17401 - Accreting white dwarfs as probes of compact binary evolution

Cycle: 31, Proposal Category: GO

(UV Initiative, Treasury)

(Availability Mode: AVAILABLE)

INVESTIGATORS

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Dr. Knox S. Long (CoI)	Eureka Scientific Inc.

VISITS

Visit	***Targets used in Visit***	***Configurations used in Visit***	***Orbits Used***	***Last Orbit Planner Run***	***OP Current with Visit?***
01	(1) 2MASS-J23375921+4308509	COS/FUV	2	19-Nov-2025 12:00:16.0	yes
02	(2) 1RXS-J022917.1-395851	COS/FUV	2	19-Nov-2025 12:00:17.0	yes
03	(3) GD-1662	COS/FUV	4	19-Nov-2025 12:00:17.0	yes
04	(4) HS-0506+7725	COS/FUV	3	19-Nov-2025 12:00:18.0	yes
05	(5) V-V794-AQL	COS/FUV	3	19-Nov-2025 12:00:18.0	yes
06	(6) V-V442-OPH	COS/FUV	2	19-Nov-2025 12:00:19.0	yes
38	(38) SDSS-J152509.57+360054.5	COS/FUV COS/NUV	5	19-Nov-2025 12:00:20.0	yes
43	(43) WD-J104019.50-495129.7	COS/FUV COS/NUV	3	19-Nov-2025 12:00:21.0	yes
4G	(43) WD-J104019.50-495129.7	S/C	1	19-Nov-2025 12:00:21.0	yes
4H	(44) WD-J104019.50-4951-SAFE-TARGET	COS/FUV COS/NUV	3	19-Nov-2025 12:00:22.0	yes
20	(20) V-LL-LYR	COS/FUV	3	19-Nov-2025 12:00:23.0	yes
2A	(20) V-LL-LYR	S/C	1	19-Nov-2025 12:00:23.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
2B	(21) V-LL-LYR-SAFE-TGT	COS/FUV	3	19-Nov-2025 12:00:23.0	yes

35 Total Orbits Used

ABSTRACT

In the last 20 years, the study of compact interacting binaries has led to two major breakthroughs in astrophysics: the discovery of dark energy and the first detection of gravitational waves. Although binaries are critically important to probe the properties of the Universe and to test fundamental physical theories, our understanding of their evolution and final fate is still far from being complete.

Accreting white dwarfs are ideal laboratories in which to test the models of compact binary evolution. We here propose a COS Treasury program specifically designed to explore those regions of the parameter space that have been previously poorly studied and where major discrepancies between the theory and observations are found. Combining the high-quality ultraviolet data with the parallaxes from Gaia, we will accurately measure effective temperatures, masses and accretion rates for 43 accreting white dwarfs (the minimum number required to homogeneously sample the entire physical parameter space spanned by this diverse population) thereby testing the mechanisms of angular momentum loss which drive the evolution of all kinds of binaries. The white dwarf masses are a key ingredient in the pathway toward Supernova Type Ia explosions and by obtaining their accurate values, we will constrain both the single and the double-detonation scenarios. Finally, only the ultraviolet allows the detection of the nitrogen and carbon resonance lines. From their abundances, we will establish the formation channel for the most compact systems, which will later be used to verify the performance of the space-mission LISA and calibrate the detector for future gravitational wave source discoveries.

OBSERVING DESCRIPTION

The aim of this program is to obtain far-ultraviolet COS/G140L and STIS/E140M spectroscopy of 43 accreting white dwarfs (WDs). While past HST observations have studied in detail systems in the range 70 min $< P_{orb} <$ 150 min, very few observations have been obtained of long- ($P_{orb} >$ 150 min) and short- ($P_{orb} <$ 60 min) period accreting WDs, which are therefore the targets of this proposal. We have screened the literature for systems that are bright enough to be observed in 3-5 HST orbits each. The set of targets was chosen to ensure a homogeneous sampling across the Porb range and to maximise the chances of detecting the white dwarf in the UV, and avoiding frequently outbursting systems.

The actual observations are relatively straight-forward: target acquisition, depending on the target brightness, will be done with NUV imaging, or in dispersed light using the G140L grating. The coordinates and proper motions are drawn from Gaia EDR3, hence we do not precede the observations with a search pattern. Depending on the target brightness, the COS G140L spectroscopy will extend over 2, 3, 4, 5 or 6 orbits. We will make use of all 4 FP-POS positions.

Our targets can be divided in two sub-classes according to their observational properties:
1) Dwarf novae: systems characterised by quiescent states of low-mass transfer rates onto the WD, interrupted by bright disc outbursts, during which the binary typically brightens by 2-5 magnitudes. In order to ensure that HST spectroscopy is obtained during quiescence, when the WD is the dominant emission source and safe to be observed, we will obtain intensive continuous ground-based monitoring up until 24 h prior to the HST observations.
2) Nova-likes: systems in the period range 180 min < Porb < 240 min are typically characterised by high average accretion rates which keep the disc in a stable hot state, equivalent to a permanent outburst. Occasionally the accretion rate drastically drops ("low state"), unveiling the WD. Our sample contains nine systems falling in this category. We will photometrically monitor them from the ground and the HST observations will be triggered via a non-disruptive ToO only once a low state is detected. We expect to detect ~3 systems in low state per year and the observations of these targets will be carried out over the over the next three cycles, in order to observe nine of these systems by the end of the program.

Several of the targets are eclipsing (GS Pav, V1239 Her, 2MASS J15445360+2553488, YZ LMi, ZTFJ040749.30-000716.67, ASASSN-14cn, ZTF-J2252-0519). We have included their ephemeris in order for the target acquisition to be scheduled such that it avoids the eclipse (in a similar strategy as that of HST program 12870).

Impact of reduced-gyro operations:
For the dwarf nova targets, we do not expect major impacts on our program in case of reduced-gyro operations. Prolonged acquisition procedures will not significantly affect the SNR we can achieve, while a possible extension of our program into the next cycle will not preclude our science goals, nor affect in any way the feasibility of our observations.
Instead, with time critical observations becoming much more difficult to schedule, reduced-gyro operations could potentially affect the observations of the nova-like targets, for which long-term non-disruptive ToOs are necessary. The additional nova-likes targets we have include can possibility mitigate the limitations related to reduced-gyro operations by offering (i) alternative pointings that can compensate for the limited sky accessibility, (ii) alternative observing windows that could be more easily included in the schedule.

Visit

Proposal 17401, 2MASS-J23375921+4308509 (01), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 15-JUN-2021:00:00:00 AND 15-JAN-2022:00:00:00; BETWEEN 15-JUN-2022:00:00:00 AND 15-JAN-2023:00:00:00; BETWEEN 15-JUN-2023:00:00:00 AND 15-JAN-2024:00:00:00; BETWEEN 15-JUN-2024:00:00:00 AND 15-JAN-2025:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(2MASS-J23375921+4308509 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

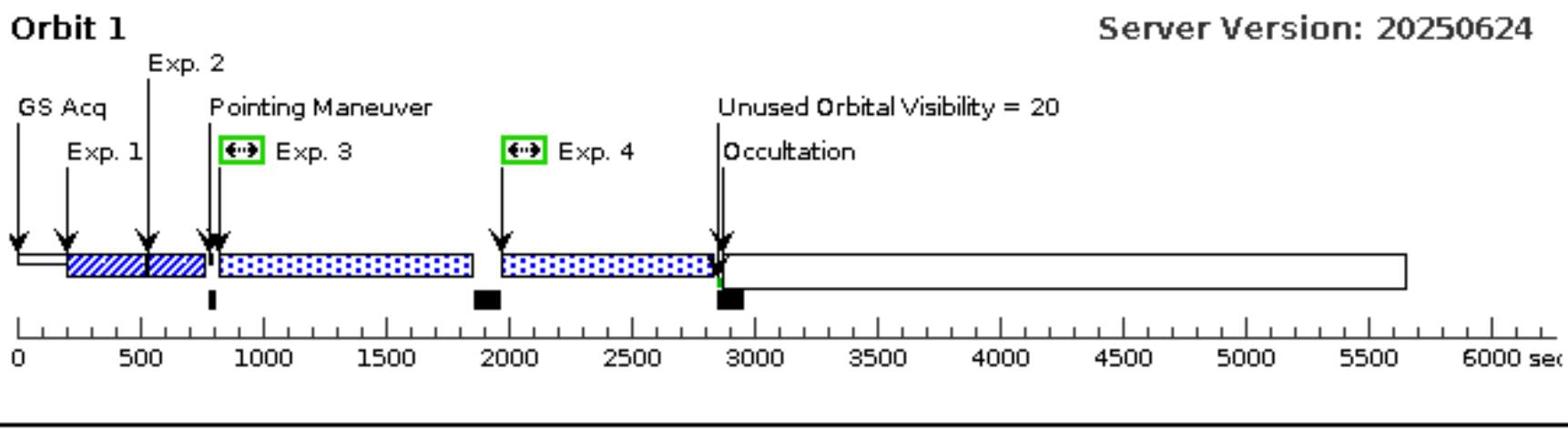
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	2MASS-J23375921+4308509	RA: 23 37 59.2215 (354.4967563d) Dec: +43 08 50.89 (43.14747d) Equinox: J2000	Proper Motion RA: 5.05944115231642 mas/yr Proper Motion Dec: -8.709179843108805 mas/yr Parallax: 0.0011740599949903849" Epoch of Position: 2016.0	V=14.31+/-0.08 NUV = 17.49, Gaia EDR3 1925596502097065344, G=16.2, parallax = 1.17(4) mas.	Reference Frame: ICRS

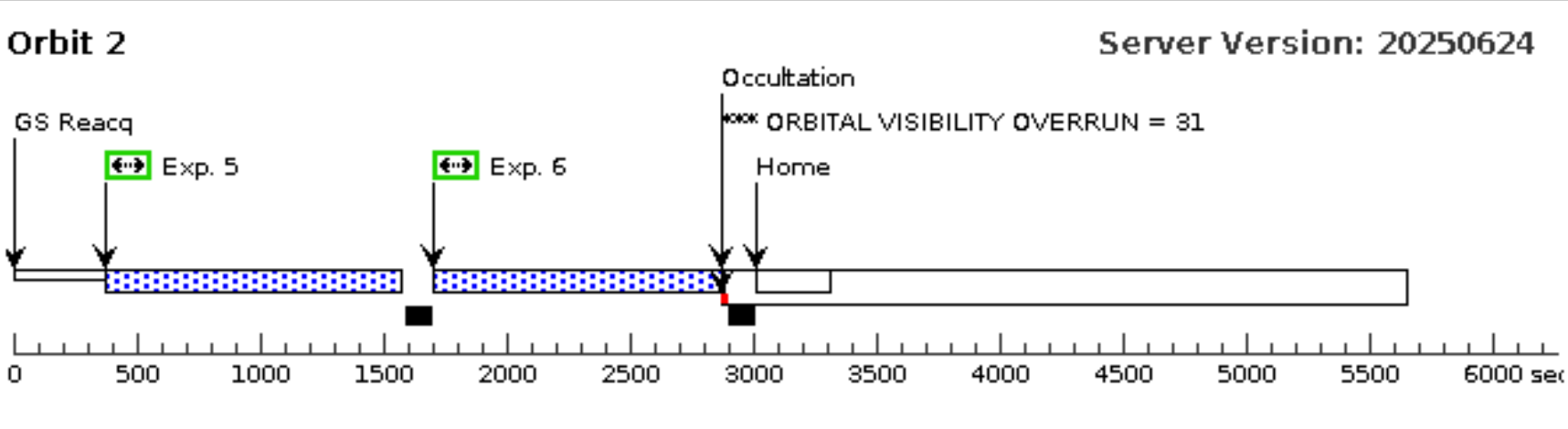
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (1527541)	(1) 2MASS-J23375921+4308509	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			17 Secs (17 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 2 more magnitudes.									
2	ACQ/PEAK D (1527541)	(1) 2MASS-J23375921+4308509	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			17 Secs (17 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 2 more magnitudes.									
3	FP-POS=1 (1527545)	(1) 2MASS-J23375921+4308509	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=872; LIFETIME-POS=LP3			872 Secs (872 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
4	FP-POS=2 (1527545)	(1) 2MASS-J23375921+4308509	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=872; LIFETIME-POS=LP3			806 Secs (806 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
5	FP-POS=3 (1527545)	(1) 2MASS-J23375921+4308509	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=1146; LIFETIME-POS=LP3			1146 Secs (1146 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
6	FP-POS=4 (1527545)	(1) 2MASS-J23375921+4308509	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=1146; LIFETIME-POS=LP3			1130 Secs (1130 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									

Orbit Structure





Visit

Proposal 17401, 1RXS-J022917.1-395851 (02), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 30-JUN-2021:00:00:00 AND 22-FEB-2022:00:00:00; BETWEEN 30-JUN-2022:00:00:00 AND 22-FEB-2023:00:00:00; BETWEEN 30-JUN-2023:00:00:00 AND 22-FEB-2024:00:00:00; BETWEEN 30-JUN-2024:00:00:00 AND 22-FEB-2025:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(1RXS-J022917.1-395851 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

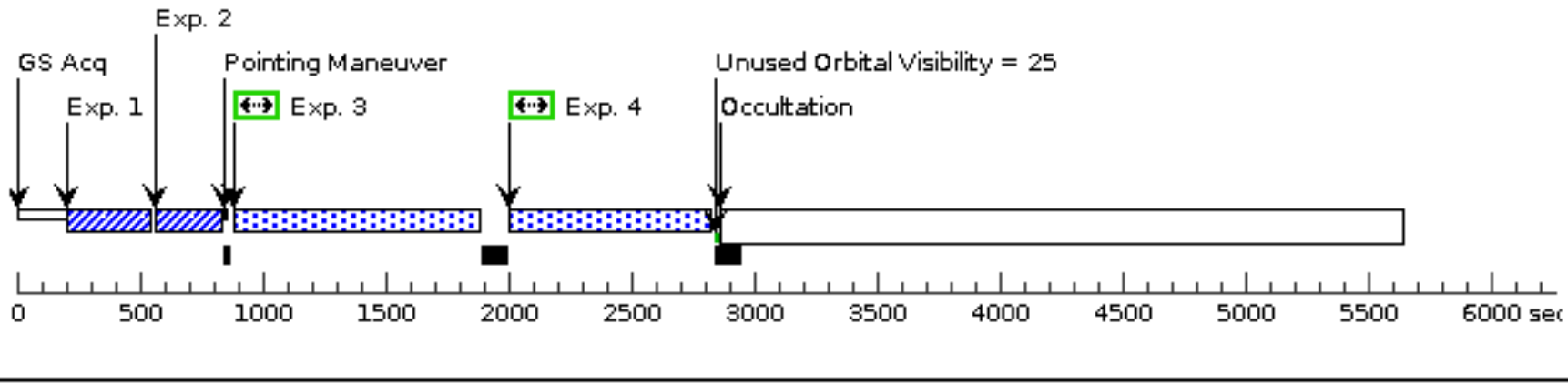
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	1RXS-J022917.1-395851	RA: 02 29 17.0025 (37.3208438d) Dec: -39 59 1.61 (-39.98378d) Equinox: J2000	Proper Motion RA: 42.614043637291694 mas/yr Proper Motion Dec: 2.7212311407274634 mas/yr Parallax: 0.0020367016033755827" Epoch of Position: 2016.0	V=13.52+/-0.05 FUV = 13.4, Gaia EDR3 4951395327129718528, G=13.5, parallax = 2.04(1) mas.	Reference Frame: ICRS

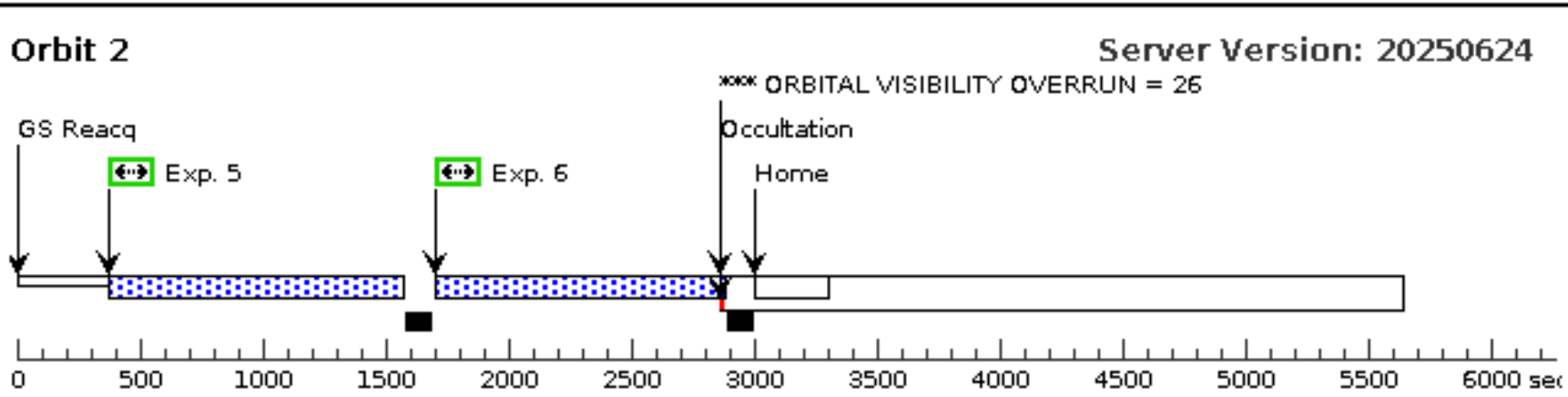
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1527549)	(2) 1RXS-J022917.1-395851	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			25 Secs (25 Secs) *[==>]*	***[1]***
	Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 2 more magnitudes.								
2	ACQ/PEAKD (1527549)	(2) 1RXS-J022917.1-395851	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			25 Secs (25 Secs) *[==>]*	***[1]***
	Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 2 more magnitudes.								
3	FP-POS=1 (1527551)	(2) 1RXS-J022917.1-395851	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=8399; LIFETIME-POS=LP3			839 Secs (839 Secs) *[==>]*	***[1]***
	Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).								
4	FP-POS=2 (1527551)	(2) 1RXS-J022917.1-395851	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=8399; LIFETIME-POS=LP3			768 Secs (768 Secs) *[==>]*	***[1]***
	Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).								
5	FP-POS=3 (1527551)	(2) 1RXS-J022917.1-395851	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=1145; LIFETIME-POS=LP3			1145 Secs (1145 Secs) *[==>]*	***[2]***
	Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).								
6	FP-POS=4 (1527551)	(2) 1RXS-J022917.1-395851	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=1145; LIFETIME-POS=LP3			1124 Secs (1124 Secs) *[==>]*	***[2]***
	Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).								

Orbit Structure





Visit

Proposal 17401, GD-1662 (03), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 23-OCT-2023:00:00:00 AND 25-NOV-2023:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(GD-1662 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(GD-1662 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(GD-1662 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

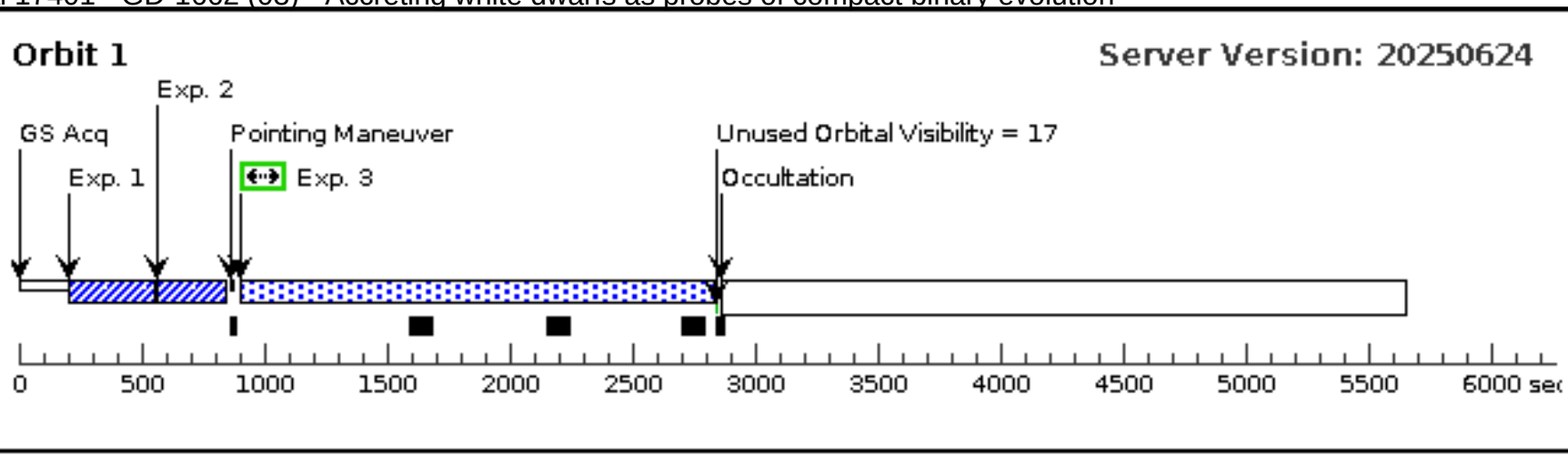
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	GD-1662	RA: 23 29 0.4543 (352.2518929d) Dec: -29 46 46.08 (-29.77947d) Equinox: J2000	Proper Motion RA: -13.847933168928266 mas/yr Proper Motion Dec: -6.005677448492444 mas/yr Parallax: 0.001640177333531042" Epoch of Position: 2016.0	V=13.2+/-0.3 FUV=14.0, NUV=13.8, Gaia EDR3 2329317895999827840, G=13.6, parallax = 1.64(2) mas.	Reference Frame: ICRS

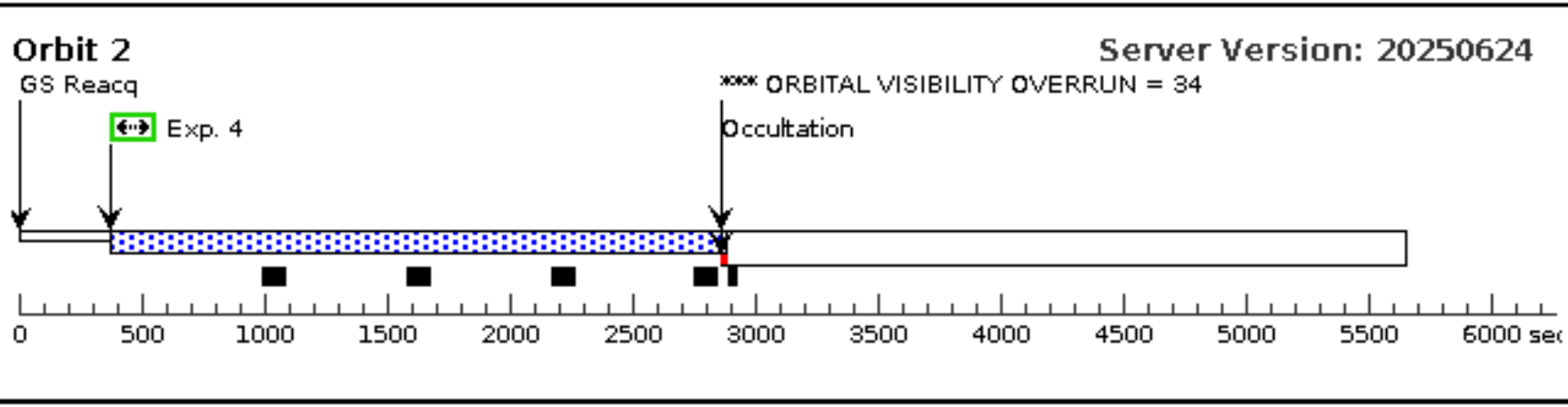
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

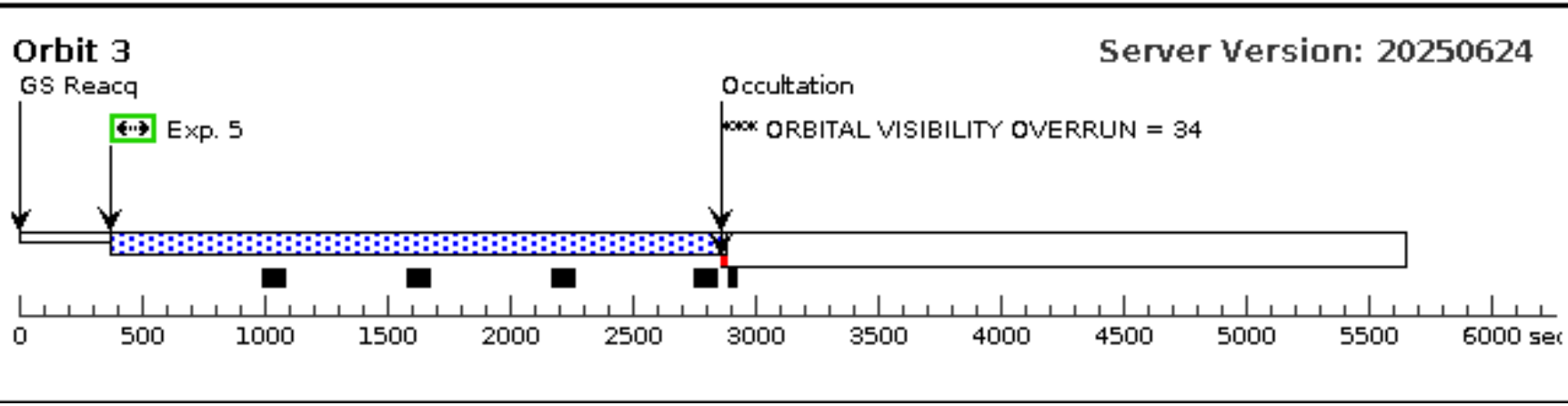
Exposures

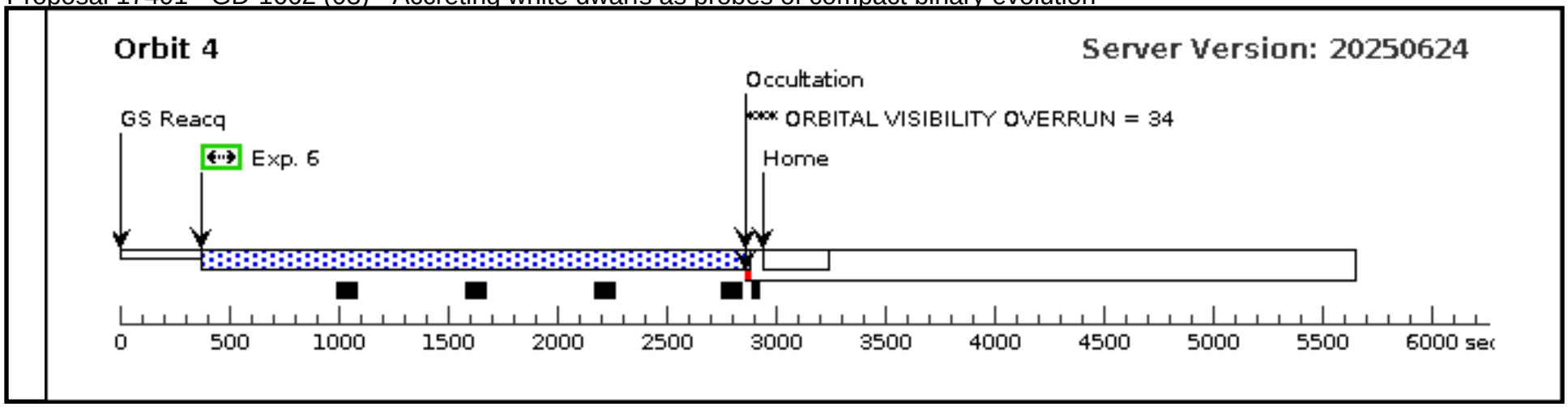
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1527561)	(3) GD-1662	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			27 Secs (27 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to FUV=16.6 (as measured from IUE data obtained in low state), through the ETC. The exposure time allows for the system fading another magnitude.									
2	ACQ/PEAKD (1527561)	(3) GD-1662	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			27 Secs (27 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to FUV=16.6 (as measured from IUE data obtained in low state), through the ETC. The exposure time allows for the system fading another magnitude.									
3	FP-POS=1 (1527563)	(3) GD-1662	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=5555; LIFETIME-POS=LP3			1776 Secs (1776 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short to avoid overflow, in case the system is observed in abrighter state than the low state minimum.									
4	FP-POS=2 (1527563)	(3) GD-1662	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=5866; LIFETIME-POS=LP3			2454 Secs (2454 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short to avoid overflow, in case the system is observed in abrighter state than the low state minimum.									
5	FP-POS=3 (1527563)	(3) GD-1662	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=5866; LIFETIME-POS=LP3			2454 Secs (2454 Secs) *[==>]*	***[3]***
Comments: Buffer-time set conservatively short to avoid overflow, in case the system is observed in abrighter state than the low state minimum.									
6	FP-POS=4 (1527563)	(3) GD-1662	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=5866; LIFETIME-POS=LP3			2454 Secs (2454 Secs) *[==>]*	***[4]***
Comments: Buffer-time set conservatively short to avoid overflow, in case the system is observed in abrighter state than the low state minimum.									

Orbit Structure








Orbit 4
Server Version: 20250624
Occultation
GS Reacq
**** ORBITAL VISIBILITY OVERRUN = 34
Exp. 6
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0
500
1000
1500
2000
2500
3000
3500
4000
4500
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5500
6000 sec

Visit

Proposal 17401, HS-0506+7725 (04), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 01-SEP-2021:00:00:00 AND 05-APR-2022:00:00:00; BETWEEN 01-SEP-2022:00:00:00 AND 05-APR-2023:00:00:00; BETWEEN 01-SEP-2023:00:00:00 AND 05-APR-2024:00:00:00; BETWEEN 01-SEP-2024:00:00:00 AND 05-APR-2025:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(HS-0506+7725 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(HS-0506+7725 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

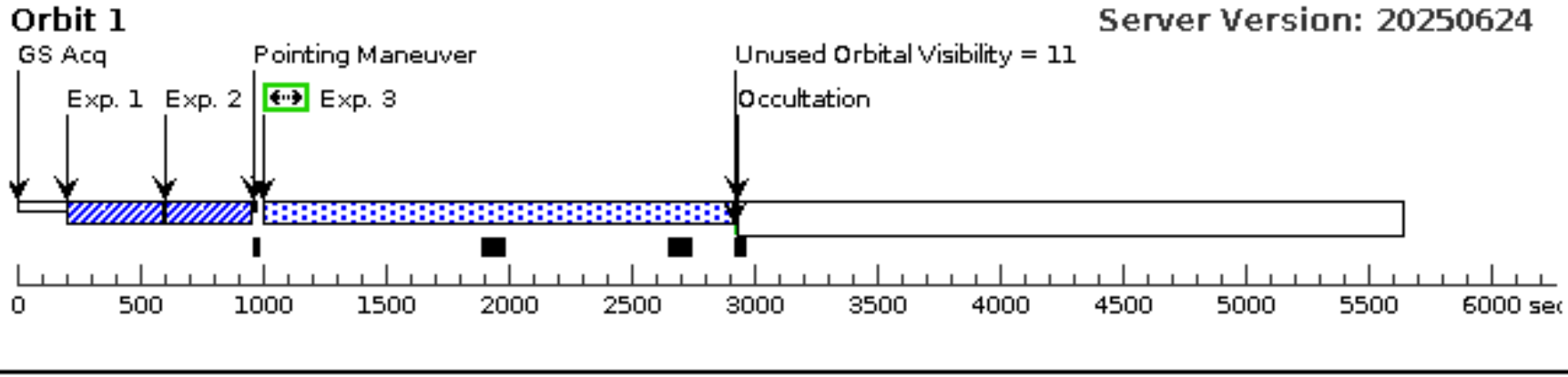
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	HS-0506+7725	RA: 05 13 36.5757 (78.4023988d) Dec: +77 28 42.67 (77.47852d) Equinox: J2000	Proper Motion RA: 1.2821538884881634 mas/yr Proper Motion Dec: -6.849241478209648 mas/yr Parallax: 0.001085954010123805" Epoch of Position: 2016.0	V=14.7 FUV=16.5, NUV=16.5, Gaia EDR3 5521586977692176 64, G=15.04, parallax = 1.09(2) mas.	Reference Frame: ICRS

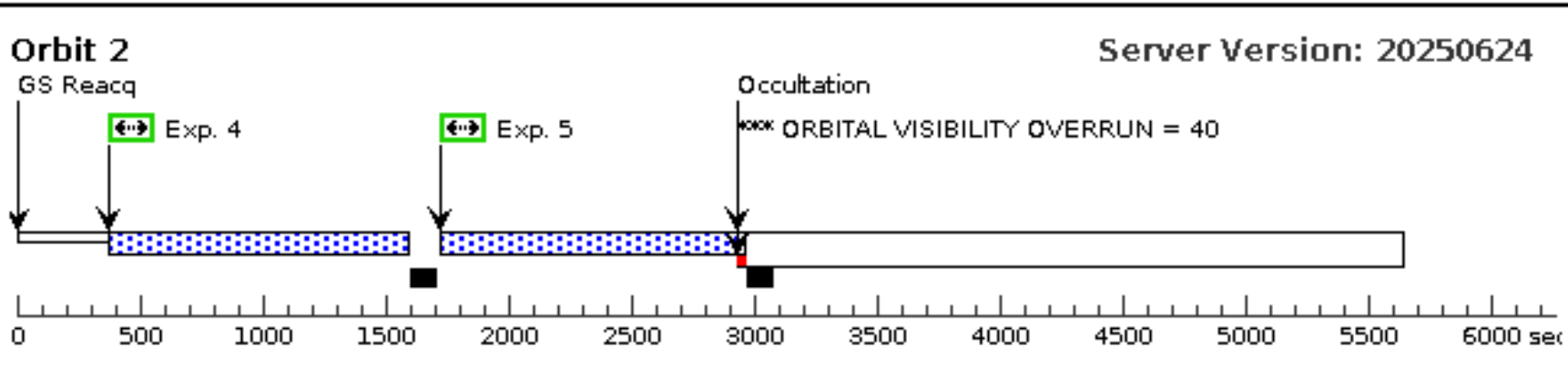
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

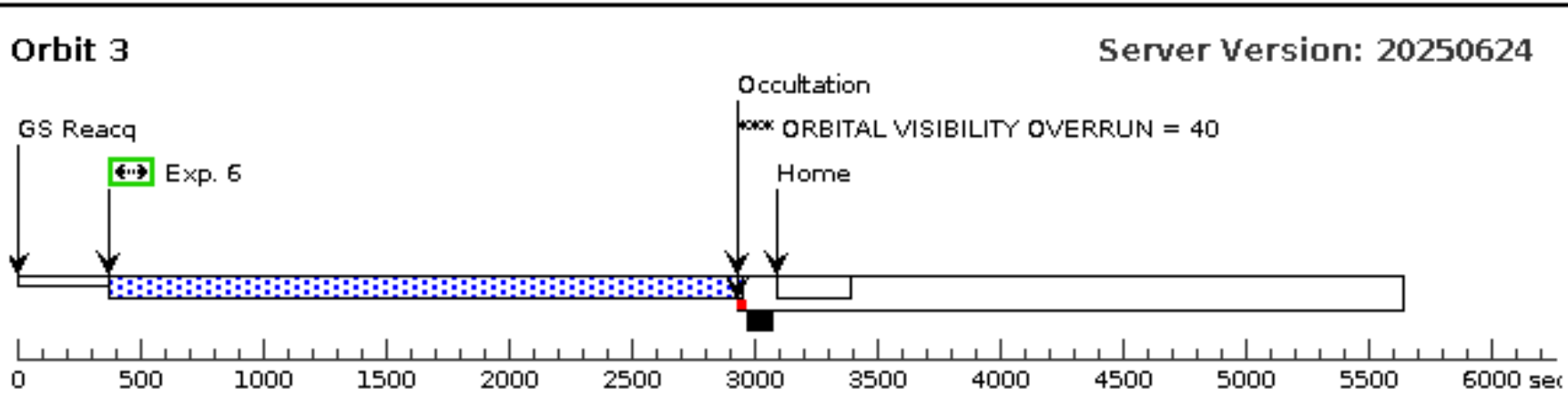
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1527733)	(4) HS-0506+7725	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			40 Secs (40 Secs) *[==>]*	***[1]***
Comments: Exposure time based on a 50000K WD model, scaled to the distance to the system, but conservatively allowing for the target fading two more magnitudes.									
2	ACQ/PEAKD (1527733)	(4) HS-0506+7725	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			40 Secs (40 Secs) *[==>]*	***[1]***
Comments: Exposure time based on a 50000K WD model, scaled to the distance to the system, but conservatively allowing for the target fading two more magnitudes.									
3	FP-POS=1 (1527737)	(4) HS-0506+7725	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=752; LIFETIME-POS=LP3			1750 Secs (1750 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
4	FP-POS=2 (1527737)	(4) HS-0506+7725	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=1185; LIFETIME-POS=LP3			1165 Secs (1165 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
5	FP-POS=3 (1527737)	(4) HS-0506+7725	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=1186; LIFETIME-POS=LP3			1186 Secs (1186 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
6	FP-POS=4 (1527737)	(4) HS-0506+7725	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=2552; LIFETIME-POS=LP3			2532 Secs (2532 Secs) *[==>]*	***[3]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									

Orbit Structure







Visit

Proposal 17401, V-V794-AQL (05), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 18-APR-2021:00:00:00 AND 08-NOV-2021:00:00:00; BETWEEN 18-APR-2022:00:00:00 AND 08-NOV-2022:00:00:00; BETWEEN 18-APR-2023:00:00:00 AND 08-NOV-2023:00:00:00; BETWEEN 18-APR-2024:00:00:00 AND 08-NOV-2024:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(V-V794-AQL (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(V-V794-AQL (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

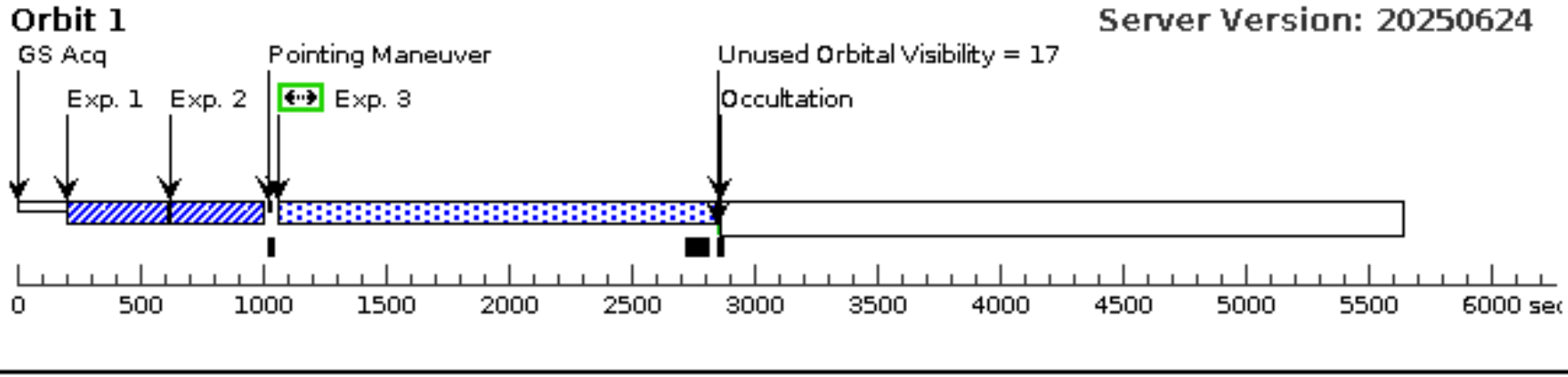
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-V794-AQL	RA: 20 17 33.8730 (304.3911375d) Dec: -03 39 51.19 (-3.66422d) Equinox: J2000	Proper Motion RA: -40.13430224001505 mas/yr Proper Motion Dec: -14.632375673806653 mas/yr Parallax: 0.0015277963634299084" Epoch of Position: 2016.0	V=14.7 FUV = 16.2, Gaia EDR3 4222299752184927616, G=14.8, parallax = 1.53(3) mas.	Reference Frame: ICRS

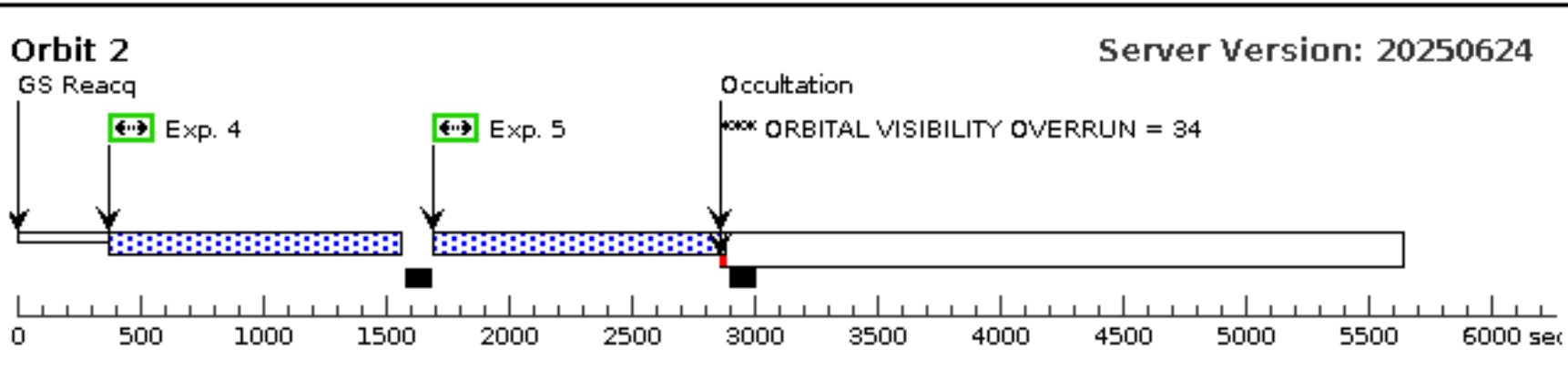
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

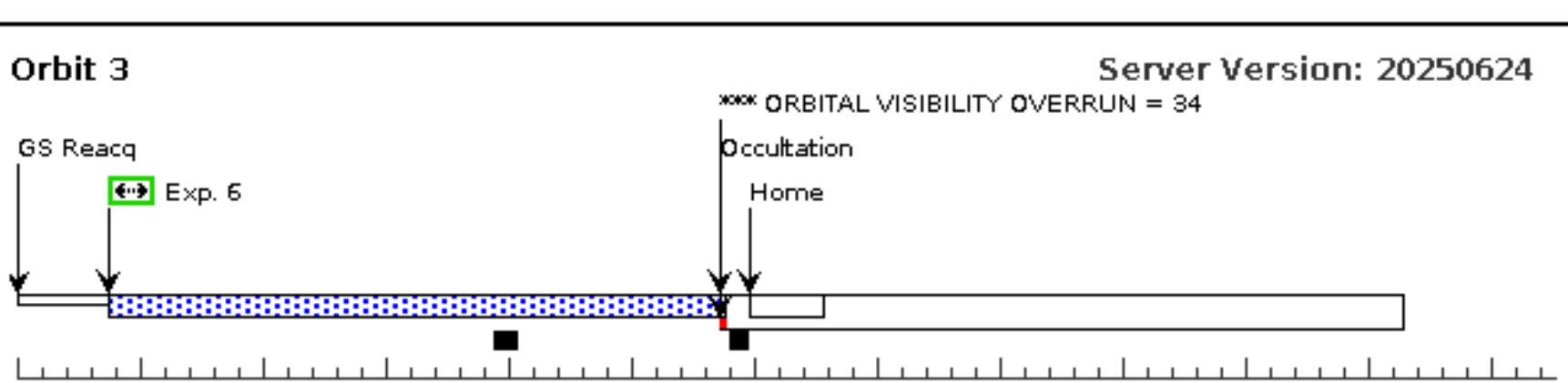
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1527706)	(5) V-V794-AQL	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			47 Secs (47 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 1 more magnitudes.									
2	ACQ/PEAKD (1527706)	(5) V-V794-AQL	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			47 Secs (47 Secs) *[==>]*	***[1]***
Comments: I ran a WD spectrum with Teff=50000K, scaled to the distance to the system, through the ETC. The exposure time allows for the system fading 1 more magnitudes.									
3	FP-POS=1 (1527716)	(5) V-V794-AQL	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=1527; LIFETIME-POS=LP3			1619 Secs (1619 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
4	FP-POS=2 (1527716)	(5) V-V794-AQL	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=1141; LIFETIME-POS=LP3			1141 Secs (1141 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
5	FP-POS=3 (1527716)	(5) V-V794-AQL	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=1140; LIFETIME-POS=LP3			1135 Secs (1135 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
6	FP-POS=4 (1527716)	(5) V-V794-AQL	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=1527; LIFETIME-POS=LP3			2457 Secs (2457 Secs) *[==>]*	***[3]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									

Orbit Structure







Visit

Proposal 17401, V-V442-OPH (06), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; BETWEEN 07-MAR-2022:00:00:00 AND 10-OCT-2022:00:00:00; BETWEEN 07-MAR-2023:00:00:00 AND 10-OCT-2023:00:00:00; BETWEEN 07-MAR-2024:00:00:00 AND 10-OCT-2024:00:00:00; BETWEEN 07-MAR-2025:00:00:00 AND 10-OCT-2025:00:00:00; ON HOLD ; TOO RESPONSE TIME 21.0D

On Hold Comments: LONG-TERM TOO
This is one of the targets in which the white dwarf is visible only during a low state. We will trigger the ToO when the occurrence of a low state is detected by our ground-based monitoring.

Diagnostics

(V-V442-OPH (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

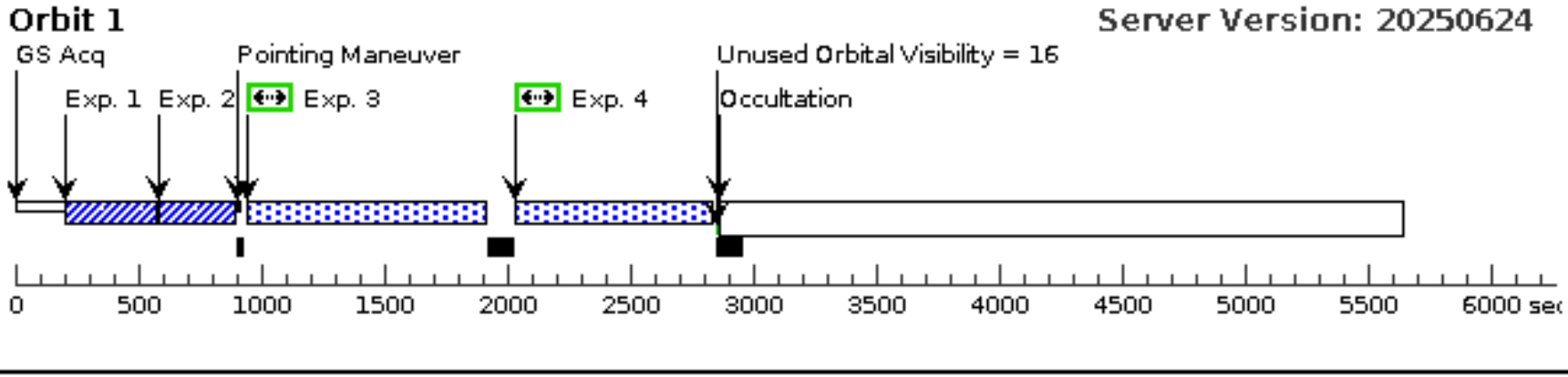
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-V442-OPH	RA: 17 32 15.1318 (263.0630492d) Dec: -16 15 22.01 (-16.25611d) Equinox: J2000	Proper Motion RA: -3.9615056735586376 mas/yr Proper Motion Dec: 3.5013410220099415 mas/yr Parallax: 0.002070837745656075" Epoch of Position: 2016.0	V=13.4 FUV=16.7, NUV=16.5, G=13.9, Gaia EDR3 4124654392314770 048, G=parallax=2.07(1) mas.	Reference Frame: ICRS

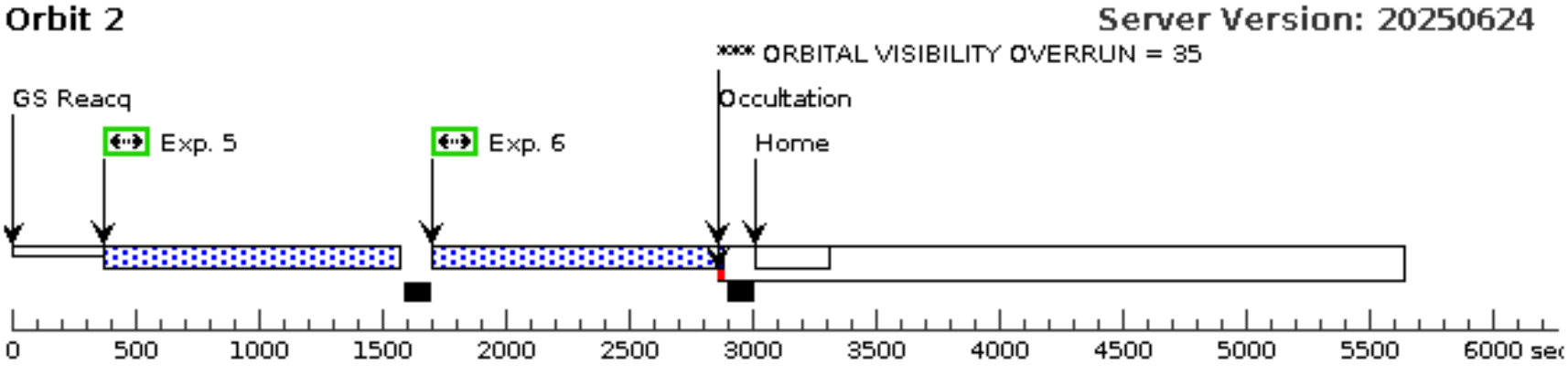
Comments:
Category=STAR
Description=[INTERACTING BINARY, IRREGULAR VARIABLE, NOVA-LIKE]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1527475)	(6) V-V442-OPH	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			32 Secs (32 Secs) *[==>]*	*[1]*
Comments: I ran a WD spectrum with Teff=50000K, scaled to FUV=16.8 (as measured from Galex photometry in low state), through the ETC. The exposure time allows for the system fading another magnitude.									
2	ACQ/PEAKD (1527475)	(6) V-V442-OPH	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			32 Secs (32 Secs) *[==>]*	*[1]*
Comments: I ran a WD spectrum with Teff=50000K, scaled to FUV=16.8 (as measured from Galex photometry in low state), through the ETC. The exposure time allows for the system fading another magnitude.									
3	FP-POS=1 (1527650)	(6) V-V442-OPH	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=812; LIFETIME-POS=LP3			812 Secs (812 Secs) *[==>]*	*[1]*
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
4	FP-POS=2 (1527650)	(6) V-V442-OPH	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=812; LIFETIME-POS=LP3			746 Secs (746 Secs) *[==>]*	*[1]*
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
5	FP-POS=3 (1527650)	(6) V-V442-OPH	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=1146; LIFETIME-POS=LP3			1146 Secs (1146 Secs) *[==>]*	*[2]*
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									
6	FP-POS=4 (1527650)	(6) V-V442-OPH	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=1146; LIFETIME-POS=LP3			1130 Secs (1130 Secs) *[==>]*	*[2]*
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the low state).									

Orbit Structure





Visit

Proposal 17401, SDSS-J152509.57+360054.5 (38), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 01-MAR-2025:00:00:00 AND 13-MAR-2025:00:00:00; BETWEEN 19-MAR-2025:00:00:00 AND 10-APR-2025:00:00:00; BETWEEN 18-APR-2025:00:00:00 AND 07-MAY-2025:00:00:00; BETWEEN 16-MAY-2025:00:00:00 AND 05-JUN-2025:00:00:00

Diagnostics

(SDSS-J152509.57+360054.5 (38)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(SDSS-J152509.57+360054.5 (38)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(SDSS-J152509.57+360054.5 (38)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(SDSS-J152509.57+360054.5 (38)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

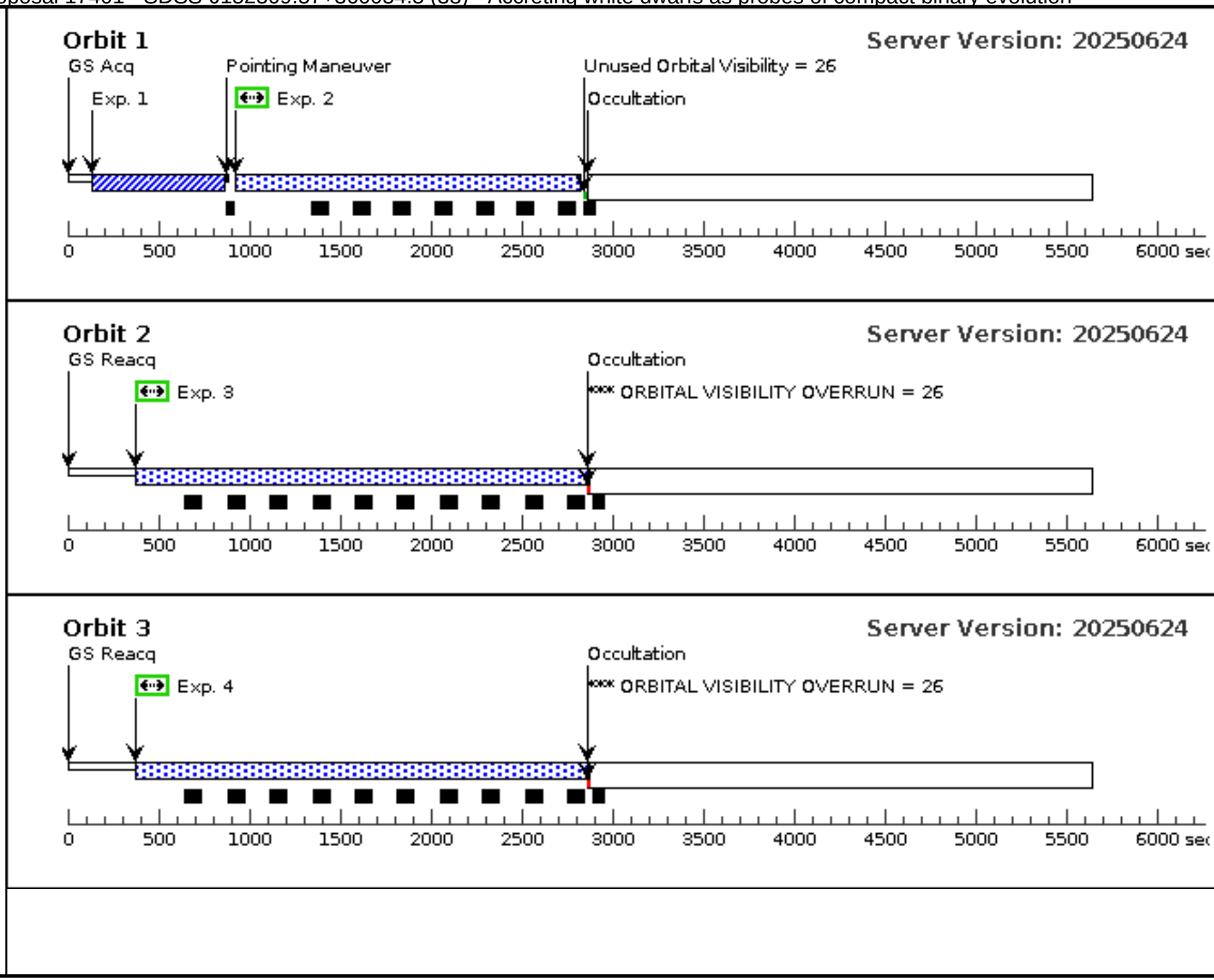
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(38)	SDSS-J152509.57+360054.5	RA: 15 25 9.5732 (231.2898883d) Dec: +36 00 54.41 (36.01511d) Equinox: J2000	Proper Motion RA: 4.986026977395869 mas/yr Proper Motion Dec: -15.85931643659449 mas/yr Parallax: 0.00196588153504011" Epoch of Position: 2016.0	V=19.64 FUV=20.1, NUV=19.5, Gaia EDR3 1375131155313563136, G=19.8, parallax=1.9(2) mas.	Reference Frame: ICRS

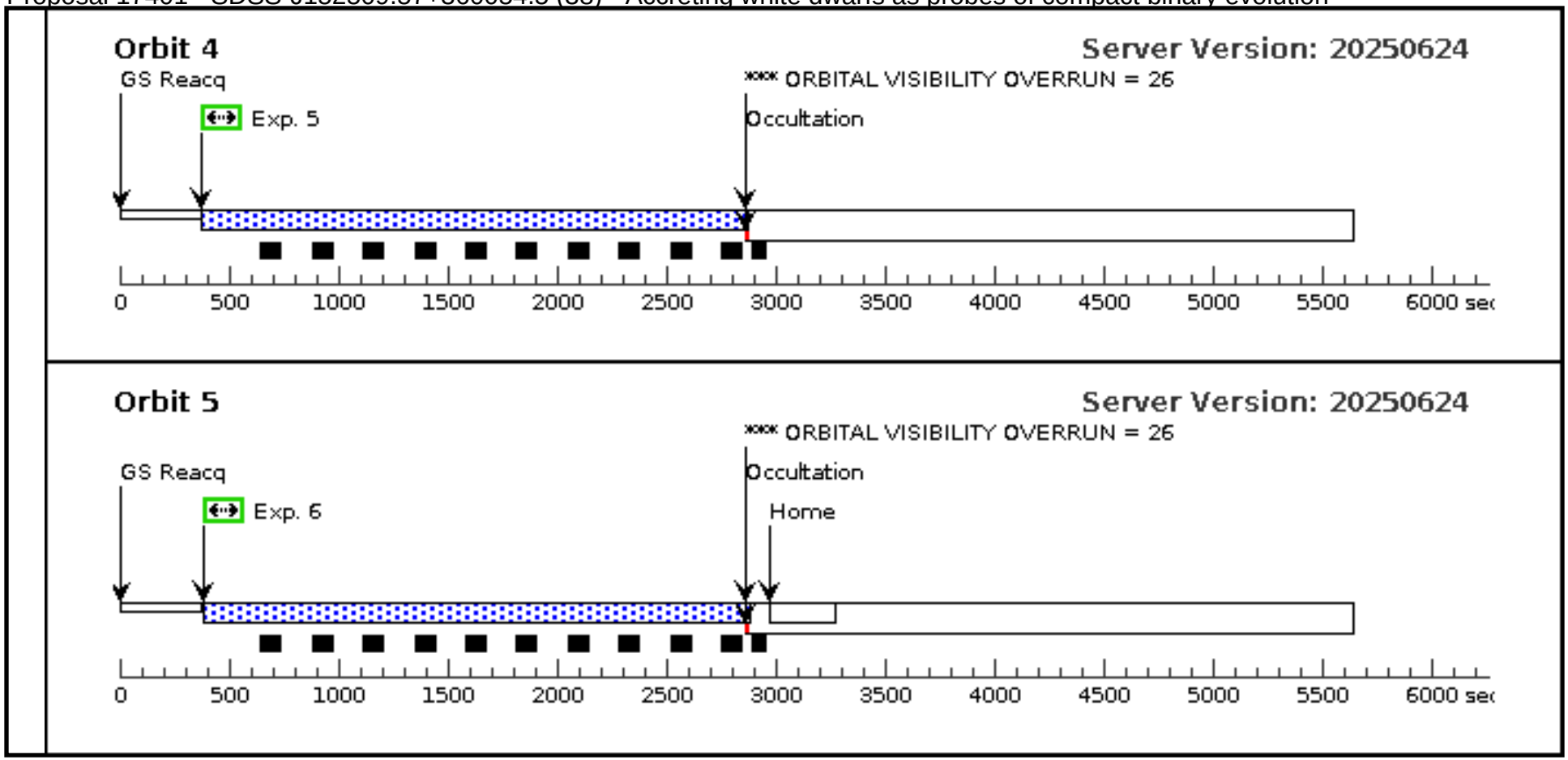
Comments: No V magnitude available, reporting u-SDSS magnitude instead.
Category=STAR
Description=[ACCRETION DISK, DWARF NOVA, INTERACTING BINARY, IRREGULAR VARIABLE]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (1529618)	(38) SDSS-J152509.57+360054.5	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				210 Secs (210 Secs) *[==>]*	***[1]***
2	FP-POS=1 (1529621)	(38) SDSS-J152509.57+360054.5	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=226; LIFETIME-POS=LP3			1693 Secs (1693 Secs) *[==>]*	***[1]***
3	FP-POS=2 (1529621)	(38) SDSS-J152509.57+360054.5	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=234; LIFETIME-POS=LP3			2450 Secs (2450 Secs) *[==>]*	***[2]***
4	FP-POS=3 (1529621)	(38) SDSS-J152509.57+360054.5	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=234; LIFETIME-POS=LP3			2450 Secs (2450 Secs) *[==>]*	***[3]***
5	FP-POS=4 (1529621)	(38) SDSS-J152509.57+360054.5	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=234; LIFETIME-POS=LP3			2450 Secs (2450 Secs) *[==>]*	***[4]***
6	FP-POS=4 (1529621)	(38) SDSS-J152509.57+360054.5	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=234; LIFETIME-POS=LP3			2450 Secs (2450 Secs) *[==>]*	***[5]***

Orbit Structure




Orbit 4
Server Version: 20250624
GS Reacq
Exp. 5
**** ORBITAL VISIBILITY OVERRUN = 26
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 5
Server Version: 20250624
**** ORBITAL VISIBILITY OVERRUN = 26
GS Reacq
Occultation
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17401, WD-J104019.50-495129.7 (43), implementation Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; ORIENT 170D TO 45 D; BETWEEN 01-NOV-2025:00:00:00 AND 01-DEC-2025:00:00:00

Comments: This should be scheduled in the evening local-time on a Thursday or Friday. Flags need to be cleared during the work day. Weekends and holidays are to be avoided since the CS must clear the target within 24 hours of HST execution

Diagnostics

(WD-J104019.50-495129.7 (43)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(WD-J104019.50-495129.7 (43)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(WD-J104019.50-495129.7 (43)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

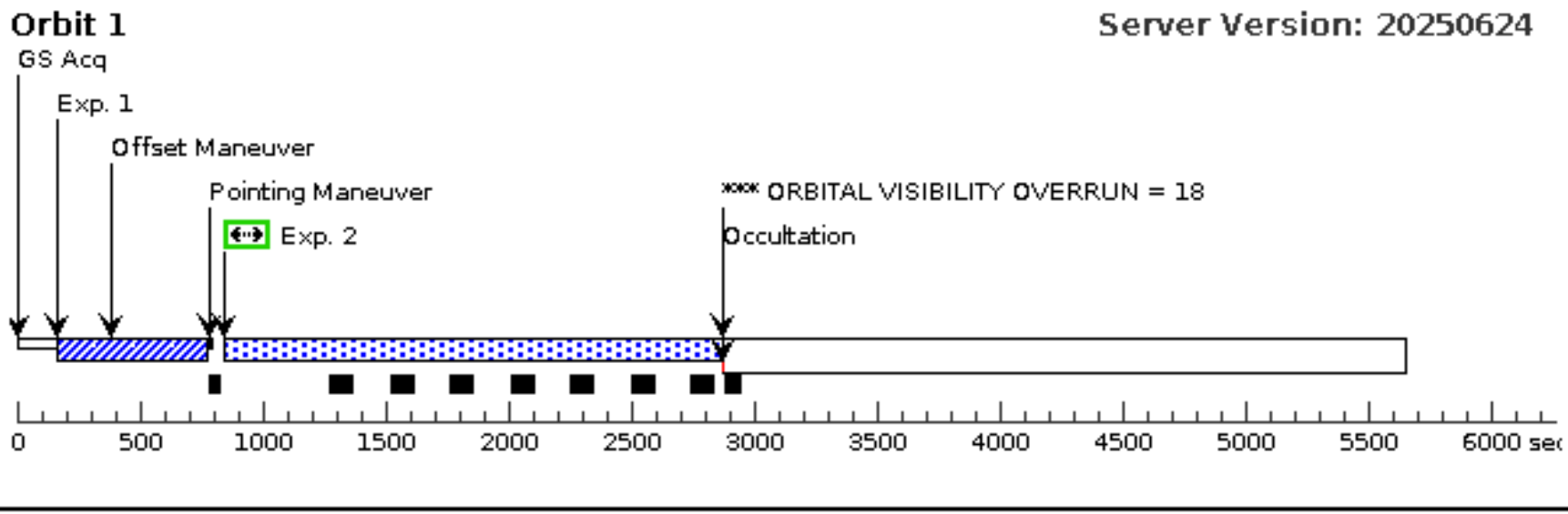
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(43)	WD-J104019.50-495129.7	RA: 10 40 19.4785 (160.0811604d) Dec: -49 51 29.43 (-49.85818d) Equinox: J2000	Proper Motion RA: -11.746504535541535 mas/yr Proper Motion Dec: 16.566512133372953 mas/yr Parallax: 0.003783567563747677" Epoch of Position: 2016.0	V=17 Gaia EDR3 5360970516650651136, G=17.1, parallax= 3.78(5) mas.	Reference Frame: ICRS

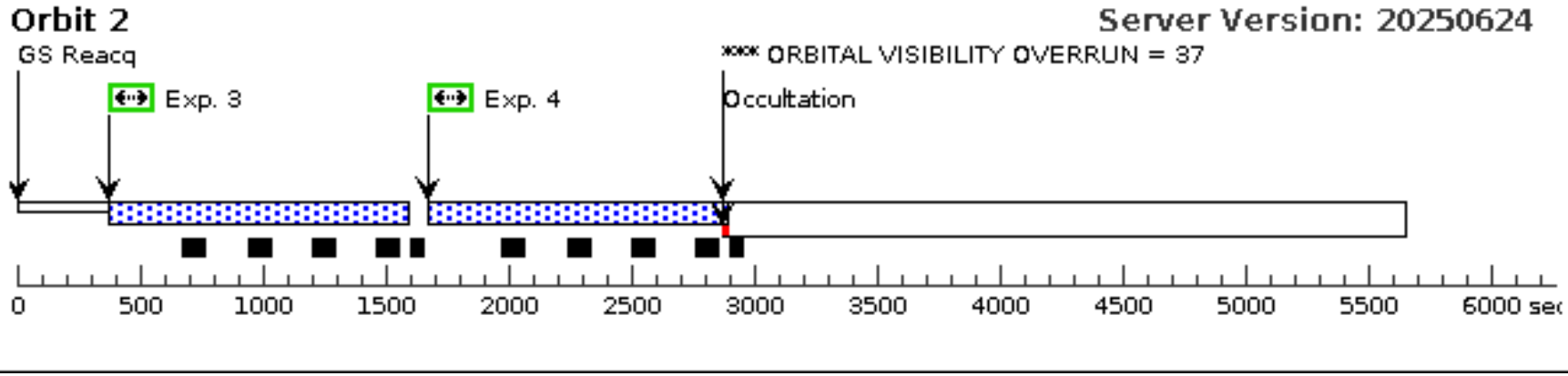
Comments:
Category=STAR
Description=[ACCRETION DISK, DWARF NOVA, INTERACTING BINARY, IRREGULAR VARIABLE]
Extended=NO

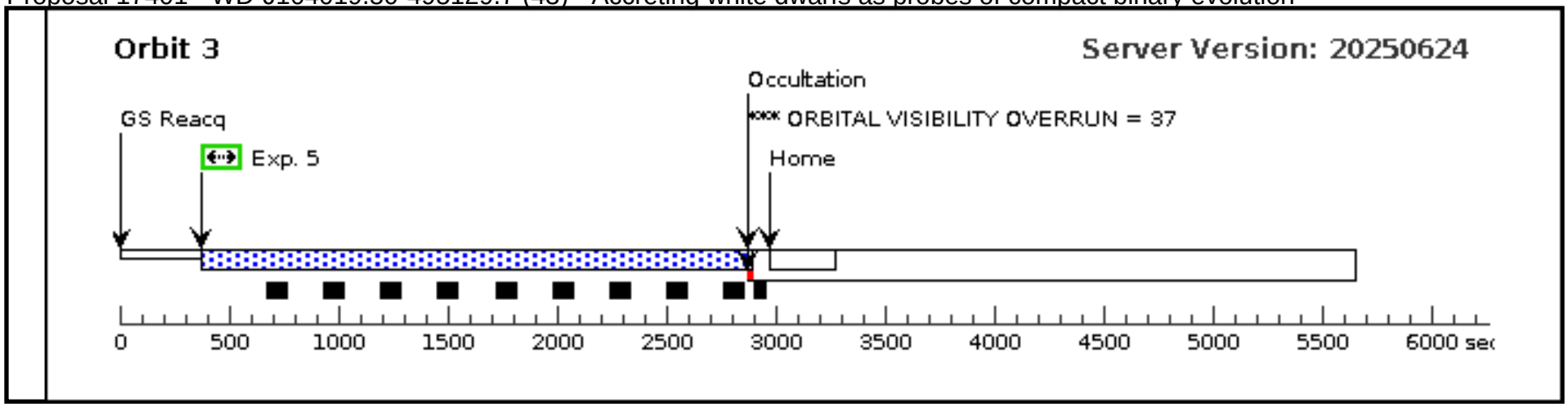
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (1895722)	(43) WD-J104019.50-495129.7	COS/NUV, ACQ/IMAGE, PSA	MIRRORB		USE OFFSET V43SAF		150 Secs (150 Secs) *[==>]*	***[1]***
Comments: Using mirror B to avoid exceeding count rate per pixel in case the system is brighter than expected (but still safe for the detector). The exposure time computed assuming a black body with Teff=17000K, scaled to FUV=17, and has been increase by an amount equal to the duration of the full eclipse (90 seconds). This will allow to reach the required S/N even if an eclipse occurs during the acquisition. 50 seconds more have been added to be conservative.									
2	FP-POS=1 (1529784)	(43) WD-J104019.50-495129.7	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=2445; LIFETIME-POS=LP3	USE OFFSET V43SAF		1827 Secs (1827 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
3	FP-POS=2 (1529784)	(43) WD-J104019.50-495129.7	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=263; LIFETIME-POS=LP3	USE OFFSET V43SAF		1165 Secs (1165 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
4	FP-POS=3 (1529784)	(43) WD-J104019.50-495129.7	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=263; LIFETIME-POS=LP3	USE OFFSET V43SAF		1165 Secs (1165 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
5	FP-POS=4 (1529784)	(43) WD-J104019.50-495129.7	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=261; LIFETIME-POS=LP3	USE OFFSET V43SAF		2464 Secs (2464 Secs) *[==>]*	***[3]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									

Orbit Structure






Orbit 3
Server Version: 20250624
Occultation
GS Reacq
**** ORBITAL VISIBILITY OVERRUN = 37
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17401, S/C visit for visit 43 (4G), scheduling Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: S/C

Special Requirements: ORIENT 170D TO 45 D

Comments: This visit allocates and sets up the ssafe position offset slot for visit 43 which will use that slot. This S/C visit should go 3-5 days before visit 43. The S/C visit will contain only 1 exposure

Fixed Targets

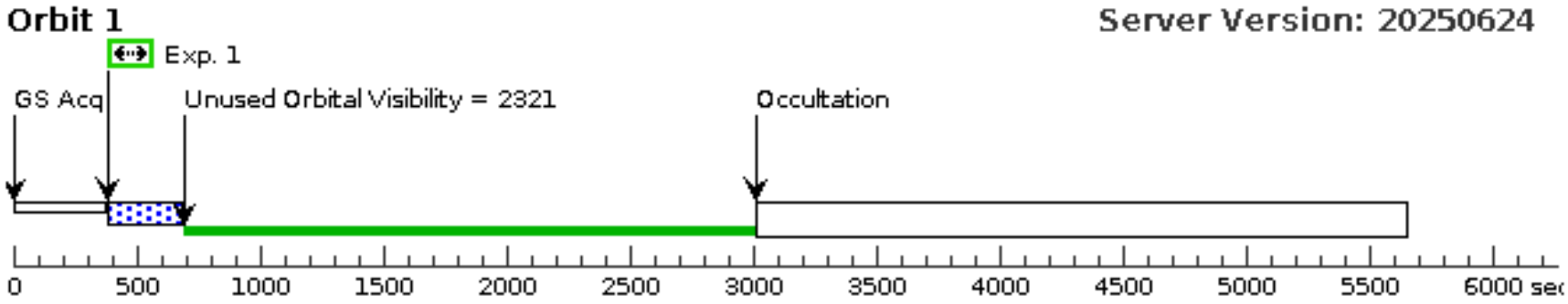
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(43)	WD-J104019.50-495129.7	RA: 10 40 19.4785 (160.0811604d) Dec: -49 51 29.43 (-49.85818d) Equinox: J2000	Proper Motion RA: -11.746504535541535 mas/yr Proper Motion Dec: 16.566512133372953 mas/yr Parallax: 0.003783567563747677" Epoch of Position: 2016.0	V=17 Gaia EDR3 5360970516650651136, G=17.1, parallax= 3.78(5) mas.	Reference Frame: ICRS

Comments:
Category=STAR
Description=[ACCRETION DISK, DWARF NOVA, INTERACTING BINARY, IRREGULAR VARIABLE]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(43) WD-J104019.50-495129.7	S/C, DATA, V1			POS TARG 232.7230,-237.515; SAVE OFFSET V43 SAF; SPEC COM INSTR ECSLOTSET; QESIPARM ANGLE 331.7; QESIPARM DIST 9.576		310 Secs (310 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 17401, BOP visit for visit 43 (4H), withdrawn Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; ORIENT 170D TO 45 D; BETWEEN 01-NOV-2025:00:00:00 AND 01-DEC-2025:00:00:00

Comments: This visit is for BOP checkign the safe target only and shoudl not execute onboard HST.

Diagnostics

(BOP visit for visit 43 (4H)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(BOP visit for visit 43 (4H)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

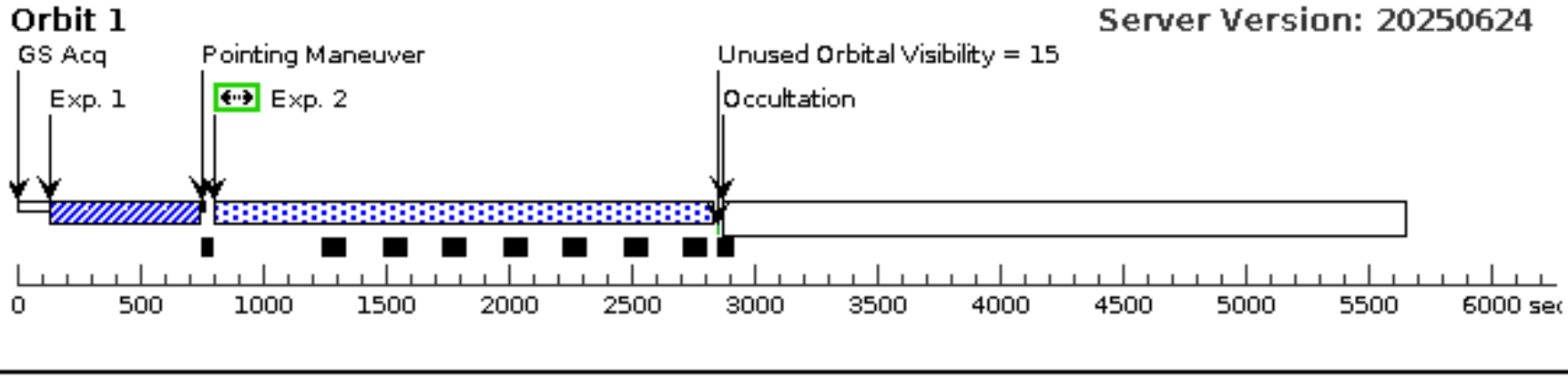
Fixed Targets

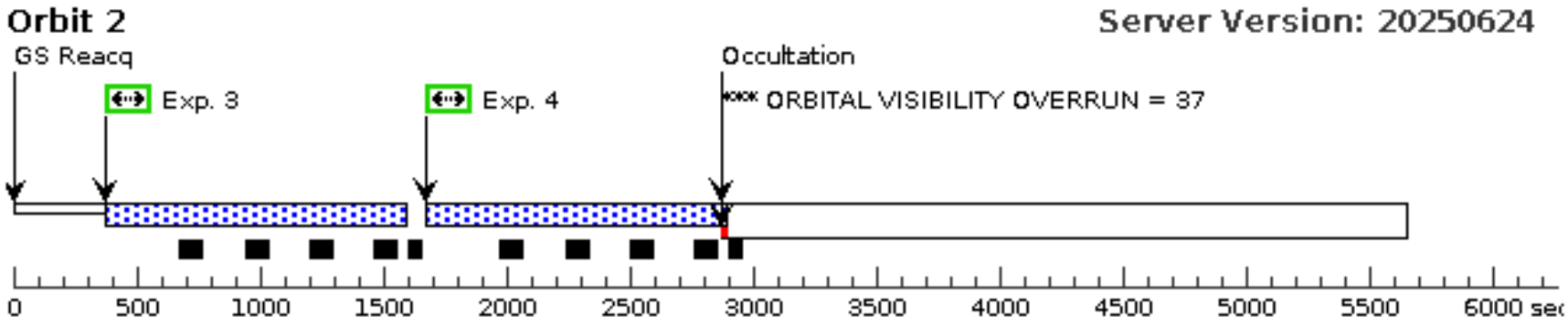
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(43)	WD-J104019.50-495129.7	RA: 10 40 19.4785 (160.0811604d) Dec: -49 51 29.43 (-49.85818d) Equinox: J2000	Proper Motion RA: -11.746504535541535 mas/yr Proper Motion Dec: 16.566512133372953 mas/yr Parallax: 0.003783567563747677" Epoch of Position: 2016.0	V=17 Gaia EDR3 5360970516650651136, G=17.1, parallax= 3.78(5) mas.	Reference Frame: ICRS
Comments: *Category=STAR* *Description=[ACCRETION DISK, DWARF NOVA, INTERACTING BINARY, IRREGULAR VARIABLE]* *Extended=NO*					
(44)	WD-J104019.50-4951-SAFE-TARGET	Offset from WD-J104019.50-495129.7 RA Offset: -0.46 Secs Dec Offset: 8.432 Arcsec		V=17	Offset Position (WD-J104019.50-4951-SAFE-TARGET)
Comments: This target is a blank piece of sky which is the bright object safe pointing and is 9.576 arcseconds away at PA 331.7 degrees from WD-J104019 *Category=UNIDENTIFIED* *Description=[BLANK FIELD]* *Extended=NO*					

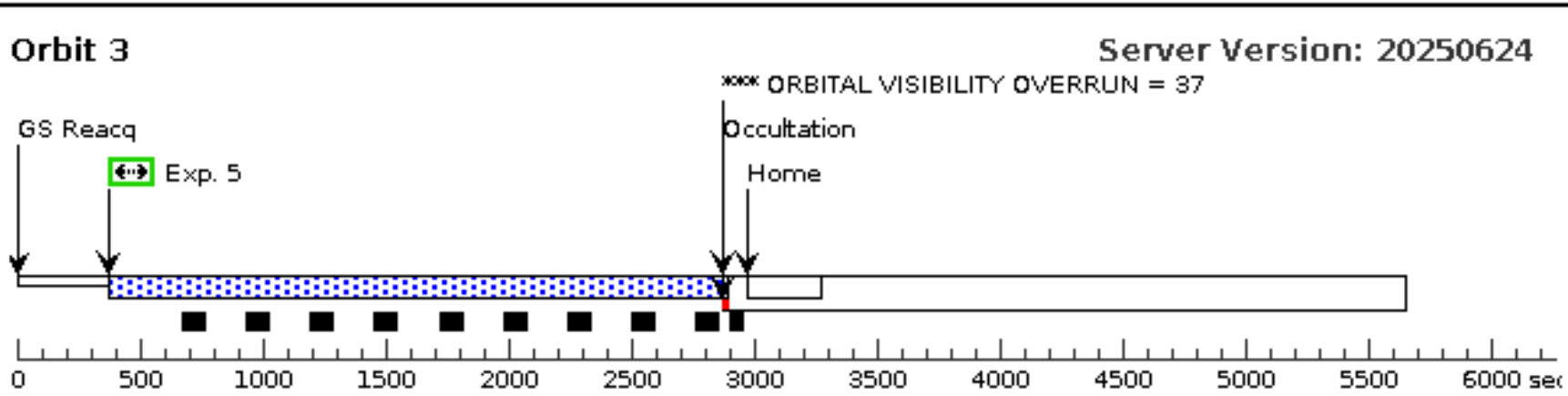
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (1895722)	(44) WD-J104019.50-4951-SAFE-TARGET	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				150 Secs (150 Secs) *[==>]*	***[1]***
Comments: Using mirror B to avoid exceeding count rate per pixel in case the system is brighter than expected (but still safe for the detector). The exposure time computed assuming a black body with Teff=17000K, scaled to FUV=17, and has been increase by an amount equal to the duration of the full eclipse (90 seconds). This will allow to reach the required S/N even if an eclipse occurs during the acquisition. 50 seconds more have been added to be conservative.									
2	FP-POS=1 (1529784)	(44) WD-J104019.50-4951-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=2455; LIFETIME-POS=LP3			1827 Secs (1827 Secs) *[==>]*	***[1]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
3	FP-POS=2 (1529784)	(44) WD-J104019.50-4951-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=2663; LIFETIME-POS=LP3			1165 Secs (1165 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
4	FP-POS=3 (1529784)	(44) WD-J104019.50-4951-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=2663; LIFETIME-POS=LP3			1165 Secs (1165 Secs) *[==>]*	***[2]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									
5	FP-POS=4 (1529784)	(44) WD-J104019.50-4951-SAFE-TARGET	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=2661; LIFETIME-POS=LP3			2464 Secs (2464 Secs) *[==>]*	***[3]***
Comments: Buffer-time set conservatively short in case the system is brighter (which will still be safe, but the buffer would overflow if set to the appropriate value for the quiescent level).									

Orbit Structure







Visit

Proposal 17401, V-LL-LYR (20), completed Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; ORIENT 220D TO 90 D; BETWEEN 18-MAY-2025:00:00:00 AND 02-JUN-2025:00:00:00

Comments: This should be scheduled in the evening local-time on a Thursday or Friday. Flags need to be cleared during the work day. Weekends & holidays are to be avoided since the CS must clear the target within 24 hours of HST execution.

Diagnostics

(V-LL-LYR (20)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(V-LL-LYR (20)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(V-LL-LYR (20)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

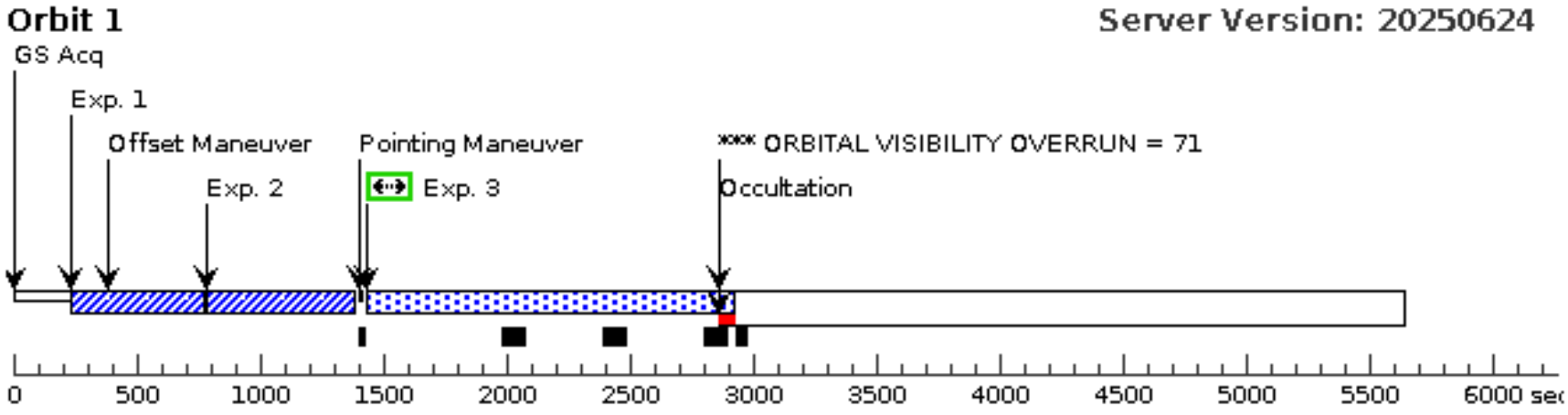
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(20)	V-LL-LYR	RA: 18 35 12.8110 (278.8033792d) Dec: +38 20 4.22 (38.33451d) Equinox: J2000	Proper Motion RA: -5.892977038105109 mas/yr Proper Motion Dec: -7.856846564309298 mas/yr Parallax: 0.001185522968873011" Epoch of Position: 2016.0	V=18.5 Gaia EDR3 2097903507608061440, G=17.5, parallax=1.18(7) mas.	Reference Frame: ICRS

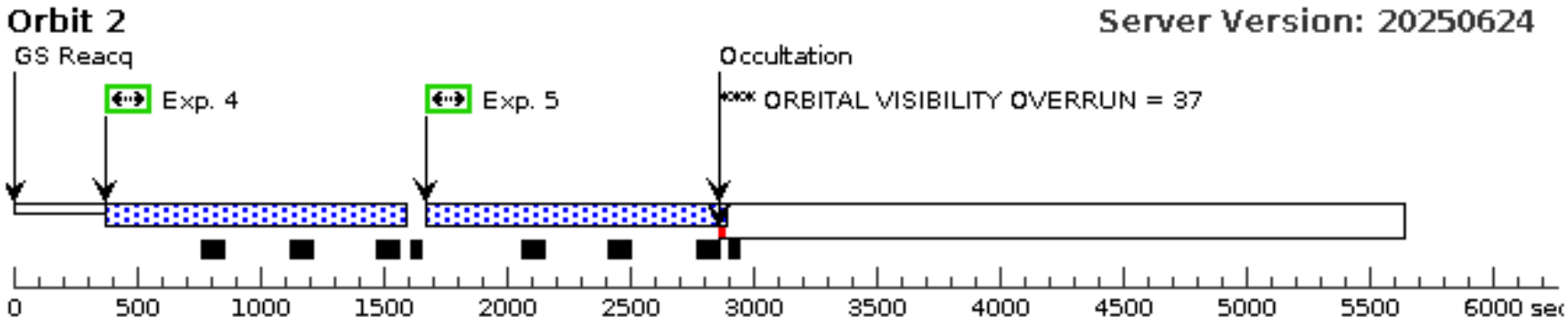
Comments:
Category=STAR
Description=[ACCRETION DISK, DWARF NOVA, EMISSION LINE STAR, INTERACTING BINARY, IRREGULAR VARIABLE]
Extended=NO

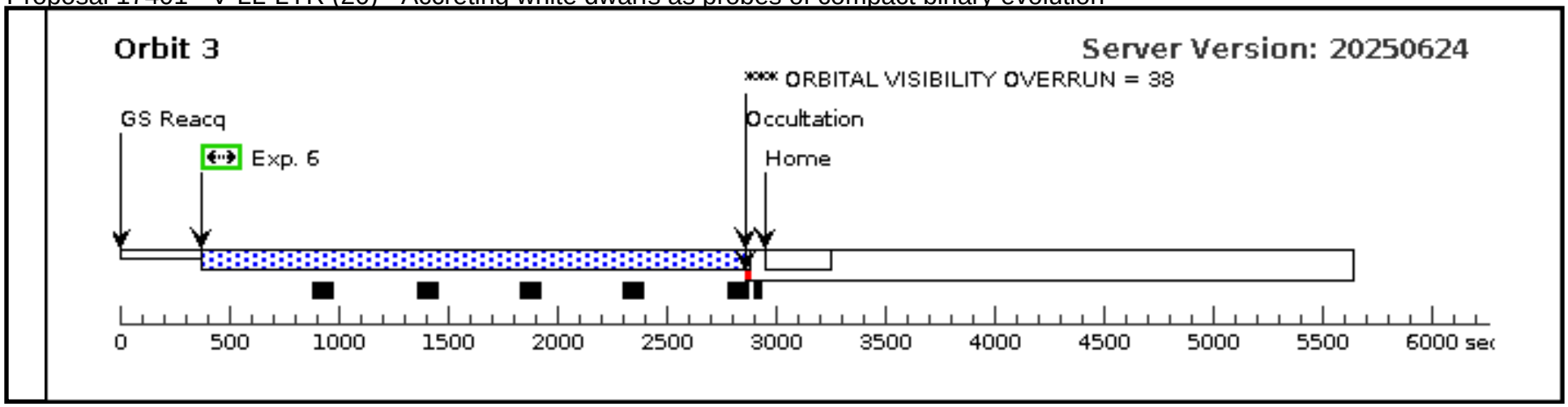
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1528116)	(20) V-LL-LYR	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4	USE OFFSET V20SAF		90 Secs (90 Secs) *[==>]*	*[1]*
	Comments: Computed assuming a WD models with Teff=35000K, scaled to FUV=17.7 (as expected for the given distance to the system). The exposure time allows the acquisition in case the system is up to one magnitude fainter than expected.								
2	ACQ/PEAKD (1528116)	(20) V-LL-LYR	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4	USE OFFSET V20SAF		90 Secs (90 Secs) *[==>]*	*[1]*
	Comments: Computed assuming a WD models with Teff=35000K, scaled to FUV=17.7 (as expected for the given distance to the system). The exposure time allows the acquisition in case the system is up to one magnitude fainter than expected.								
3	FP-POS=1 (1528122)	(20) V-LL-LYR	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=409; LIFETIME-POS=LP3	USE OFFSET V20SAF		1339 Secs (1331 Secs) *[==>1331.0 Secs]*	*[1]*
4	FP-POS=2 (1528122)	(20) V-LL-LYR	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=354; LIFETIME-POS=LP3	USE OFFSET V20SAF		1174 Secs (1169 Secs) *[==>1169.0 Secs]*	*[2]*
5	FP-POS=3 (1528122)	(20) V-LL-LYR	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=354; LIFETIME-POS=LP3	USE OFFSET V20SAF		1173 Secs (1168 Secs) *[==>1168.0 Secs]*	*[2]*
6	FP-POS=4 (1528122)	(20) V-LL-LYR	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=473; LIFETIME-POS=LP3	USE OFFSET V20SAF		2471 Secs (2462 Secs) *[==>2462.0 Secs]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20250624
**** ORBITAL VISIBILITY OVERRUN = 38
GS Reacq
Exp. 6
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17401, S/C visit for visit 20 (2A), completed Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: S/C

Special Requirements: ORIENT 220D TO 90 D

Comments: This visit allocates and sets up the safe position offset slot for visit 20 which will use that slot. This S/C visit should go 3-5 days before visit 20. The S/C visit will contain only 1 exposure

Fixed Targets

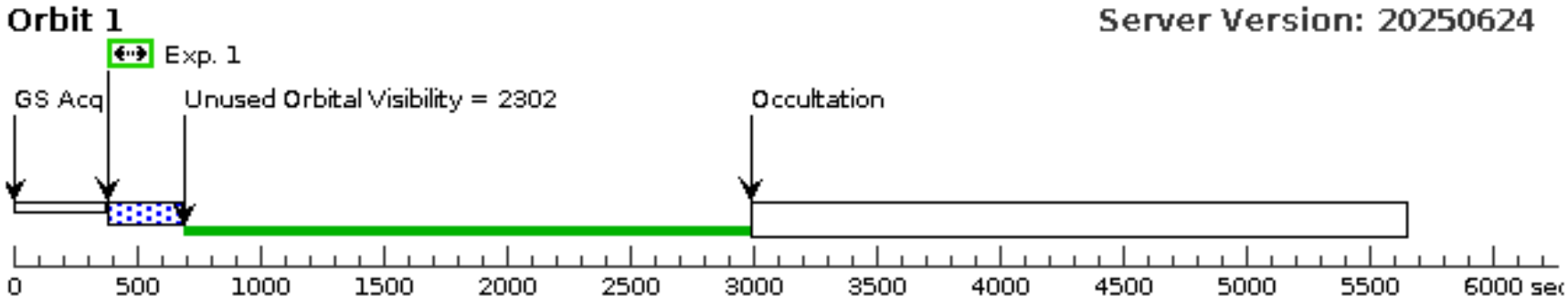
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(20)	V-LL-LYR	RA: 18 35 12.8110 (278.8033792d) Dec: +38 20 4.22 (38.33451d) Equinox: J2000	Proper Motion RA: -5.892977038105109 mas/yr Proper Motion Dec: -7.856846564309298 mas/yr Parallax: 0.001185522968873011" Epoch of Position: 2016.0	V=18.5 Gaia EDR3 2097903507608061440, G=17.5, parallax=1.18(7) mas.	Reference Frame: ICRS

Comments:
Category=STAR
Description=[ACCRETION DISK, DWARF NOVA, EMISSION LINE STAR, INTERACTING BINARY, IRREGULAR VARIABLE]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(20) V-LL-LYR	S/C, DATA, V1			POS TARG 229.1328,-241.0575; SAVE OFFSET V20 SAF; SPEC COM INSTR ECSLOTSET; QESIPARM ANGLE 19.6; QESIPARM DIST 9.739		310 Secs (310 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 17401, BOP visit for visit 20 (2B), withdrawn Wed Nov 19 17:00:24 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%; ORIENT 220D TO 90 D; BETWEEN 18-MAY-2025:00:00:00 AND 02-JUN-2025:00:00:00

Comments: This visit is for BOP checking the safe target only and should not execute onboard HST

Diagnostics

(BOP visit for visit 20 (2B)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(BOP visit for visit 20 (2B)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(BOP visit for visit 20 (2B)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(20)	V-LL-LYR	RA: 18 35 12.8110 (278.8033792d) Dec: +38 20 4.22 (38.33451d) Equinox: J2000	Proper Motion RA: -5.892977038105109 mas/yr Proper Motion Dec: -7.856846564309298 mas/yr Parallax: 0.001185522968873011" Epoch of Position: 2016.0	V=18.5 Gaia EDR3 2097903507608061440, G=17.5, parallax=1.18(7) mas.	Reference Frame: ICRS
Comments: *Category=STAR* *Description=[ACCRETION DISK, DWARF NOVA, EMISSION LINE STAR, INTERACTING BINARY, IRREGULAR VARIABLE]* *Extended=NO*					
(21)	V-LL-LYR-SAFE-TGT	Offset from V-LL-LYR RA Offset: 0.27 Secs Dec Offset: 9.172 Arcsec		V=18.5	Offset Position (V-LL-LYR-SAFE-TGT)
Comments: This target is a blank piece of sky which is the bright object safe pointing and is 9.739 arcseconds away at PA 19.6 degrees from V-LL-LYR *Category=UNIDENTIFIED* *Description=[BLANK FIELD]* *Extended=NO*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAKXD (1528116)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A	LIFETIME-POS=LP4			90 Secs (90 Secs)	
								[==>]	***[1]***
	Comments: Computed assuming a WD models with Teff=35000K, scaled to FUV=17.7 (as expected for the given distance to the system). The exposure time allows the acquisition in case the system is up to one magnitude fainter than expected.								
2	ACQ/PEAKD (1528116)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	CENTER=FLUX-WT-FLR; NUM-POS=5; STEP-SIZE=0.9; LIFETIME-POS=LP4			90 Secs (90 Secs)	
								[==>]	***[1]***
	Comments: Computed assuming a WD models with Teff=35000K, scaled to FUV=17.7 (as expected for the given distance to the system). The exposure time allows the acquisition in case the system is up to one magnitude fainter than expected.								
3	FP-POS=1 (1528122)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=1; BUFFER-TIME=409; LIFETIME-POS=LP3			1339 Secs (1331 Secs)	
								[==>1331.0 Secs]	***[1]***
4	FP-POS=2 (1528122)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=2; BUFFER-TIME=354; LIFETIME-POS=LP3			1174 Secs (1169 Secs)	
								[==>1169.0 Secs]	***[2]***
5	FP-POS=3 (1528122)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=3; BUFFER-TIME=354; LIFETIME-POS=LP3			1173 Secs (1168 Secs)	
								[==>1168.0 Secs]	***[2]***
6	FP-POS=4 (1528122)	(21) V-LL-LYR-SA FE-TGT	COS/FUV, TIME-TAG, PSA	G140L 800 A	FLASH=YES; FP-POS=4; BUFFER-TIME=473; LIFETIME-POS=LP3			2471 Secs (2462 Secs)	
								[==>2462.0 Secs]	***[3]***

Orbit Structure