17626 - Cycle 32 COS FUV Change in Spectroscopic Sensitivity Trends

Cycle: 32, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

Name	*Institution*
Jacqueline Hernandez (PI) (Contact)	**Space Telescope Science Institute**
Dr. Ravi Sankrit (CoI) (Contact)	Space Telescope Science Institute
Dr. Leonardo Dos Santos (CoI) (Contact)	Space Telescope Science Institute
Dr. Marc Rafelski (CoI) (Contact)	Space Telescope Science Institute
Dr. Svea S Hernandez (CoI) (ESA Member) (Contact)	Space Telescope Science Institute - ESA - JWST

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
3A	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	15-Oct-2024 08:00:39.0	yes
3B	(2) WD1057+719 DARK WAVE	COS/FUV COS/NUV S/C	3	15-Oct-2024 08:00:41.0	yes
4A	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	15-Oct-2024 08:00:42.0	yes
4B	(2) WD1057+719 DARK WAVE	COS/FUV COS/NUV S/C	3	15-Oct-2024 08:00:44.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
5A	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	15-Oct-2024 08:00:45.0	yes
5B	(1) WD0308-565	COS/FUV COS/NUV	2	15-Oct-2024 08:00:47.0	yes
6A	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	15-Oct-2024 08:00:48.0	yes
6B	(2) WD1057+719 DARK WAVE	COS/FUV COS/NUV S/C	3	15-Oct-2024 08:00:50.0	yes

19 Total Orbits Used

ABSTRACT

The FUV gratings are the most used modes on COS. They have experienced changes in sensitivity since the instrument was installed. The trends in the time-dependent spectroscopic sensitivity depend on the grating, segment and wavelength. Each cycle a calibration proposal to monitor the sensitivity of each FUV grating mode at several cenwave settings is implemented. The monitor runs on an approximate schedule of one set of visits every two months. This program is contingency program that will be triggered in the case that the sensitivity of any grating/mode is found to be rapidly decreasing and therefore requiring a higher cadence of observations.

OBSERVING DESCRIPTION

The description below is from program 17626, the main COS FUV Spectroscopic Sensitivity Monitor for Cycle 32, adjusted to reflect the RGM. This is a contingency program, and the exposure sequence in each visit are identical to those in the main program.

As part of the standard monitoring sequence the standard stars, WD0308-565 and WD1057+719, will be observed every two months (except for April, during which time WD1057+719 is unavailable).

Each sequence consists of 5 orbits: a 2 orbit visit (target WD0308-565) that covers
G130M/1055,
G130M/1222,
G130M/1291,
G130M/1327/FUVA,
G140L/800/FUVA,
G140L/1105/FUVA,
G140L/1280,

a 3 orbit visit (target WD1057+719) that covers
G130M/1096/FUVB,
G160M/1533,
G160M/1577,
G160M/1623.

These comprise the shortest and longest central wavelengths of the normal modes with each grating. Additionally, G130M/1055, and 1096 (the blue modes) and G130M/1291 are included. Also included is G160M/1577, which used to be the shortest cenwave before the introduction of G160M/1533 in Cycle 26. The G130M 1291 and 1327 observations will be done at LP5, G140L observations will be done at LP3, G130M/1222 observations will be done at LP4, G160M observations will be done at LP6, and G130M/1055 and G130M/1096 will be done at LP2.

In Cycle 30, LP4-LP6 connection exposures for G160M/1533, 1577, 1611 and 1623 were added to check sensitivity changes between LPs, two G160M cenwaves per visit.

G160M/1611 was added in Cycle 29 in order to monitor this highly used but untracked cenwave, and to investigate the detector position vs wavelength dependence of the TDS.

In Cycle 31, HST went into reduced gyro mode which makes the original second target GD71 unscheduable for a majority of the year until late August. Because of this, GD71 has been replaced with WD1057+719 and will do all G160M observations with SEGMENT=BOTH. This will

increase the observation time roughly by 10% in total, as stated in TIR2018-01.

In Cycle 32, G160M/1611 exposures have been removed due to lack of connection visits between GD71 and WD0308-565 to WD1057+719. The LP4-LP6 connection exposures for G160M were also removed. Due to RGM, WD0308-565 is unscheduable in December and February and so the visits have been exchanged with November and Janurary.

SNR requirements:
- The general requirement is for an SNR of 15 per resel at the wavelength of least sensitivity for the standard modes, and SNR of 15 per resel beyond some minimum wavelength for the G130M/1055 and c1222. The G140L/800 and 1280 and G130M/1096 modes have slightly different criteria, to provide SNR of >~5 per resel at wavelengths below ~1080 Ang.
- The aim is to obtain TDS calibration better than 2% for standard modes and 5% for blue modes.

ETC calculations:
- The ETC calculations use CALSPEC standard model versions wd0308_565_mod_006.fits and wd1057_719_mod_009.fits against which the TDS model slopes are referenced.
- The ETC calculations are specified by requiring SNR of 15 at specific wavelengths, except for the following:
G130M/1096 SNR of 7 per resel at 1030 Ang (only FUVB is used)
G140L/800 SNR of 6 per resel at 1045 Ang (only FUVA is used)
G140L/1280 SNR of 12 per resel at 1090 Ang (lies on FUVB)

- For theG130M/1055 and c1222, the wavelengths specified for SNR of 15 are:
1120 Ang for c1055 (lies on FUVA)
1130 Ang for c1222 (lies on FUVB)

Time constraints:
- Complete monitoring sequence should occur every 2 months starting in November 2024.
- WD1057-565 is unscheduable in April, and therefore that sequence will consist of two 2-orbit visits.

The organization of the WD0308-565 G140L and G130M visits follows the scheme used in Cycle 31. Due to reduced gyro mode and switching out

the target GD71 with WD1057+719, the organization of all the WD1057+719 visits follows the scheme suggested in TIR2018-01. All exposure times have been updated to reflect the most recent updates to the FLUXTAB.

In Cycle 29, an additional NUV ACQ/IMAGE was added at the beginning of the second orbit of the 2 orbit WD0308-565 visits to protect against guide star reaquisition failures, which this particular target is prone to.

Visit

Proposal 17626, WD0308-MAR (3A), implementation Tue Oct 15 12:00:50 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 90%; BETWEEN 09-MAR-2025:00:00:00 AND 23-MAR-2025:00:00:00

Diagnostics

(WD0308-MAR (3A)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d)	Proper Motion RA: 149.241 mas/yr	V=14.07+/-0.02	Reference Frame: ICRS
		Dec: -56 23 49.41 (-56.39706d)	Proper Motion Dec: 66.919 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

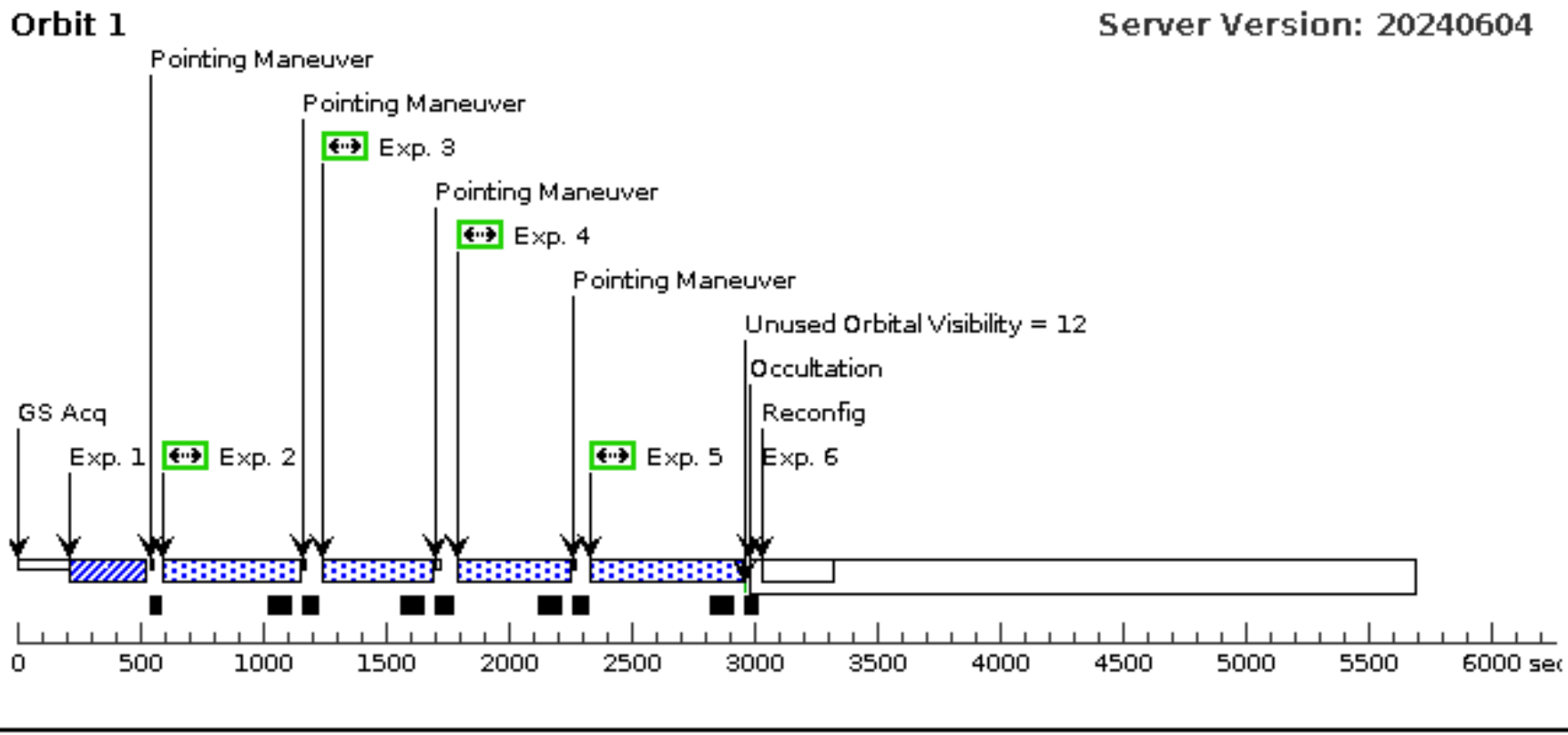
Comments: Coordinates carried over from Cycle 25 proposal, checked against SIMBAD, which uses the GAIA DR2 catalog.
Proper motions changed to mas/yr, from SIMBAD, also using the GAIA DR2 catalog.
Category=STAR
Description=[DB]
Extended=NO

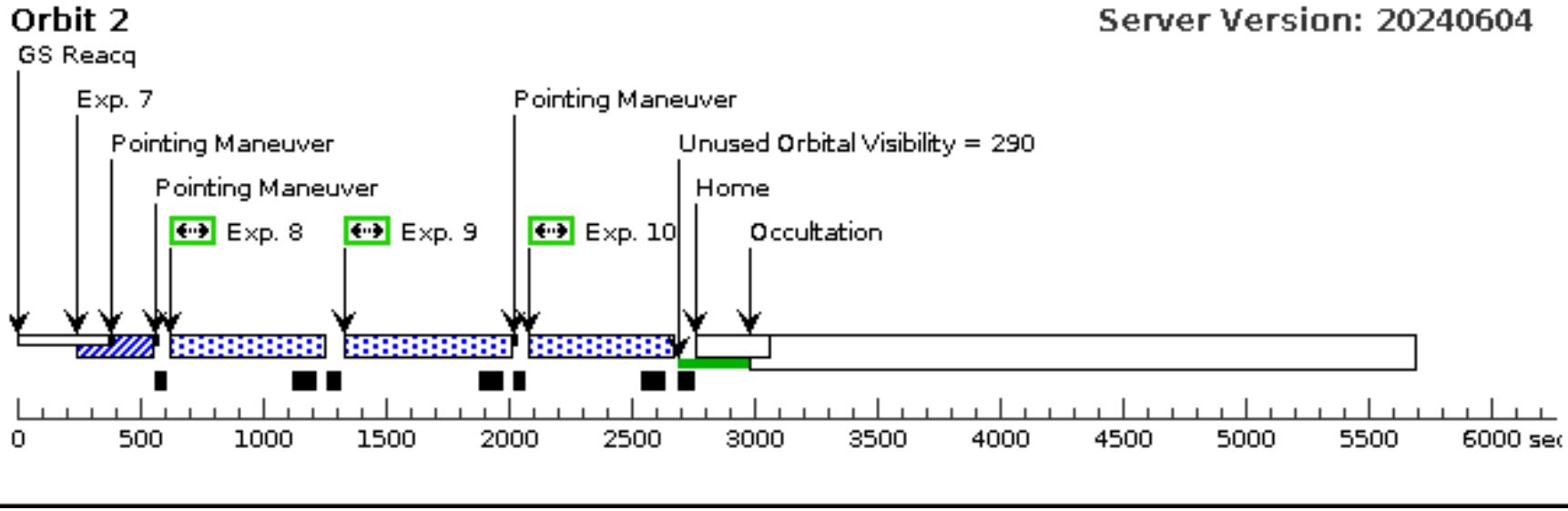
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925399)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	***[1]***
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									
2	G130M/1055/LP2 (COS.sp.1937916)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=232; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP2			342 Secs (342 Secs) *[==>]*	***[1]***
Comments: Cycle 29 comment: exposure time updated following blue modes TDS and FLUXTAB update. --- *Cycle 32 comment: exposure time updated following blue modes TDS and FLUXTAB update.* *ETC buffer time is 1405 sec* *Set buffer time = exptime - 110 sec*									
3	G130M/1222/LP4 (COS.sp.1937921)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=180; FP-POS=3; LIFETIME-POS=LP4; SEGMENT=BOTH			290 Secs (290 Secs) *[==>]*	***[1]***
Comments: ETC buffer time is 456 sec. *Set buffer time = exptime - 110 sec*									
4	G130M/1291/LP5 (COS.sp.1937926)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=198; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=BOTH			308 Secs (308 Secs) *[==>]*	***[1]***
Comments: ETC buffer time is 395 sec. *Set buffer time = exptime - 110 sec*									
5	G140L/1280/LP3 (COS.sp.1937927)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=282; FP-POS=3; LIFETIME-POS=LP3; SEGMENT=BOTH			392 Secs (392 Secs) *[==>]*	***[1]***
Comments: Cycle 30 comment: exposure time updated following FLUXTAB update. *ETC buffer time is 610 sec.* *Set buffer time = exptime - 110 sec*									
6		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	***[1]***
Comments: Work-around to efficiently schedule the reconfiguration to SEG-A. Eliminates SPSS induced gaps.									
7	ACQ/IM (COS.ta.1925405)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	***[2]***
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									

	8	G140L/800/FUVA/LP3 (COS.sp.1937928)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=304; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	414 Secs (414 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 441 sec. *Set buffer time = exptime - 110 sec*						
	9	G140L/1105/FUVA/LP3 (COS.sp.1937930)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=427; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	537 Secs (537 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 457 sec. *Set buffer time = exptime - 110 sec*						
	10	G130M/1327/FUVA/LP5 (COS.sp.1937931)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=242; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	352 Secs (352 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 379 sec. *set buffer time = exptime - 110 sec*						

Orbit Structure





Visit

Proposal 17626, WD1057-MAR (3B), implementation Tue Oct 15 12:00:50 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 80%; BETWEEN 16-MAR-2025:00:00:00 AND 30-MAR-2025:00:00:00

Comments: exposure 4: GO wavecal to calculate the OSM shifts of the G130M/1096/FUVB observation
George Chapman added Exposure 3
All G160M observations are with SEGMENT = BOTH

In Cycle 32, HST went into reduced gyro mode and made GD71 unscheduable for most of the year until September. Due to this, target WD1057+719 has been exchanged for GD71.

Diagnostics

(WD1057-MAR (3B)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1057+719	RA: 11 00 34.2200 (165.1425833d)	Proper Motion RA: -0.00973 sec of time/yr	V=14.68	Reference Frame: ICRS
		Dec: +71 38 2.99 (71.63416d)	Proper Motion Dec: -0.02 arcsec/yr		
		Equinox: J2000	Epoch of Position: 2000.0		

Comments: HST FASTEX standard
PM, coords from USNOB

GSC2 coords are 11:00:34.25, 71:38:02.97, 1997.19 epoch
Category=STAR
Description=[DA]
Extended=NO

Exposures

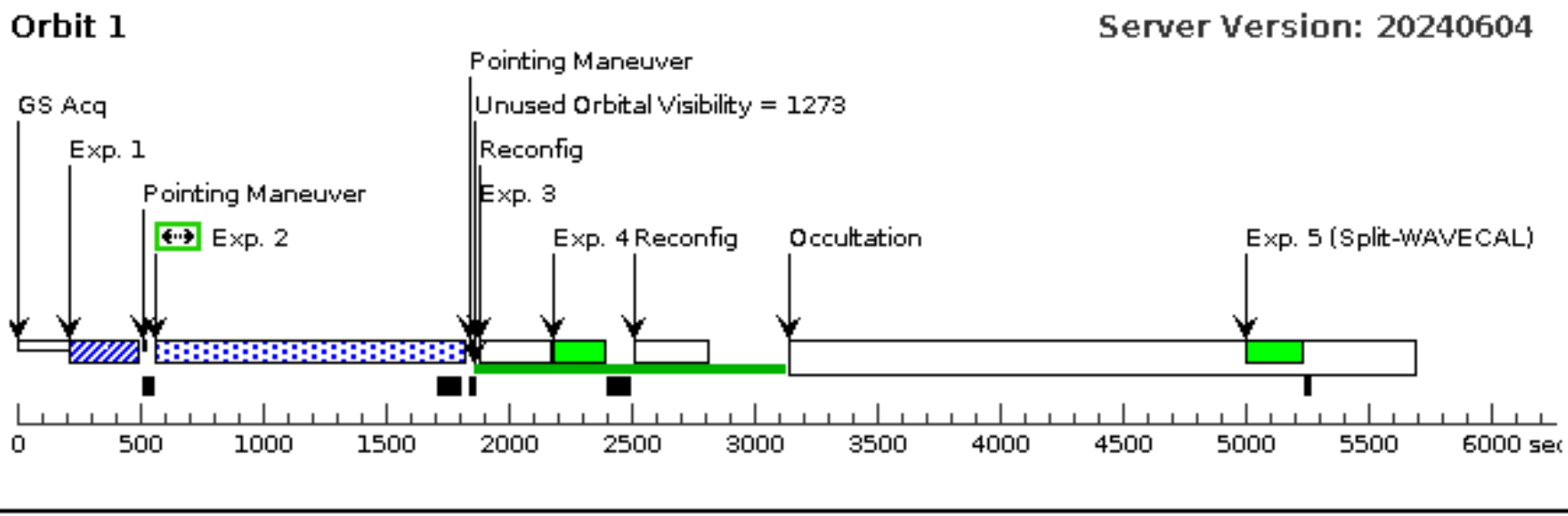
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925424)	(2) WD1057+719	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				30 Secs (30 Secs) *[==>]*	***[1]***
	Comments: Exptime for S/N of 55 is 27 seconds. *In cycle 32, we replaced GD71 with WD1057+719 due to HST going into reduced gyro mode. The original exptime for S/N of 55 for GD71 was 90 seconds, so we use 30 seconds to achieve the same S/N as before.*								
2	G130M/1096/FUVB/LP2 (COS.sp.1937933)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=953; FP-POS=3; SEGMENT=B; LIFETIME-POS=LP2			1053 Secs (1053 Secs) *[==>]*	***[1]***
	Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to obse rve with both segments which will reduce time used in visits. A draw back will be increased exposure time. In the TIR 2018-01, the team advises that an S/N of ~7 at 1030.00 will achieve comparable TDS data quality t o the previous GD71 observations. *FUVB only (all ETC warnings come from FUVA).* *The FUVB count rate is 217 cts/sec, so the buffer time is 4,294 sec.* *Set buffer-time = exptime - 110 sec*								
3		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	***[1]***
	Comments: Work-around to efficiently schedule the SEG-B to SEG-A reconfiguration. Eliminates SPSS induced gaps.								
4	G130M/1096/FUVA WAVECAL/LP2	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1096 A	FP-POS=3; SEGMENT=A; FLASH=NO; LIFETIME-POS=LP2			160 Secs (160 Secs) *[==>]*	***[1]***
	Comments: Cycle 28: the exposure time has been updated to 160 seconds. This was determined after characterizing the decrease by about 12 percent in the summed count-rate with time over the period between Dece mber 2017 and April 2020.								
5	G160M/1623/LP6 (COS.sp.1937935)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=337; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			1094 Secs (1094 Secs) *[==>]*	***[2]***
	Comments: ETC Buffer fill time 506 seconds *Set buffer-time = 506 * (2/3)*								
6	G160M/1577/LP6 (COS.sp.1937936)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=251; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			928 Secs (928 Secs) *[==>]*	***[2]***
	Comments: ETC Buffer fill time 377 seconds *Set buffer-time = 377 * (2/3)*								

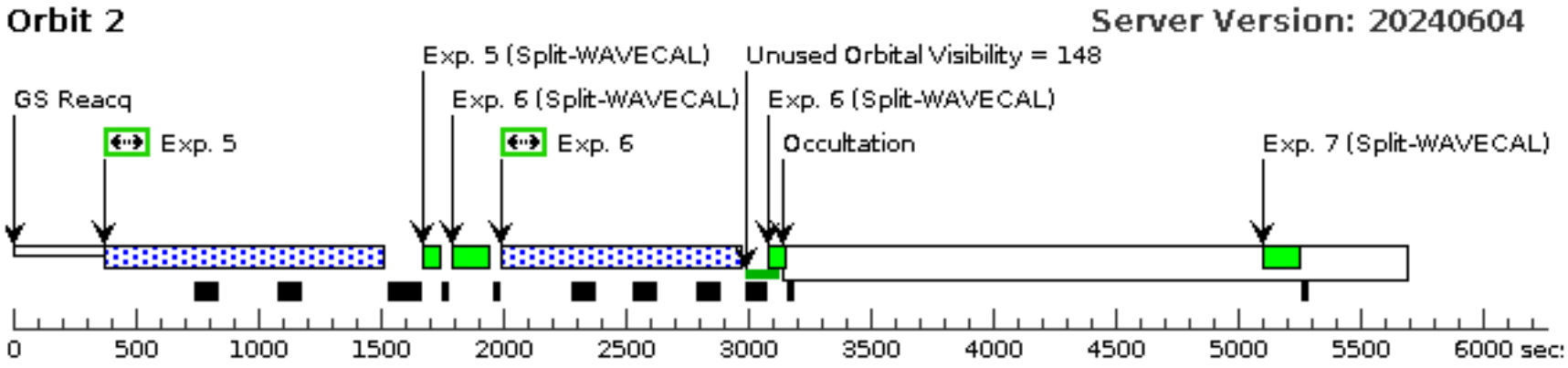
	7	G160M/1533/LP6 (COS.sp.1937)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1533 A	BUFFER-TIME=189; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6	669 Secs (669 Secs) *[==>]*	***[3]***

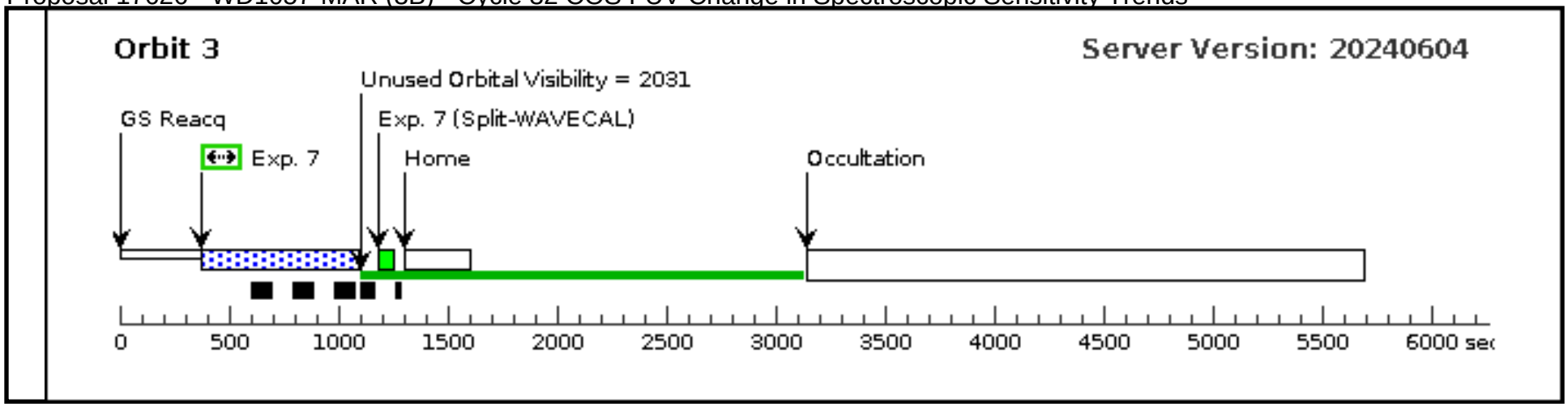
Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to obse rve with both segments which will reduce time used in visits.

ETC buffer-time = 283
Set buffer-time = 283(2/3)*

Orbit Structure






Orbit 3
Server Version: 20240604
Unused Orbital Visibility = 2031
GS Reacq
Exp. 7 (Split-WAVECAL)
Exp. 7
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17626, WD0308-MAY (4A), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 90%; BETWEEN 04-MAY-2025:00:00:00 AND 18-MAY-2025:00:00:00

Diagnostics

(WD0308-MAY (4A)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d)	Proper Motion RA: 149.241 mas/yr	V=14.07+/-0.02	Reference Frame: ICRS
		Dec: -56 23 49.41 (-56.39706d)	Proper Motion Dec: 66.919 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

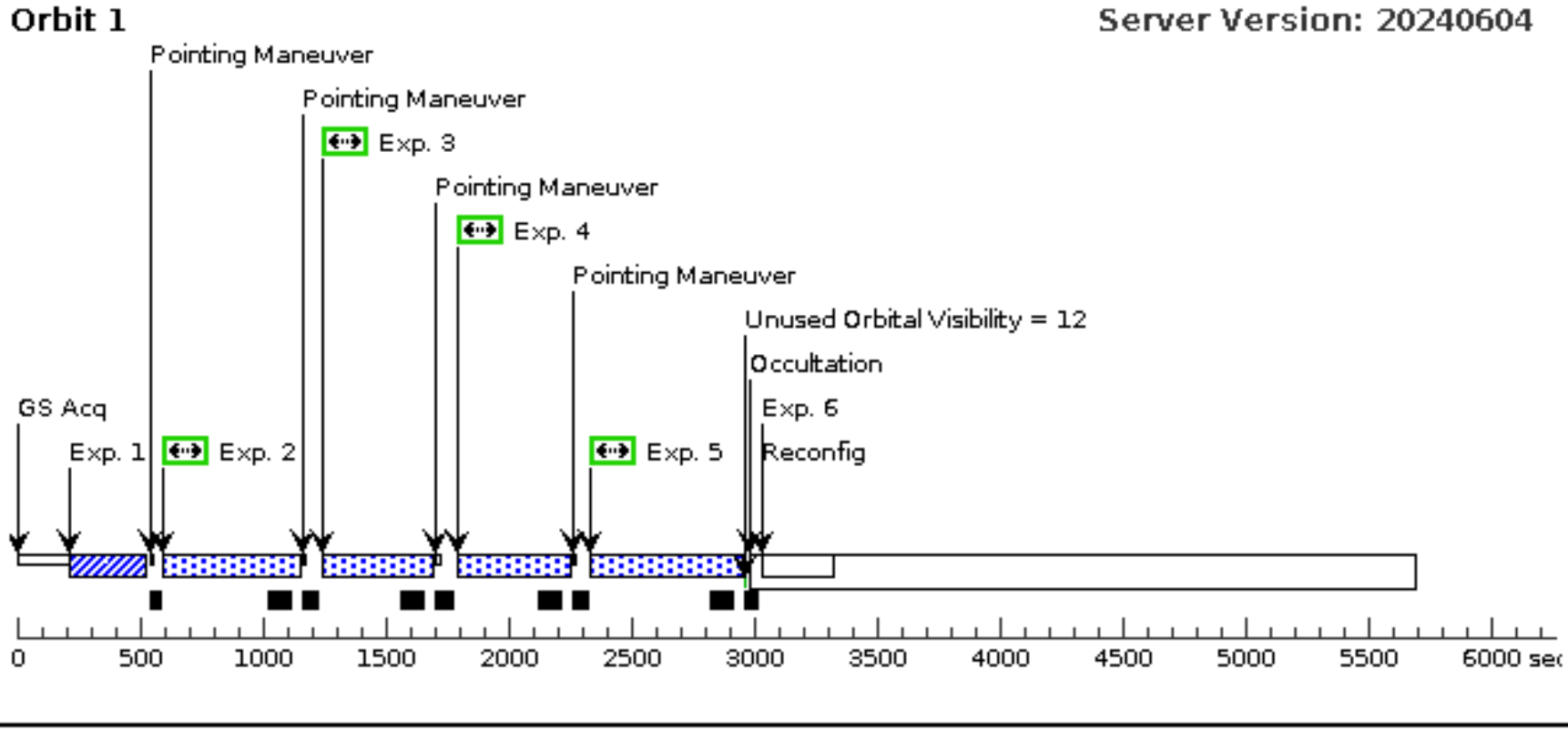
Comments: Coordinates carried over from Cycle 25 proposal, checked against SIMBAD, which uses the GAIA DR2 catalog.
Proper motions changed to mas/yr, from SIMBAD, also using the GAIA DR2 catalog.
Category=STAR
Description=[DB]
Extended=NO

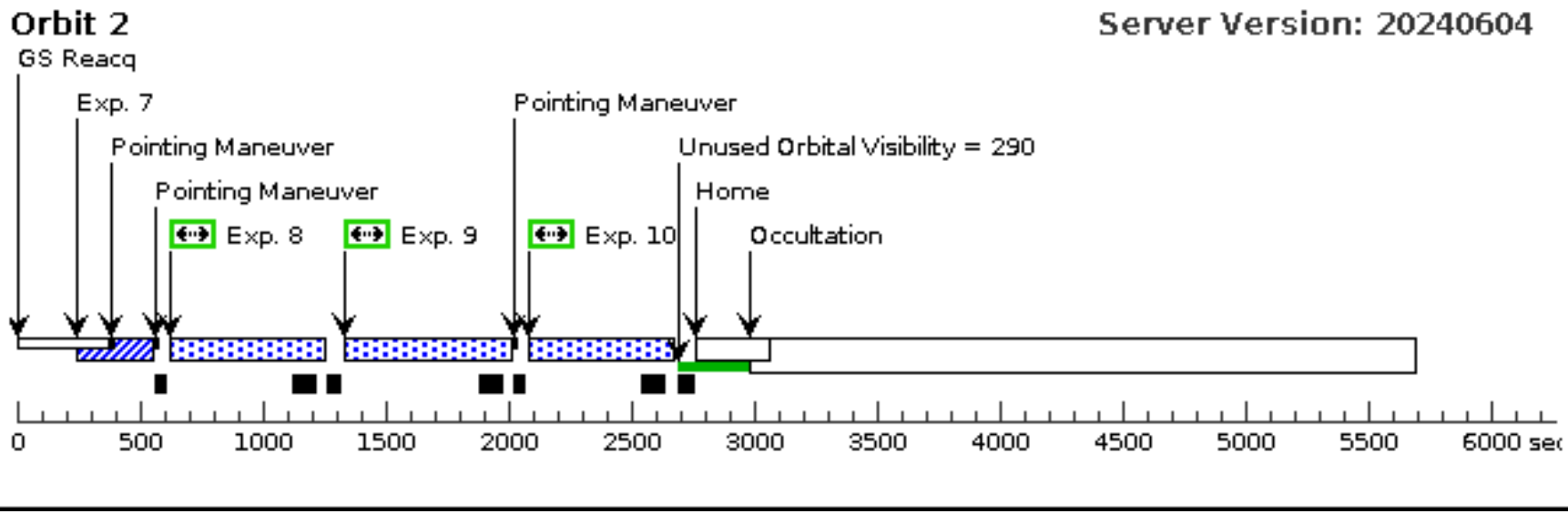
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925399)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	*[1]*
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									
2	G130M/1055/LP2 (COS.sp.1937916)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=232; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP2			342 Secs (342 Secs) *[==>]*	*[1]*
Comments: Cycle 29 comment: exposure time updated following blue modes TDS and FLUXTAB update. --- *Cycle 32 comment: exposure time updated following blue modes TDS and FLUXTAB update.* *ETC buffer time is 1405 sec* *Set buffer time = exptime - 110 sec*									
3	G130M/1222/LP4 (COS.sp.1937921)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=180; FP-POS=3; LIFETIME-POS=LP4; SEGMENT=BOTH			290 Secs (290 Secs) *[==>]*	*[1]*
Comments: ETC buffer time is 456 sec. *Set buffer time = exptime - 110 sec*									
4	G130M/1291/LP5 (COS.sp.1937926)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=198; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=BOTH			308 Secs (308 Secs) *[==>]*	*[1]*
Comments: ETC buffer time is 395 sec. *Set buffer time = exptime - 110 sec*									
5	G140L/1280/LP3 (COS.sp.1937927)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=282; FP-POS=3; LIFETIME-POS=LP3; SEGMENT=BOTH			392 Secs (392 Secs) *[==>]*	*[1]*
Comments: Cycle 30 comment: exposure time updated following FLUXTAB update. *ETC buffer time is 610 sec.* *Set buffer time = exptime - 110 sec*									
6		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	*[1]*
Comments: Work-around to efficiently schedule the reconfiguration to SEG-A. Eliminates SPSS induced gaps.									
7	ACQ/IM (COS.ta.1925405)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	*[2]*
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									

	8	G140L/800/FUVA/LP3 (COS.sp.1937928)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=304; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	414 Secs (414 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 441 sec. *Set buffer time = exptime - 110 sec*						
	9	G140L/1105/FUVA/LP3 (COS.sp.1937930)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=427; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	537 Secs (537 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 457 sec. *Set buffer time = exptime - 110 sec*						
	10	G130M/1327/FUVA/LP5 (COS.sp.1937931)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=242; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	352 Secs (352 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 379 sec. *set buffer time = exptime - 110 sec*						

Orbit Structure





Visit

Proposal 17626, WD1057-MAY (4B), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 80%; BETWEEN 04-MAY-2025:00:00:00 AND 18-MAY-2025:00:00:00

Comments: exposure 4: GO wavecal to calculate the OSM shifts of the G130M/1096/FUVB observation
George Chapman added Exposure 3
All G160M observations are with SEGMENT = BOTH

In Cycle 32, HST went into reduced gyro mode and made GD71 unscheduable for most of the year until September. Due to this, target WD1057+719 has been exchanged for GD71.

Diagnostics

(WD1057-MAY (4B)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1057+719	RA: 11 00 34.2200 (165.1425833d)	Proper Motion RA: -0.00973 sec of time/yr	V=14.68	Reference Frame: ICRS
		Dec: +71 38 2.99 (71.63416d)	Proper Motion Dec: -0.02 arcsec/yr		
		Equinox: J2000	Epoch of Position: 2000.0		

Comments: HST FASTEX standard
PM, coords from USNOB

GSC2 coords are 11:00:34.25, 71:38:02.97, 1997.19 epoch
Category=STAR
Description=[DA]
Extended=NO

Exposures

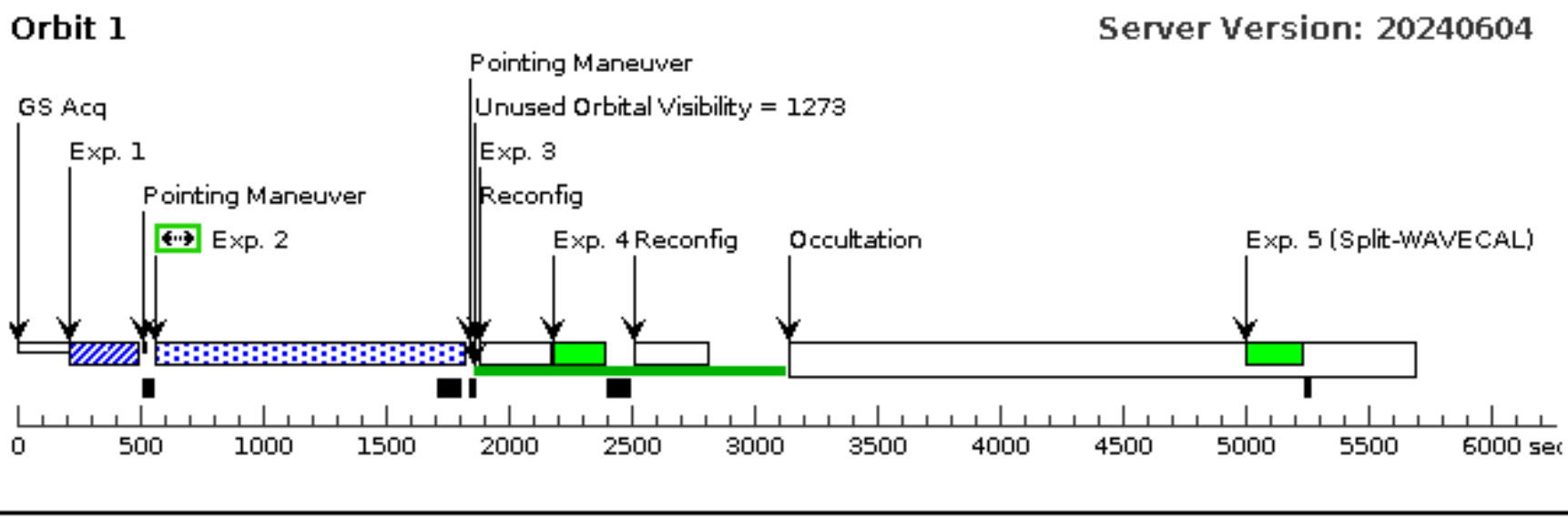
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925424)	(2) WD1057+719	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				30 Secs (30 Secs) *[==>]*	*[1]*
	Comments: Exptime for S/N of 55 is 27 seconds. *In cycle 32, we replaced GD71 with WD1057+719 due to HST going into reduced gyro mode. The original exptime for S/N of 55 for GD71 was 90 seconds, so we use 30 seconds to achieve the same S/N as before.*								
2	G130M/1096/FUVB/LP2 (COS.sp.1937933)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=953; FP-POS=3; SEGMENT=B; LIFETIME-POS=LP2			1053 Secs (1053 Secs) *[==>]*	*[1]*
	Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to obse rve with both segments which will reduce time used in visits. A draw back will be increased exposure time. In the TIR 2018-01, the team advises that an S/N of ~7 at 1030.00 will achieve comparable TDS data quality t o the previous GD71 observations. *FUVB only (all ETC warnings come from FUVA).* *The FUVB count rate is 217 cts/sec, so the buffer time is 4,294 sec.* *Set buffer-time = exptime - 110 sec*								
3		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	*[1]*
	Comments: Work-around to efficiently schedule the SEG-B to SEG-A reconfiguration. Eliminates SPSS induced gaps.								
4	G130M/1096/FUVA WAVECAL/LP2	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1096 A	FP-POS=3; SEGMENT=A; FLASH=NO; LIFETIME-POS=LP2			160 Secs (160 Secs) *[==>]*	*[1]*
	Comments: Cycle 28: the exposure time has been updated to 160 seconds. This was determined after characterizing the decrease by about 12 percent in the summed count-rate with time over the period between Dece mber 2017 and April 2020.								
5	G160M/1623/LP6 (COS.sp.1937935)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=337; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			1094 Secs (1094 Secs) *[==>]*	*[2]*
	Comments: ETC Buffer fill time 506 seconds *Set buffer-time = 506 * (2/3)*								
6	G160M/1577/LP6 (COS.sp.1937936)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=251; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			928 Secs (928 Secs) *[==>]*	*[2]*
	Comments: ETC Buffer fill time 377 seconds *Set buffer-time = 377 * (2/3)*								

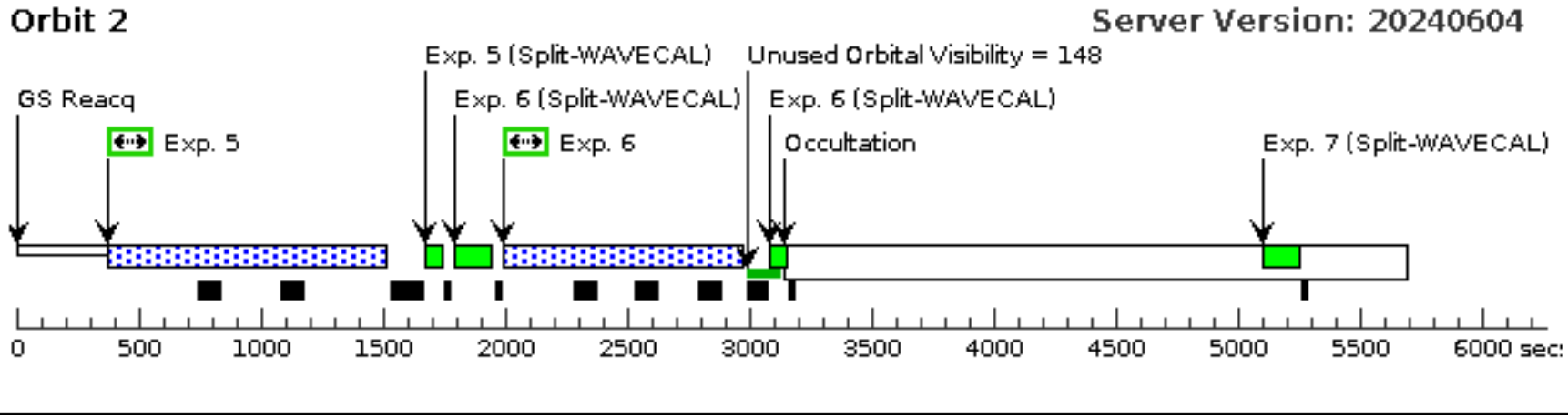
	7	G160M/1533/LP6 (COS.sp.1937)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1533 A	BUFFER-TIME=189; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6	669 Secs (669 Secs) *[==>]*	***[3]***

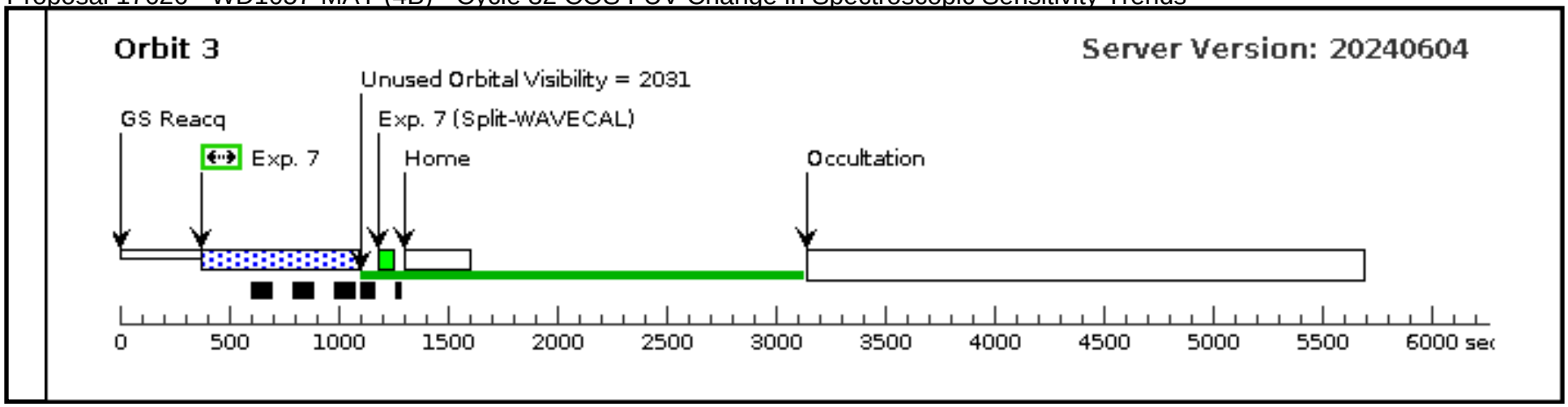
Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to observe with both segments which will reduce time used in visits.

ETC buffer-time = 283
Set buffer-time = 283(2/3)*

Orbit Structure






Orbit 3
Server Version: 20240604
Unused Orbital Visibility = 2031
GS Reacq
Exp. 7 (Split-WAVECAL)
Exp. 7
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17626, WD0308-JUL (5A), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 90%; BETWEEN 13-JUL-2025:00:00:00 AND 27-JUL-2025:00:00:00

Diagnostics

(WD0308-JUL (5A)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d)	Proper Motion RA: 149.241 mas/yr	V=14.07+/-0.02	Reference Frame: ICRS
		Dec: -56 23 49.41 (-56.39706d)	Proper Motion Dec: 66.919 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

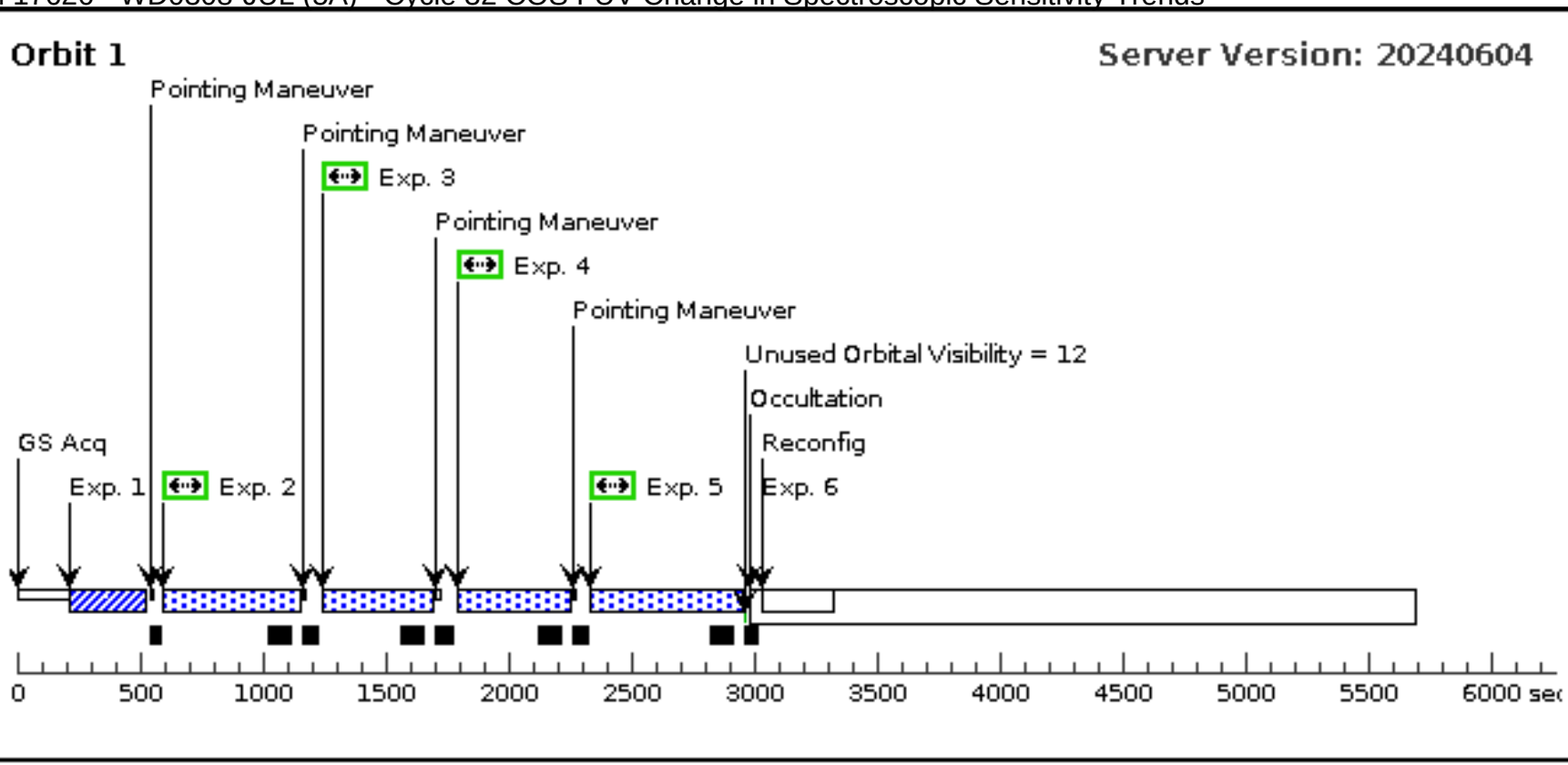
Comments: Coordinates carried over from Cycle 25 proposal, checked against SIMBAD, which uses the GAIA DR2 catalog.
Proper motions changed to mas/yr, from SIMBAD, also using the GAIA DR2 catalog.
Category=STAR
Description=[DB]
Extended=NO

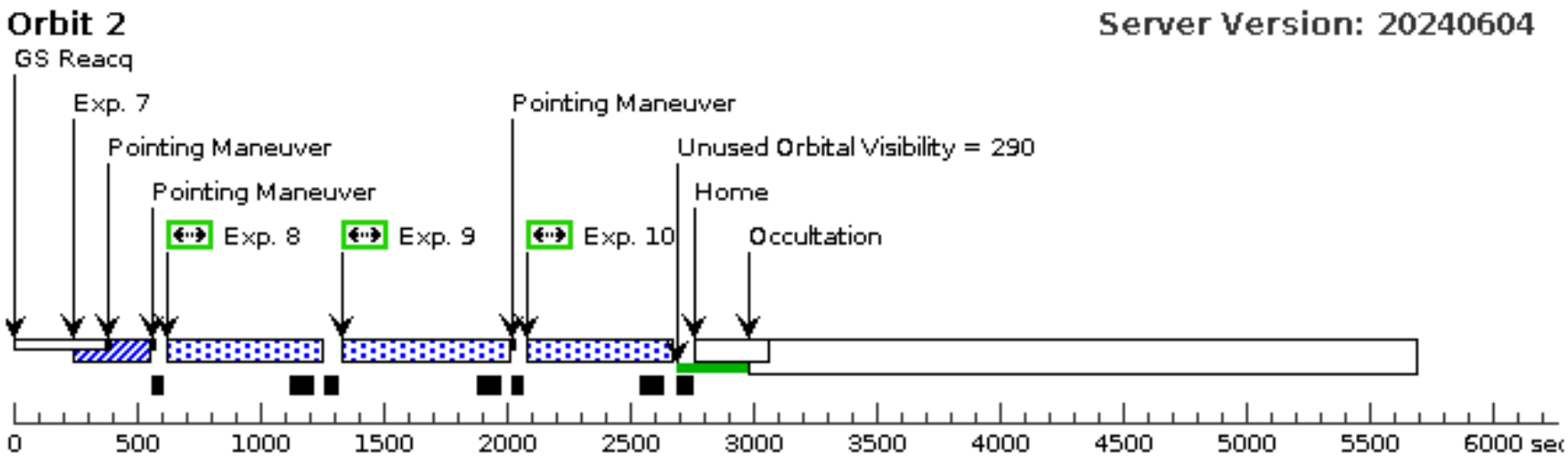
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925399)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	 ***[1]***
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									
2	G130M/1055/LP2 (COS.sp.1937916)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=232; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP2			342 Secs (342 Secs) *[==>]*	 ***[1]***
Comments: Cycle 29 comment: exposure time updated following blue modes TDS and FLUXTAB update. --- *Cycle 32 comment: exposure time updated following blue modes TDS and FLUXTAB update.* *ETC buffer time is 1405 sec* *Set buffer time = exptime - 110 sec*									
3	G130M/1222/LP4 (COS.sp.1937921)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=180; FP-POS=3; LIFETIME-POS=LP4; SEGMENT=BOTH			290 Secs (290 Secs) *[==>]*	 ***[1]***
Comments: ETC buffer time is 456 sec. *Set buffer time = exptime - 110 sec*									
4	G130M/1291/LP5 (COS.sp.1937926)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=198; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=BOTH			308 Secs (308 Secs) *[==>]*	 ***[1]***
Comments: ETC buffer time is 395 sec. *Set buffer time = exptime - 110 sec*									
5	G140L/1280/LP3 (COS.sp.1937927)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=282; FP-POS=3; LIFETIME-POS=LP3; SEGMENT=BOTH			392 Secs (392 Secs) *[==>]*	 ***[1]***
Comments: Cycle 30 comment: exposure time updated following FLUXTAB update. *ETC buffer time is 610 sec.* *Set buffer time = exptime - 110 sec*									
6		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	 ***[1]***
Comments: Work-around to efficiently schedule the reconfiguration to SEG-A. Eliminates SPSS induced gaps.									
7	ACQ/IM (COS.ta.1925405)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	 ***[2]***
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									

	8	G140L/800/FUVA/LP3 (COS.sp.1937928)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=304; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	414 Secs (414 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 441 sec. *Set buffer time = exptime - 110 sec*						
	9	G140L/1105/FUVA/LP3 (COS.sp.1937930)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=427; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	537 Secs (537 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 457 sec. *Set buffer time = exptime - 110 sec*						
	10	G130M/1327/FUVA/LP5 (COS.sp.1937931)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=242; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	352 Secs (352 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 379 sec. *set buffer time = exptime - 110 sec*						

Orbit Structure





Visit

Proposal 17626, WD0308-JUL (5B), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 13-JUL-2025:00:00:00 AND 27-JUL-2025:00:00:00

Fixed Targets

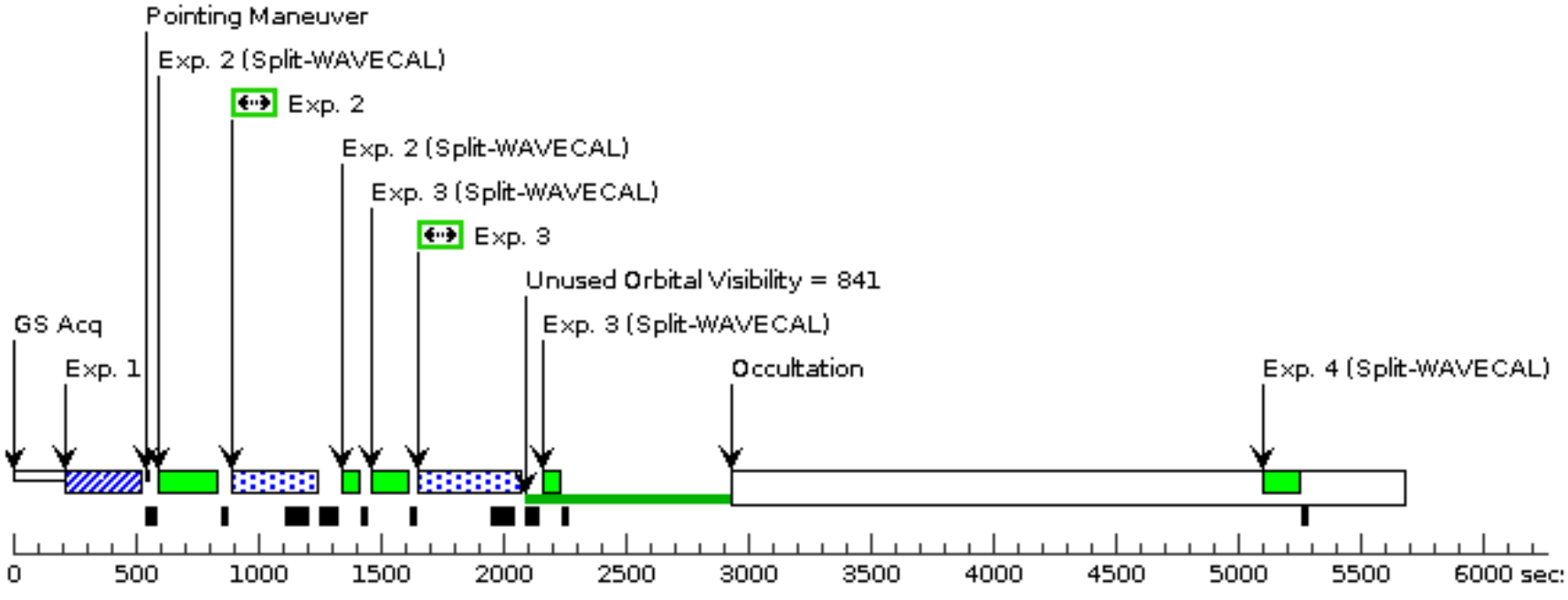
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 149.241 mas/yr Proper Motion Dec: 66.919 mas/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS

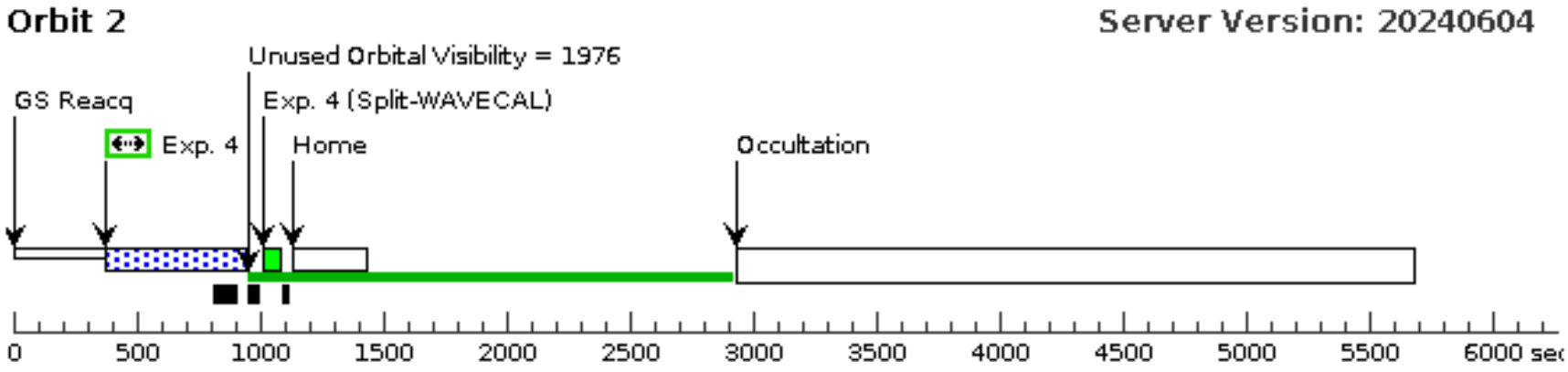
Comments: Coordinates carried over from Cycle 25 proposal, checked against SIMBAD, which uses the GAIA DR2 catalog.
Proper motions changed to mas/yr, from SIMBAD, also using the GAIA DR2 catalog.
Category=STAR
Description=[DB]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (839564)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	***[1]***
Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*									
2	G160M/1533/BOTH/LP6 (COS.sp.1937941)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=3; BUFFER-TIME=187; LIFETIME-POS=LP6; SEGMENT=BOTH			297 Secs (297 Secs) *[==>]*	***[1]***
Comments: ETC buffer time is 659 sec. *Set buffer time = exptime - 110 sec.*									
3	G160M/1577/BOTH/LP6 (COS.sp.1937942)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; BUFFER-TIME=259; LIFETIME-POS=LP6; SEGMENT=BOTH			369 Secs (369 Secs) *[==>]*	***[1]***
Comments: ETC buffer time is 829 sec. *Set buffer time = exptime - 110 sec*									
4	G160M/1623/BOTH/LP6 (COS.sp.1937943)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=408; LIFETIME-POS=LP6; SEGMENT=BOTH			518 Secs (518 Secs) *[==>]*	***[2]***
Comments: ETC buffer time is 1046 sec. *Set buffer time = exptime - 110 sec*									

Orbit Structure





Visit

Proposal 17626, WD0308-SEP (6A), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 90%; BETWEEN 07-SEP-2025:00:00:00 AND 21-SEP-2025:00:00:00

Diagnostics

(WD0308-SEP (6A)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d)	Proper Motion RA: 149.241 mas/yr	V=14.07+/-0.02	Reference Frame: ICRS
		Dec: -56 23 49.41 (-56.39706d)	Proper Motion Dec: 66.919 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

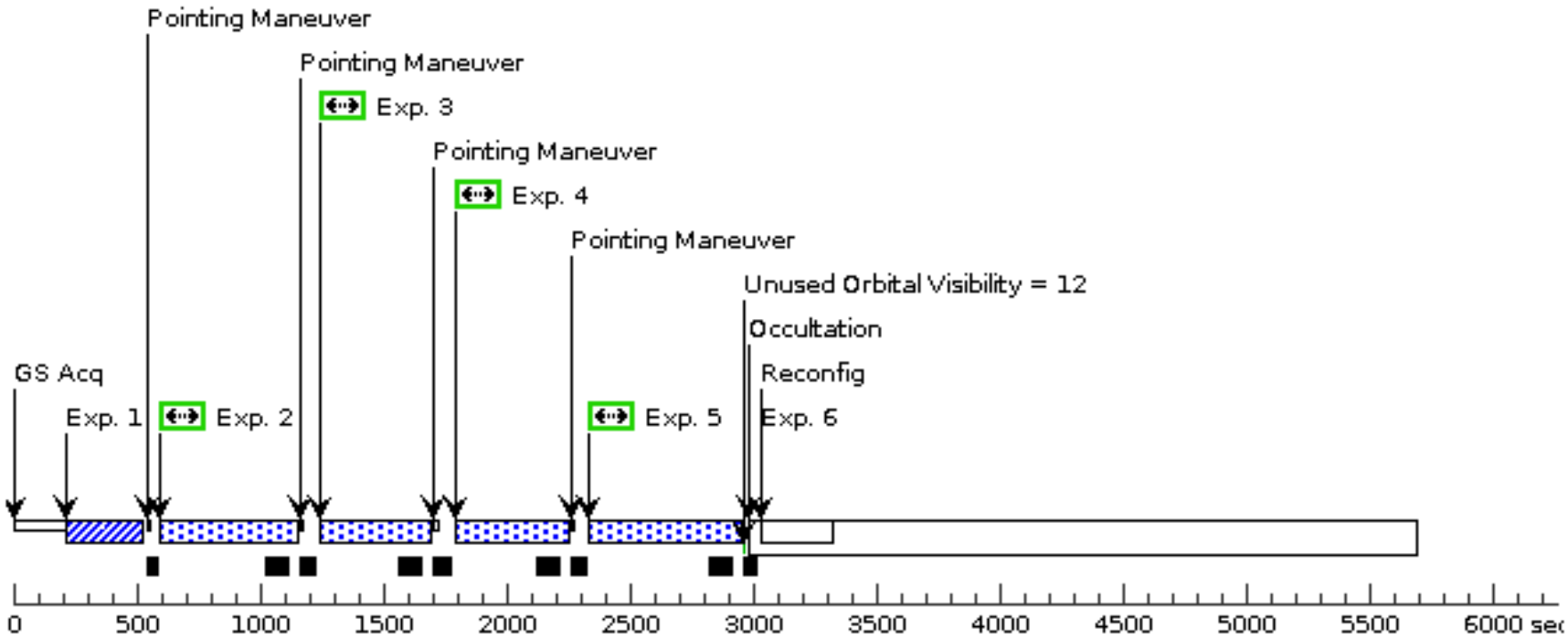
Comments: Coordinates carried over from Cycle 25 proposal, checked against SIMBAD, which uses the GAIA DR2 catalog.
Proper motions changed to mas/yr, from SIMBAD, also using the GAIA DR2 catalog.
Category=STAR
Description=[DB]
Extended=NO

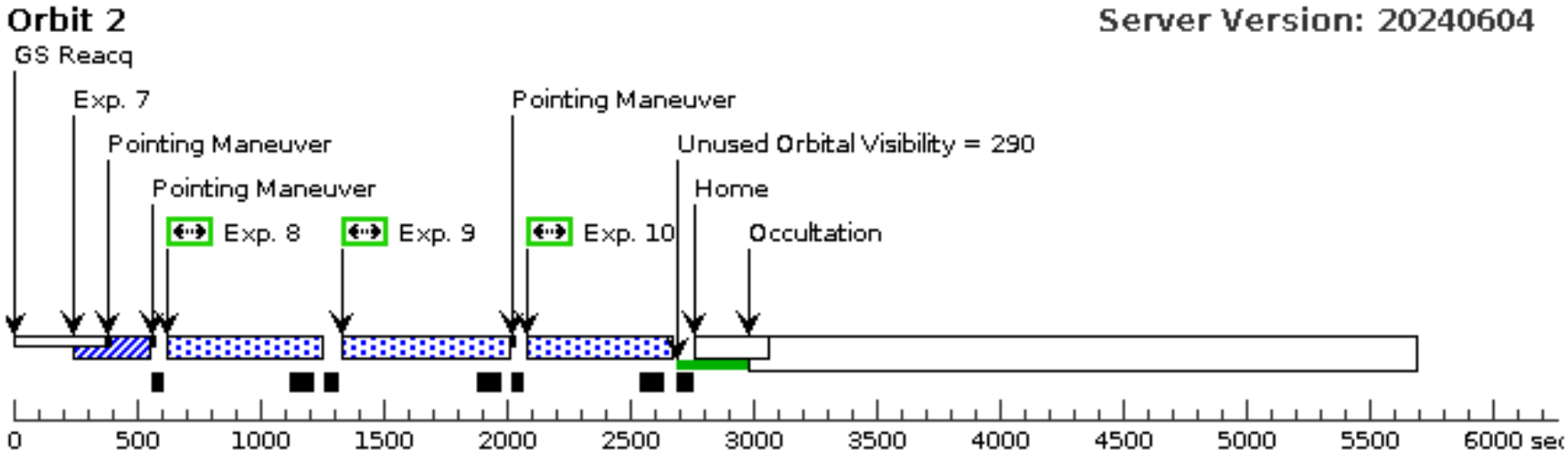
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925399)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	*[1]*
	Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*								
2	G130M/1055/LP2 (COS.sp.1937916)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1055 A	BUFFER-TIME=232; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP2			342 Secs (342 Secs) *[==>]*	*[1]*
	Comments: Cycle 29 comment: exposure time updated following blue modes TDS and FLUXTAB update. --- *Cycle 32 comment: exposure time updated following blue modes TDS and FLUXTAB update.* *ETC buffer time is 1405 sec* *Set buffer time = exptime - 110 sec*								
3	G130M/1222/LP4 (COS.sp.1937921)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=180; FP-POS=3; LIFETIME-POS=LP4; SEGMENT=BOTH			290 Secs (290 Secs) *[==>]*	*[1]*
	Comments: ETC buffer time is 456 sec. *Set buffer time = exptime - 110 sec*								
4	G130M/1291/LP5 (COS.sp.1937926)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=198; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=BOTH			308 Secs (308 Secs) *[==>]*	*[1]*
	Comments: ETC buffer time is 395 sec. *Set buffer time = exptime - 110 sec*								
5	G140L/1280/LP3 (COS.sp.1937927)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=282; FP-POS=3; LIFETIME-POS=LP3; SEGMENT=BOTH			392 Secs (392 Secs) *[==>]*	*[1]*
	Comments: Cycle 30 comment: exposure time updated following FLUXTAB update. *ETC buffer time is 610 sec.* *Set buffer time = exptime - 110 sec*								
6		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	*[1]*
	Comments: Work-around to efficiently schedule the reconfiguration to SEG-A. Eliminates SPSS induced gaps.								
7	ACQ/IM (COS.ta.1925405)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				45 Secs (45 Secs) *[==>]*	*[2]*
	Comments: cycle 24 comment: exposure times not reduced following updated ETC calculations, differences not enough to affect orbit requested. *Cycle 28 comment: we continue to use the same exposure time since differences do not affect orbit request.*								

	8	G140L/800/FUVA/LP3 (COS.sp.1937928)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=304; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	414 Secs (414 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 441 sec. *Set buffer time = exptime - 110 sec*						
	9	G140L/1105/FUVA/LP3 (COS.sp.1937930)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=427; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP3	537 Secs (537 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 457 sec. *Set buffer time = exptime - 110 sec*						
	10	G130M/1327/FUVA/LP5 (COS.sp.1937931)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=242; FP-POS=3; LIFETIME-POS=LP5; SEGMENT=A	352 Secs (352 Secs) *[==>]*	***[2]***
		Comments: ETC buffer time is 379 sec. *set buffer time = exptime - 110 sec*						

Orbit Structure





Visit

Proposal 17626, WD1057-SEP (6B), implementation Tue Oct 15 12:00:51 GMT 2024

Diagnostic Status: Warning

Scientific Instruments: S/C, COS/FUV, COS/NUV

Special Requirements: GYRO MODE 1G; SCHED 80%; BETWEEN 01-SEP-2025:00:00:00 AND 30-SEP-2025:00:00:00

Comments: exposure 4: GO wavecal to calculate the OSM shifts of the G130M/1096/FUVB observation
George Chapman added Exposure 3
All G160M observations are with SEGMENT = BOTH

In Cycle 32, HST went into reduced gyro mode and made GD71 unscheduable for most of the year until September. Due to this, target WD1057+719 has been exchanged for GD71.

Diagnostics

(WD1057-SEP (6B)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1057+719	RA: 11 00 34.2200 (165.1425833d)	Proper Motion RA: -0.00973 sec of time/yr	V=14.68	Reference Frame: ICRS
		Dec: +71 38 2.99 (71.63416d)	Proper Motion Dec: -0.02 arcsec/yr		
		Equinox: J2000	Epoch of Position: 2000.0		

Comments: HST FASTEX standard
PM, coords from USNOB

GSC2 coords are 11:00:34.25, 71:38:02.97, 1997.19 epoch
Category=STAR
Description=[DA]
Extended=NO

Exposures

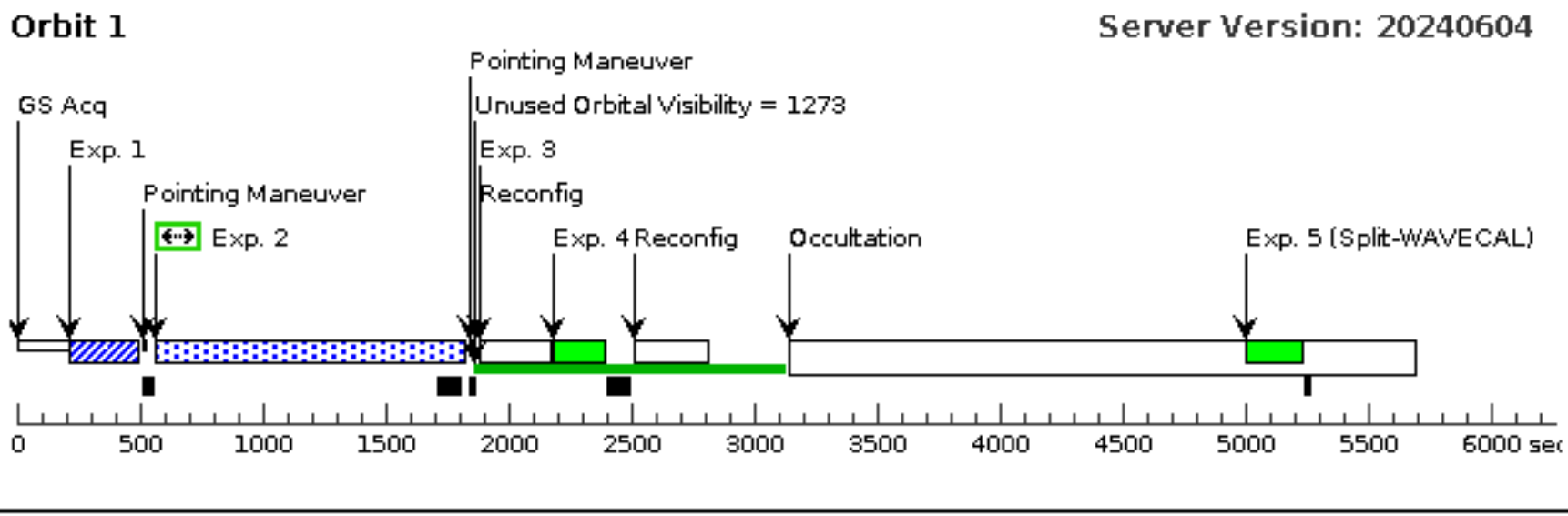
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IM (COS.ta.1925424)	(2) WD1057+719	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				30 Secs (30 Secs) *[==>]*	*[1]*
	Comments: Exptime for S/N of 55 is 27 seconds. *In cycle 32, we replaced GD71 with WD1057+719 due to HST going into reduced gyro mode. The original exptime for S/N of 55 for GD71 was 90 seconds, so we use 30 seconds to achieve the same S/N as before.*								
2	G130M/1096/FUVB/LP2 (COS.sp.1937933)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=953; FP-POS=3; SEGMENT=B; LIFETIME-POS=LP2			1053 Secs (1053 Secs) *[==>]*	*[1]*
	Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to obse rve with both segments which will reduce time used in visits. A draw back will be increased exposure time. In the TIR 2018-01, the team advises that an S/N of ~7 at 1030.00 will achieve comparable TDS data quality t o the previous GD71 observations. *FUVB only (all ETC warnings come from FUVA).* *The FUVB count rate is 217 cts/sec, so the buffer time is 4,294 sec.* *Set buffer-time = exptime - 110 sec*								
3		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVLOW		1 Secs (1 Secs) *[==>]*	*[1]*
	Comments: Work-around to efficiently schedule the SEG-B to SEG-A reconfiguration. Eliminates SPSS induced gaps.								
4	G130M/1096/FUVA WAVECAL/LP2	WAVE	COS/FUV, TIME-TAG, WCA	G130M 1096 A	FP-POS=3; SEGMENT=A; FLASH=NO; LIFETIME-POS=LP2			160 Secs (160 Secs) *[==>]*	*[1]*
	Comments: Cycle 28: the exposure time has been updated to 160 seconds. This was determined after characterizing the decrease by about 12 percent in the summed count-rate with time over the period between Dece mber 2017 and April 2020.								
5	G160M/1623/LP6 (COS.sp.1937935)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=337; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			1094 Secs (1094 Secs) *[==>]*	*[2]*
	Comments: ETC Buffer fill time 506 seconds *Set buffer-time = 506 * (2/3)*								
6	G160M/1577/LP6 (COS.sp.1937936)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=251; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6			928 Secs (928 Secs) *[==>]*	*[2]*
	Comments: ETC Buffer fill time 377 seconds *Set buffer-time = 377 * (2/3)*								

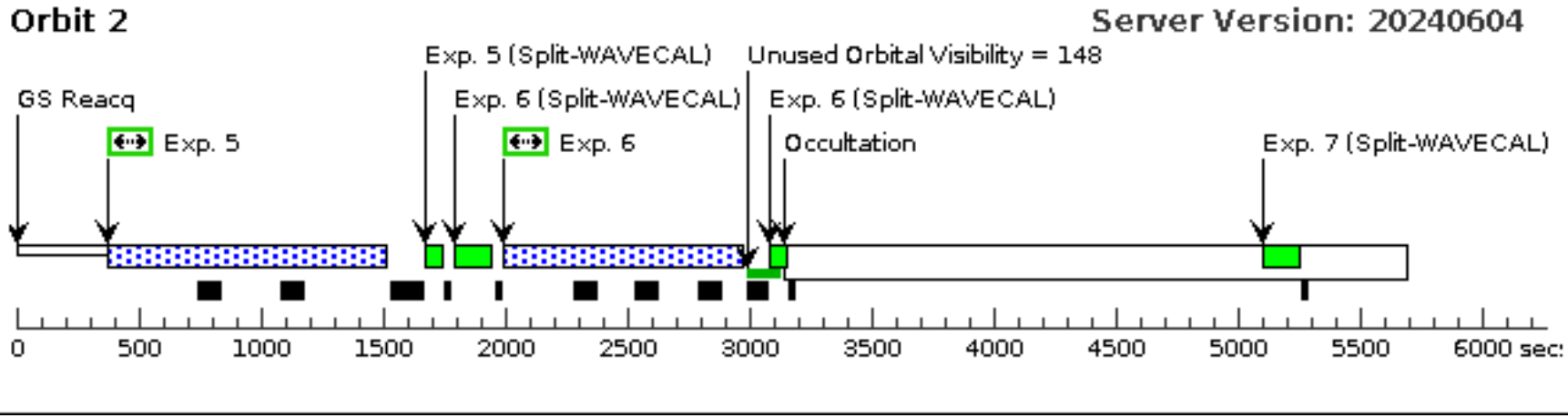
	7	G160M/1533/LP6 (COS.sp.1937)	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1533 A	BUFFER-TIME=189; FP-POS=3; SEGMENT=BOTH; LIFETIME-POS=LP6	669 Secs (669 Secs) *[==>]*	***[3]***

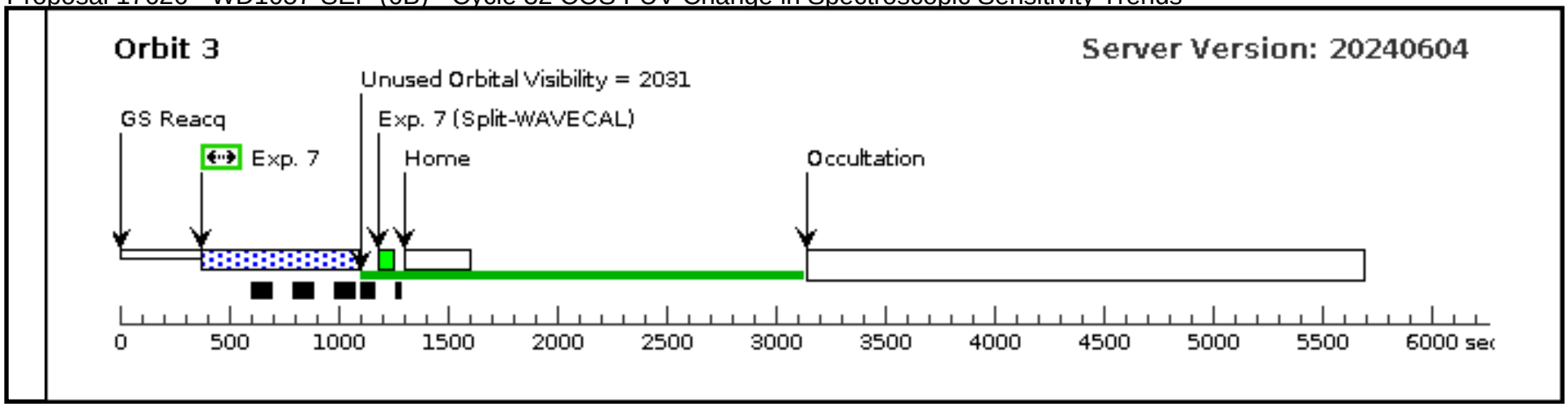
Comments: In Cycle 32, Hubble went reduced gyro mode and making GD71 unscheduable. Due to this, GD71 has been replaced with WD1057+719. WD1057+719 is dimmer than GD71 and allows the ability to obse rve with both segments which will reduce time used in visits.

ETC buffer-time = 283
Set buffer-time = 283(2/3)*

Orbit Structure






Orbit 3
Server Version: 20240604
Unused Orbital Visibility = 2031
GS Reacq
Exp. 7 (Split-WAVECAL)
Exp. 7
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec