13193 - COS Side 2 Initial FUV Checkout

Cycle: 31, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	NONE WAVE	COS COS/FUV	1	29-Sep-2023 10:01:03.0	yes
02	(1) AZV75	COS/FUV	2	29-Sep-2023 10:01:04.0	yes
03	(2) PG0832+676	COS/FUV COS/NUV	2	29-Sep-2023 10:01:06.0	yes
04	(3) BD+631964	COS/FUV COS/NUV	4	29-Sep-2023 10:01:08.0	yes

9 Total Orbits Used

ABSTRACT

This program will execute in the event of a failure of the COS side 1 electronics, after the instrument has been restored using side 2 (MEB2) electronics. The purpose of this program

is to confirm that the aperture placement and grating translation (focus)
using side 2 electronics produces the expected results: namely, spectra are being placed on
the detector where they should be, and the commanded focus is the best focus.

OBSERVING DESCRIPTION

Program is split into two parts; the first will test the aperture
X and Y locations and the second will verify the focus. The first test will involve
internal exposures which replicate previously obtained XAPER and YAPER offsets, to verify that
the commanded offsets have the same results as obtained previously.
The test of XAPER translation from side 1 to side 2 will be done using internal wavecal exposures
at different lifetime positions (XAPER values). The locations in cross-dispersion space
from program 12677 ("COS/FUV Mapping of Stray PtNe Lamp Light Through FCA")
on side 1 will be compared with the expected locations on side 2.
The test of YAPER translation will perform internal wavecal exposures offset in the dispersion
direction to replicate the YAPER offset exposures in program 12795 visit 2
("Second COS FUV Lifetime Position: Verification of Aperture and FUV Spectrum Placement {FENA2}").
The second part of the program will obtain spectra of an external target using two configurations with
widely separated focus values to confirm that the commanded focus remains the best focus.
Note that no explicit test of target acquisition in the FUV is to be performed, as
verification of NUV alignment should suffice for this purpose, and no TA parameters are side-dependent.
Nonetheless, an FUV TA will be used to acquire the target for the focus verification; this is to be used
as a fail-safe. After the FUV spectra are obtained in this program, an NUV image will be obtained as
additional verification of FUV aperture location.

------ Calibration Justification -------

This program will execute in the event of a failure of the COS side 1 electronics, after the
instrument has been restored using side 2 electronics. The purpose of this program
is to confirm that the aperture placement and grating translation (focus)

using side 2 electronics produces the expected results: namely, spectra are being placed on
the detector where they should be, and the commanded focus is the best focus.

--------- Additional Comments ----------

Program should execute only after program 13190 ("COS FUV Detector Recovery After MEB Side Switch") completes.
** this version of the program does not contain any constraints except those related to the FUV recovery program (13190), following a success oriented approach - C. Oliveira Aug 28 2013 **

The data obtained in the first part of this program, which confirms the aperture placement in the dispersion and cross-dispersion directions will be compared to data taken at similar offsets in programs 12677 and 12795. The analysis of these data will take into account the uncertainties in the spectrum placement due to OSM1 uncertainties in both the dispersion (up to 1/2 FP-POS) and cross-dispersion directions (up to +/- 2 pix).
The data obtained in the second part of the program will be compared to data obtained with side 1 electronics in the program that verified the resolution at the lifetime position in use at the time that the side switch occurs. The data obtained with side 2 electronics can also be compared to archival STIS data of AzV75, convolved with the LSF appropriate to the lifetime position in use at the time the side switch occurs, particularly if the program that checked the resolution did not use the cenwaves that will be tested in this program.

Comparison data for visit 02:
Visit 02 G130M/1222 data will be compared with AzV75/G130M/1222/LP4 data from Program 15366 Visit 01
Vitit 02 G130M/1327 data will be compared with AzV75/G130M/1327 data from Program 14842 Visit 01, exposures 13, 14, 15, and 16

COS2025 notes
Before executing this program, we need to check if the spectral windows used for the spectral resolution analysis are affected by gain sag. If this is the case, we may want to raise the HV before taking observations. This was not necessary in the original design of this program, i.e. before COS2025 policies were implemented, because small areas of gain sag were spread across the detector and the HV was raised according to those areas. Now, with COS2025 in place, the gain sag regions are concentrated in only a few regions and HV is raised only when the continuum in certain regions is becoming sagged.

February 2019: One Gyro Contingency Visits Added:

Two additional contingency visits were added to this program, which contain targets that can be used if HST is operating in one-gyro mode and AzV75 is not visible. Under one-gyro mode, AzV75 is not continuously visible. The two targets added (PG0832+676 and BD+631964) were chosed to have visibility windows that complement AzV75 under one-gyro operations, such that this program can be be executed at any time. The side-1 electronics LP4 spectral resolution comparison data for both targets was obtained with Program 15682 (PI James).

PLEASE NOTE:

- If HST is operating under three-gyro mode, do NOT execute contingency visits 03 or 04.
- If HST is operating under one-gyro mode at the time of side-1 electronics failure, AND AzV75 is not visible, only contingency Visit 03 OR Visit 04 should be executed (depending on which target is visible), along with Visit 01.

Comparison data for contingency visits 03 and 04:

Visit 03 PG0832/G130M/1222&1327 data will be compared with PG0832/G130M/1222&1327/LP4 data from Program 15682 Visit 01

Visit 04 BD63_1964/G130M/1222&1327 data will be compared with BD63_1964/G130M/1222&1327/LP4 data from Program 15682 Visit 02

September 2022 LP5/6 updates

In accordance with the COS2030 rules, and the commissioning of LP5 and LP6 the following changes were made:

Changed the target acquisition in Visit 02 that is taken with the G130M/1291 mode from LP4 to LP5.

Turned off segment B for all G130M/1327 exposures and moved them to LP5.

WE ADVISE CAREFUL CONSIDERATION OF THESE VISITS AND THEIR COMPARISION DATA/MEASUREMENTS BEFORE EXECUTING THIS PROGRAM.

Visit

Proposal 13193, XAPER, YAPER test (01), implementation Fri Sep 29 14:01:08 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: COS, COS/FUV

Special Requirements: SCHED 100%

Comments: This visit will perform internal wavecal exposures to replicate XAPER and YAPER moves done previously. Comparison to extant data will ensure that MEB1 ->MEB2 translation is producing the expected results. We start with XAPER offsets (moves in the cross-dispersion direction), then proceed to YAPER offsets (dispersion direction). The XAPER offsets replicate internal exposures from PID 12677, "COS/FUV Mapping of Stray PtNe Lamp Light Through FCA". The XAPER offsets are -21, -63, -84, +21, +42, +84. Light leaks were observed to occur for XAPER offsets greater than -105, and the largest XAPER offset used here is -84. These offsets are with respect to the original lifetime position, so LIFETIME-POS=ORIG is selected. The YAPER offsets replicate exposures from PID 12795, "Second COS FUV Lifetime Position: Verification of Aperture and FUV Spectrum Placement {FENA2}". These offsets are also specified relative to the original lifetime position, so LIFETIME-POS=ORIG is selected. The YAPER offsets are +29, +18, +10, 0, -10, -18, -29. The tests in 12795 were of external target spectra, so only the wavecal portion is replicated here. The XAPER value in use for 12795 is used here, although it is not strictly speaking necessary. CURRENT=low was used in the 12677 and 12795 exposures due to concerns about light leaks, however since none were found at the offsets being used in this program we use the default (CURRENT=medium) value. Special commanding ELNOAPMAIN is required after exposures which use an aperture offset to prevent the aperture being returned to the default value after the exposure. In cy24, definition of LIFETIME_POS was changed from (ORIGINAL, ALTERNATE and BEST) to (LP1, LP2, LP3,...LP8). Since V01 needs to execute at LP1, LIFETIME_POS was updated to LP1.

Diagnostics

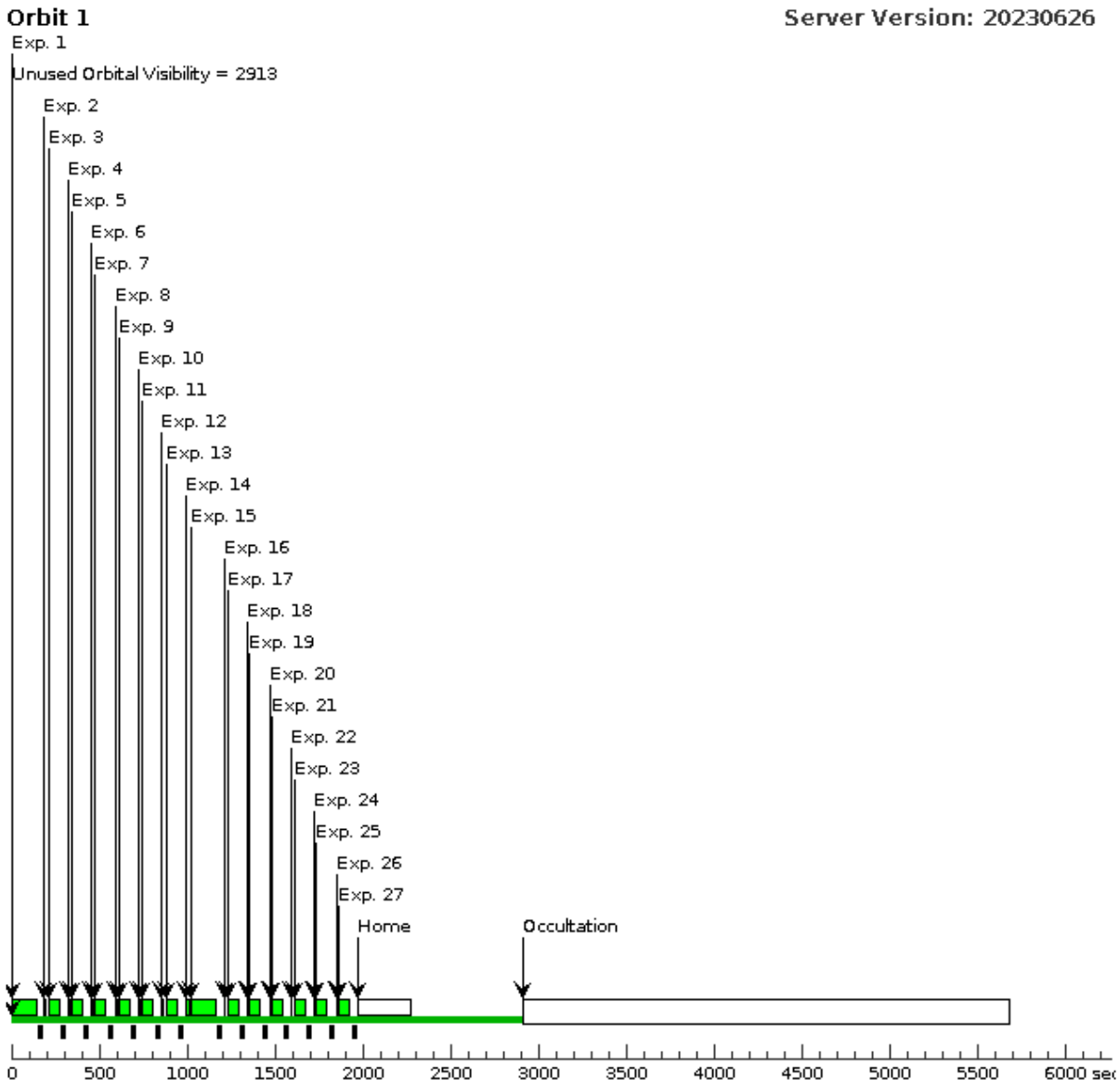
(XAPER, YAPER test (01)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	XAPER starting exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
2	XAPER offset of -21	NONE	COS, ALIGN/APER		XAPER=-21; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
3	XAPER-21 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
4	XAPER offset of -63	NONE	COS, ALIGN/APER		XAPER=-63; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
5	XAPER-63 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
6	XAPER offset of -84	NONE	COS, ALIGN/APER		XAPER=-84; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
7	XAPER-84 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
8	XAPER offset of +21	NONE	COS, ALIGN/APER		XAPER=+21; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
9	XAPER+21 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
10	XAPER offset of +42	NONE	COS, ALIGN/APER		XAPER=+42; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
11	XAPER+42 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
12	XAPER offset of +84	NONE	COS, ALIGN/APER		XAPER=+84; YAPER=0			0.0 Secs (0 Secs)	
								[==>]	*[1]*
13	XAPER+84 G130M/1291 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1291 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
14	YAPER offset of +29 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=29			0.0 Secs (0 Secs)	
								[==>]	*[1]*
15	YAPER +29 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1			8 Secs (8 Secs)	
								[==>]	*[1]*
16	YAPER offset of +18 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=18			0.0 Secs (0 Secs)	
								[==>]	*[1]*
17	YAPER+18 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1			8.0 Secs (8 Secs)	
								[==>]	*[1]*
18	YAPER offset of +10 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=10			0.0 Secs (0 Secs)	
								[==>]	*[1]*

	19	YAPER+10 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1	8.0 Secs (8 Secs) *[==>]*	***[1]***
	20	YAPER offset of 0 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=0	0.0 Secs (0 Secs) *[==>]*	***[1]***
	21	YAPER+0 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1	8.0 Secs (8 Secs) *[==>]*	***[1]***
	22	YAPER offest of -10 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=-10	0.0 Secs (0 Secs) *[==>]*	***[1]***
	23	YAPER-10 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1	8.0 Secs (8 Secs) *[==>]*	***[1]***
	24	YAPER offset of -18 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=-18	0.0 Secs (0 Secs) *[==>]*	***[1]***
	25	YAPER-18 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1	8.0 Secs (8 Secs) *[==>]*	***[1]***
	26	YAPER offset of -29 (0)	NONE	COS, ALIGN/APER		XAPER=-73; YAPER=-29	0.0 Secs (0 Secs) *[==>]*	***[1]***
	27	YAPER-29 G130M/1309 exposure	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1309 A	FP-POS=3; LIFETIME-POS=LP1	8.0 Secs (8 Secs) *[==>]*	***[1]***

Orbit Structure



Visit

Proposal 13193, focus verification: AzV75 (02), implementation Fri Sep 29 14:01:08 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%

Comments: This visit obtains external target observations to confirm that the focus using MEB2 remains the best focus. High S/N observations at two cenwaves with widely separated focus values are used to confirm the spectral quality. The target is AzV75 which has been observed previously in the G130M/1222 and G130M/1327 settings, which have best focus values at lifetime position 2 of -810 and +631, respectively. The target has been observed in these settings in PIDs 12805 (G130M/1327) and 13070 (G130M/1222). An FUV target acquisition is performed, which serves two purposes: (1) it confirms that target acquisitions are not affected by the MEB switch and will be the first FUV target acquisition once the switch occurs, and (2) the FUV dispersed light target acquisition obviates the need for orient restrictions due to a yellow supergiant 16" away from the target.

Regarding the BOT, there is an object at 00:50:30.99 -72:52:21.0, 2MASSJ00503106-7252207, J=11.673, which Simbad says is a yellow supergiant, O5.5 spectral type. It is ~16" away from AzV75. An ETC calculation for a dispersed light target acquisition for the target in the PSA, in which this object might fall in the BOA, shows that there is no safety issue (COS.sa.461620). Thus there is no need for an orient restriction, such as is employed for the imaging target acquisitions of this object in the wavelength scale monitoring programs.

Under operating conditions current in the Spring of 2013 the target used in this visit has continuous visibility through April 2015. Target visibility should be re-evaluated if the operating conditions change, i.e., if for instance one of the gyros is no longer in use at the time this program executes.

Diagnostics

(focus verification: AzV75 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(focus verification: AzV75 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

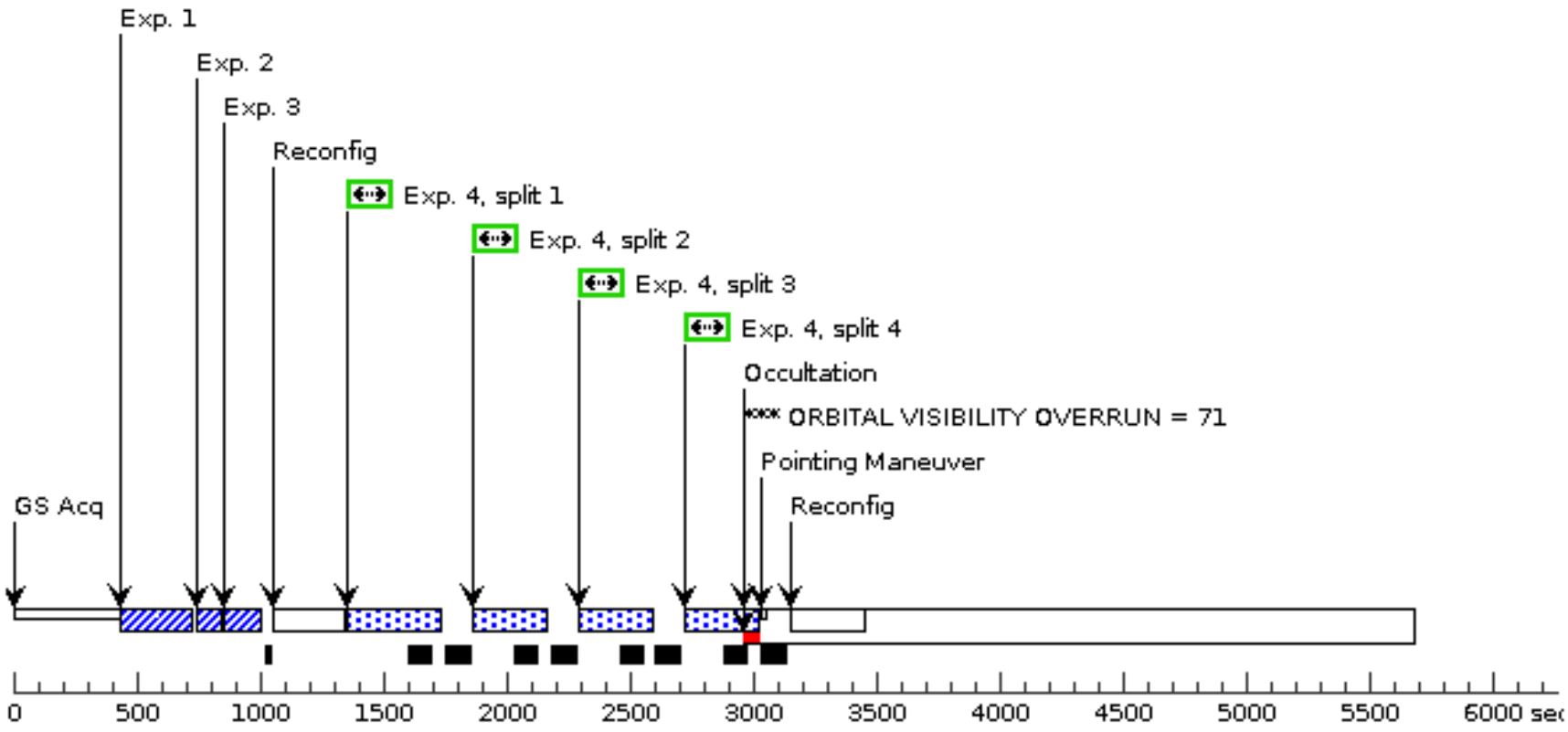
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV75	RA: 00 50 32.3920 (12.6349667d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000		V=12.79	Reference Frame: ICRS

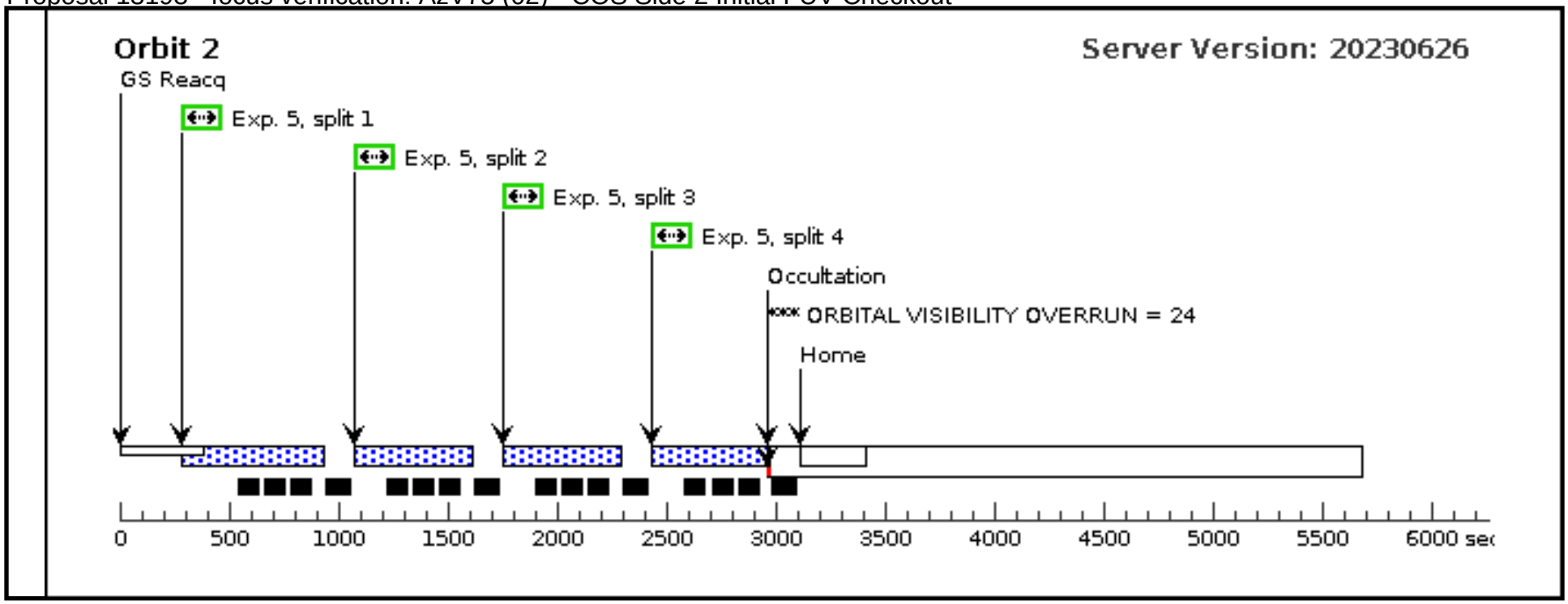
Comments:
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/SEARCH (COS.sa.458600)	(1) AZV75	COS/FUV, ACQ/SEARCH, PSA	G130M 1291 A	STEP-SIZE=1.767; SCAN-SIZE=3; CENTER=FLUX-WT-FLR; LIFETIME-POS=LP5			0.2 Secs (0.2 Secs) *[==>]*	***[1]***
2	ACQ/PEAKXD (COS.sa.458600)	(1) AZV75	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	LIFETIME-POS=LP5; NUM-POS=3			0.2 Secs (0.2 Secs) *[==>]*	***[1]***
	Comments: APT 25.1.1 includes the COS APT Requirements - PEAKXD Update: Added optional parameter NUM-POS=1								
3	ACQ/PEAKD (COS.sa.458600)	(1) AZV75	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR; LIFETIME-POS=LP5			0.2 Secs (0.2 Secs) *[==>]*	***[1]***
4	G130M-1327 (COS.sp.496137)	(1) AZV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=128.; FLASH=YES; FP-POS=ALL; LIFETIME-POS=LP5; SEGMENT=A			350. Secs (984 Secs) *[==>246.0 Secs (Split 1)]* *[==>246.0 Secs (Split 2)]* *[==>246.0 Secs (Split 3)]* *[==>246.0 Secs (Split 4)]*	***[1]***
	Comments: The ETC calculation gives a warning that the glocal count rate for each segment exceeds the segment/stripe limit for irregularly-variable sources. The count rates are ~9000 cps on each of FUVA and FUVB, so well below the 15000 cps screening limit. Previous observations confirm that this object is not variable and is safe to observe.								
5	G130M-1222 (COS.sp.458658)	(1) AZV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=ALL; BUFFER-TIME=120; FLASH=YES; LIFETIME-POS=LP4			480. Secs (1960 Secs) *[==>490.0 Secs (Split 1)]* *[==>490.0 Secs (Split 2)]* *[==>490.0 Secs (Split 3)]* *[==>490.0 Secs (Split 4)]*	***[2]***
	Comments: The ETC calculation gives a warning that the glocal count rate for segment A exceeds the segment/stripe limit for irregularly-variable sources. The count rates are ~7600 cps on FUVA, so well below the 15000 cps screening limit. Previous observations confirm that this object is not variable and is safe to observe.								

Orbit Structure




Orbit 2
Server Version: 20230626
GS Reacq
Exp. 5, split 1
Exp. 5, split 2
Exp. 5, split 3
Exp. 5, split 4
Occultation
**** ORBITAL VISIBILITY OVERRUN = 24
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 13193, focus verification: PG0832 contingency (03), implementation Fri Sep 29 14:01:09 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Diagnostics

(focus verification: PG0832 contingency (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PG0832+676	RA: 08 37 34.7328 (129.3947200d)	Proper Motion RA: -0.942 mas/yr	V=14.12+/-0.1	Reference Frame: ICRS
		Dec: +67 24 13.59 (67.40378d)	Proper Motion Dec: -2.994 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

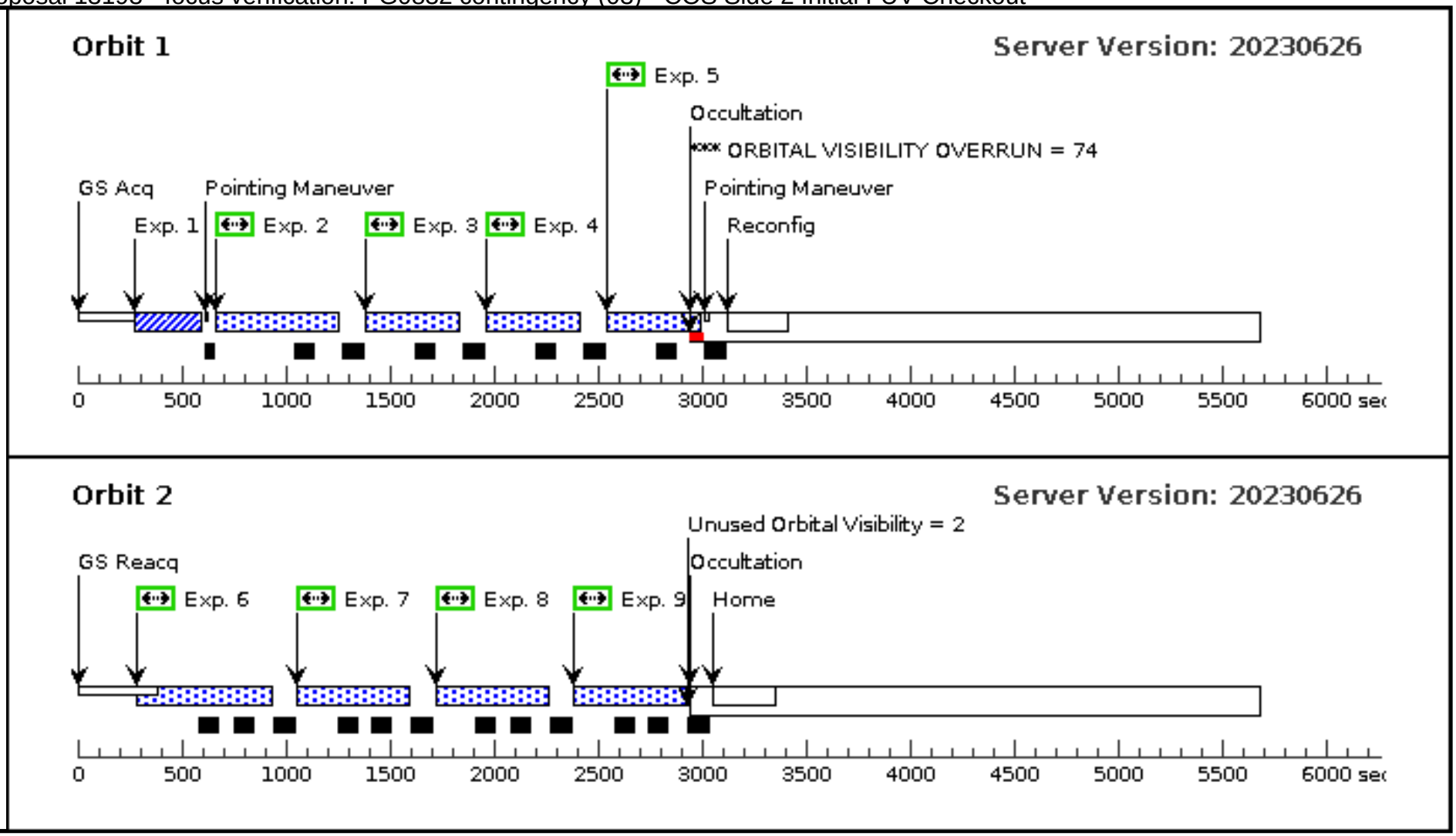
Comments: Coordinate and proper motion information taken from SIMBAD: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=%40411127&Name=PG%200832%2b676&submit=submit
Gaia DR2
Category=STAR
Description=[POST-AGB STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	image_acq_boa (COS.ta.1161669)	(2) PG0832+676	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				48 Secs (48 Secs) *[==>]*	***[1]***
Comments: S/N of 20 reached									
2	1222_1 (COS.sp.1161670)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=2000; FP-POS=1; LIFETIME-POS=LP4			400 Secs (400 Secs) *[==>]*	***[1]***
Comments: S/N of 60 per resel @ 1250A when FP-POS combined									
3	1222_2 (COS.sp.1161670)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=2000; FP-POS=2; LIFETIME-POS=LP4			400 Secs (400 Secs) *[==>]*	***[1]***
Comments: S/N of 60 per resel when FP-POS combined									
4	1222_3 (COS.sp.1161670)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=2000; FP-POS=3; LIFETIME-POS=LP4			400 Secs (400 Secs) *[==>]*	***[1]***
Comments: S/N of 60 per resel when FP-POS combined									
5	1222_4 (COS.sp.1161670)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=2000; FP-POS=4; LIFETIME-POS=LP4			400 Secs (400 Secs) *[==>]*	***[1]***
Comments: S/N of 60 per resel when FP-POS combined									
6	1327_1 (COS.sp.1161673)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=162; FP-POS=1; LIFETIME-POS=LP5; SEGMENT=A			480 Secs (485 Secs) *[==>485.0 Secs]*	***[2]***
Comments: S/N of 60 per resel @1250A when FP-POS combined									
7	1327_2 (COS.sp.1161673)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=162; FP-POS=2; LIFETIME-POS=LP5; SEGMENT=A			480 Secs (485 Secs) *[==>485.0 Secs]*	***[2]***
Comments: S/N of 60 per resel when FP-POS combined									

	8	1327_3 (COS.sp.1161673)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=162; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	480 Secs (485 Secs) *[==>485.0 Secs]*	***[2]***
	Comments: S/N of 60 per resel when FP-POS combined							
	9	1327_4 (COS.sp.1161673)	(2) PG0832+676	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=162; FP-POS=4; LIFETIME-POS=LP5; SEGMENT=A	480 Secs (485 Secs) *[==>485.0 Secs]*	***[2]***
	Comments: S/N of 60 per resel when FP-POS combined							

Orbit Structure



Visit

Proposal 13193, focus verification: BD63_1964 contingency (04), implementation Fri Sep 29 14:01:09 GMT 2023

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Diagnostics

(focus verification: BD63_1964 contingency (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

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(focus verification: BD63_1964 contingency (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	BD+631964	RA: 23 17 21.5627 (349.3398446d)	Proper Motion RA: -6.765 mas/yr	V=8.49	Reference Frame: ICRS
		Dec: +64 07 16.17 (64.12116d)	Proper Motion Dec: -0.753 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

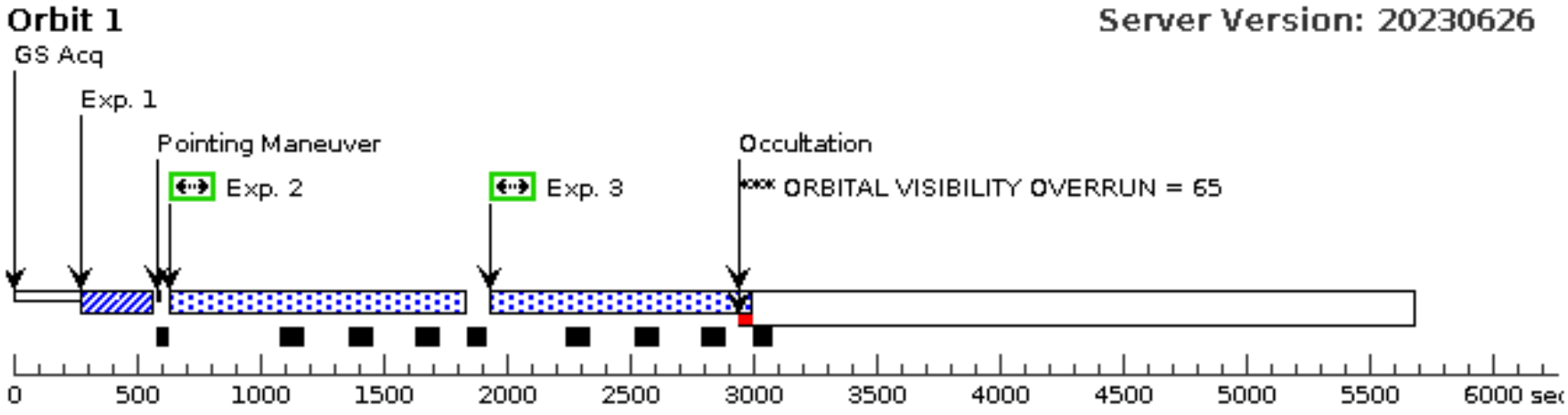
Comments: Coordinates and proper motion information taken from SIMBAD:
http://simbad.u-strasbg.fr/simbad/sim-id?Ident=BD%2B631964&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id
Gaia DR2.
Category=STAR
Description=[B0-B2 III-I]
Extended=NO

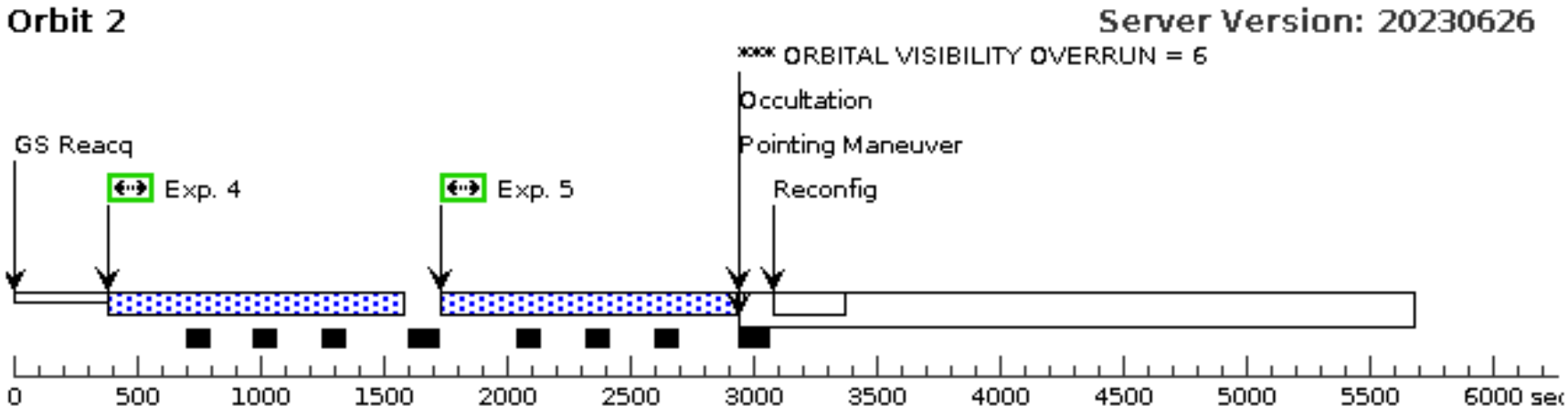
Exposures

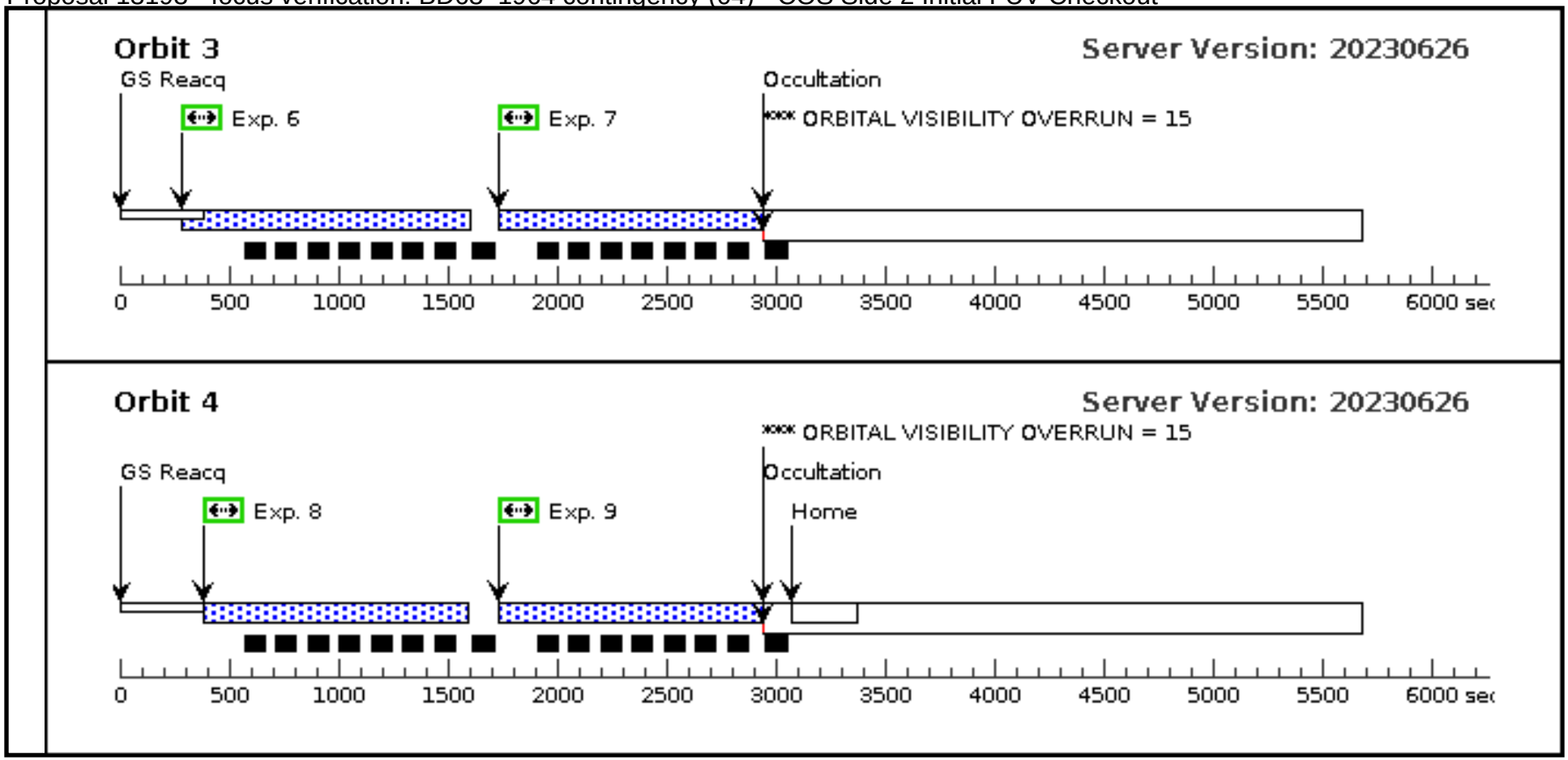
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	image_acq_boa (COS.ta.1161678)	(3) BD+631964	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				32 Secs (32 Secs) *[==>]*	***[1]***
Comments: S/N of 40 reached									
2	1222_1 (COS.sp.1167582)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=276; FP-POS=1; LIFETIME-POS=LP4			995 Secs (1007 Secs) *[==>1007.0 Secs]*	***[1]***
Comments: S/N of 40 per resel @1180A when FP-POS combined									
3	1222_2 (COS.sp.1167582)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=276; FP-POS=2; LIFETIME-POS=LP4			995 Secs (1007 Secs) *[==>1007.0 Secs]*	***[1]***
Comments: S/N of 40 per resel @1180A when FP-POS combined									
4	1222_3 (COS.sp.1167582)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=276; FP-POS=3; LIFETIME-POS=LP4			1190 Secs (1146 Secs) *[==>1146.0 Secs]*	***[2]***
Comments: S/N of 40 per resel @1180A when FP-POS combined									
5	1222_4 (COS.sp.1167582)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=276; FP-POS=4; LIFETIME-POS=LP4			1190 Secs (1146 Secs) *[==>1146.0 Secs]*	***[2]***
Comments: S/N of 40 per resel @1180A when FP-POS combined									
6	1327_1 (COS.sp.1314278)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=145; FP-POS=1; LIFETIME-POS=LP5; SEGMENT=A			1190 Secs (1160 Secs) *[==>1160.0 Secs]*	***[3]***
Comments: S/N of 50-60 per resel @1150A when FP-POS combined at 1180A *ETC reports countrate exceeded for irregularly variable sources. Target is not variable.*									
7	1327_2 (COS.sp.1314278)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=145; FP-POS=2; LIFETIME-POS=LP5; SEGMENT=A			1190 Secs (1160 Secs) *[==>1160.0 Secs]*	***[3]***
Comments: S/N of 50-60 per resel @1150A when FP-POS combined at 1180A									

	8	1327_3 (COS.sp.1314278)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=145; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	1190 Secs (1160 Secs) *[==>1160.0 Secs]*	***[4]***
	Comments: S/N of 50-60 per resel @1150A when FP-POS combined at 1180A							
	9	1327_4 (COS.sp.1314278)	(3) BD+631964	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=145; FP-POS=4; LIFETIME-POS=LP5; SEGMENT=A	1190 Secs (1160 Secs) *[==>1160.0 Secs]*	***[4]***
	Comments: S/N of 50-60 per resel @1150A when FP-POS combined at 1180A							

Orbit Structure






Orbit 3
Server Version: 20230626
GS Reacq
Exp. 6
Exp. 7
Occultation
*** ORBITAL VISIBILITY OVERRUN = 15
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 4
Server Version: 20230626
*** ORBITAL VISIBILITY OVERRUN = 15
GS Reacq
Exp. 8
Exp. 9
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec