16233 - Jets and disk scattering - Spatially resolved optical and FUV observations of AA Taudac

Cycle: 28, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

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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	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	2	08-Nov-2022 16:00:38.0	yes
02	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	2	08-Nov-2022 16:00:40.0	yes
03	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	2	08-Nov-2022 16:00:41.0	yes
04	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:42.0	yes
4B	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:43.0	yes
05	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:44.0	yes
5B	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:44.0	yes
06	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:45.0	yes
6B	(1) V-AA-TAU WAVE	STIS/CCD STIS/FUV-MAMA	1	08-Nov-2022 16:00:46.0	yes
07	(1) V-AA-TAU WAVE	STIS/CCD	1	08-Nov-2022 16:00:47.0	yes
7B	(1) V-AA-TAU WAVE	STIS/CCD	1	08-Nov-2022 16:00:48.0	yes
08	(1) V-AA-TAU WAVE	STIS/CCD	2	08-Nov-2022 16:00:49.0	yes
09	(1) V-AA-TAU WAVE	STIS/CCD	1	08-Nov-2022 16:00:51.0	yes

17 Total Orbits Used

ABSTRACT

Planets form during the time, when the central star accretes material from the surrounding circumstellar disk and the final system architecture depends on the poorly known accretion and ejection history. Accretion tracers are particularly prominent in the UV so that the HST legacy program ULLYSES was conceived to obtain a UV atlas of accreting, young stars. In the UV, however, extinction is a severe issue and already moderate amounts of dust can completely extinguish any (accretion) signal. Accretion and extinction decline with age so that it is imperative to understand how well UV observations actually trace genuine accretion emission for higher absorption column densities or if rather other processes, namely jet emission or light scattered towards the observer by the upper disk layers, mimic accretion in spatially unresolved data such as the ULLYSES COS observations.

Our target, the classical T Tauri star AA Tau, currently experiences a long-lasting dimming event, presumably caused by inner disk dust, i.e., the star is currently hidden behind a "natural coronograph" and the direct emission is greatly reduced. Spatially unresolved HST COS data suggest that jet emission and scattering dominate the integrated FUV light during the dimming event. We propose to utilize this situation to detect UV scattering for the first time and to measure the jet's contribution to the FUV light through spatially resolving the emission with a series of STIS long-slit spectra. This experiment, right in time for ULLYSES, will uncover what fundamentally limits UV accretion studies, lack of signal due to absorption or "contaminating" emission spoiling the interpretation of the signals.

OBSERVING DESCRIPTION

The goal of this program is to spatially resolve the FUV and optical emission in the AA Tau system through a series of STIS long-slit observations with the slit oriented along the jet axis (perpendicular to disk's major axis).

The program has been changed to visits of max 2 orbits following the cycle 28 recommendations. The target (the jet) is variable and the different visits shall be executed within the same visibility window.

Due to HST entering the safe mode in Oct. 2021 just before these observations were planned to execute, the exposure times were slightly shortend

to make the program schedulable in 2022.

Reduced gyro operations
==========

This program targets only a single object and requires a certain ORIENT range for the long-slit observations and, hence, has a limited number of observing opportunities per year. Reduced gyro operations may make the requested ORIENT ranges unschedulable. Increased power in the PSF wings is not considered very relevant for this program.

FUV data
=========

6 identical 2 orbit visits with STIS-MAMA and the G140M grating (CENWAVE=1540). During both of the two orbits, we will use the 52x0.1D1 and 52x0.5D1 slits to cover different sky regions. We opt for this setup to mitigate issue due to potential minor source variability.

The flux in the G140M grating with CENWAVE=1540 is dominated by C IV and H2 emission and previous observations allow us to estimate the expected count rates (cf. ETC run STIS.sp.1345817 for the dim state and STIS.sp.1339668 for the bright state). The 52x0.5D1 slit captures about 50% more photons than 52x0.1D1 (see STIS.sp.1345818)

Detector safety

Previous COS observations of AA Tau allow us to demonstrate that the expected global (160 cts/s) and local count rates (0.01 cts/s) are well below safety limits. In fact, the detector can tolerate 100 fold increase in FUV

flux even w.r.t. the bright state; ETC-run: STIS.sp.1339668.

BOT has been run and does not report unsafe targets.

Optical data
============
The optical data consists of a series of five long-slit exposures separated by 0.1 arcsec using the 52x0.1 slit oriented along the jet axis. Five different slit positions (stepped perpendicular to the jet) will cover the same spatial region as the FUV data.

To reduce the number of orbits per visits while maintaining that each visit covers all 5 slit positions, three different visits were constructed: one 2 orbit visit with 3/2 slit positions per orbit, one 2 orbit visit with 2/3 slit positions per orbit and, finally, one 1 orbit visit with all 5 slit positions. This setup balances scheudling flexibility while simultaneously still maintining a low number of readouts per slit position.

We use the STIS G750M grating with CENWAVE=6581 to spatially resolve key lines (Halpha, [O I], [S II], [N II]). Line fluxes have been estimated from a flux calibrated ESO/VLT Xshooter spectrum (Bouvier et al. 2013). We use fluxes of 2.0e-14 erg/s/cm^2 for [O I] 6300 AA and 1.4e-15 erg/s/cm^2 for [S II] 6716 AA; see STIS.sp.1345844 where we additionally assumed that the jet's Halpha emission is 3e-14 erg/s/cm^2.

Target Acquisition
==========
We use the same setup as previous successful aquistions (F28x50LP), but with a slightly increased exposure time (1.2 s). We estimate that this

exposure time is sufficient to aquire the target even for the dimmest ever observed target brightness while still avoiding saturation for bright state conditions.

The target confirmation chart has been reviewed and shows the target well centered.

Visit

Proposal 16233, UV part [1/6] (01), scheduled Tue Nov 08 21:00:51 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

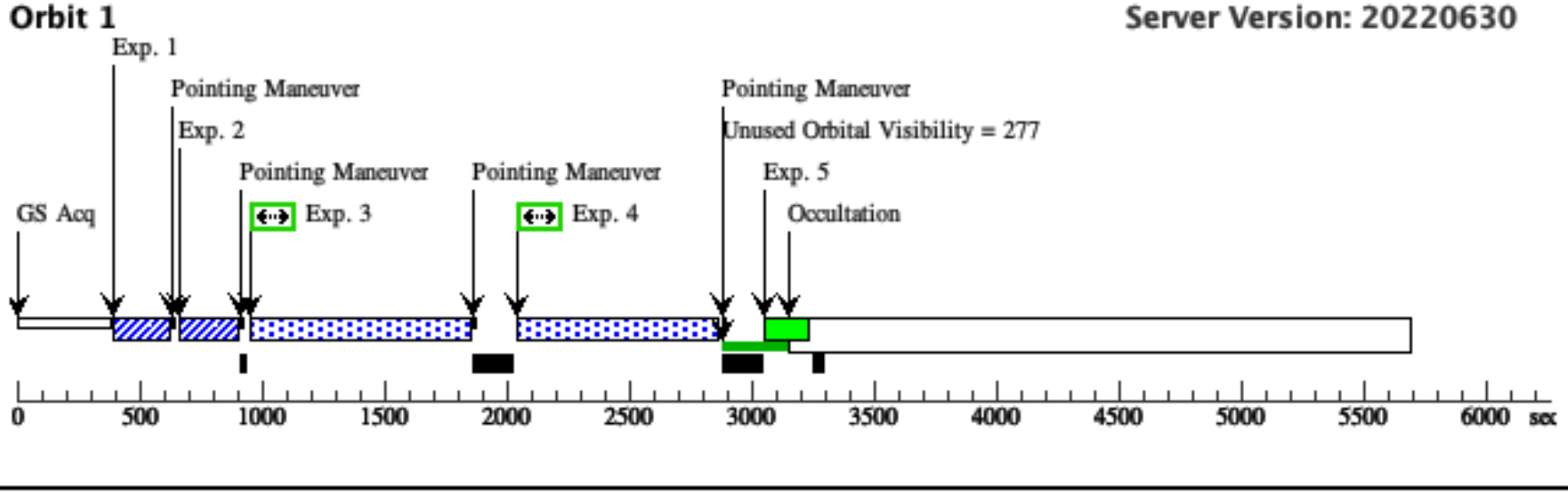
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

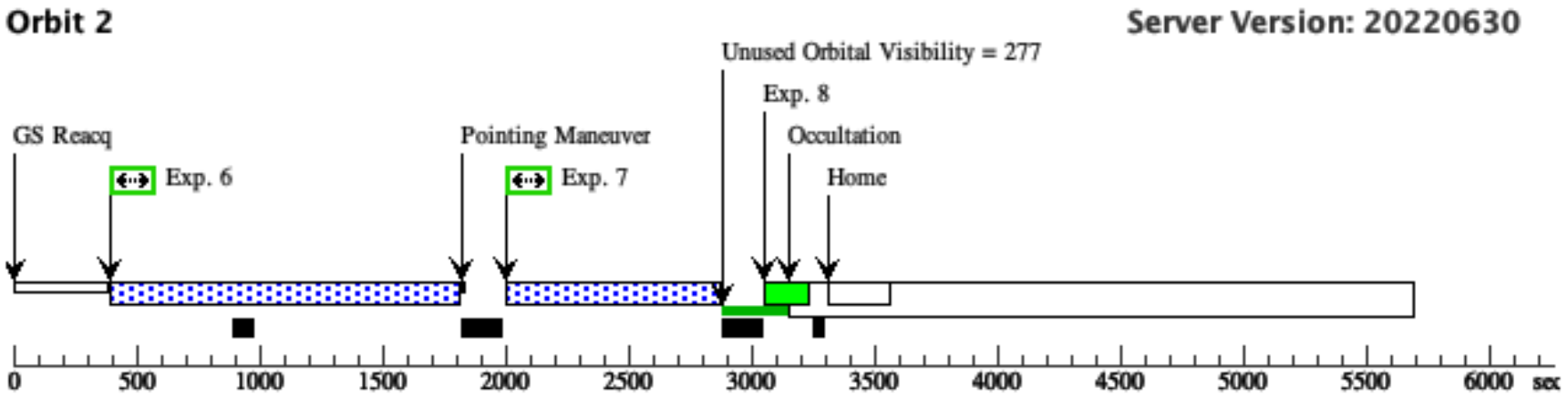
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (760 Secs) *[==>760.0 Secs]*	***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (759 Secs) *[==>759.0 Secs]*	***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***
6	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (1400 Secs) *[==>1400.0 Secs]*	***[2]***
7	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (804 Secs) *[==>804.0 Secs]*	***[2]***
8		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[2]***

Orbit Structure





Visit

Proposal 16233, UV part [2/6] (02), scheduled Tue Nov 08 21:00:51 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

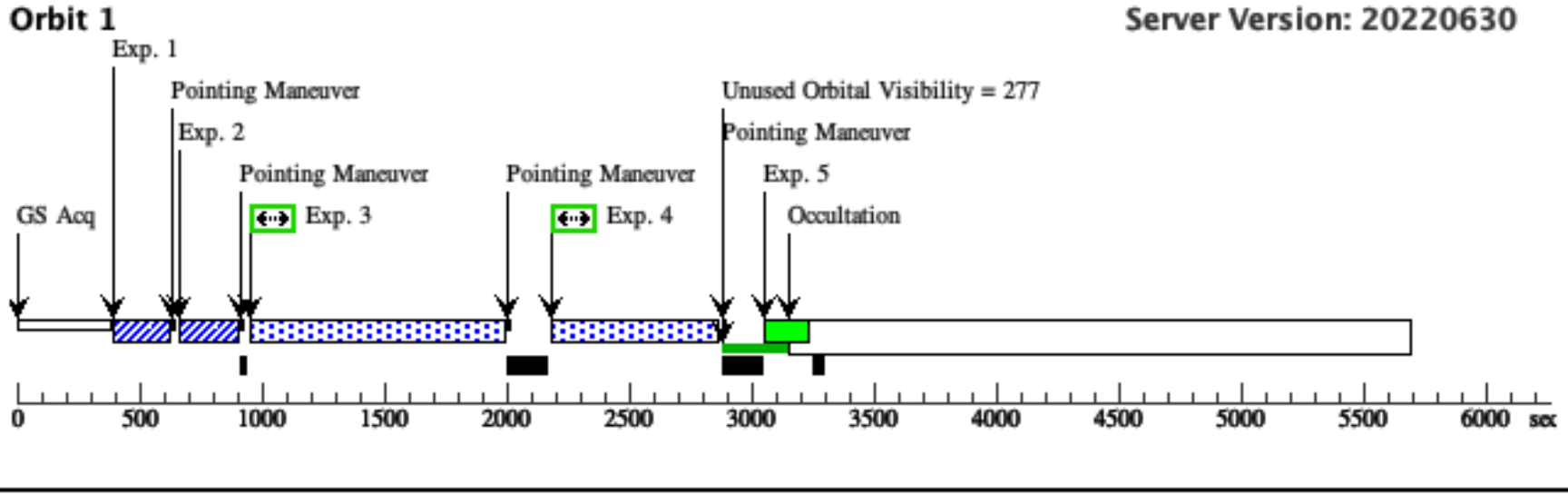
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

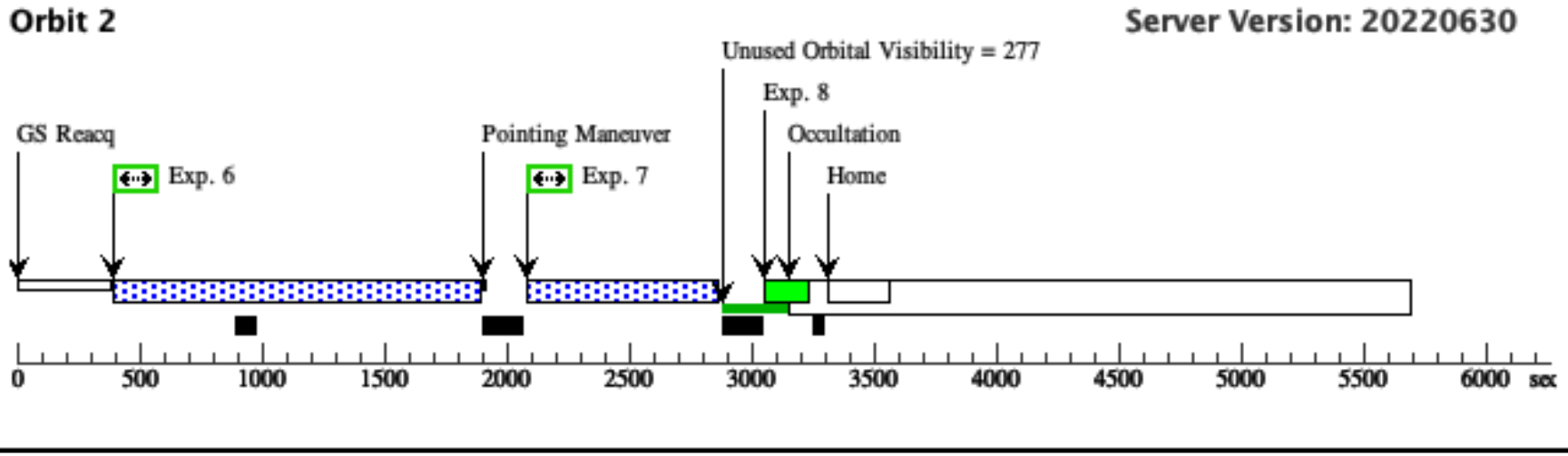
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***
6	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (1481 Secs) *[==>1481.0 Secs]*	***[2]***
7	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (723 Secs) *[==>723.0 Secs]*	***[2]***
8		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[2]***

Orbit Structure





Visit

Proposal 16233, UV part [3/6] (03), scheduled Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

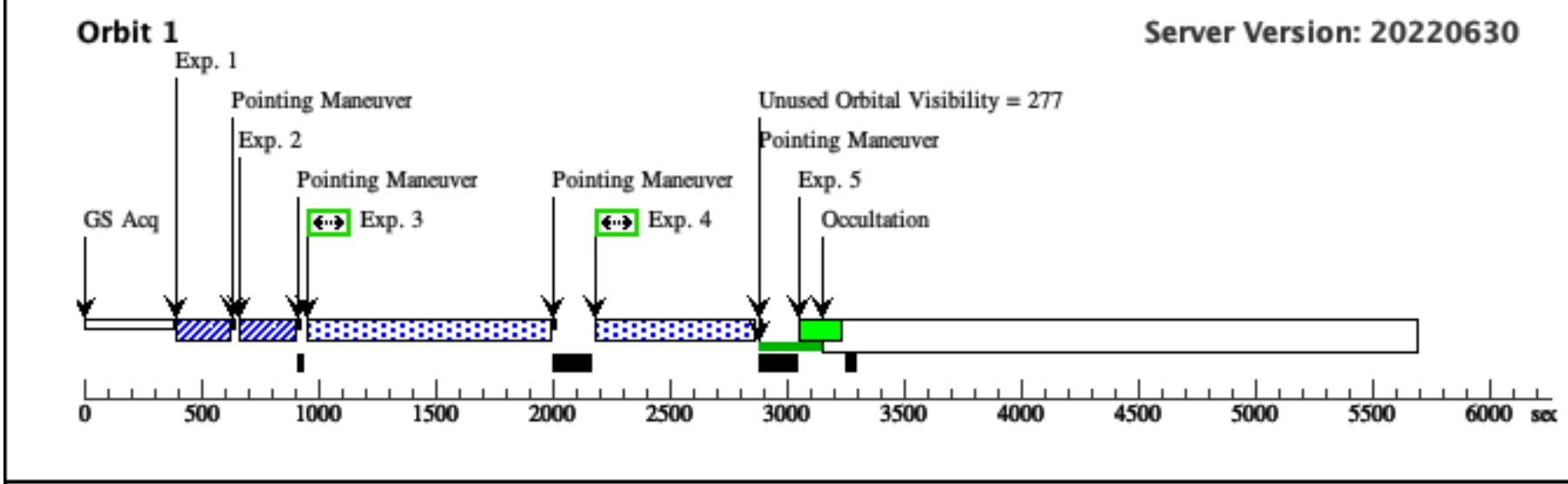
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

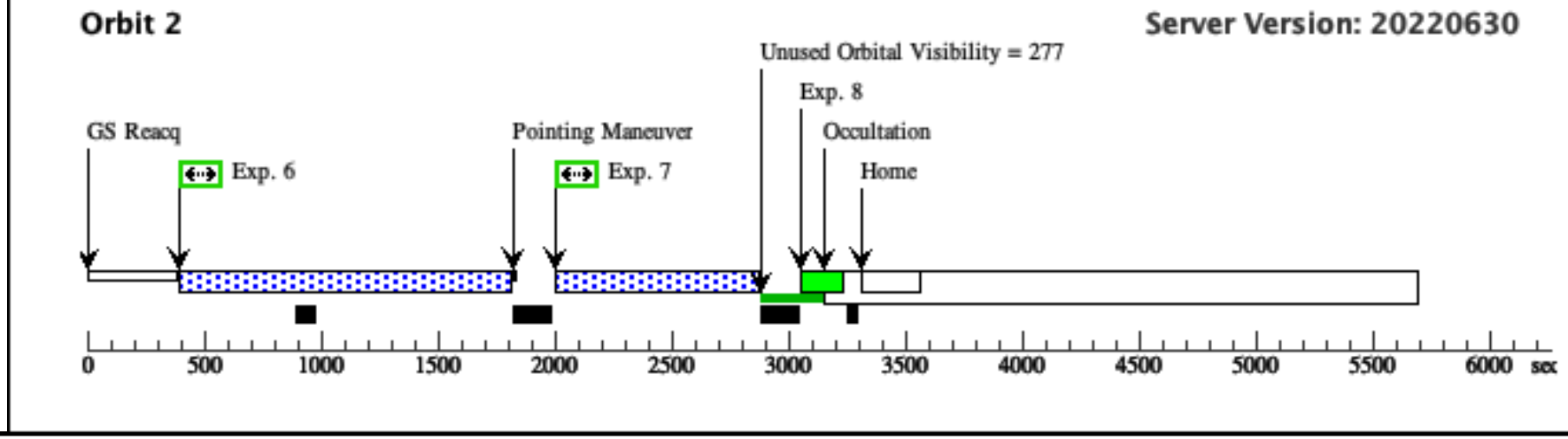
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***
6	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (1400 Secs) *[==>1400.0 Secs]*	***[2]***
7	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (804 Secs) *[==>804.0 Secs]*	***[2]***
8		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[2]***

Orbit Structure





Visit

Proposal 16233, UV part [4/6] (04), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

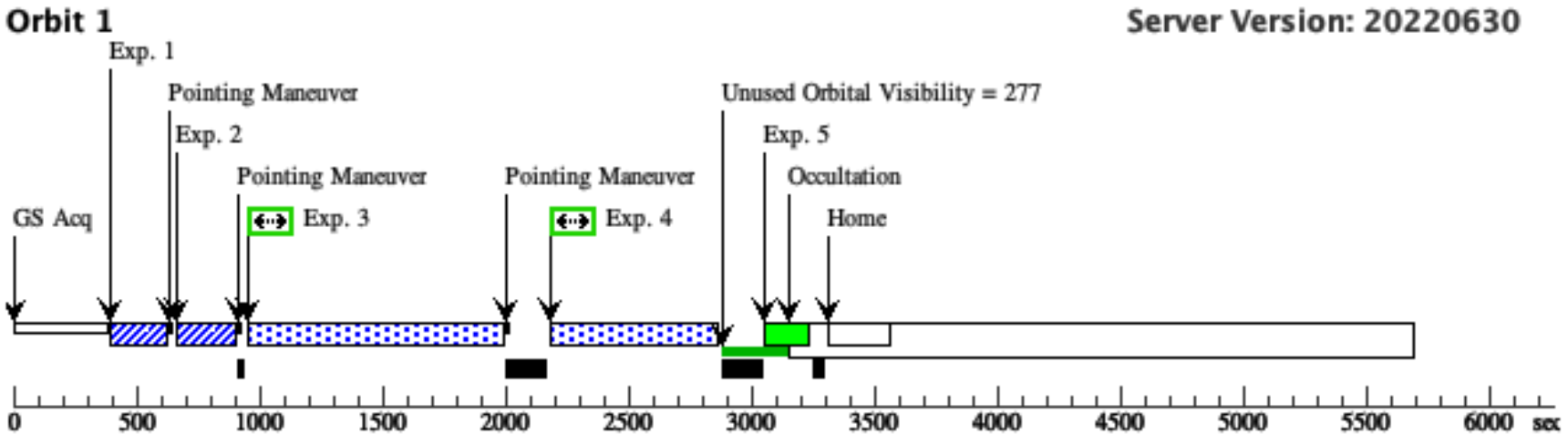
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	 ***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	 ***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, UV part [4/6] B (4B) Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

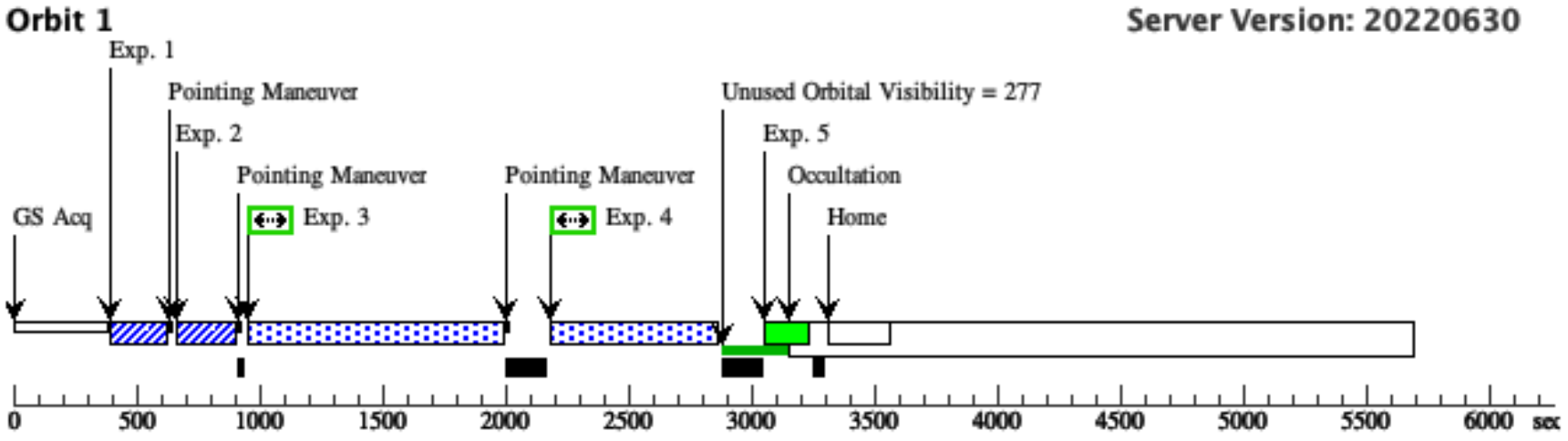
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	 ***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	 ***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, UV part [5/6] (05), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

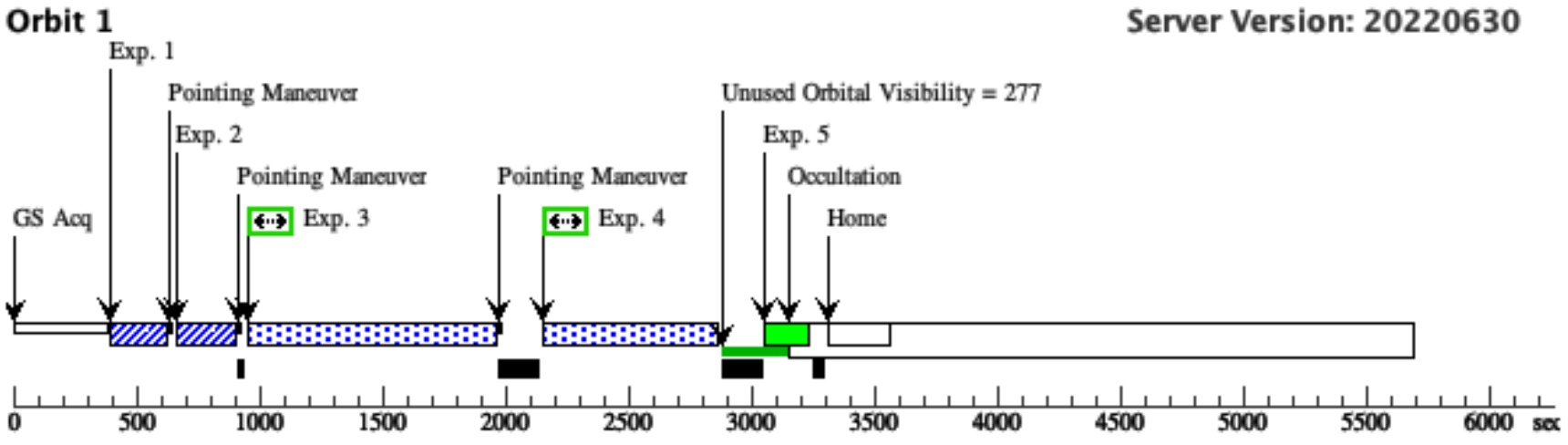
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (869 Secs) *[==>869.0 Secs]*	 ***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (650 Secs) *[==>650.0 Secs]*	 ***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, UV part [5/6] B (5B) Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

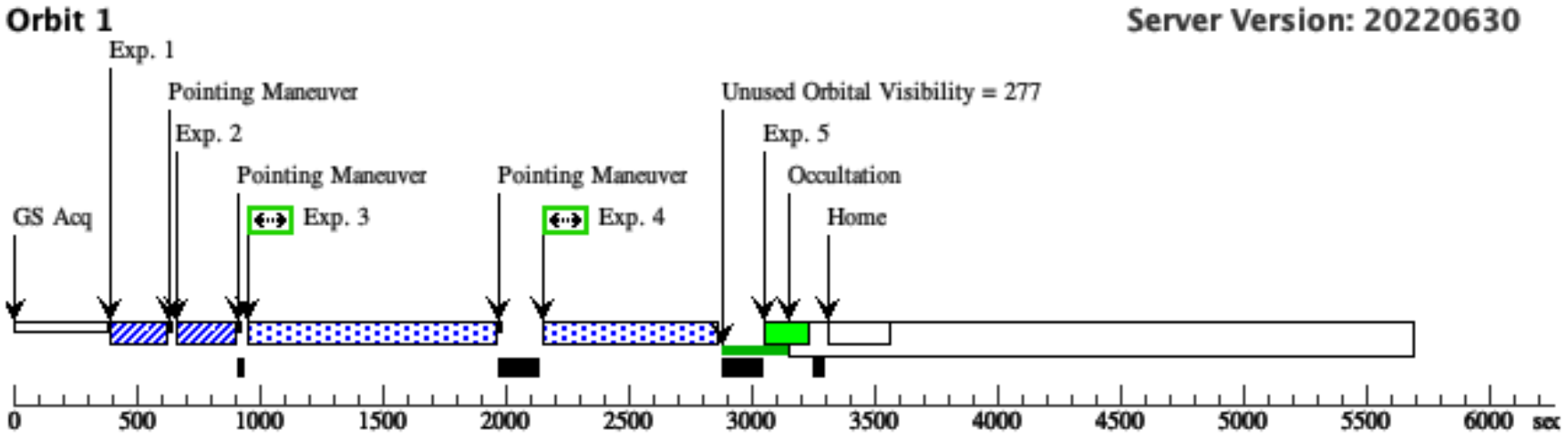
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (869 Secs) *[==>869.0 Secs]*	 ***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (650 Secs) *[==>650.0 Secs]*	 ***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, UV part [6/6] (06), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

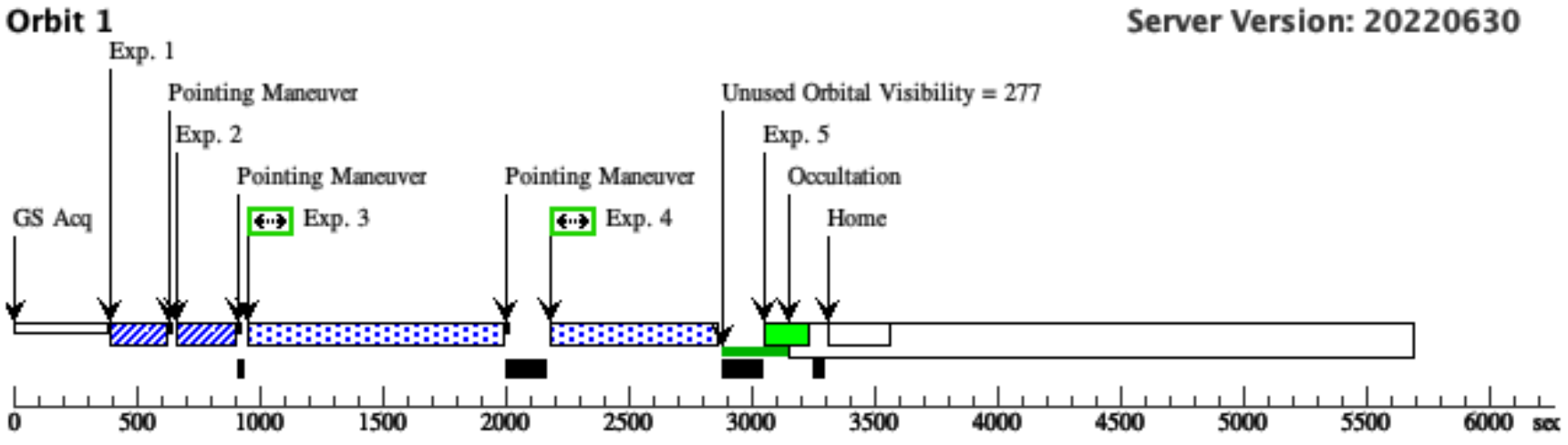
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	 ***[1]***
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	 ***[1]***
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, UV part [6/6] B (6B) Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D

Comments: Long slit observation with two slit widths per orbit. This setup enables us to monitor variability between the two slit widths.

All UV orbits are identical.

Fixed Targets

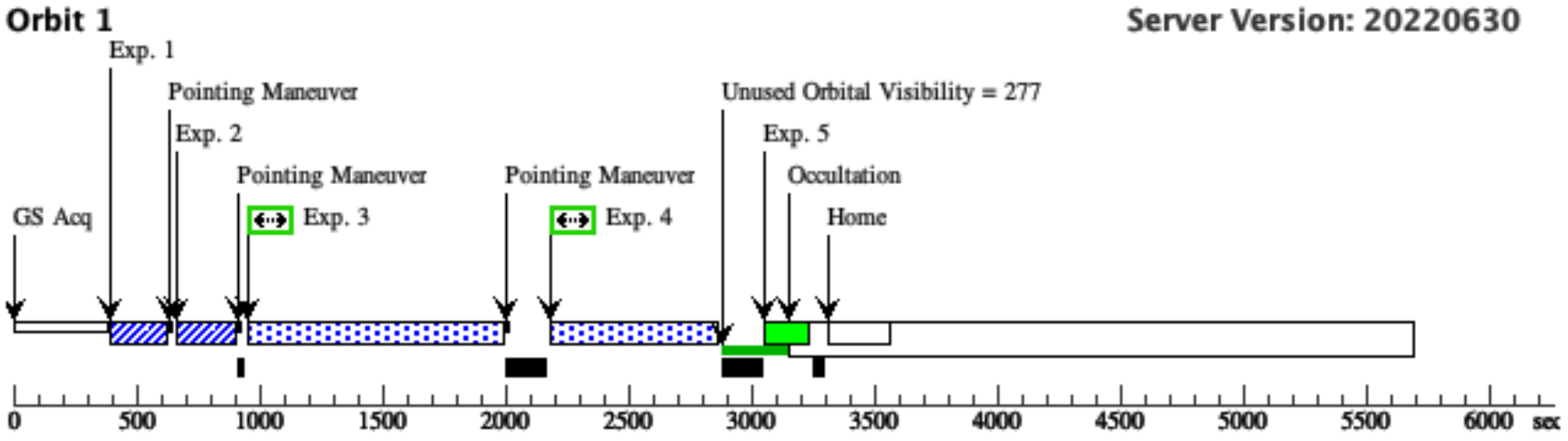
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	*[1]*
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1D1	MIRROR				2 Secs (2 Secs) *[==>]*	*[1]*
3	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1540 A	BUFFER-TIME=500; WAVECAL=NO			1200 Secs (900 Secs) *[==>900.0 Secs]*	*[1]*
4	(STIS.sp.1345817)	(1) V-AA-TAU	STIS/FUV-MAMA, TIME-TAG, 52X0.5D1	G140M 1540 A	BUFFER-TIME=500			1200 Secs (619 Secs) *[==>619.0 Secs]*	*[1]*
5		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1540 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 16233, Optical long slit (3/2 pos/orbit) (07), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Part 1/3 for the optical data

2 orbit visit with 3 slit positions in the first orbit and 2 slit positions in the second.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=STIS-PERP-TO-SLIT	Coordinate Frame=POS-TARG		(3)
	Purpose=MOSAIC	Pattern Orientation=0.0		
	Number Of Points=3	Angle Between Sides=		
	Point Spacing=0.2	Center Pattern=true		
	Line Spacing=			

Fixed Targets

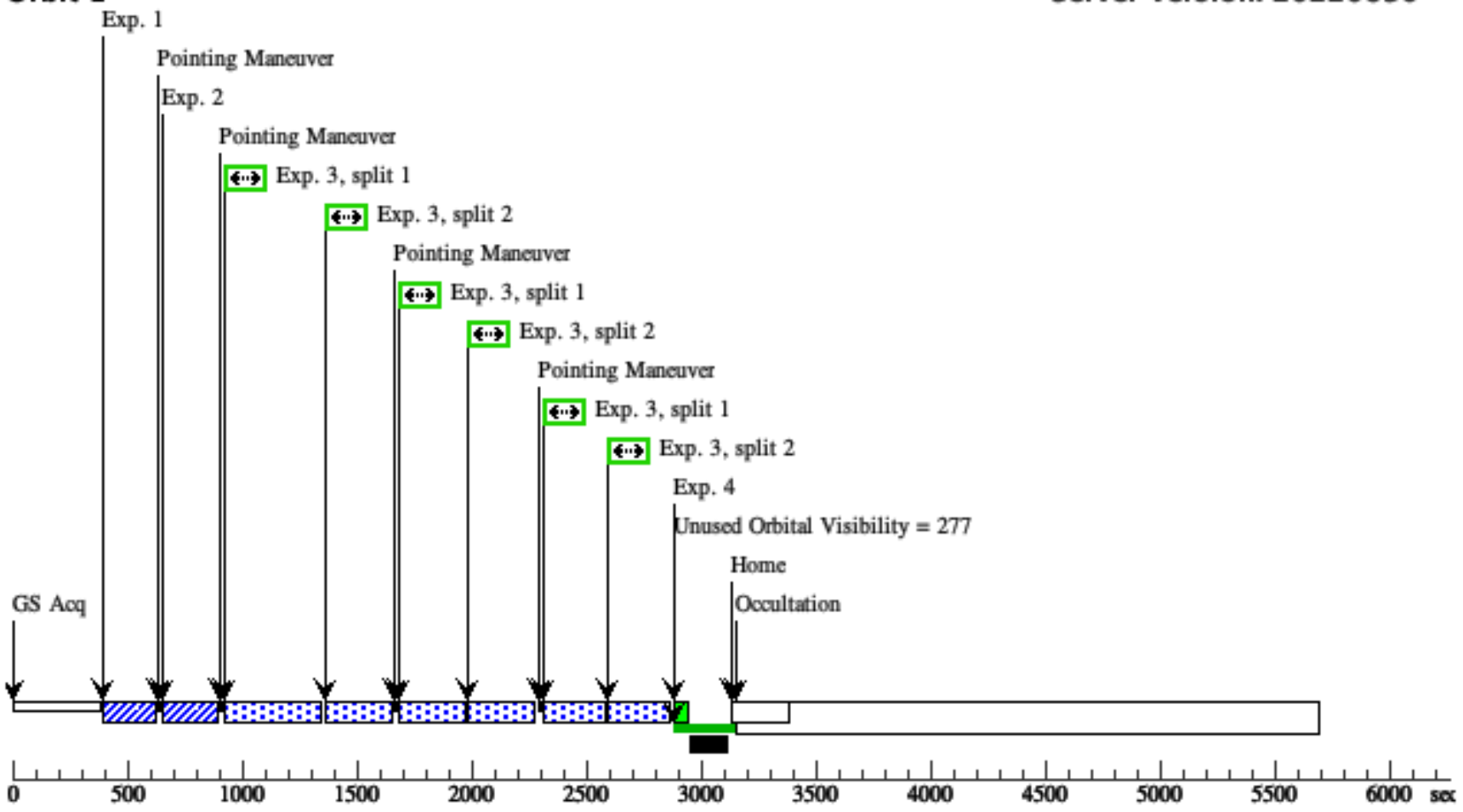
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs)	
								[==>]	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1	MIRROR				2 Secs (2 Secs)	
								[==>]	***[1]***
3		(1) V-AA-TAU	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A	WAVECAL=NO		Pattern 3, Exps 3-3 in Optical long slit (3/2 pos/orbit) (07) (3)	342 Secs (1495 Secs)	
								[==>255.0 Secs (Pattern 1, Split 1)]	***[1]***
								[==>255.0 Secs (Pattern 1, Split 2)]	
								[==>255.0 Secs (Pattern 2, Split 1)]	
								[==>256.0 Secs (Pattern 2, Split 2)]	
								[==>237.0 Secs (Pattern 3, Split 1)]	
								[==>237.0 Secs (Pattern 3, Split 2)]	
4		WAVE	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, Optical long slit (3/2 pos/orbit) B (7B) Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D

Comments: Part 1/3 for the optical data

2 orbit visit with 3 slit positions in the first orbit and 2 slit positions in the second.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-PERP-TO-SLIT	Coordinate Frame=POS-TARG		(3)
	Purpose=MOSAIC	Pattern Orientation=0.0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=0.2	Center Pattern=true		
	Line Spacing=			

Fixed Targets

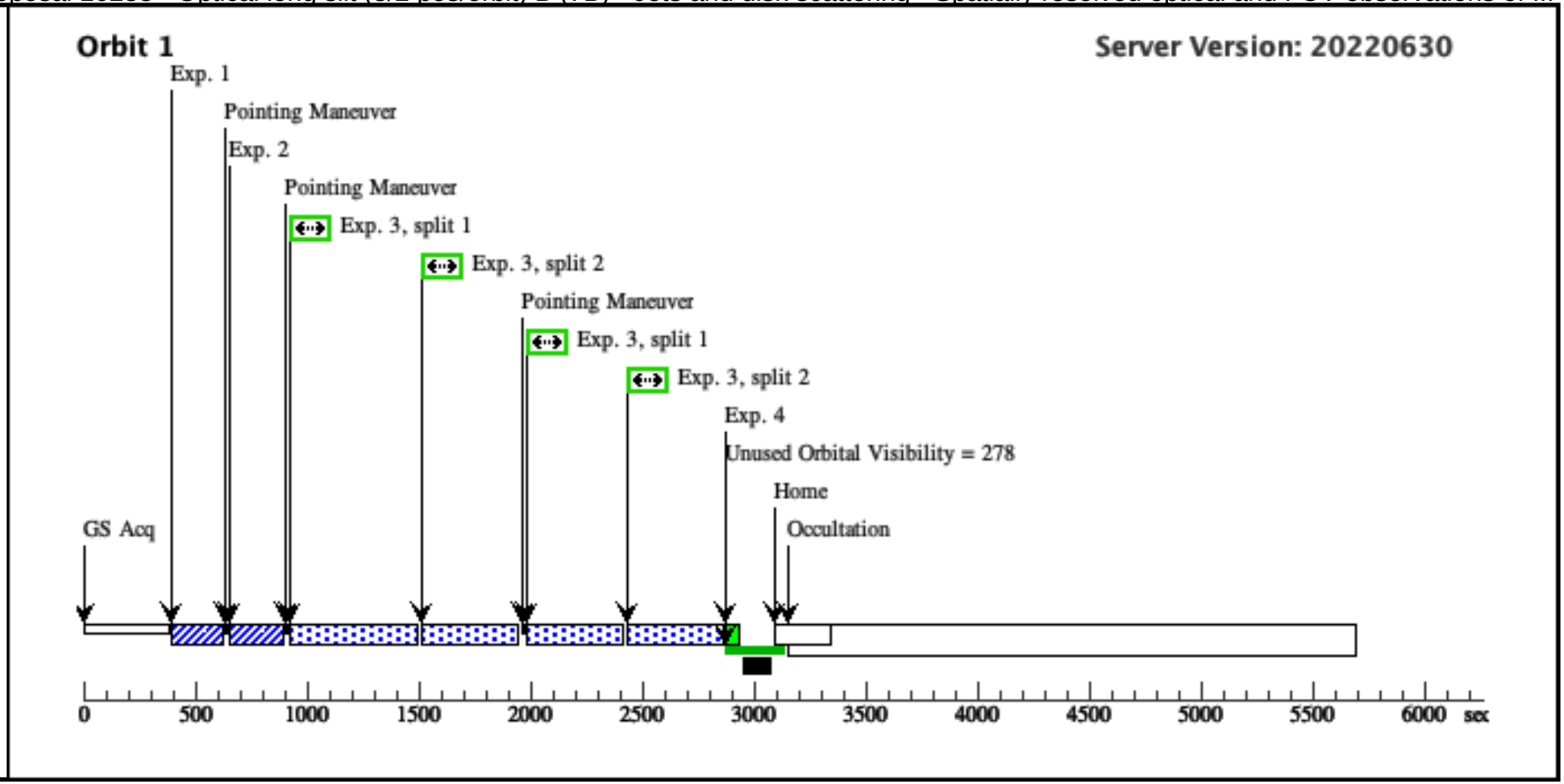
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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	(STIS.ta.1491480)	(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	 ***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3		(1) V-AA-TAU	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A	WAVECAL=NO		Pattern 2, Exps 3-3 in Optical long slit (3/2 pos/orbit) B (7B) (2)	342 Secs (1608 Secs) *[==>402.0 Secs (Pattern 1, Split 1)]* *[==>402.0 Secs (Pattern 1, Split 2)]* *[==>402.0 Secs (Pattern 2, Split 1)]* *[==>402.0 Secs (Pattern 2, Split 2)]*	 ***[1]***
4		WAVE	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 16233, Optical long slit (2/3 pos/orbit) (08), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Part 2/3 for the optical data

2 orbit visit with 2 slit positions in the first orbit and 3 slit positions in the second.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-PERP-TO-SLIT	Coordinate Frame=POS-TARG		(3)
	Purpose=MOSAIC	Pattern Orientation=0.0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=0.2	Center Pattern=true		
	Line Spacing=			
(3)	Pattern Type=STIS-PERP-TO-SLIT	Coordinate Frame=POS-TARG		(5)
	Purpose=MOSAIC	Pattern Orientation=0.0		
	Number Of Points=3	Angle Between Sides=		
	Point Spacing=0.2	Center Pattern=true		
	Line Spacing=			

Fixed Targets

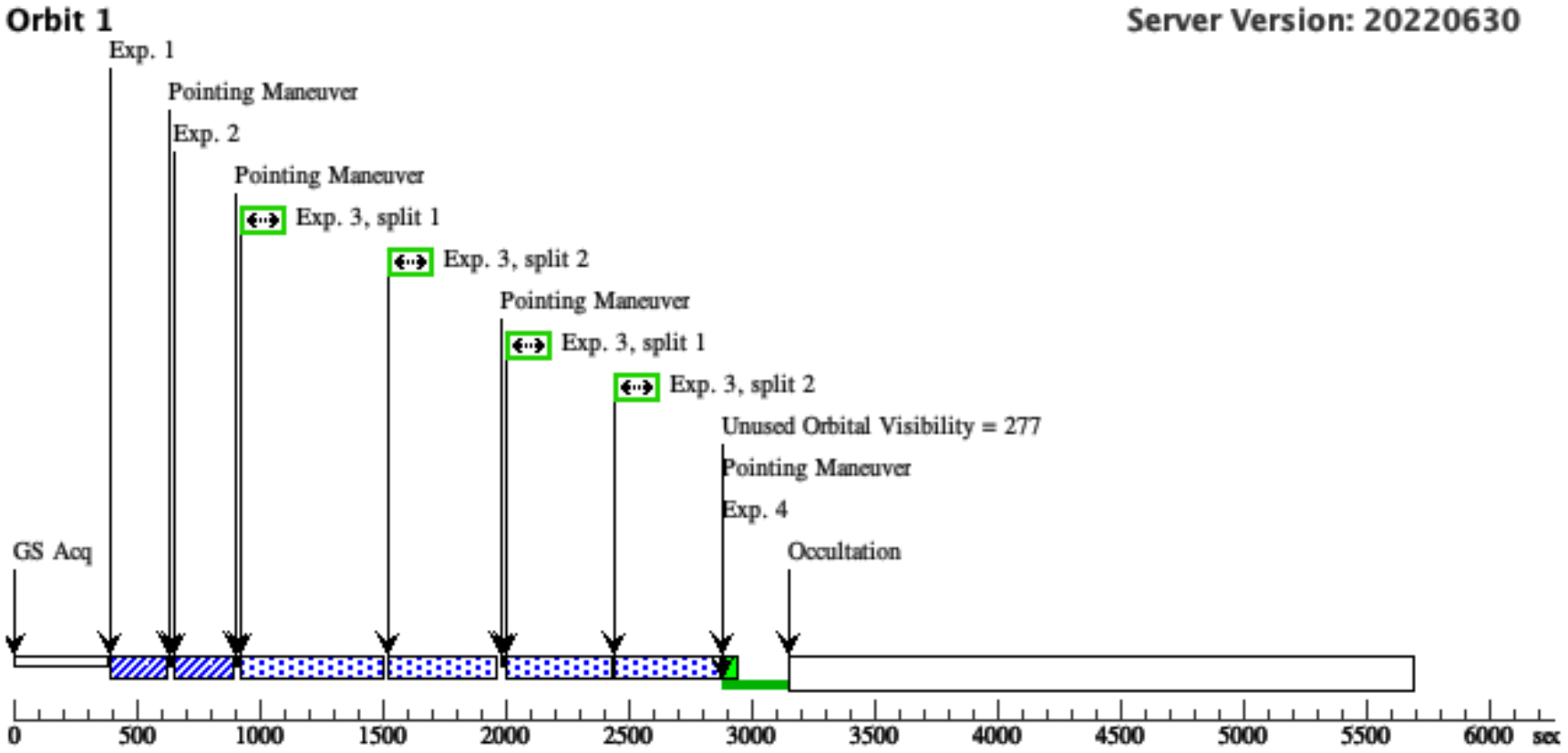
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

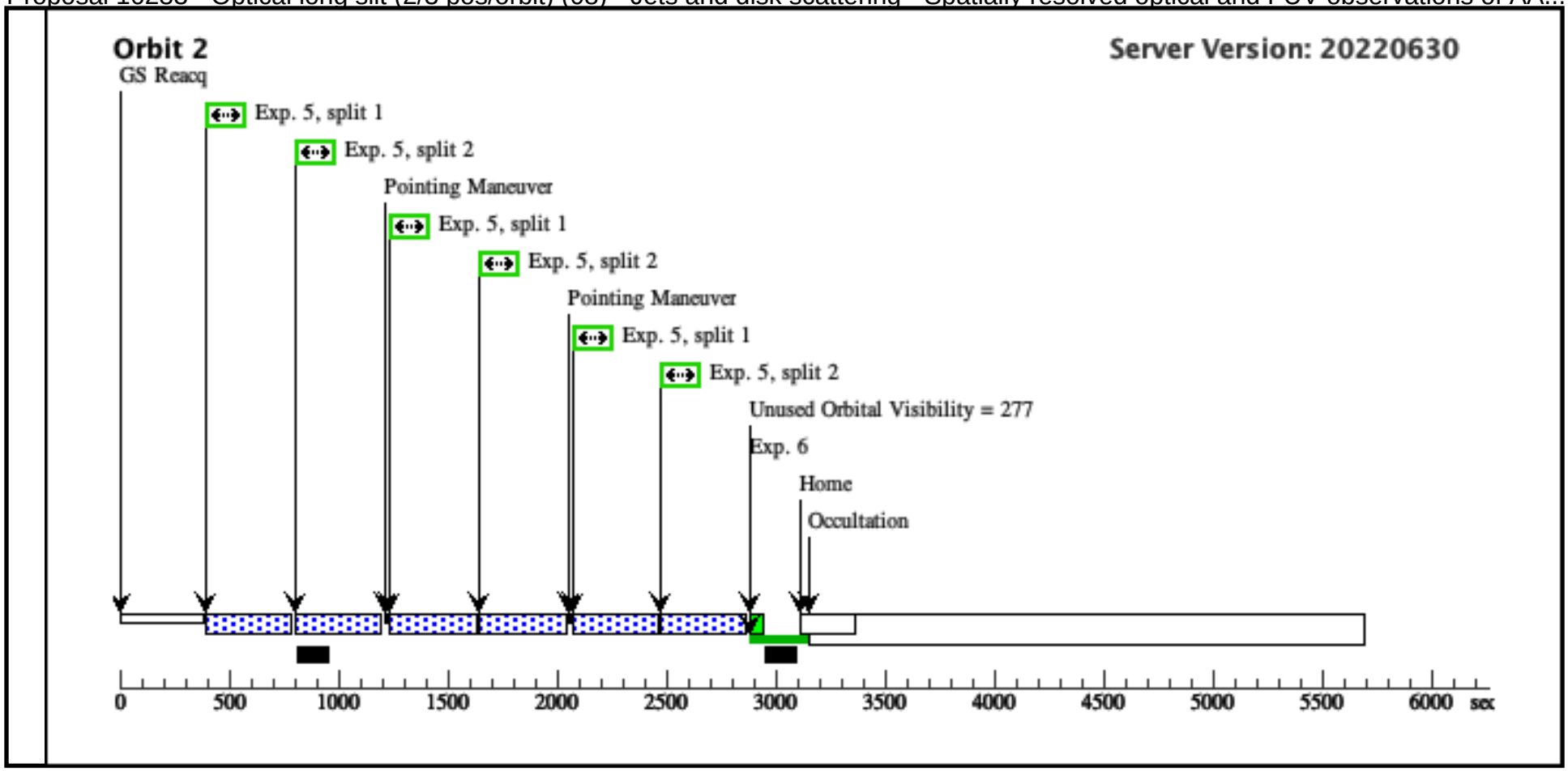
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs) *[==>]*	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1	MIRROR				2 Secs (2 Secs) *[==>]*	***[1]***
3		(1) V-AA-TAU	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A	WAVECAL=NO		Pattern 2, Exps 3-3 in Optical long slit (2/3 pos/orbit) (08) (2)	342 Secs (1609 Secs) *[==>411.0 Secs (Pattern 1, Split 1)]* *[==>412.0 Secs (Pattern 1, Split 2)]* *[==>393.0 Secs (Pattern 2, Split 1)]* *[==>393.0 Secs (Pattern 2, Split 2)]*	***[1]***
4		WAVE	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A				*[==>]*	***[1]***
5		(1) V-AA-TAU	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A	WAVECAL=NO		Pattern 3, Exps 5-5 in Optical long slit (2/3 pos/orbit) (08) (3)	342 Secs (2166 Secs) *[==>362.0 Secs (Pattern 1, Split 1)]* *[==>362.0 Secs (Pattern 1, Split 2)]* *[==>363.0 Secs (Pattern 2, Split 1)]* *[==>363.0 Secs (Pattern 2, Split 2)]* *[==>358.0 Secs (Pattern 3, Split 1)]* *[==>358.0 Secs (Pattern 3, Split 2)]*	***[2]***
6		WAVE	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A				*[==>]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
GS Reacq
Exp. 5, split 1
Exp. 5, split 2
Pointing Maneuver
Exp. 5, split 1
Exp. 5, split 2
Pointing Maneuver
Exp. 5, split 1
Exp. 5, split 2
Unused Orbital Visibility = 277
Exp. 6
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16233, Optical long slit (5 pos in 1 orbit) (09), scheduling Tue Nov 08 21:00:52 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: STIS/CCD

Special Requirements: ORIENT 226D TO 230 D; ORIENT 46D TO 50 D; SEQ 01,02,03,04,05,06,07,08,09 WITHIN 30 D

Comments: Part 3/3 for the optical data

1 orbit visit with 5slit positions

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-PERP-TO-SLIT	Coordinate Frame=POS-TARG		(3)
	Purpose=MOSAIC	Pattern Orientation=0.0		
	Number Of Points=5	Angle Between Sides=		
	Point Spacing=0.1	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-AA-TAU	RA: 04 34 55.4262 (68.7309425d) Dec: +24 28 52.71 (24.48131d) Equinox: J2000	Proper Motion RA: 2.5513777869542076E-4 sec of time/yr Proper Motion Dec: -0.020987000016248203 arcsec/yr Epoch of Position: 2015.5	V=12.2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[JET, K V-IV, PROTOPLANETARY DISK, T TAURI 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		(1) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				1.3 Secs (1.3 Secs)	
								[==>]	***[1]***
2	(STIS.ta.1492138)	(1) V-AA-TAU	STIS/CCD, ACQ/PEAK, 52X0.1	MIRROR				2 Secs (2 Secs)	
								[==>]	***[1]***
3		(1) V-AA-TAU	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A	WAVECAL=NO		Pattern 1, Exps 3-3 in Optical long slit (5 pos in 1 orbit) (09) (1)	342 Secs (650 Secs)	
								[==>65.0 Secs (Pattern 1, Split 1)]	***[1]***
								[==>65.0 Secs (Pattern 1, Split 2)]	
								[==>65.0 Secs (Pattern 2, Split 1)]	
								[==>65.0 Secs (Pattern 2, Split 2)]	
								[==>65.0 Secs (Pattern 3, Split 1)]	
								[==>65.0 Secs (Pattern 3, Split 2)]	
								[==>65.0 Secs (Pattern 4, Split 1)]	
								[==>65.0 Secs (Pattern 4, Split 2)]	
								[==>65.0 Secs (Pattern 5, Split 1)]	
								[==>65.0 Secs (Pattern 5, Split 2)]	
4		WAVE	STIS/CCD, ACCUM, 52X0.1	G750M 6581 A				*[==>]*	***[1]***

Orbit Structure