1243-vis3 (04), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 11-AUG-2024:00:00:00 AND 01-JAN-2025:08:00:00</p> <p>Comments: <i>Third visit of GJ 1243.</i></p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																								
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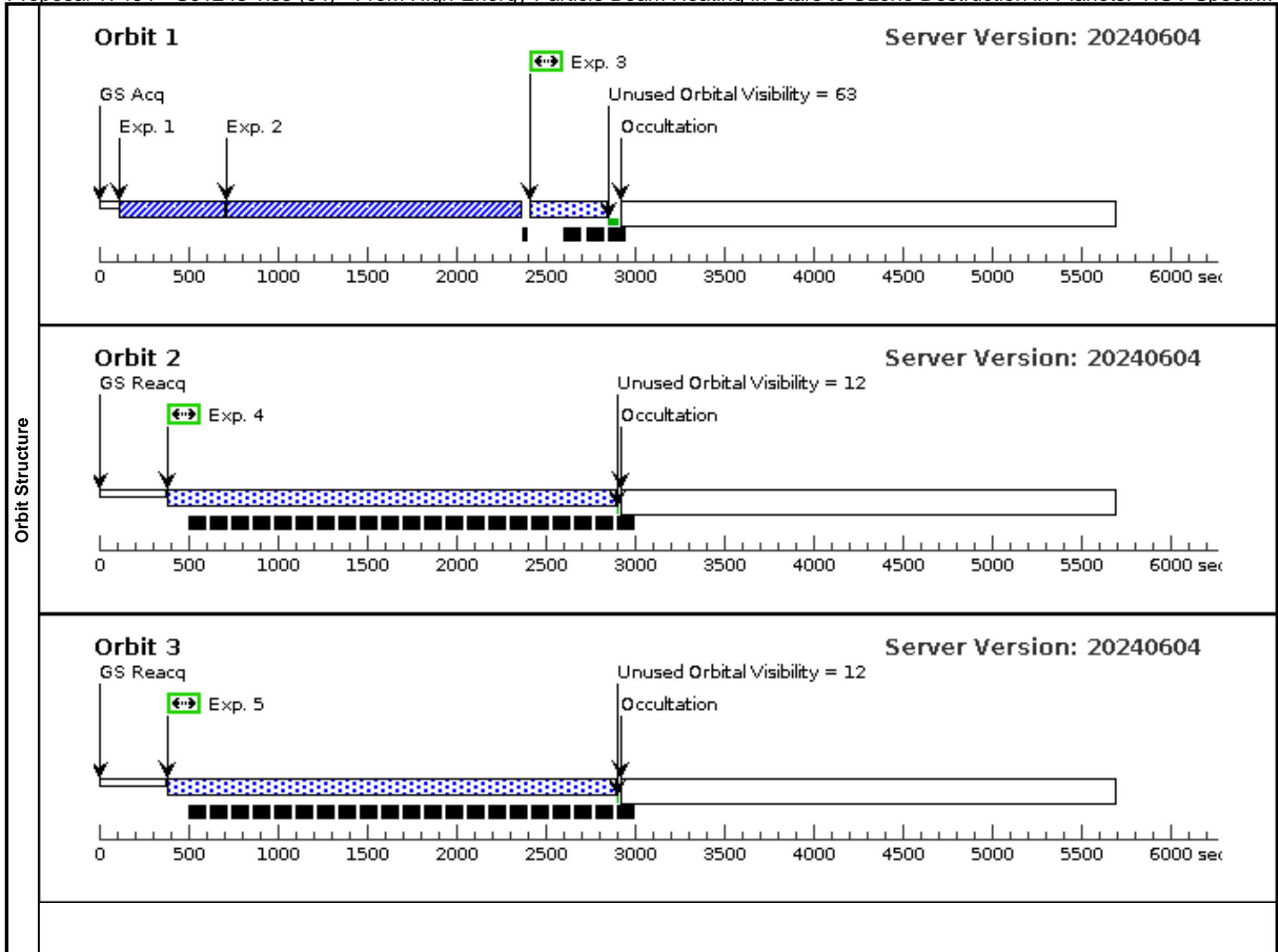
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
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	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
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<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis3orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

Proposal 17464 - GJ1243-vis3 (04) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

5	Sci-GJ1243- (2) GJ1243 vis3orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis3orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis3orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis3orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
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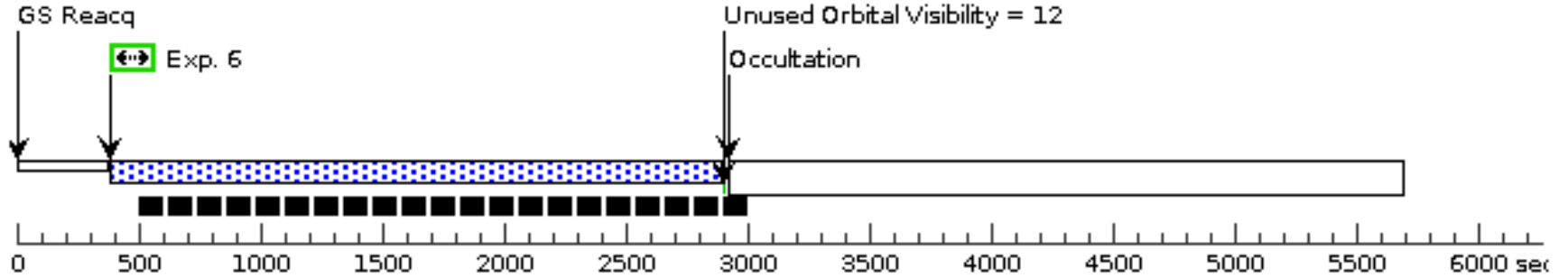
Proposal 17464 - GJ1243-vis3 (04) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis3orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_{flare}=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



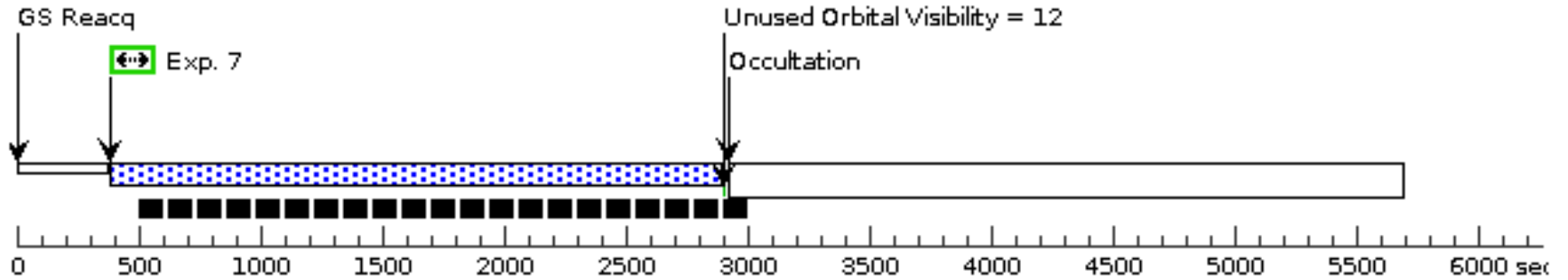
Orbit 4

Server Version: 20240604



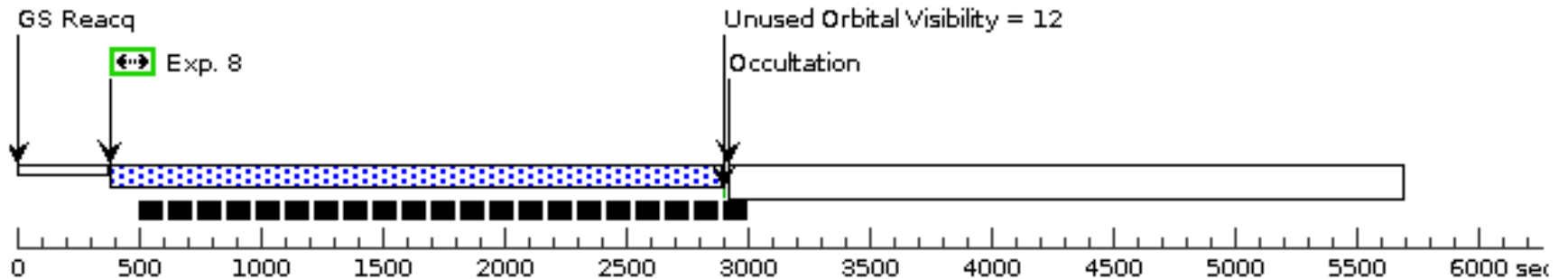
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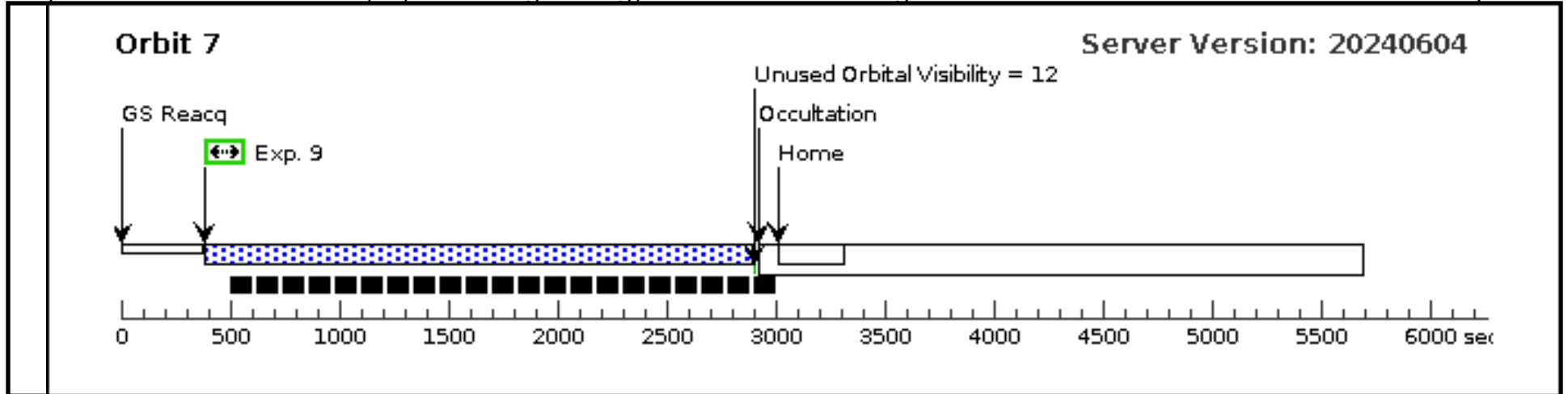
Server Version: 20240604



Orbit 6

Server Version: 20240604





Proposal 17464 - GJ1243-vis4 (05) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

Visit	<p>Proposal 17464, GJ1243-vis4 (05), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 04-JAN-2024:00:00:00 AND 29-JAN-2024:12:00:00; BETWEEN 16-JUL-2024:00:00:00 AND 09-AUG-2024:12:00:00; BETWEEN 11-AUG-2024:00:00:00 AND 27-AUG-2024:08:00:00; BETWEEN 31-JAN-2024:00:00:00 AND 25-FEB-2024:12:00:00</p> <p><i>Comments: Fourth visit of GJ 1243.</i></p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																									
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIA DR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</i></p> <p><i>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIA DR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec	
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Proposal 17464 - GJ1243-vis4 (05) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

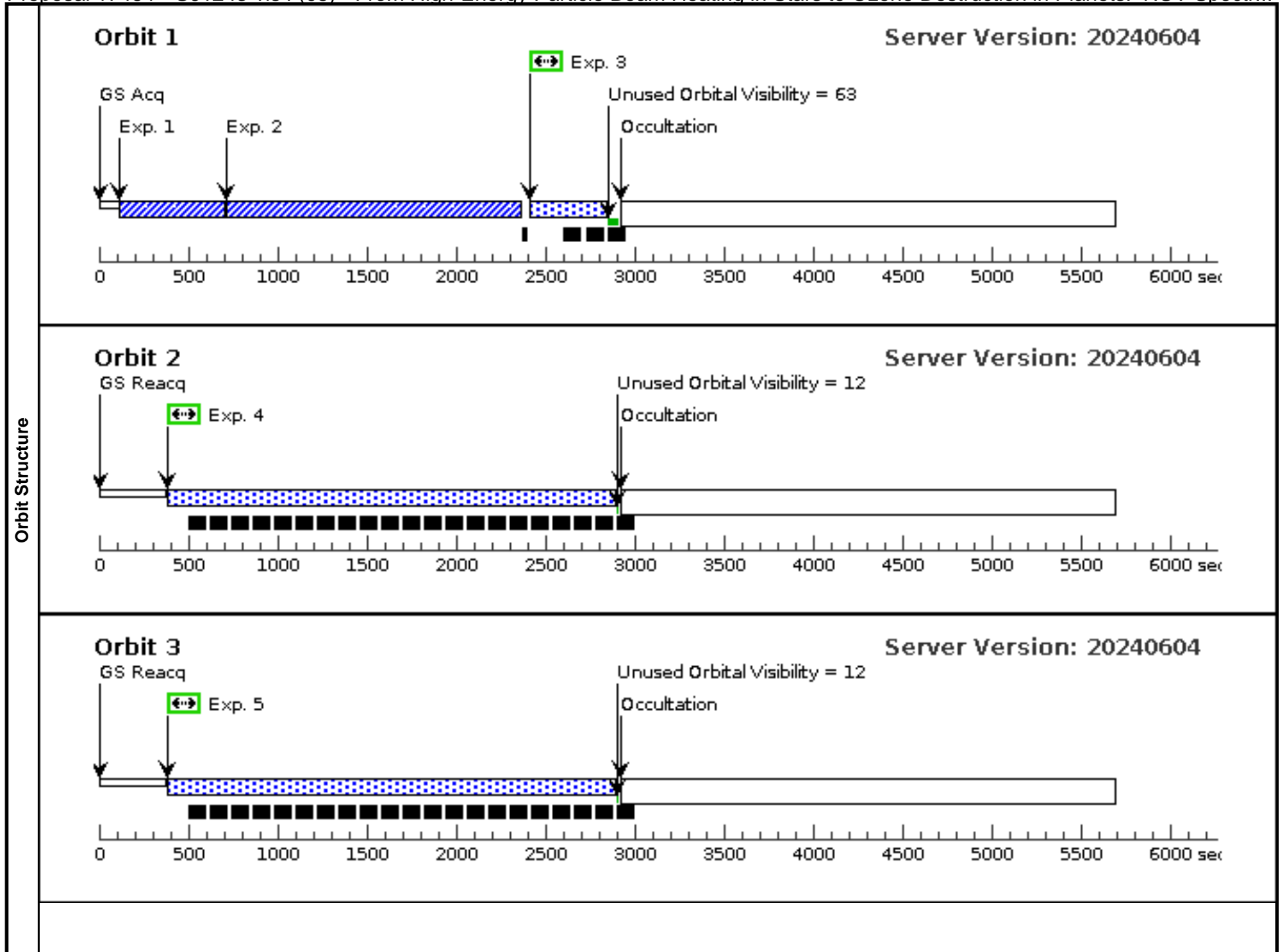
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis4orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is4orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis4orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
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4	Sci-GJ1243- (2) GJ1243 vis4orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
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5	Sci-GJ1243- (2) GJ1243 vis4orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
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6	Sci-GJ1243- (2) GJ1243 vis4orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
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<p>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</p> <p>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>						
8	Sci-GJ1243- (2) GJ1243 vis4orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
<p>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</p> <p>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>						

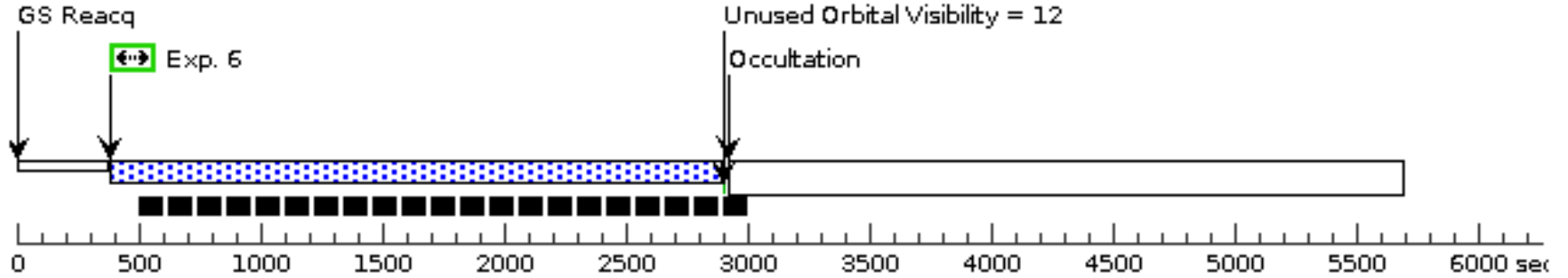
Proposal 17464 - GJ1243-vis4 (05) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis4orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_{flare}=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



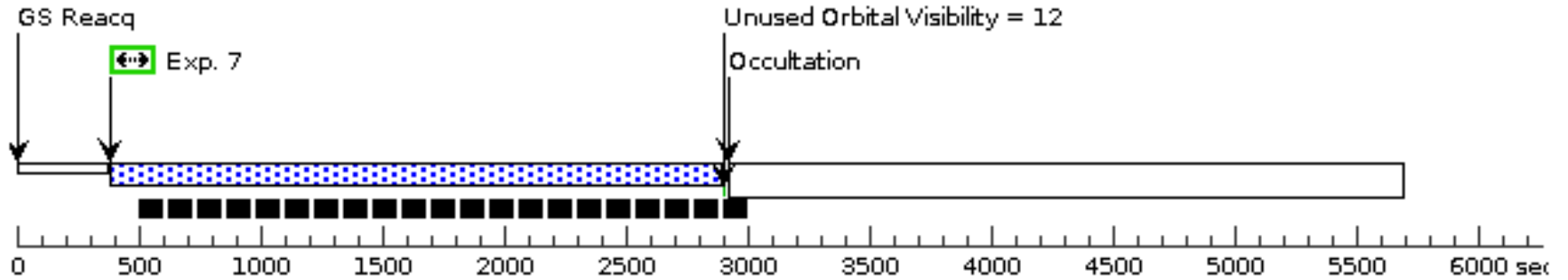
Orbit 4

Server Version: 20240604



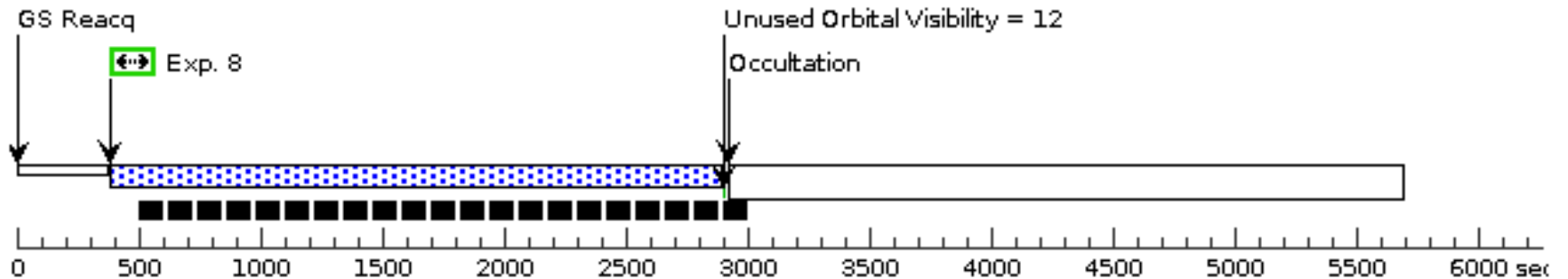
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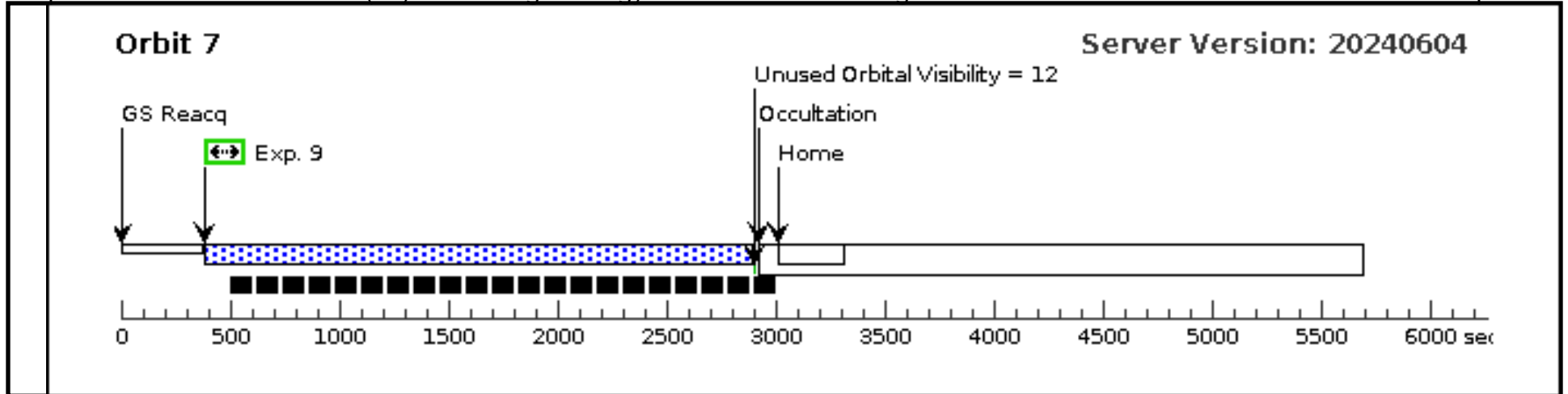
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Orbit 6

Server Version: 20240604





Proposal 17464 - GJ1243-vis5 (06) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

Visit	<p>Proposal 17464, GJ1243-vis5 (06), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 04-JAN-2024:00:00:00 AND 29-JAN-2024:12:00:00; BETWEEN 16-JUL-2024:00:00:00 AND 09-AUG-2024:12:00:00; BETWEEN 11-AUG-2024:00:00:00 AND 27-AUG-2024:08:00:00; BETWEEN 31-JAN-2024:00:00:00 AND 25-FEB-2024:12:00:00</p> <p><i>Comments: Fifth visit of GJ 1243.</i></p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																									
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIA DR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIA DR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec			<p><i>Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</i></p> <p><i>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</i></p> <p><i>Category=STAR</i> <i>Description=[M V-IV]</i> <i>Extended=NO</i></p>			
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Proposal 17464 - GJ1243-vis5 (06) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

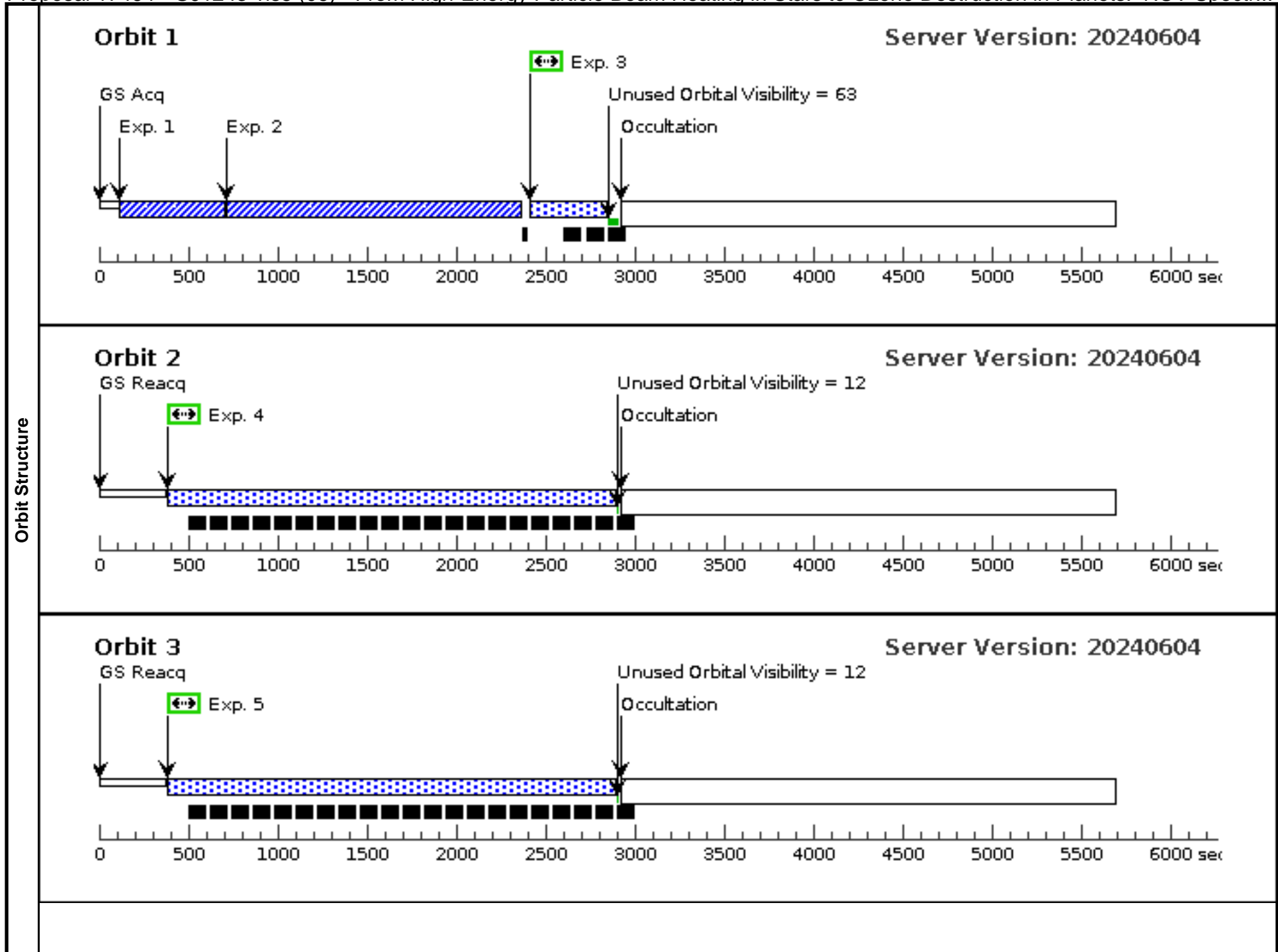
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis5orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is5orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis5orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis5orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

Proposal 17464 - GJ1243-vis5 (06) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

5	Sci-GJ1243- (2) GJ1243 vis5orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis5orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis5orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis5orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						

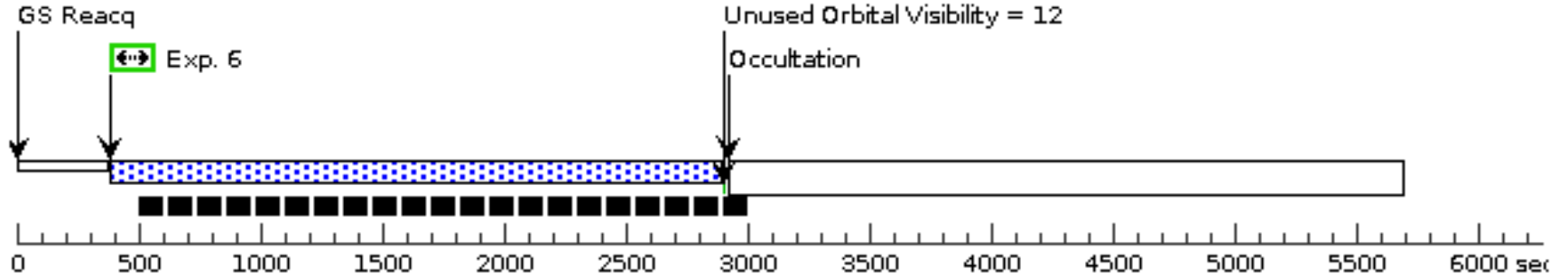
Proposal 17464 - GJ1243-vis5 (06) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis5orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



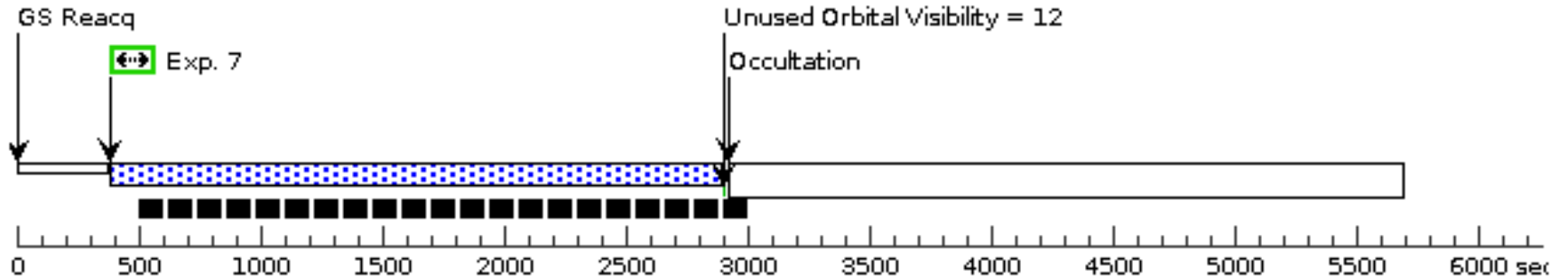
Orbit 4

Server Version: 20240604



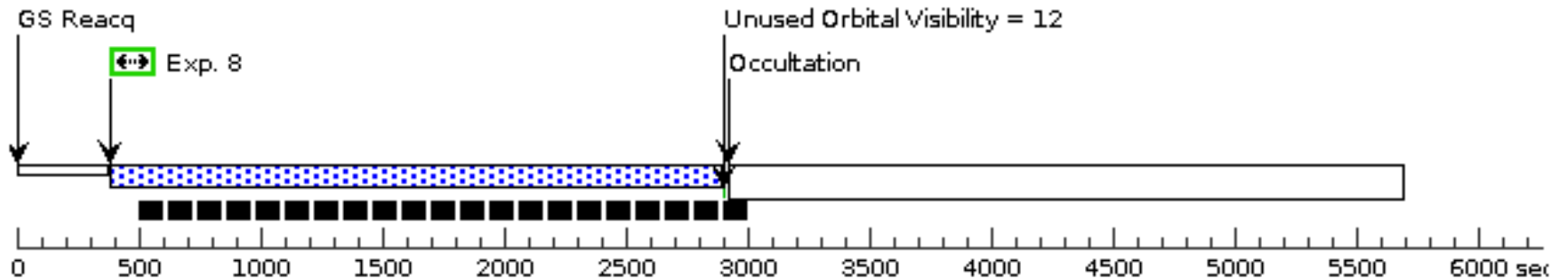
Orbit 5

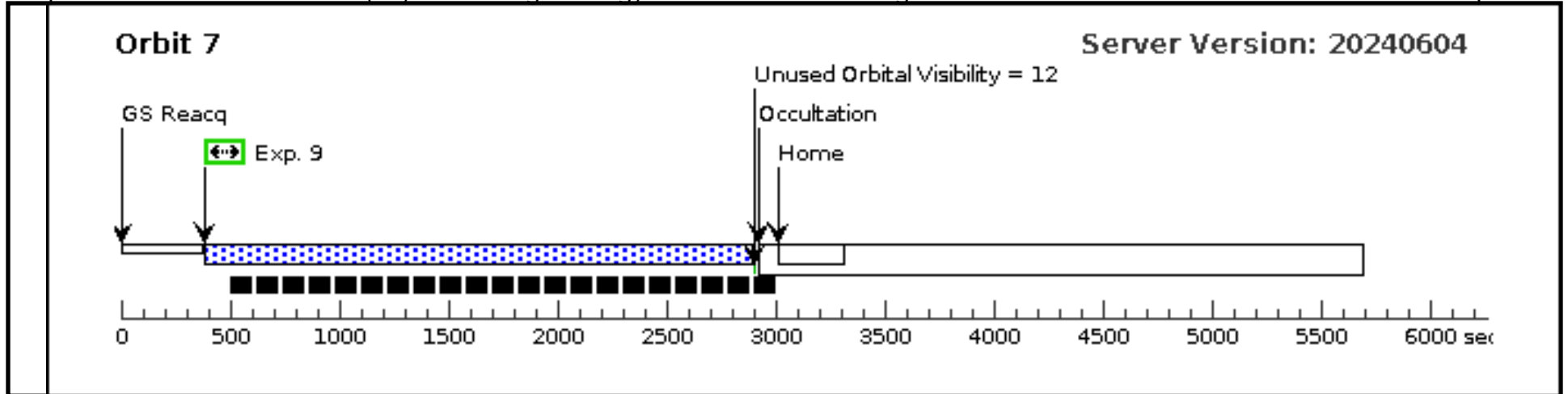
Server Version: 20240604



Orbit 6

Server Version: 20240604





Visit	<p>Proposal 17464, GJ1243-vis6 (07), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 11-AUG-2024:00:00:00 AND 01-JAN-2025:08:00:00</p> <p>Comments: Sixth visit of GJ 1243.</p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																								
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIADR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIADR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec			<p>Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</p> <p>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</p> <p>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = $\cos(dec) * \mu_{RA}$) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>		
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Proposal 17464 - GJ1243-vis6 (07) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

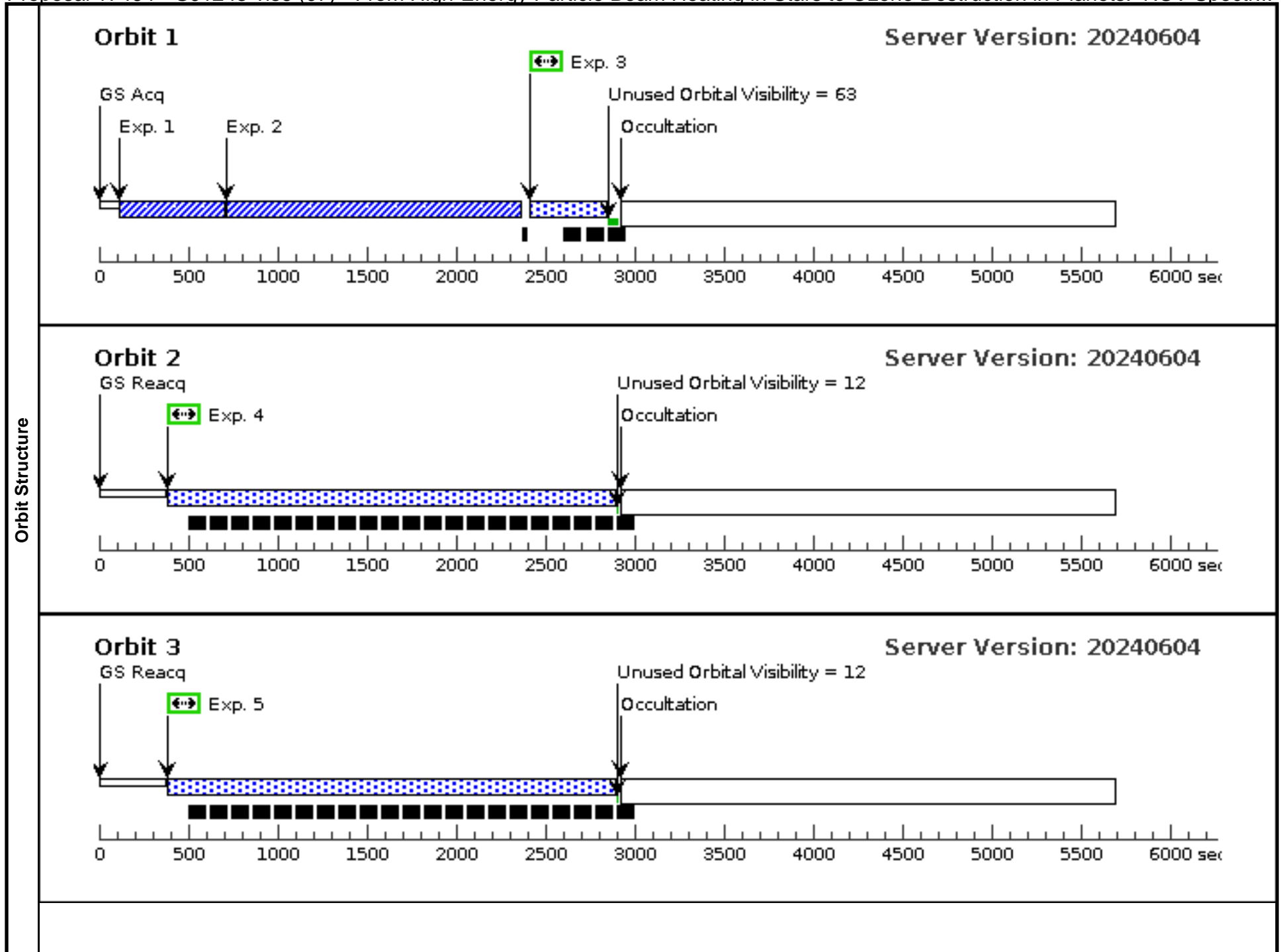
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis6orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is6orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis6orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis6orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{\text{flare}}=12,000\text{K}$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

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5	Sci-GJ1243- (2) GJ1243 vis6orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis6orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis6orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis6orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
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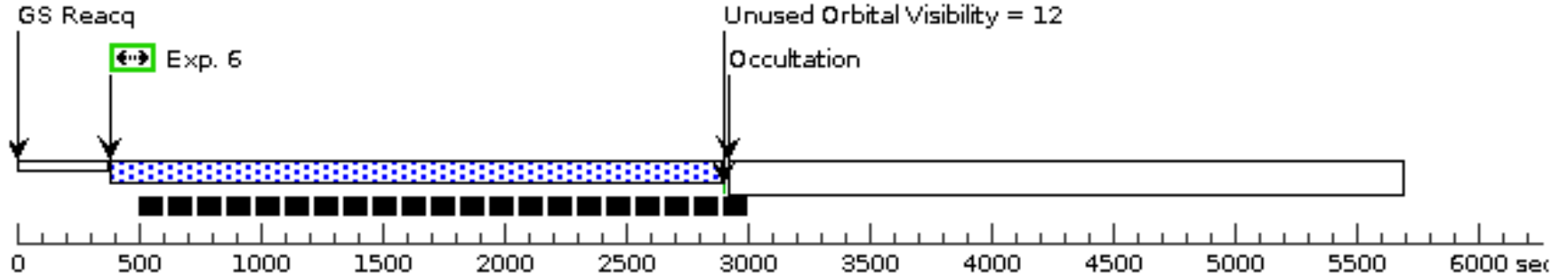
Proposal 17464 - GJ1243-vis6 (07) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis6orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



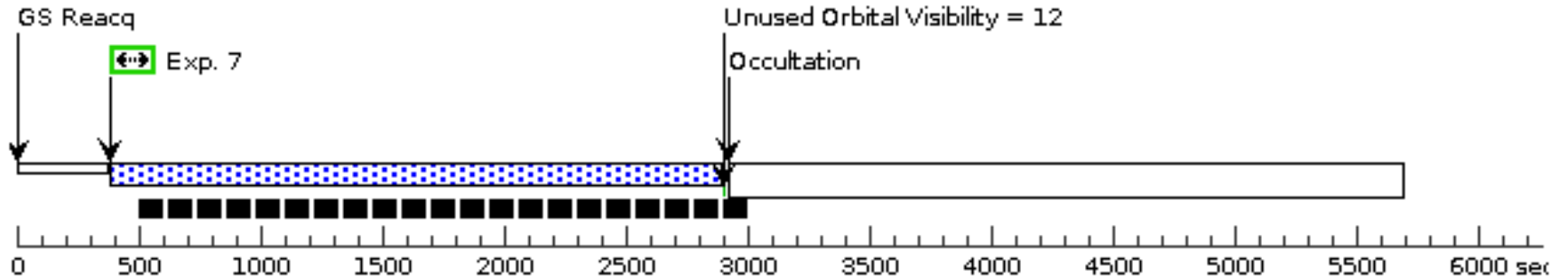
Orbit 4

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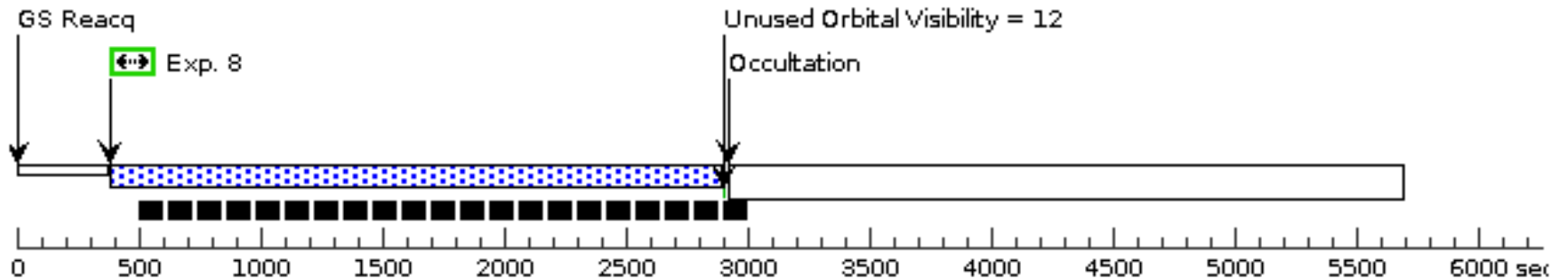
Orbit 5

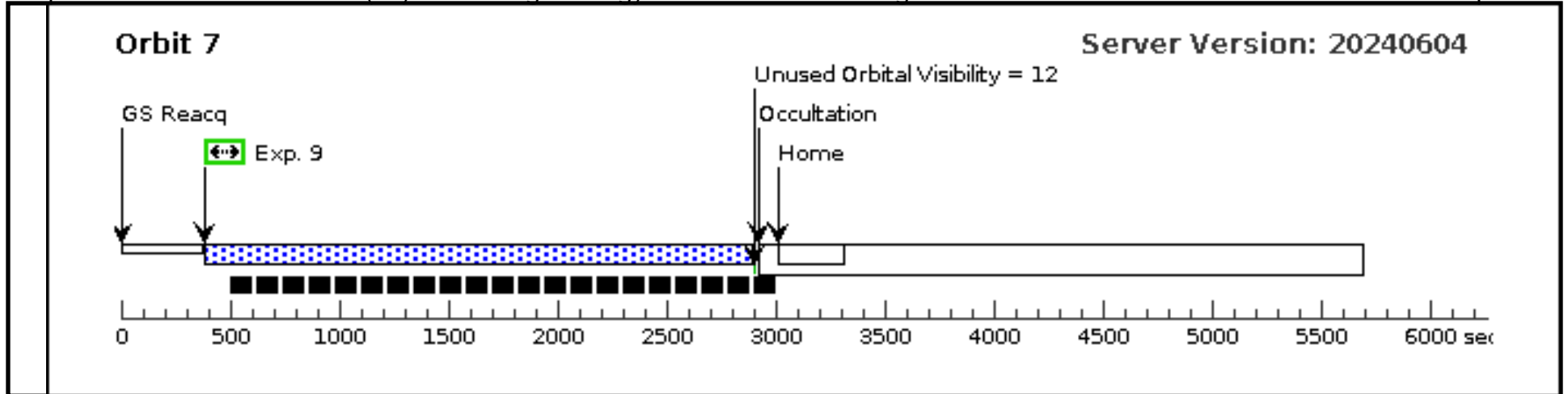
Server Version: 20240604



Orbit 6

Server Version: 20240604





Visit	<p>Proposal 17464, GJ1243-vis7 (08), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 11-AUG-2024:00:00:00 AND 01-JAN-2025:08:00:00</p> <p>Comments: Seventh visit of GJ 1243.</p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																								
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Proposal 17464 - GJ1243-vis7 (08) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

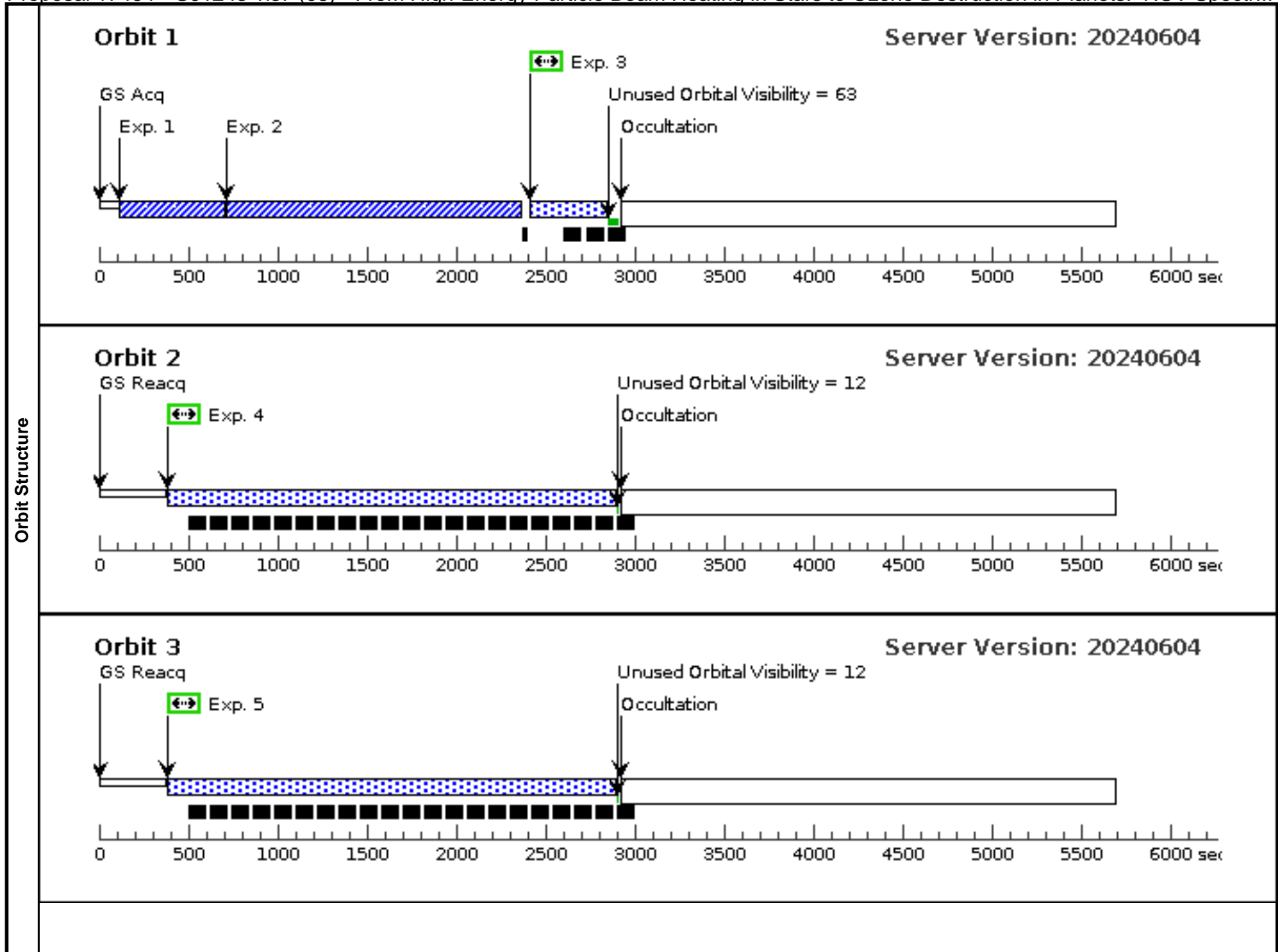
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	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis7orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis7orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

Proposal 17464 - GJ1243-vis7 (08) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

5	Sci-GJ1243- (2) GJ1243 vis7orb3 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[3]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
6	Sci-GJ1243- (2) GJ1243 vis7orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[4]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
7	Sci-GJ1243- (2) GJ1243 vis7orb5 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[5]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						
8	Sci-GJ1243- (2) GJ1243 vis7orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[6]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						

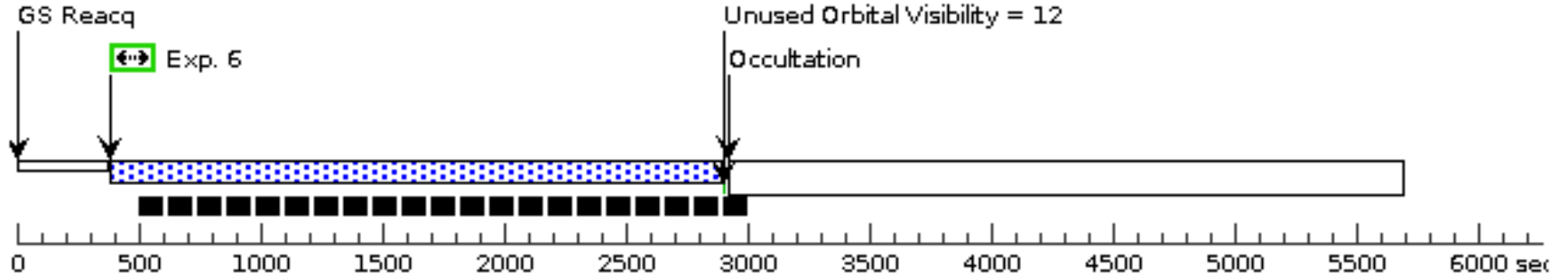
Proposal 17464 - GJ1243-vis7 (08) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis7orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_{flare}=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



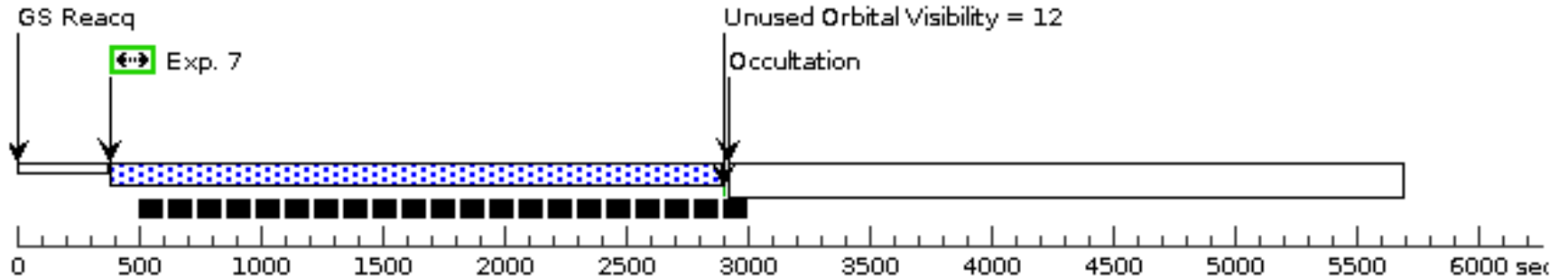
Orbit 4

Server Version: 20240604



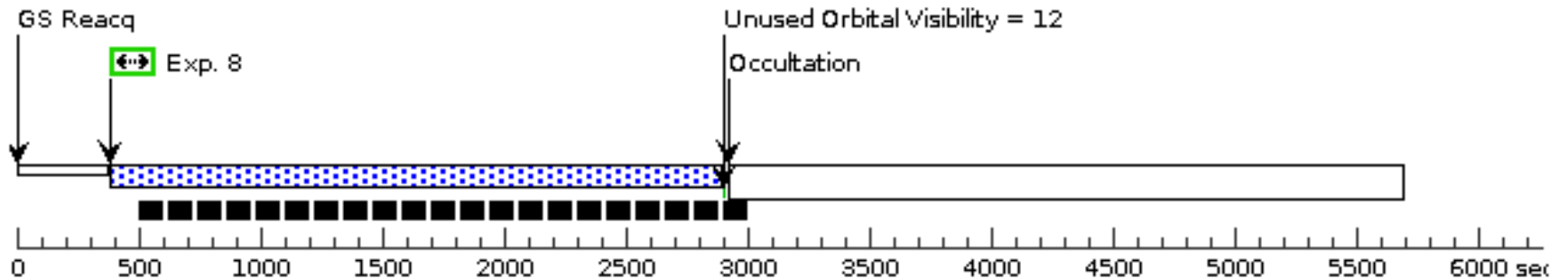
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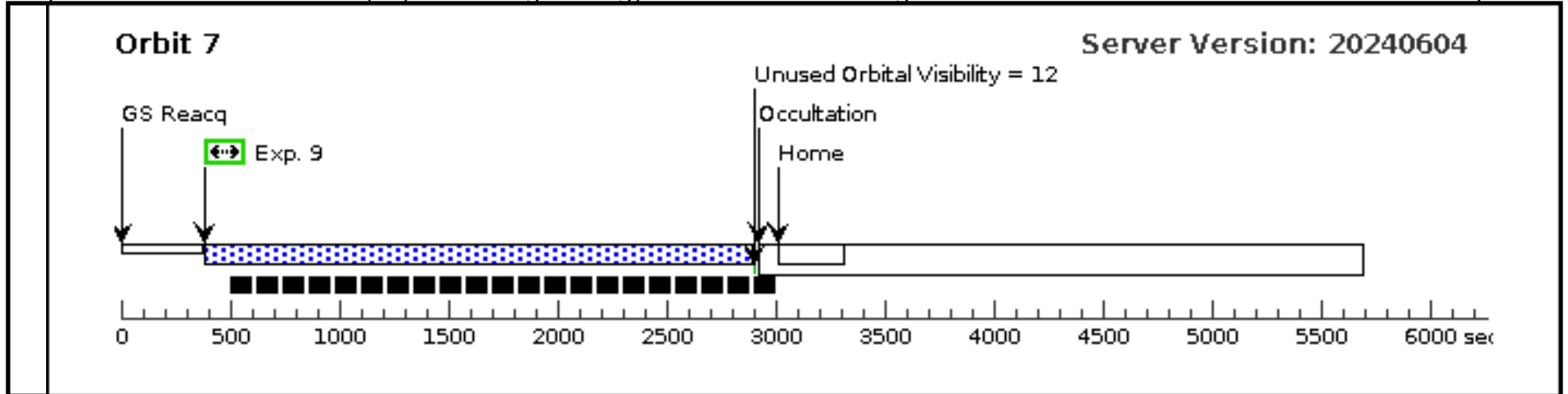
Server Version: 20240604



Orbit 6

Server Version: 20240604





Proposal 17464 - GJ1243-vis8 (12) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

Visit	<p>Proposal 17464, GJ1243-vis8 (12), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 04-JAN-2024:00:00:00 AND 29-JAN-2024:12:00:00; BETWEEN 16-JUL-2024:00:00:00 AND 09-AUG-2024:12:00:00; BETWEEN 11-AUG-2024:00:00:00 AND 27-AUG-2024:08:00:00; BETWEEN 31-JAN-2024:00:00:00 AND 25-FEB-2024:12:00:00</p> <p><i>Comments: Eighth visit of GJ 1243.</i></p> <p><i>A non-flaring spectrum of GJ 1243 from 1100-9000 Ang was constructed for the TA calculation: FUV and NUV spectra of AD Leo (a dM3e star; Hawley & Pettersen 1991) scaled to the magnitude of GJ 1243 combined with an optical spectrum of GJ 1243 (Kowalski et al. 2013 ApJS). We used SWIFT/UVOT images of GJ1243 in the UVW1 and UVM2 filters (archive.stsci.edu) to refine the quiescent UV flux.</i></p>																																									
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>GJ1243</td> <td>RA: 19 51 9.3206 (297.7888358d)</td> <td>Proper Motion RA: 0.183242 arcsec/yr</td> <td>V=12.8</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G208-42</td> <td>Dec: +46 29 0.21 (46.48339d)</td> <td>Proper Motion Dec: 0.265697 arcsec/yr</td> <td>U=15.5,</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: GAIA DR3208028572786 1817088</td> <td>Equinox: J2000</td> <td>Parallax: 0.083494"</td> <td>lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Radial Velocity: -12.334 km/sec</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we confirmed).</i></p> <p><i>We take the uncertainty in RA and Dec (from Gaia) to be 1/2 of the annual parallax = 40 mas -- this is to ensure that it is less than 0.4arcsec required by our target acquisition algorithm. (the standard errors in RA and Dec, from Gaia DR3 are 0.015 mas and 0.017 mas, respectively).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia). We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.183242 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.02 mas / year and 0.02 mas / year, respectively).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(2)	GJ1243	RA: 19 51 9.3206 (297.7888358d)	Proper Motion RA: 0.183242 arcsec/yr	V=12.8	Reference Frame: ICRS		Alt Name1: G208-42	Dec: +46 29 0.21 (46.48339d)	Proper Motion Dec: 0.265697 arcsec/yr	U=15.5,			Alt Name2: GAIA DR3208028572786 1817088	Equinox: J2000	Parallax: 0.083494"	lam=2440-2840A flux = 7.5e-16 erg/s/cm2/Ang in quiescence					Epoch of Position: 2000						Radial Velocity: -12.334 km/sec	
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Proposal 17464 - GJ1243-vis8 (12) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

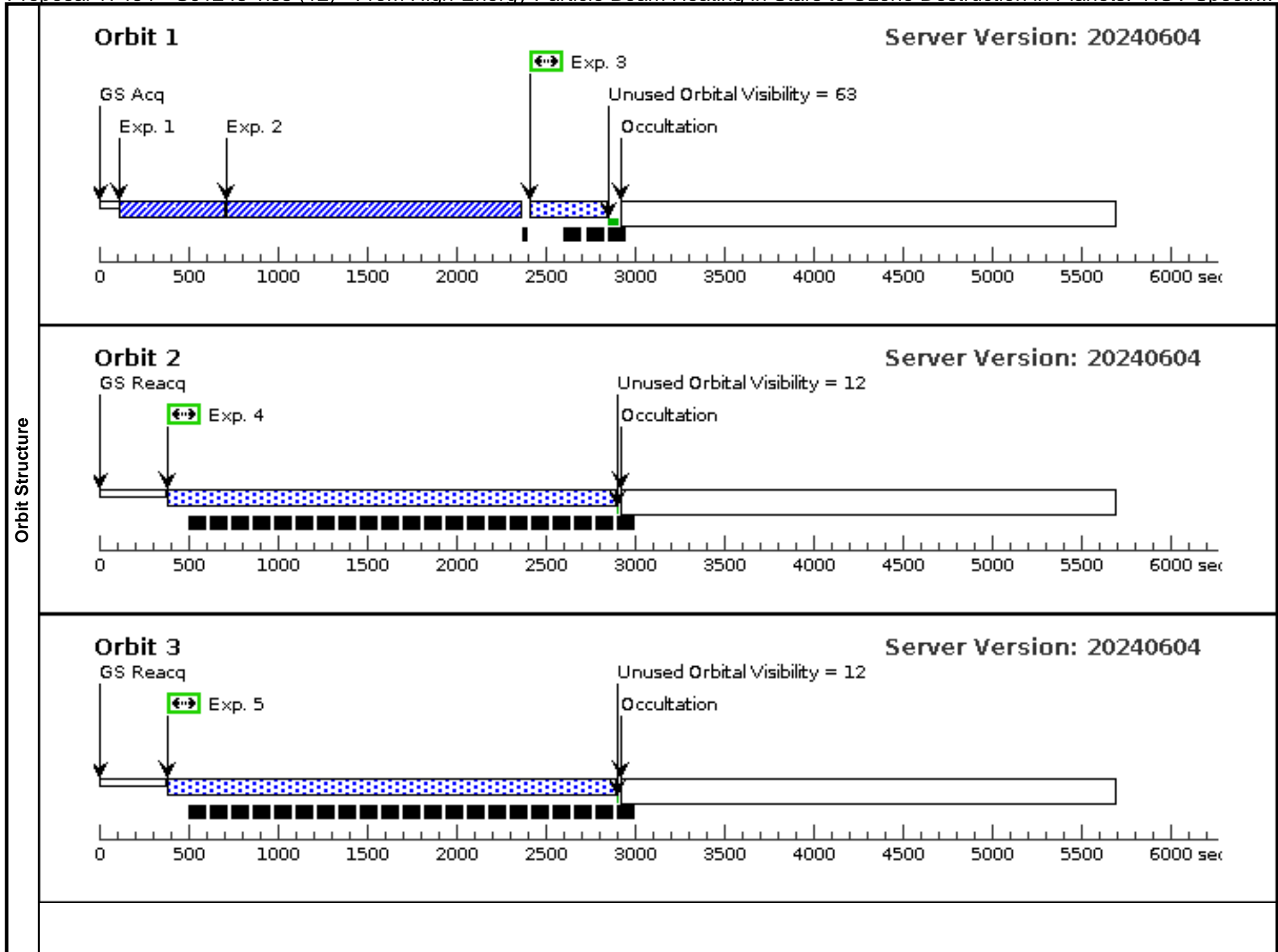
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (2) GJ1243 XD-GJ1243 -vis7orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: Because the target is intrinsically very faint in the UV during quiescence, a large fraction of the first orbit of each visit must be used for target acquisition. We have scheduled a TA algorithm of ACQ/PEAKXD (300s) +ACQ/PEAKD (300s), which give the best S/N ~ 27 and 32, respectively, for a dwell time of 300 seconds for the spectrum of GJ 1243 scaled to U=15.5. In HST GO 13323 (Sept 2014), we calculated a S/N of 40 for this quiescent spectrum of GJ 1243 (COS.sa.519303), and this TA algorithm apparently worked well then. There is no major change in sensitivity between 2014 and 2024: https://www.stsci.edu/hst/instrumentation/cos/performance/sensitivity</i></p> <p><i>Note, two 3x3 ACQ/SEARCH algorithms only allow for shorter exposure times but this takes up an entire orbit.</i></p> <p><i>The COS/G230L wavelength position of 3360 gives better S/N (compared to the wavelength position of the science exposures with COS wavelength position 2950) during quiescence because it samples the redder/brighier part of the quiescent continuum. Note that we have conservatively estimated the UV flux of GJ 1243 and any small flares will only increase the S/N for each TA exposure.</i></p> <p><i>We performed an ETC simulation with a conservatively large flare ($\Delta u = 4.7$ mag; see comments for Orb2-Science Exposure 1) for the 3360 grating and the local+global count rate limits are not exceeded. The buffer time from the ETC (COS.sa.519401) is 200 seconds (2/3 x buffer time is 130 sec), which is less than the exposure time. This would result in the loss of data during the acquisition but the S/N would be far in excess of the required level.</i></p>									
	2	ACQ-PEAK (2) GJ1243 D-GJ1243-v is7orb1 (COS.sa.189 0634)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			300 Secs (300 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
3	Sci-GJ1243- (2) GJ1243 vis7orb1 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			342 Secs (342 Secs) [==>]	[1]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
4	Sci-GJ1243- (2) GJ1243 vis7orb2 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2501 Secs (2501 Secs) [==>]	[2]		
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with $\Delta U \sim -4.7$ mag flare (twice the largest flare observed in 5 months with Kepler) and with a $T_{flare}=12,000K$ blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare ($\Delta U = -8$ mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

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<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
6	Sci-GJ1243- (2) GJ1243 vis7orb4 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs)	[==>]	[4]
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<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
8	Sci-GJ1243- (2) GJ1243 vis7orb6 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs)	[==>]	[6]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_flare=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill ti me of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we s et the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							

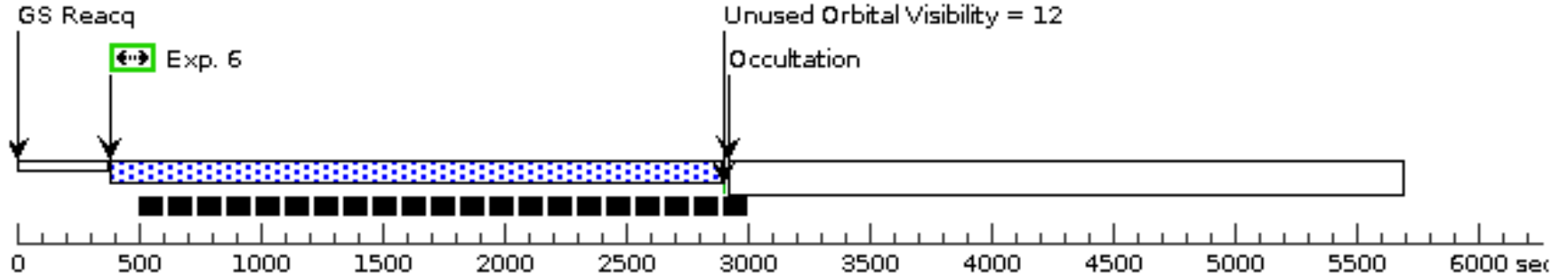
Proposal 17464 - GJ1243-vis8 (12) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectr...

9	Sci-GJ1243- (2) GJ1243 vis7orb7 (COS.sp.185 3657)	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2501 Secs (2501 Secs) [==>]	[7]
<p><i>Comments: The COS ETC Run # is given for the worst-case scenario (largest flare possible) according to COS ISR 2017-01(v3).</i></p> <p><i>Buffer-time justification: We choose a conservative buffer-time of 120 sec. The ETC for a conservatiely large flare (COS.sp.1890592) with \Delta U ~ -4.7 mag flare (twice the largest flare observed in 5 months with Kepler) and with a T_{flare}=12,000K blackbody spectrum has a buffer fill time of 237 sec, and 2/3 of this is 150 sec. To allow for slightly larger increases still, a buffer-time of 120 seconds is chosen (which is near the minimum allowable). The COS ETC Run # is given in the field above (and for Phase 1) is for the absolute worst-case scenario (largest flare possible) according to ISR COS 2017-01(v3). The ETC gives a buffer fill time of 22s, but we think the chances of a magnitude of this flare (delta U = -8 mags) occurring is very small (i.e., has never been observed on this star) within our monitoring time. Since we require time-tag mode, we set the buffer time to 120s. This was used in the HST GO 13323 observations.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>						



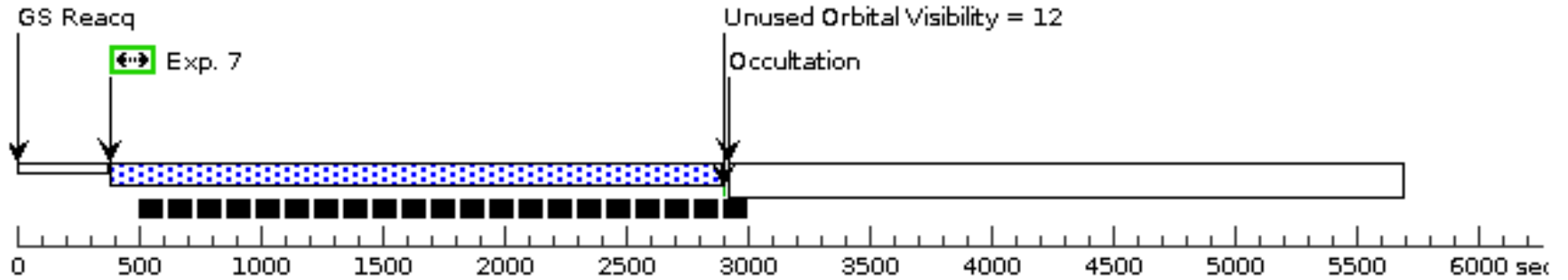
Orbit 4

Server Version: 20240604



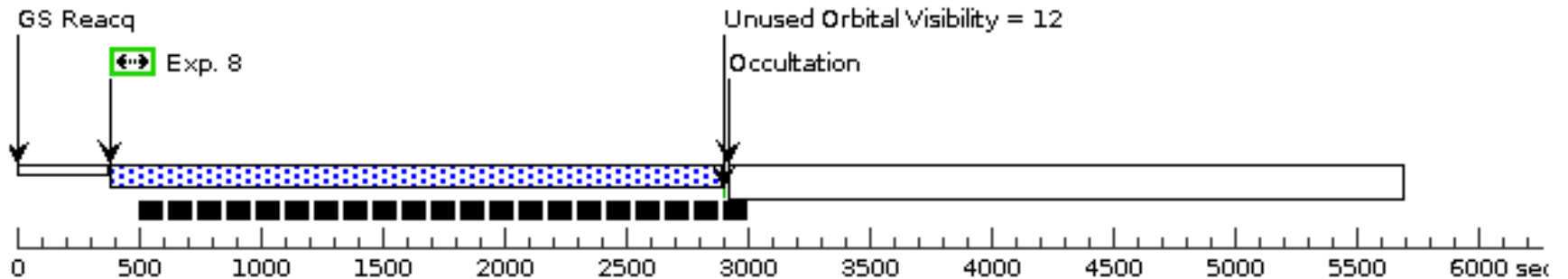
Orbit 5

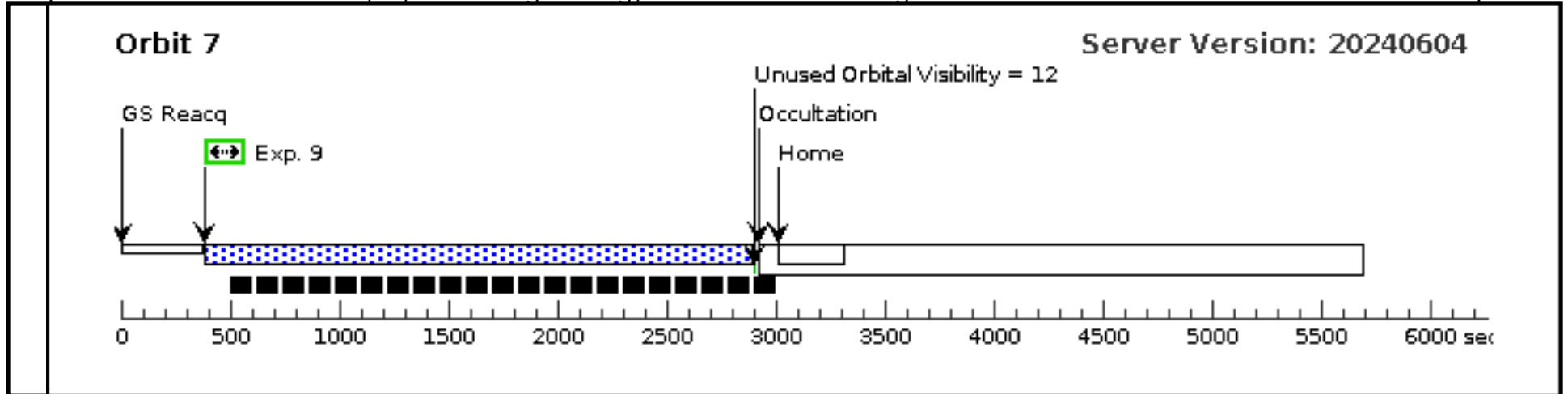
Server Version: 20240604



Orbit 6

Server Version: 20240604





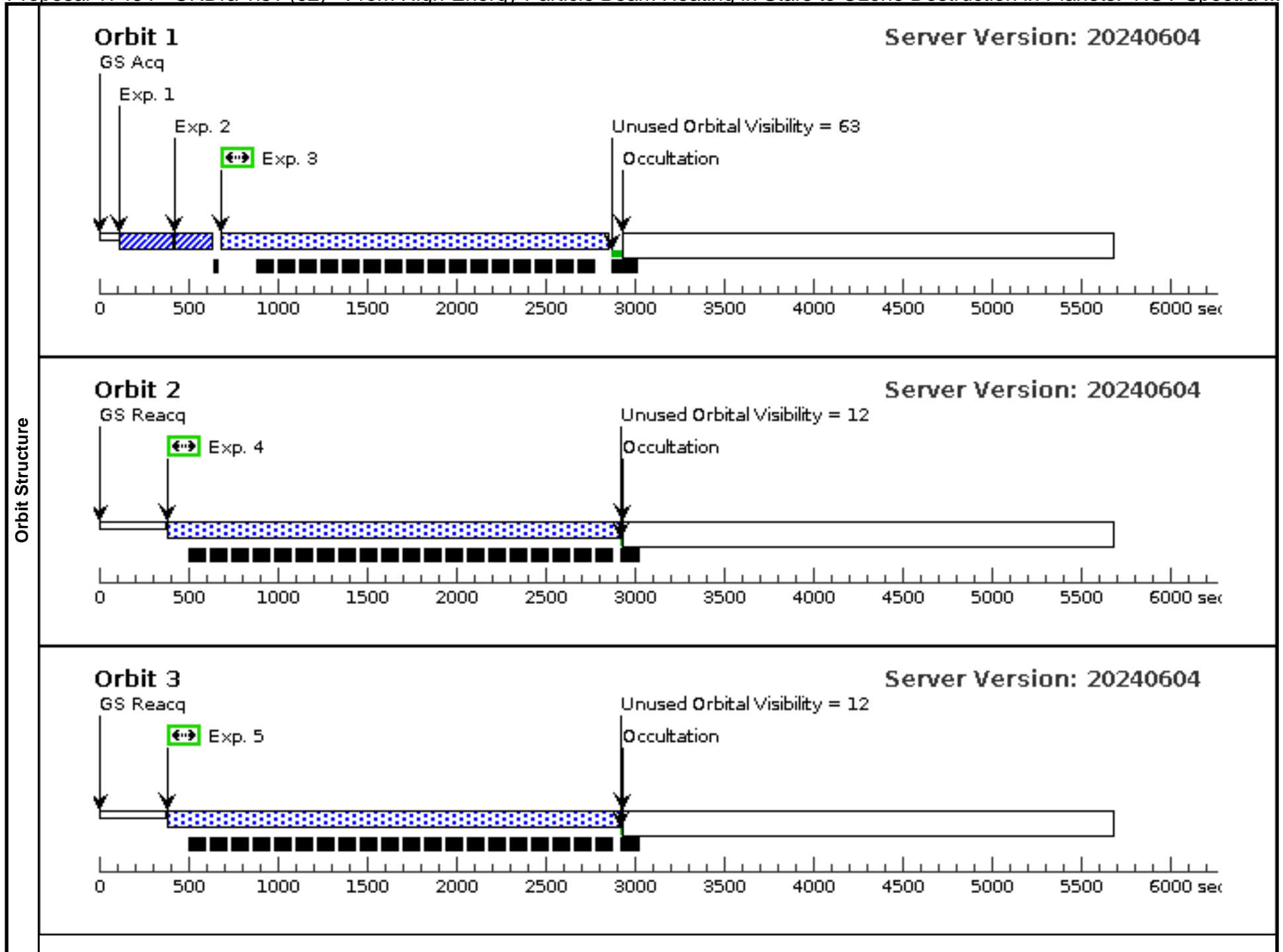
Visit	<p>Proposal 17464, CRDra-vis1 (02), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-FEB-2024:00:00:00 AND 25-MAR-2024:12:00:00; BETWEEN 27-MAR-2024:00:00:00 AND 22-APR-2024:12:00:00; BETWEEN 24-APR-2024:00:00:00 AND 20-MAY-2024:12:00:00; BETWEEN 22-MAY-2024:00:00:00 AND 17-JUN-2024:12:00:00</p> <p><i>Comments: First visit of CR Dra.</i></p>																																								
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>CRDRA</td> <td>RA: 16 17 5.3519 (244.2722996d)</td> <td>Proper Motion RA: 0.0879699215 arcsec/yr</td> <td>V=9.46</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G202-36</td> <td>Dec: +55 16 8.77 (55.26910d)</td> <td>Proper Motion Dec: -0.43096266293 arcsec/yr</td> <td>U=12.0</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2:</td> <td>Equinox: J2000</td> <td>Parallax: 0.0496303"</td> <td></td> <td></td> </tr> <tr> <td></td> <td>GAIA DR3 142943737893</td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>4511616</td> <td></td> <td>Radial Velocity: -32.81 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	CRDRA	RA: 16 17 5.3519 (244.2722996d)	Proper Motion RA: 0.0879699215 arcsec/yr	V=9.46	Reference Frame: ICRS		Alt Name1: G202-36	Dec: +55 16 8.77 (55.26910d)	Proper Motion Dec: -0.43096266293 arcsec/yr	U=12.0			Alt Name2:	Equinox: J2000	Parallax: 0.0496303"				GAIA DR3 142943737893		Epoch of Position: 2000				4511616		Radial Velocity: -32.81 km/sec			<p><i>Comments: CR Dra is a spectroscopic binary with a combined spectral type of M1. The angular separation of the two components varies between 0.06 - 0.16 arcsec, with a period of 4.05 years (Tamazian et al 2008 AJ 136, 974; note their Table 3 erroneously lists the units of angular separation in this table as milli-arcsec). The angular separation will be closer to its maximum (~0.16 arcsec) on the epoch of the HST observations (but also note that the orbital properties from astrometry conflict with those from spectroscopic lines -- Sperauskas et al. 2019 A&A), and so we have flagged this target as an extended source. According to the Tamazian et al photometry, the magnitude differences of the two components in this binary are ~ 1.8 mags in V; the differences in the NUV will be larger.</i></p> <p><i>Thus we don't know exactly how the TA algorithm will fare with this combined PSF shape. No Swift/UVOT images of CR Dra are available in the MAST archive for checking the relative fluxes in the NUV.</i></p> <p><i>We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we verified).</i></p> <p><i>Half of the annual parallax is 25 mas. However, due the binarity, the sources could be separated from our coordinates by ~0.16 arcsec, which we assign as our uncertainty in RA and Dec. (the standard errors in RA and Dec, from Gaia DR3, are 0.40 mas and 0.42 mas, respectively; these are larger positional uncertainties than for the fainter target, GJ 1243, which might reflect that the double-source is slightly extended in Gaia).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia) in the fields. We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.0879699 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.60 mas / year and 0.54 mas / year respectively, which result in a much smaller uncertainty in position by propagating these PM errors from 2016 to 2024).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>		
#		Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																																			
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Proposal 17464 - CRDra-vis1 (02) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ-PEAK (1) CRDRA XD-CRDra-vis1-orb1 (COS.sa.1890608)	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			12.0 Secs (12 Secs) [==>]	[1]	
	<p><i>Comments: The exposure time for TA was determined by scaling by the U-band magnitude difference (delta mag = -3.5) compared to GJ 1243. The S/N is 55 per 12s dwell time for a Pickles model M2V scaled to U=12.0. It will be slightly larger S/N for a M1-type like CR Dra. We checked the Pickles model flux at 3000 Ang against a IUE/LWP spectrum of CR Dra.</i></p>									
	2	ACQ-PEAK (1) CRDRA D-CRDra-vis1-orb1 (COS.sa.1890608)	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			12.0 Secs (12 Secs) [==>]	[1]	
	<p><i>Comments: See comments for the ACQ-PEAKXD exposure.</i></p>									
	3	Sci-CRDra-vis1orb1 (COS.sp.1853663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=120; FLASH=YES; FP-POS=3			2084 Secs (2084 Secs) [==>]	[1]
	<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>									
	4	Sci-CRDra-vis1orb2 (COS.sp.1853663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=120; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[2]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
5	Sci-CRDra-vis1orb3 (COS.sp.1853663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=120; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[3]	
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
6	Sci-CRDra-vis1orb4 (COS.sp.1853663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=120; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[4]	
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										
7	Sci-CRDra-vis1orb5 (COS.sp.1853663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=120; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[5]	
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>										

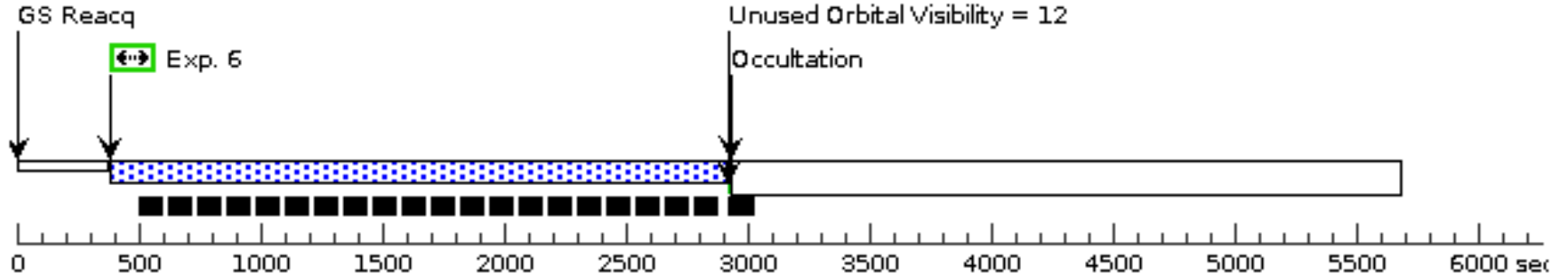
Proposal 17464 - CRDra-vis1 (02) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

8	Sci-CRDra- vis1orb6 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[6]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
9	Sci-CRDra- vis1orb7 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[7]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
10	Sci-CRDra- vis1orb8 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[8]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							



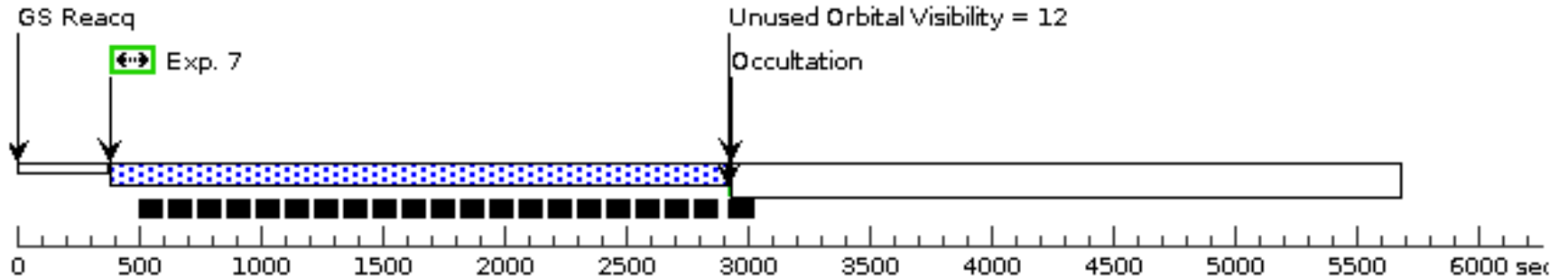
Orbit 4

Server Version: 20240604



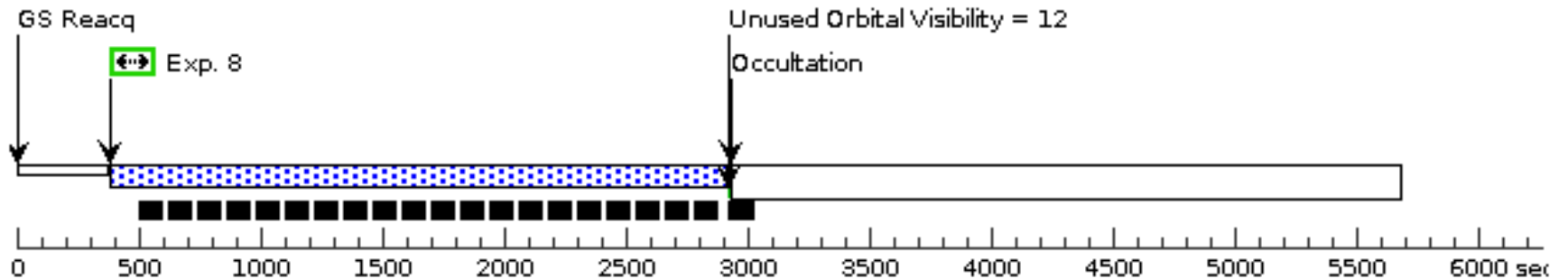
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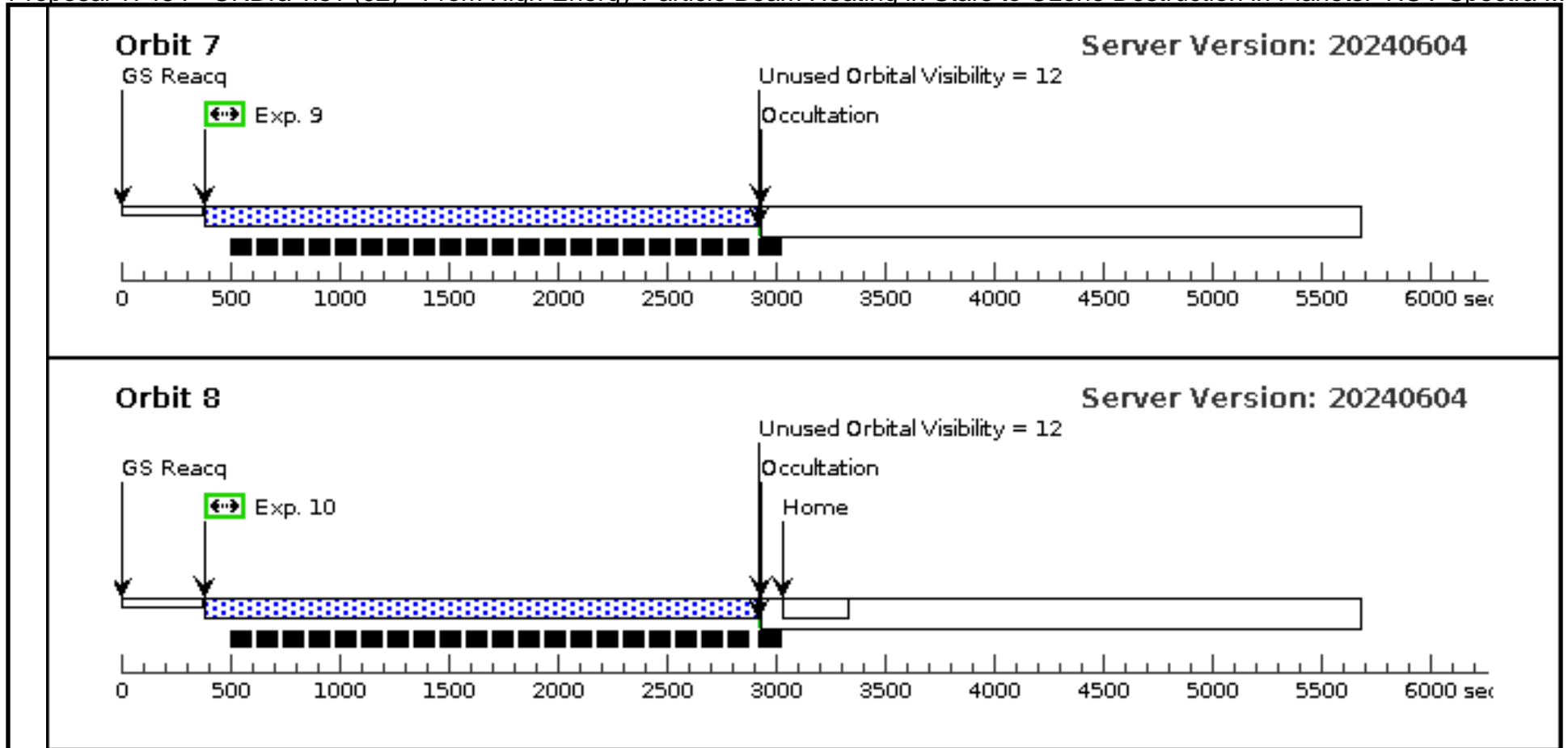
Server Version: 20240604



Orbit 6

Server Version: 20240604





Visit	<p>Proposal 17464, CRDra-vis2 (09), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-FEB-2024:00:00:00 AND 25-MAR-2024:12:00:00; BETWEEN 27-MAR-2024:00:00:00 AND 22-APR-2024:12:00:00; BETWEEN 24-APR-2024:00:00:00 AND 20-MAY-2024:12:00:00; BETWEEN 22-MAY-2024:00:00:00 AND 17-JUN-2024:12:00:00</p> <p><i>Comments: Second visit of CR Dra.</i></p>																																							
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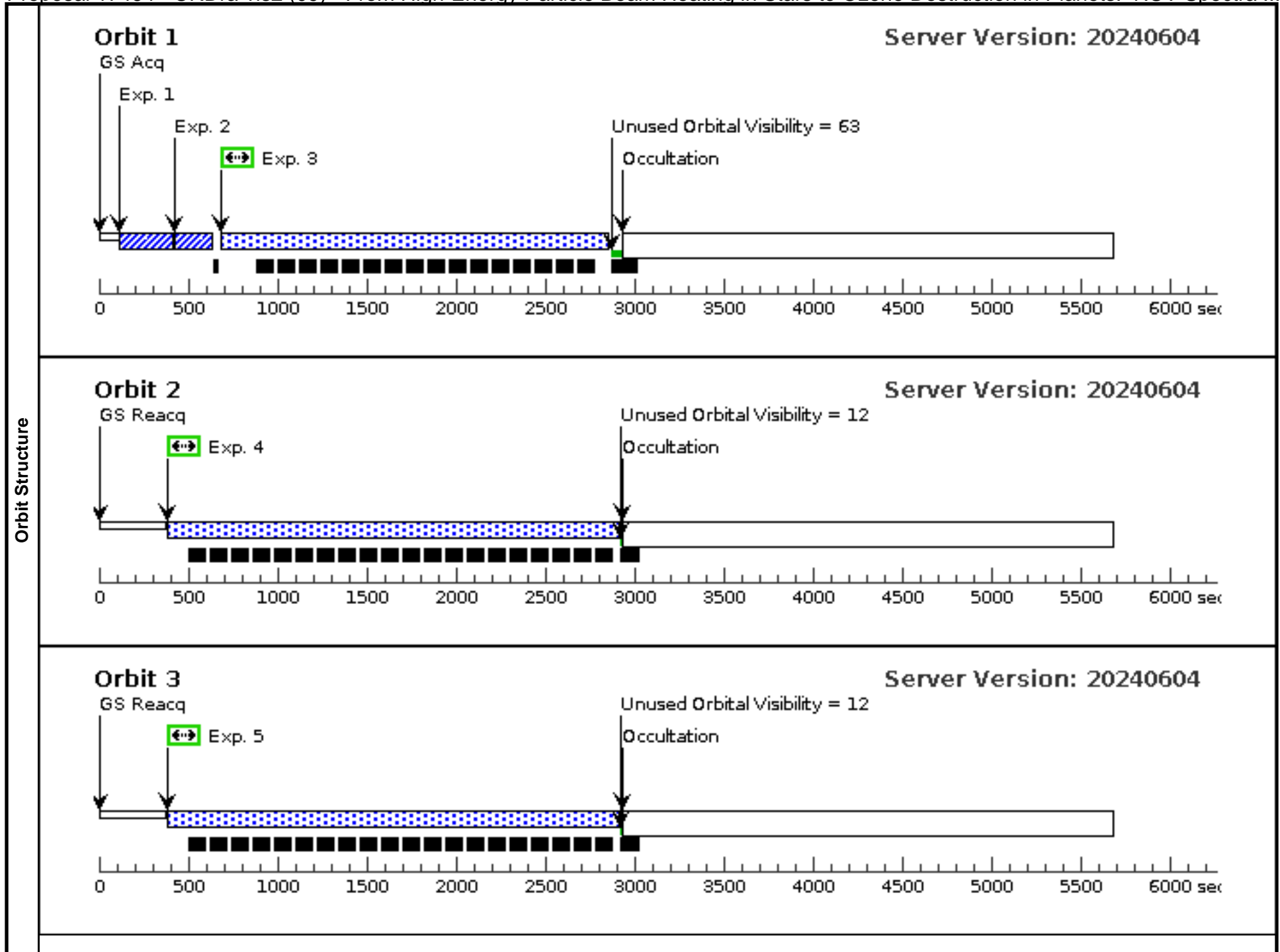
Proposal 17464 - CRDra-vis2 (09) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-PEAK XD-CRDra- vis2-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: The exposure time for TA was determined by scaling by the U-band magnitude difference (delta mag = -3.5) compared to GJ 1243. The S/N is 55 per 12s dwell time for a Pickles model M2V scaled to U=1 2.0. It will be slightly larger S/N for a M1-type like CR Dra. We checked the Pickles model flux at 3000 Ang against a IUE/LWP spectrum of CR Dra.</p>									
2	ACQ-PEAK D-CRDra-vi s2-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: See comments for the ACQ-PEAKXD exposure.</p>									
3	Sci-CRDra- vis2orb1 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2084 Secs (2084 Secs) [==>]	[1]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
4	Sci-CRDra- vis2orb2 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[2]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
5	Sci-CRDra- vis2orb3 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[3]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
6	Sci-CRDra- vis2orb4 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[4]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
7	Sci-CRDra- vis2orb5 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[5]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									

Exposures

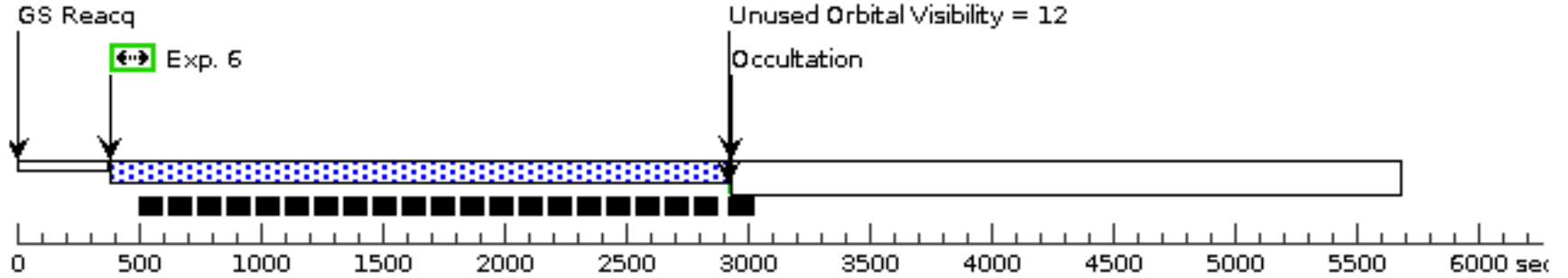
Proposal 17464 - CRDra-vis2 (09) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

8	Sci-CRDra- vis2orb6 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[6]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
9	Sci-CRDra- vis2orb7 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[7]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
10	Sci-CRDra- vis2orb8 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[8]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							



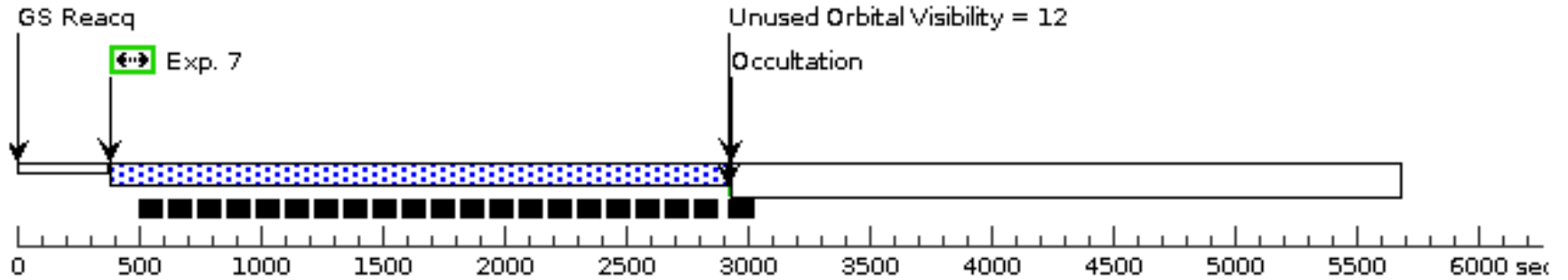
Orbit 4

Server Version: 20240604



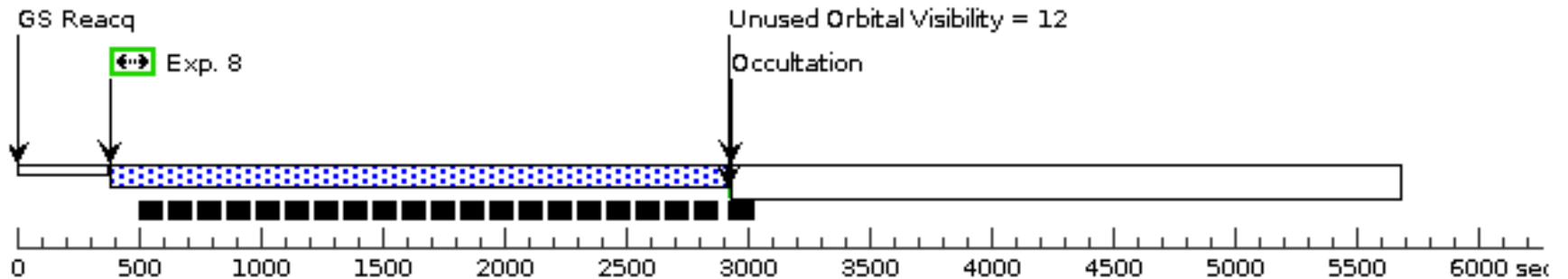
Orbit 5

Server Version: 20240604



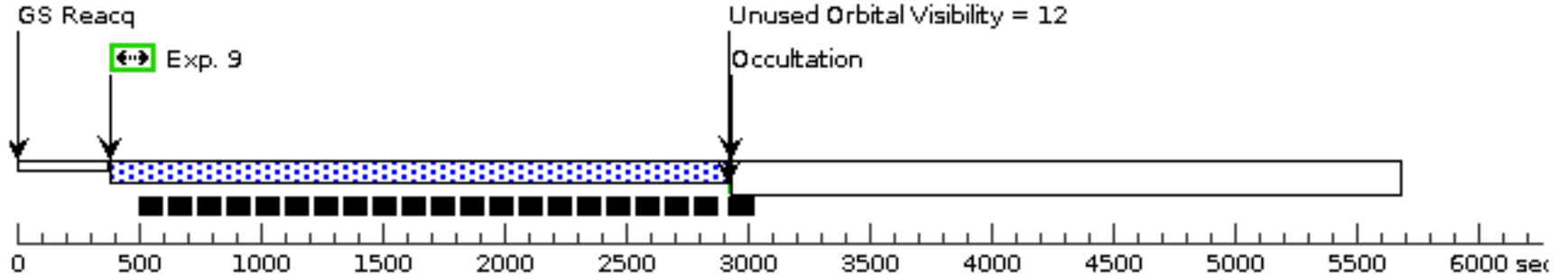
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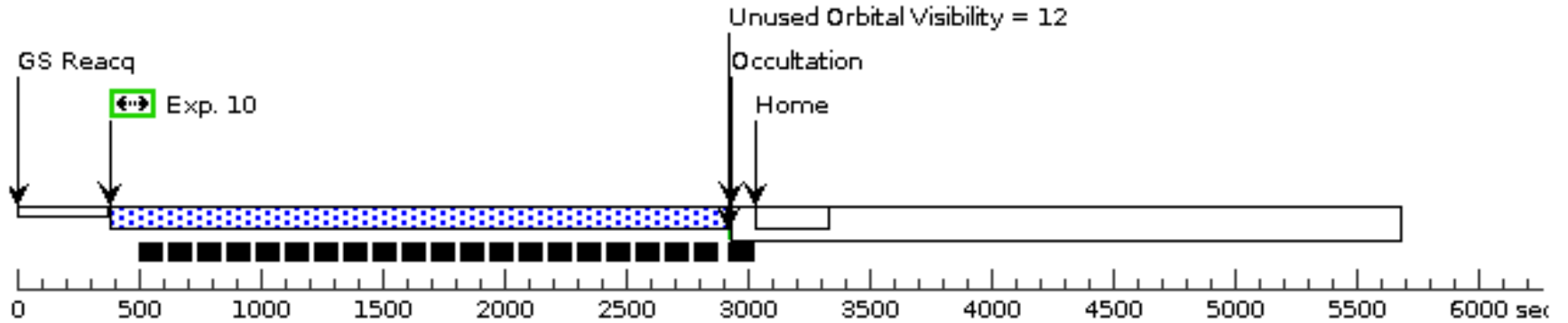
Orbit 7

Server Version: 20240604



Orbit 8

Server Version: 20240604



Visit	<p>Proposal 17464, CRDra-vis3 (10), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-FEB-2024:00:00:00 AND 25-MAR-2024:12:00:00; BETWEEN 27-MAR-2024:00:00:00 AND 22-APR-2024:12:00:00; BETWEEN 24-APR-2024:00:00:00 AND 20-MAY-2024:12:00:00; BETWEEN 22-MAY-2024:00:00:00 AND 17-JUN-2024:12:00:00</p> <p><i>Comments: Third visit of CR Dra.</i></p>																																									
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>CRDRA</td> <td>RA: 16 17 5.3519 (244.2722996d)</td> <td>Proper Motion RA: 0.0879699215 arcsec/yr</td> <td>V=9.46</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G202-36</td> <td>Dec: +55 16 8.77 (55.26910d)</td> <td>Proper Motion Dec: -0.43096266293 arcsec/yr</td> <td>U=12.0</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2:</td> <td>Equinox: J2000</td> <td>Parallax: 0.0496303"</td> <td></td> <td></td> </tr> <tr> <td></td> <td>GAIA DR3 142943737893</td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>4511616</td> <td></td> <td>Radial Velocity: -32.81 km/sec</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	CRDRA	RA: 16 17 5.3519 (244.2722996d)	Proper Motion RA: 0.0879699215 arcsec/yr	V=9.46	Reference Frame: ICRS		Alt Name1: G202-36	Dec: +55 16 8.77 (55.26910d)	Proper Motion Dec: -0.43096266293 arcsec/yr	U=12.0			Alt Name2:	Equinox: J2000	Parallax: 0.0496303"				GAIA DR3 142943737893		Epoch of Position: 2000				4511616		Radial Velocity: -32.81 km/sec			<p><i>Comments: CR Dra is a spectroscopic binary with a combined spectral type of M1. The angular separation of the two components varies between 0.06 - 0.16 arcsec, with a period of 4.05 years (Tamazian et al 2008 AJ 136, 974; note their Table 3 erroneously lists the units of angular separation in this table as milli-arcsec). The angular separation will be closer to its maximum (~0.16 arcsec) on the epoch of the HST observations (but also note that the orbital properties from astrometry conflict with those from spectroscopic lines -- Sperauskas et al. 2019 A&A), and so we have flagged this target as an extended source. According to the Tamazian et al photometry, the magnitude differences of the two components in this binary are ~ 1.8 mags in V; the differences in the NUV will be larger.</i></p> <p><i>Thus we don't know exactly how the TA algorithm will fare with this combined PSF shape. No Swift/UVOT images of CR Dra are available in the MAST archive for checking the relative fluxes in the NUV.</i></p> <p><i>We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we verified).</i></p> <p><i>Half of the annual parallax is 25 mas. However, due the binarity, the sources could be separated from our coordinates by ~0.16 arcsec, which we assign as our uncertainty in RA and Dec. (the standard errors in RA and Dec, from Gaia DR3, are 0.40 mas and 0.42 mas, respectively; these are larger positional uncertainties than for the fainter target, GJ 1243, which might reflect that the double-source is slightly extended in Gaia).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia) in the fields. We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.0879699 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.60 mas / year and 0.54 mas / year respectively, which result in a much smaller uncertainty in position by propagating these PM errors from 2016 to 2024).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>			
#		Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																																				
(1)	CRDRA	RA: 16 17 5.3519 (244.2722996d)	Proper Motion RA: 0.0879699215 arcsec/yr	V=9.46	Reference Frame: ICRS																																					
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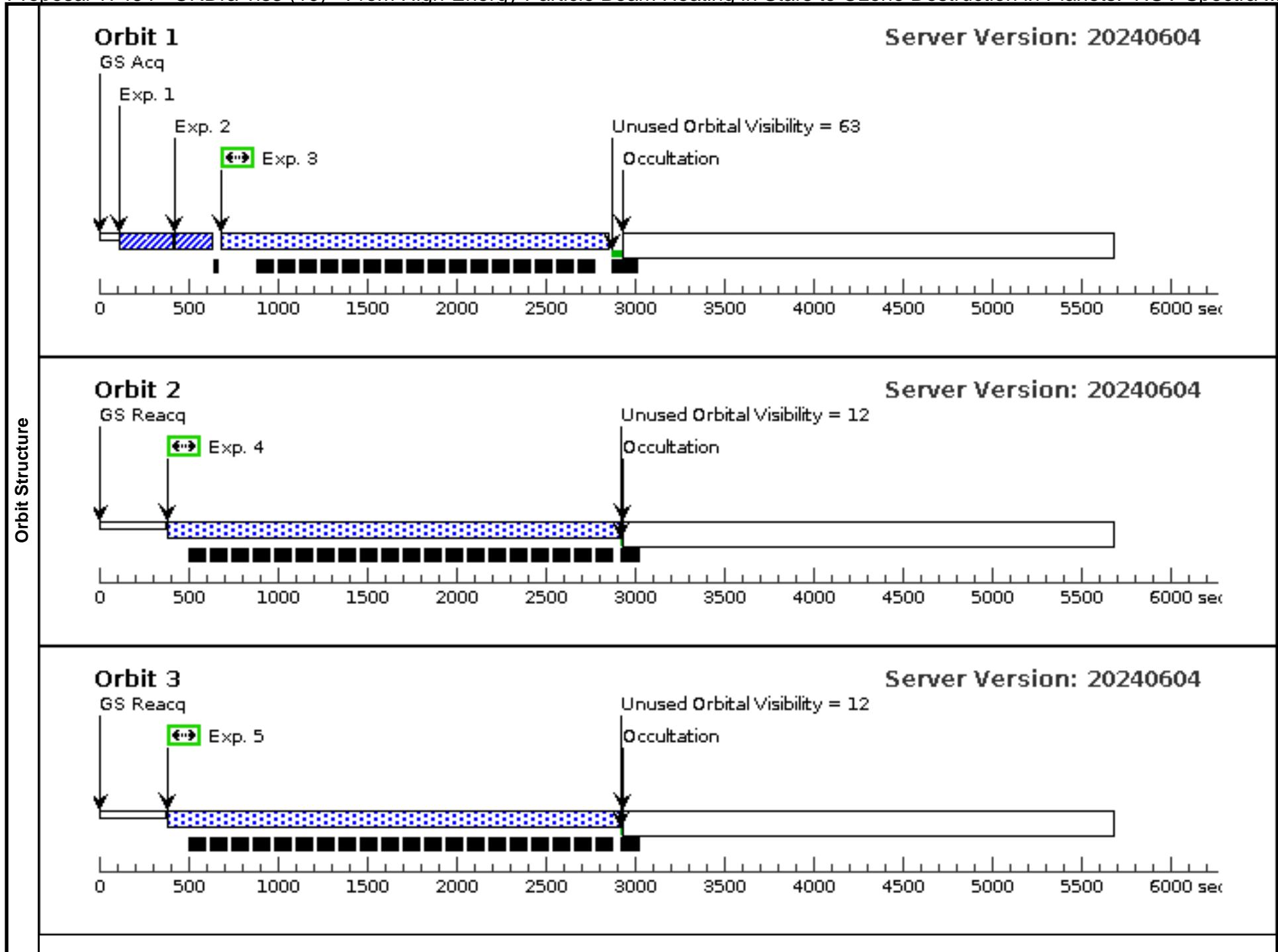
Proposal 17464 - CRDra-vis3 (10) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-PEAK XD-CRDra- vis3-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: The exposure time for TA was determined by scaling by the U-band magnitude difference (delta mag = -3.5) compared to GJ 1243. The S/N is 55 per 12s dwell time for a Pickles model M2V scaled to U=1 2.0. It will be slightly larger S/N for a M1-type like CR Dra. We checked the Pickles model flux at 3000 Ang against a IUE/LWP spectrum of CR Dra.</p>									
2	ACQ-PEAK D-CRDra-vi s3-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: See comments for the ACQ-PEAKXD exposure.</p>									
3	Sci-CRDra- vis3orb1 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2084 Secs (2084 Secs) [==>]	[1]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
4	Sci-CRDra- vis3orb2 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[2]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
5	Sci-CRDra- vis3orb3 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[3]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
6	Sci-CRDra- vis3orb4 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[4]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
7	Sci-CRDra- vis3orb5 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[5]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									

Exposures

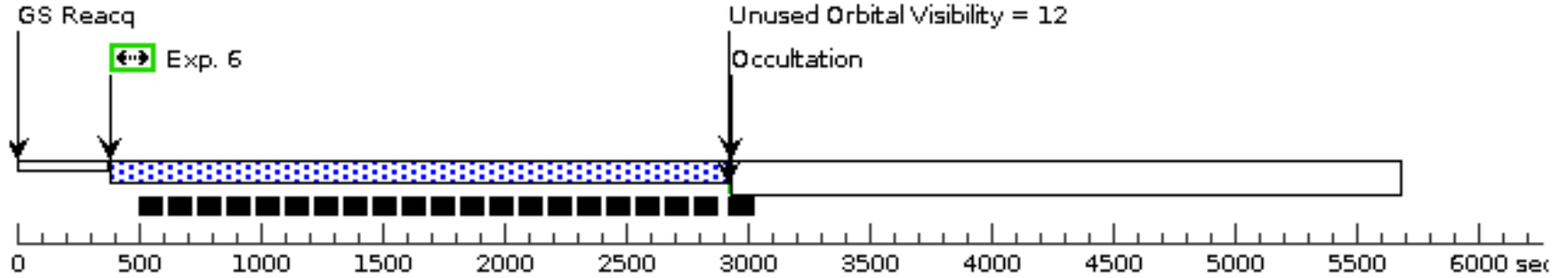
Proposal 17464 - CRDra-vis3 (10) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

8	Sci-CRDra- vis3orb6 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[6]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
9	Sci-CRDra- vis3orb7 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[7]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
10	Sci-CRDra- vis3orb8 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[8]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							



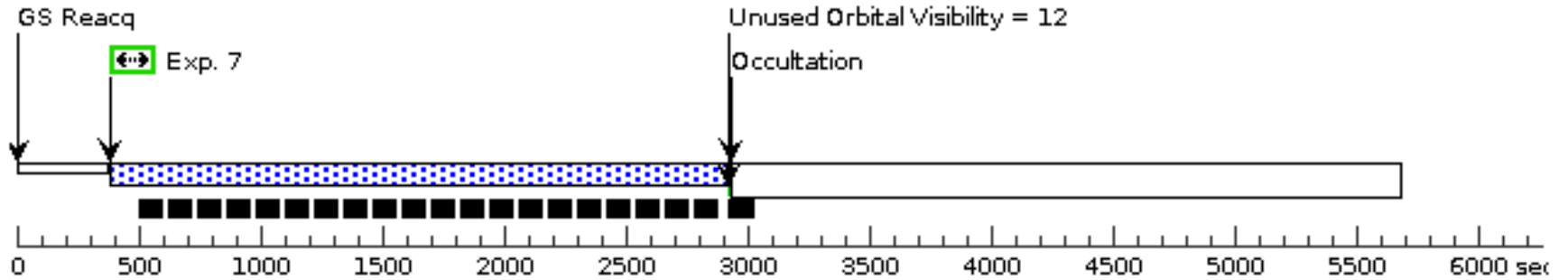
Orbit 4

Server Version: 20240604



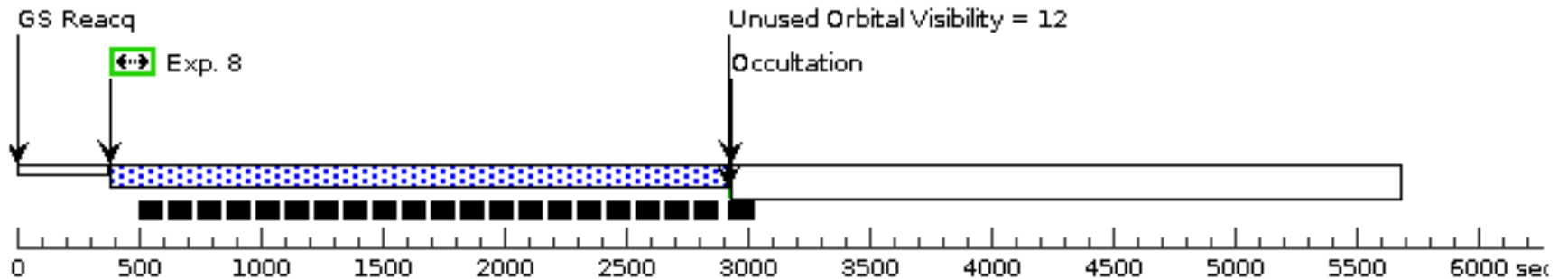
Orbit 5

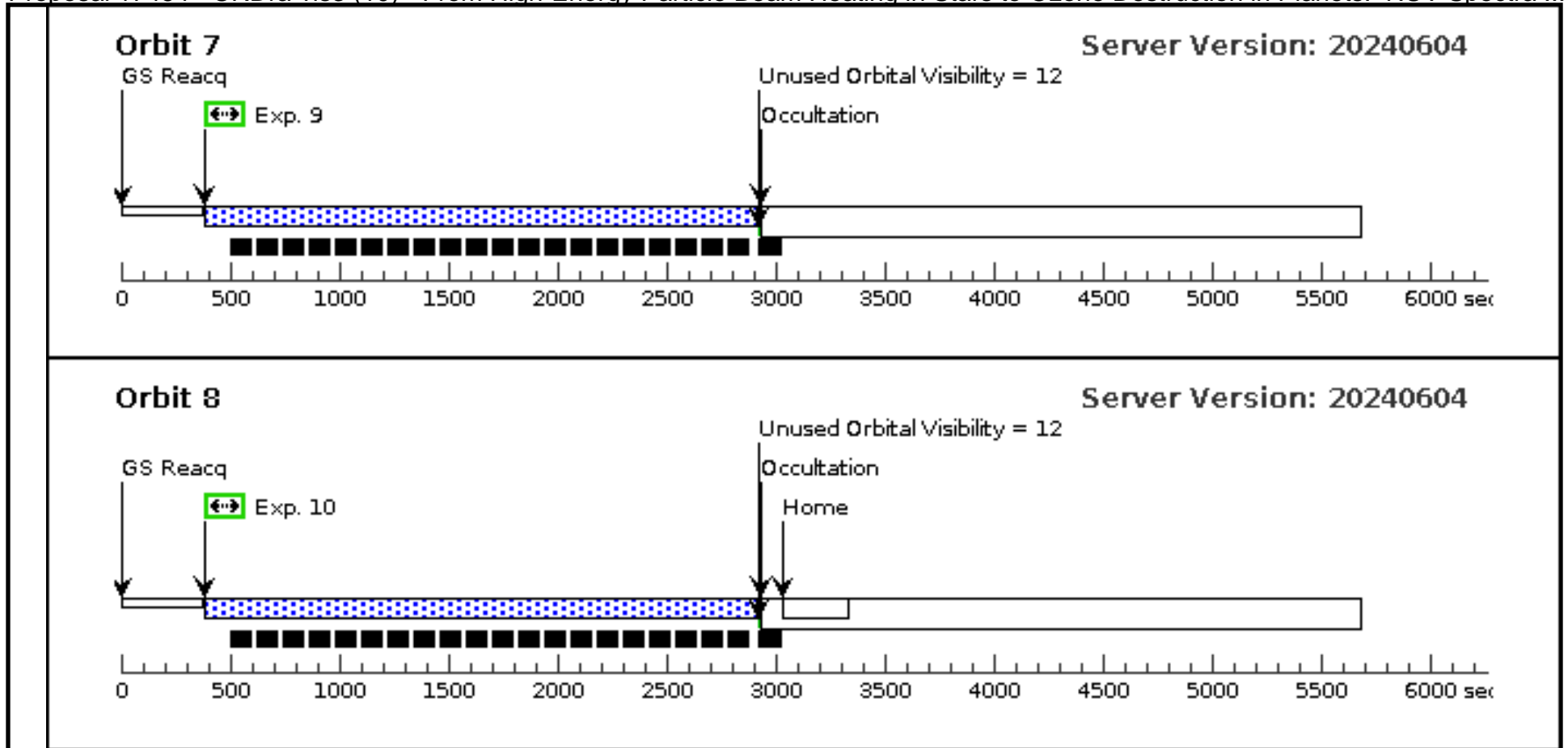
Server Version: 20240604



Orbit 6

Server Version: 20240604





Visit	<p>Proposal 17464, CRDra-vis4 (11), completed Tue Jul 16 11:00:58 GMT 2024</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-FEB-2024:00:00:00 AND 25-MAR-2024:12:00:00; BETWEEN 27-MAR-2024:00:00:00 AND 22-APR-2024:12:00:00; BETWEEN 24-APR-2024:00:00:00 AND 20-MAY-2024:12:00:00; BETWEEN 22-MAY-2024:00:00:00 AND 17-JUN-2024:12:00:00</p> <p><i>Comments: Fourth visit of CR Dra.</i></p>																																				
	Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>CRDRA</td> <td>RA: 16 17 5.3519 (244.2722996d)</td> <td>Proper Motion RA: 0.0879699215 arcsec/yr</td> <td>V=9.46</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: G202-36</td> <td>Dec: +55 16 8.77 (55.26910d)</td> <td>Proper Motion Dec: -0.43096266293 arcsec/yr</td> <td>U=12.0</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2:</td> <td>Equinox: J2000</td> <td>Parallax: 0.0496303"</td> <td></td> <td></td> </tr> <tr> <td></td> <td>GAIA DR3 3142943737893</td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> <tr> <td></td> <td>4511616</td> <td></td> <td>Radial Velocity: -32.81 km/sec</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: CR Dra is a spectroscopic binary with a combined spectral type of M1. The angular separation of the two components varies between 0.06 - 0.16 arcsec, with a period of 4.05 years (Tamazian et al 2008 AJ 136, 974; note their Table 3 erroneously lists the units of angular separation in this table as milli-arcsec). The angular separation will be closer to its maximum (~0.16 arcsec) on the epoch of the HST observations (but also note that the orbital properties from astrometry conflict with those from spectroscopic lines -- Sperauskas et al. 2019 A&A), and so we have flagged this target as an extended source. According to the Tamazian et al photometry, the magnitude differences of the two components in this binary are ~ 1.8 mags in V; the differences in the NUV will be larger.</i></p> <p><i>Thus we don't know exactly how the TA algorithm will fare with this combined PSF shape. No Swift/UVOT images of CR Dra are available in the MAST archive for checking the relative fluxes in the NUV.</i></p> <p><i>We obtained J2000 ICRS coordinates from SIMBAD, which are corrected from the epoch=2016 Gaia DR3 coordinates by accounting for proper motion (corrections automatically by Simbad, which we verified).</i></p> <p><i>Half of the annual parallax is 25 mas. However, due the binarity, the sources could be separated from our coordinates by ~0.16 arcsec, which we assign as our uncertainty in RA and Dec. (the standard errors in RA and Dec, from Gaia DR3, are 0.40 mas and 0.42 mas, respectively; these are larger positional uncertainties than for the fainter target, GJ 1243, which might reflect that the double-source is slightly extended in Gaia).</i></p> <p><i>The target has a significant proper motion and we provide these values (from Gaia) in the fields. We note that the Proper Motion RA given in the field above is the value given by Simbad (ie, PM RA = 0.0879699 arcsec / year = cos(dec) * mu_RA) and the Gaia DR3 archive. (The standard errors in PM RA and PM Dec are 0.60 mas / year and 0.54 mas / year respectively, which result in a much smaller uncertainty in position by propagating these PM errors from 2016 to 2024).</i></p> <p>Category=STAR Description=[M V-IV] Extended=NO</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	CRDRA	RA: 16 17 5.3519 (244.2722996d)	Proper Motion RA: 0.0879699215 arcsec/yr	V=9.46	Reference Frame: ICRS		Alt Name1: G202-36	Dec: +55 16 8.77 (55.26910d)	Proper Motion Dec: -0.43096266293 arcsec/yr	U=12.0			Alt Name2:	Equinox: J2000	Parallax: 0.0496303"				GAIA DR3 3142943737893		Epoch of Position: 2000				4511616		Radial Velocity: -32.81 km/sec	
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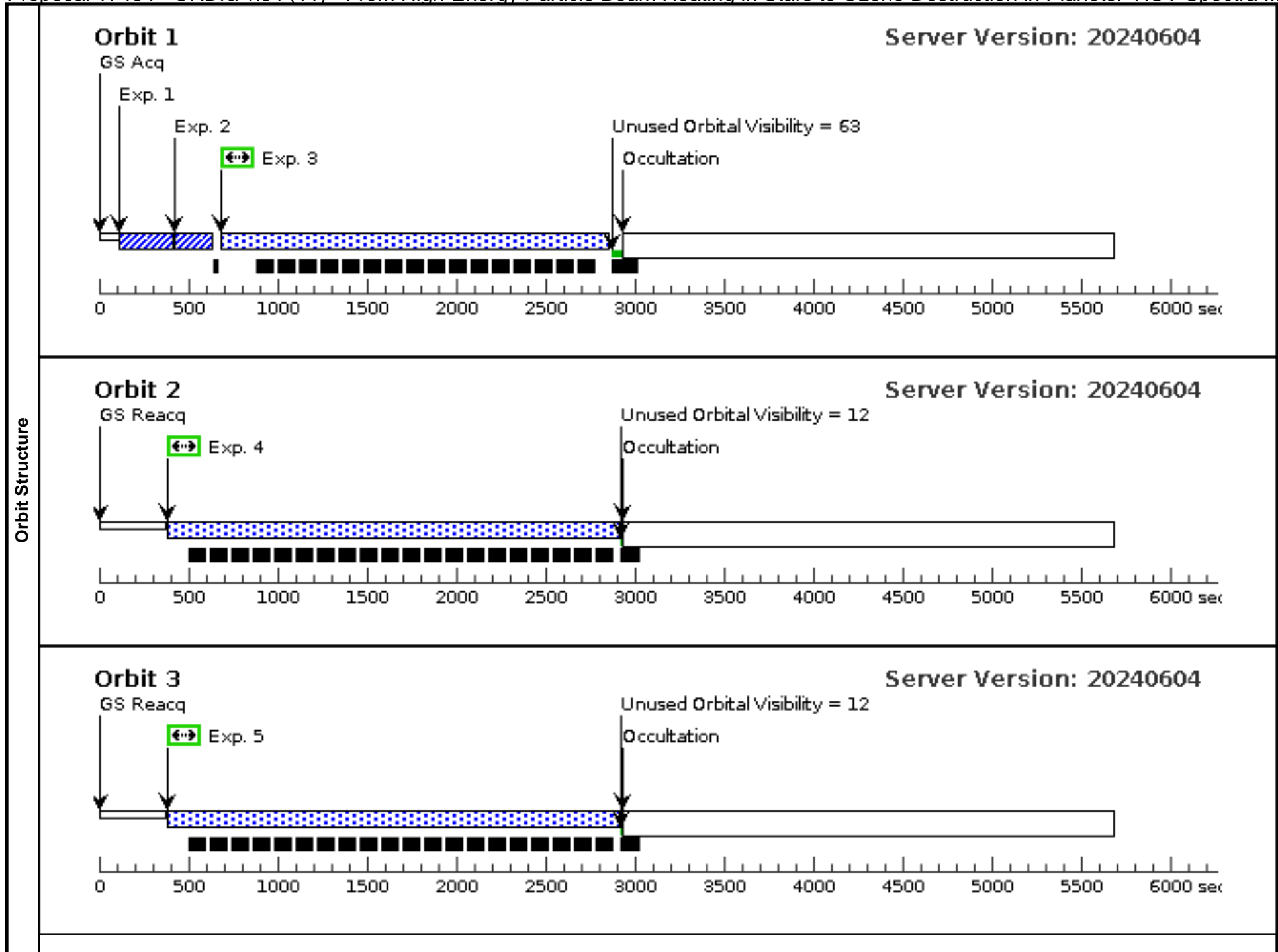
Proposal 17464 - CRDra-vis4 (11) - From High-Energy Particle Beam Heating in Stars to Ozone Destruction in Planets: NUV Spectra ...

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ-PEAK XD-CRDra- vis4-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: The exposure time for TA was determined by scaling by the U-band magnitude difference (delta mag = -3.5) compared to GJ 1243. The S/N is 55 per 12s dwell time for a Pickles model M2V scaled to U=1 2.0. It will be slightly larger S/N for a M1-type like CR Dra. We checked the Pickles model flux at 3000 Ang against a IUE/LWP spectrum of CR Dra.</p>									
2	ACQ-PEAK D-CRDra-vi s4-orb1 (COS.sa.189 0608)	(1) CRDRA	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			12.0 Secs (12 Secs) [==>]	[1]
<p>Comments: See comments for the ACQ-PEAKXD exposure.</p>									
3	Sci-CRDra- vis4orb1 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2084 Secs (2084 Secs) [==>]	[1]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
4	Sci-CRDra- vis4orb2 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[2]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
5	Sci-CRDra- vis4orb3 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[3]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
6	Sci-CRDra- vis4orb4 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[4]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									
7	Sci-CRDra- vis4orb5 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3			2515 Secs (2515 Secs) [==>]	[5]
<p>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</p> <p>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</p>									

Exposures

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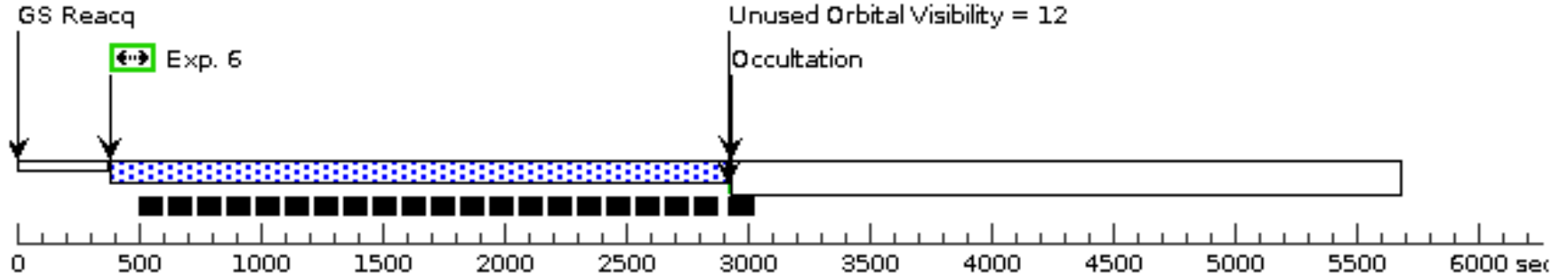
8	Sci-CRDra- vis4orb6 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[6]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
9	Sci-CRDra- vis4orb7 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[7]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							
10	Sci-CRDra- vis4orb8 (COS.sp.185 3663)	(1) CRDRA	COS/NUV, TIME-TAG, PSA	G230L 2950 A	BUFFER-TIME=12 0; FLASH=YES; FP-POS=3	2515 Secs (2515 Secs) [==>]	[8]
<p><i>Comments: Buffer time justification: COS.sp.1890594 says that in the event of a very large flare (Delta U-mag = -1.5 mags) on this star, the Buffer Fill Time is 185s. 2/3 of this is ~120s, and this is what we set for the Buffer time. The ETC Run # given above in the form (from the Phase A) is in the case of an enormous flare (delta U = -2.8mags), which we do not expect to occur on this star within our monitoring time.</i></p> <p><i>FP-POS = 3 is requested because we do not want to coadd data from individual FP-POS settings during our monitoring.</i></p>							



Orbit Structure

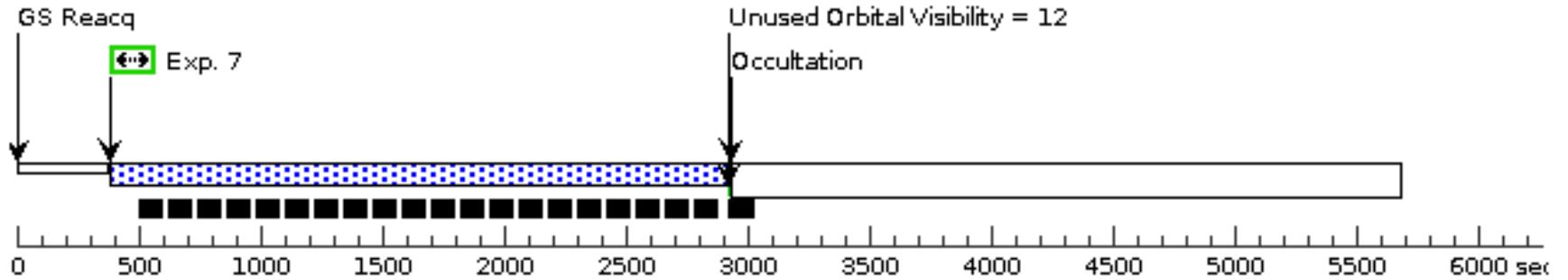
Orbit 4

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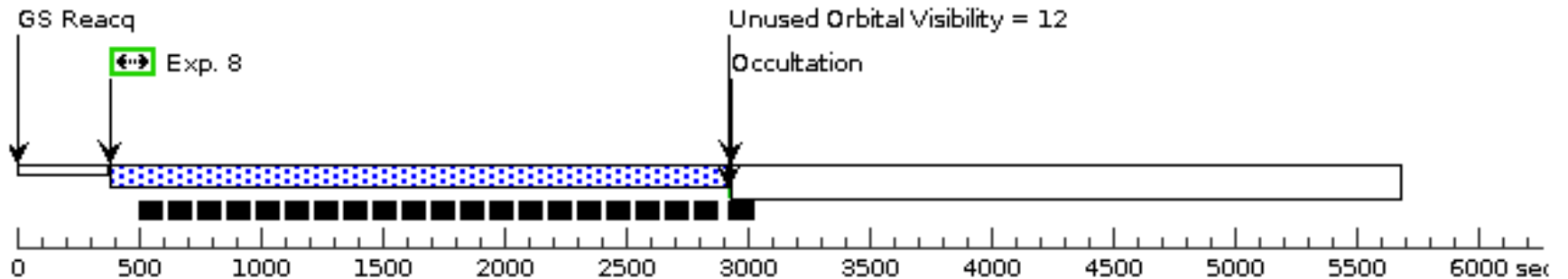
Orbit 5

Server Version: 20240604



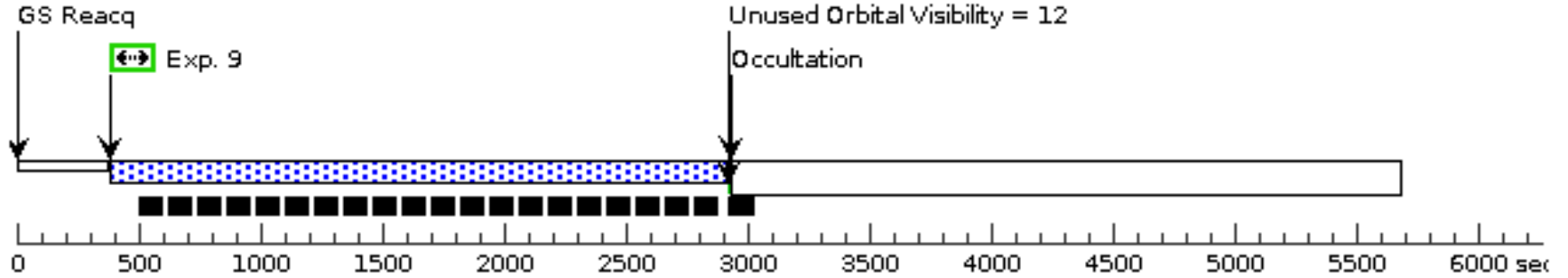
Orbit 6

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Orbit 7

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Orbit 8

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