15070 - An HST Spectroscopic Study of Protoplanetary Disk Abundances: CO/H2 Conversion Factors and Absolute Abundances for JWST

Cycle: 25, Proposal Category: GO

(UV Initiative, JWST Initative)

(Availability Mode: SUPPORTED)

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	(2) V-AA-TAU	COS/FUV COS/NUV	5	11-Oct-2019 16:00:17.0	yes
02	(2) V-AA-TAU	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	11-Oct-2019 16:00:20.0	yes
03	(3) V-CW-TAU	COS/FUV COS/NUV	5	11-Oct-2019 16:00:21.0	yes
04	(3) V-CW-TAU	STIS/CCD STIS/NUV-MAMA	1	11-Oct-2019 16:00:22.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(3) V-CW-TAU	COS/FUV COS/NUV	2	11-Oct-2019 16:00:24.0	yes
06	(4) SZ-68	COS/FUV COS/NUV	4	11-Oct-2019 16:00:25.0	yes
07	(4) SZ-68	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	11-Oct-2019 16:00:27.0	yes
08	(5) V-T-CRA	COS/FUV COS/NUV	4	11-Oct-2019 16:00:28.0	yes
Z8	(5) V-T-CRA	COS/FUV COS/NUV	4	11-Oct-2019 16:00:30.0	yes
T8	(5) V-T-CRA	COS/FUV COS/NUV	4	11-Oct-2019 16:00:31.0	yes
09	(5) V-T-CRA	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	11-Oct-2019 16:00:33.0	yes
C9	(5) V-T-CRA	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	11-Oct-2019 16:00:36.0	yes
T9	(5) V-T-CRA	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	3	11-Oct-2019 16:00:38.0	yes
10	(6) V-T-ORI	COS/FUV COS/NUV	4	11-Oct-2019 16:00:39.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
11	(6) V-T-ORI	STIS/CCD STIS/NUV-MAMA	1	11-Oct-2019 16:00:40.0	yes
12	(6) V-T-ORI	COS/FUV COS/NUV	2	11-Oct-2019 16:00:41.0	yes
13	(7) V-HK-ORI	COS/FUV COS/NUV	3	11-Oct-2019 16:00:42.0	yes
14	(7) V-HK-ORI	COS/FUV COS/NUV STIS/CCD STIS/NUV-MAMA	2	11-Oct-2019 16:00:44.0	yes

56 Total Orbits Used

ABSTRACT

Measurements of the masses and physical state of protoplanetary gas disks form the basis for estimating the initial conditions of planet formation. Among the most important constraints derived from disk diagnostics are the abundances and the physical conditions of the most important gas-phase species. Towards this end, we propose to measure absolute molecular abundances of H2, CO, H2O, and OH with HST-COS and STIS to characterize disk composition, molecular excitation temperatures, and spatial (velocity) stratification within the disk environment. These measurements will constrain the CO-to-H2 conversion factor in disks and place upcoming measurements of water and organic molecules with JWST onto an absolute abundance scale. We will achieve this goal by performing three central tasks:

(1) Measure the absorption spectra of primary molecular disk species (H2, CO, H2O, and OH) along the line-of-sight to the central star to obtain a one-dimensional slice through the disk

(2) Use these spectra to measure the column density, excitation temperature, and radial velocity of these species to determine the spatial stratification (or co-spatiality) of the gas parcels

(3) Use this information to characterize the absolute abundances (that is, relative to the H2 column density) of these major molecular species to determine the CO/H2 conversion factor and prepare for upcoming JWST disk observations. We will then characterize the abundance patterns as a

function of evolutionary state of the disk and the strength of the local ultraviolet, photodissociating radiation field.

OBSERVING DESCRIPTION

The target list (Table 1) includes six disk-hosting young stars with warm CO observed along the line-of-sight, either: 1) CO fundamental band (4.7 micron) emission profiles display a broad single component with a central self-reversal, or 2) warm CO in archival HST-COS spectra, both indicative of a layer of warm molecular gas along the pencil-beam line-of-sight to the central source, noting that the line-of-sight might be somewhat different between the M-band and the FUV. We use the same geometry to conduct our molecular gas census, using the background FUV and NUV continua generated by accretion luminosity and the stellar photosphere in varying degrees in our sources, depending on the wavelength, the mass of the central star, and the accretion rate.

We will use a combination of three observing modes,
covering two visits, for each target. H2 and H2O absorption spectra will be obtained with the COS G130M setting in the first visit, while CO and OH spectra will be obtained in the COS G160M and STIS NUV modes, respectively. The Herbig A stars are bright enough to support higher resolution STIS E230M observations in the NUV, and we will employ those modes where appropriate.

We propose to use the recently commissioned COS G130M 1222 mode to obtain spectra in the 1065 - 1360 Ang bandpass, as this is the only instrument currently capable of mediumresolution, high-sensitivity spectroscopy at wavelengths tracing warm H2 and H2O absorption transitions. The PI of this program was a co-I on the original calibration proposal to develop the G130M 1222 mode, created the wavelength solutions for this new mode, carried out some of the first science with this mode, and is intimately familiar with its operation and performance characteristics. The PI of this program was also the PI of the Cycle 20 Project WH2IPS (#12876) demonstrating the H2 observational proof-of-concept (France et al. 2014).

We will observe the objects in this program for 3 - 5 G130M 1222 orbits per target, using all four focal-plane split positions (FP-POS = 1, 2, 3, 4) when possible to mitigate the effects of fixedpattern noise and detector gain-sag due to long-term exposure of the COS detector. We use the higher resolution G130M mode instead of the lower-resolution G140L mode because line profiles and velocity centroids of the individual H2 and CO band structures require velocity resolution of less than 30 km/s, making the medium resolution modes essential for meeting the science objectives of this program.

We will observe the v = 1 - 4 bands of the CO (A - X) system with COS G160M, following the observing strategy of our previous successful programs detecting CO in this mode (e.g., France et al. 2012; McJunkin et al. 2013). We will observe the objects listed in here for 1 - 3 G160M orbits per target, using all four focal-plane split positions (FP-POS = 1, 2, 3, 4) and various cenwave settings to mitigate the effects of fixed-pattern noise.

We will employ the STIS G230M and E230M to observe and characterize the OH (A - X) system, again, the resolution of the M modes is necessary for a clean resolution of these narrow molecular features. For T Ori and HK Ori, the NUV source flux permits us to use the STIS E230M 2707 mode for even higher resolution (R 30,000) observations of the OH spectral region. The proposal team was involved with the development and testing of custom software routines for coadding CTTS spectra obtained in various central wavelength and FP-POS configurations with COS, and we will leverage this experience to produce high-quality spectral data products for analysis in this project.

Visit

Proposal 15070, AATau_v1 (01), completed Fri Oct 11 20:00:44 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(AATau_v1 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

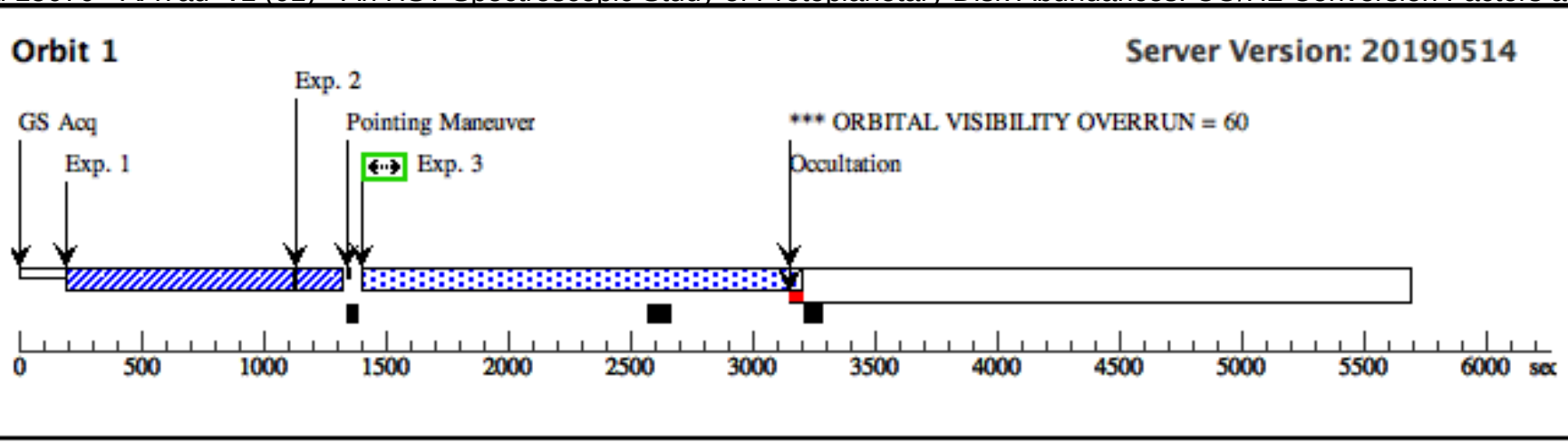
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	V-AA-TAU	RA: 04 34 55.4240 (68.7309333d)	Proper Motion RA: 1.4 mas/yr	V=12.2	Reference Frame: ICRS
		Dec: +24 28 53.16 (24.48143d)	Proper Motion Dec: -14.7 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

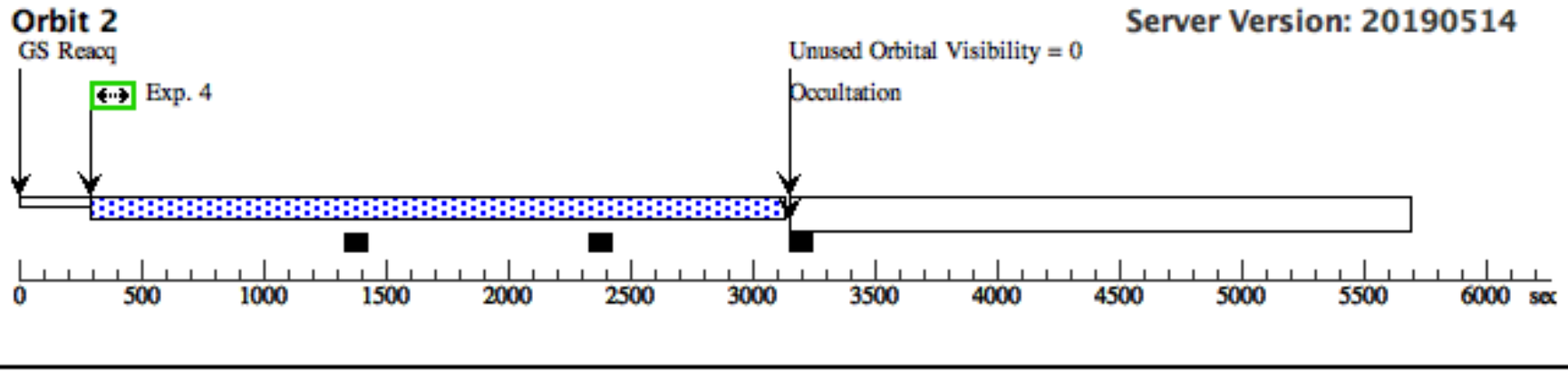
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

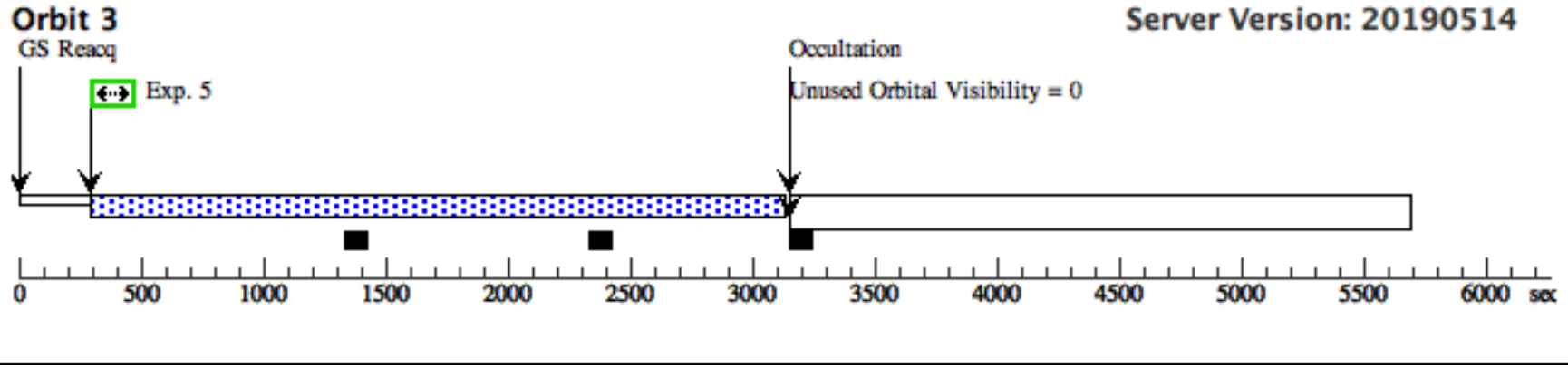
Exposures

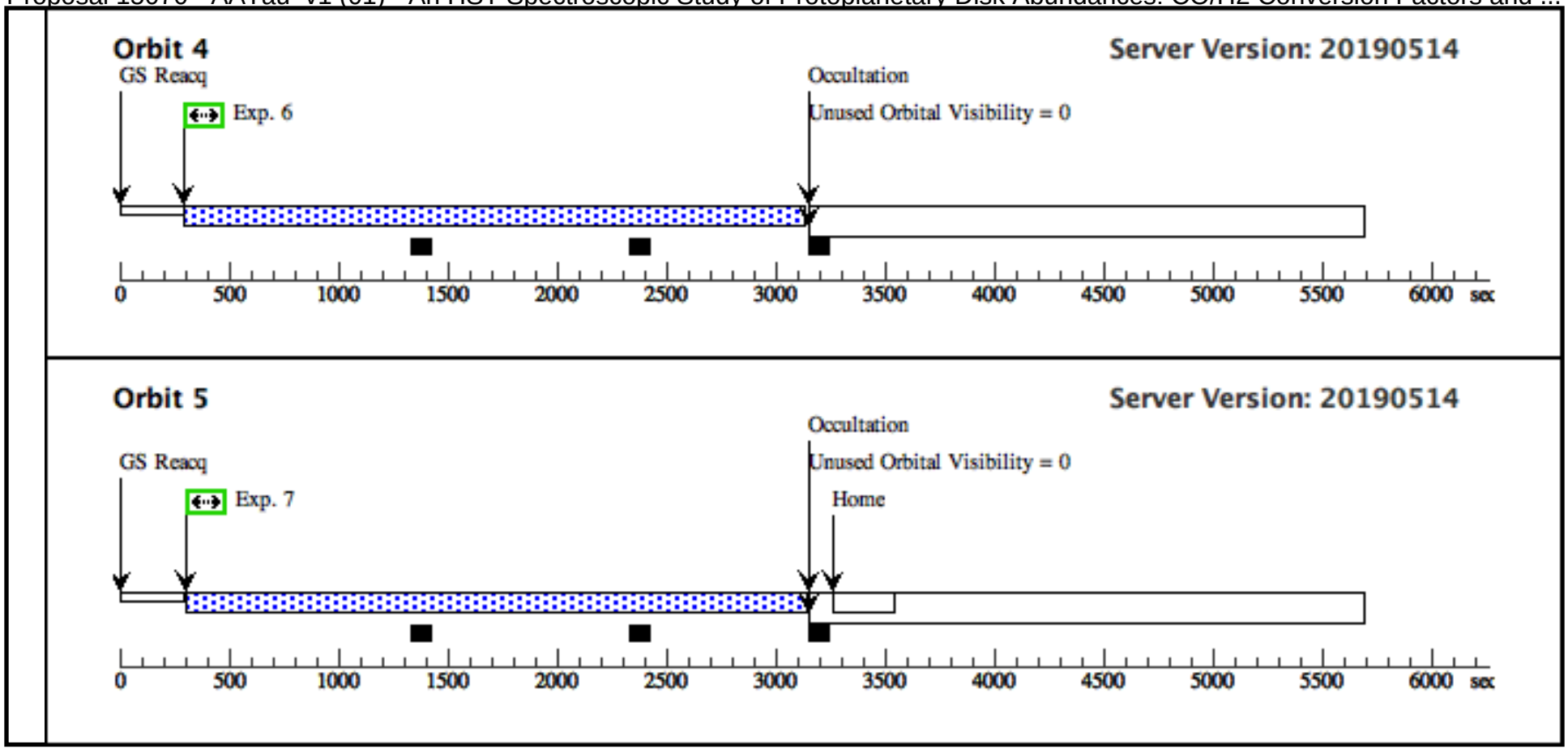
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	AATAU-ACQ/SEARCH (COS.ta.435475)	(2) V-AA-TAU	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3			50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Target NUV spectrum from DAO (GO 11616) spectra w/STIS G230L. - kf - 06/27/12 *Revised to take average IUE flux from 1982 - 1989,with PSA/MIRRORB per instruction of contact scientist - kf - 10/22/12*								
2	AATAU-ACQ/IMAGE (COS.ta.435475)	(2) V-AA-TAU	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Revised to take average IUE flux from 1982 - 1989,with PSA/MIRRORB per instruction of contact scientist - kf - 10/22/12								
3	AATAU-G130M-1 (COS.sp.411966)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1655 Secs (1616 Secs) *[==>1616.0 Secs]*	*[1]*
4	AATAU-G130M-2 (COS.sp.411966)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2931 Secs (2791 Secs) *[==>2791.0 Secs]*	*[2]*
5	AATAU-G130M-3 (COS.sp.411966)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2931 Secs (2791 Secs) *[==>2791.0 Secs]*	*[3]*
6	AATAU-G130M-4 (COS.sp.411966)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2931 Secs (2791 Secs) *[==>2791.0 Secs]*	*[4]*
7	AATAU-G130M-5 (COS.sp.411966)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2931 Secs (2791 Secs) *[==>2791.0 Secs]*	*[5]*

Orbit Structure








Orbit 4
Server Version: 20190514
GS Reacq
Exp. 6
Occultation
Unused Orbital Visibility = 0
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1000
1500
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2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 5
Server Version: 20190514
GS Reacq
Exp. 7
Occultation
Unused Orbital Visibility = 0
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, AATau_v2 (02), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER 01 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(AATau_v2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(AATau_v2 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

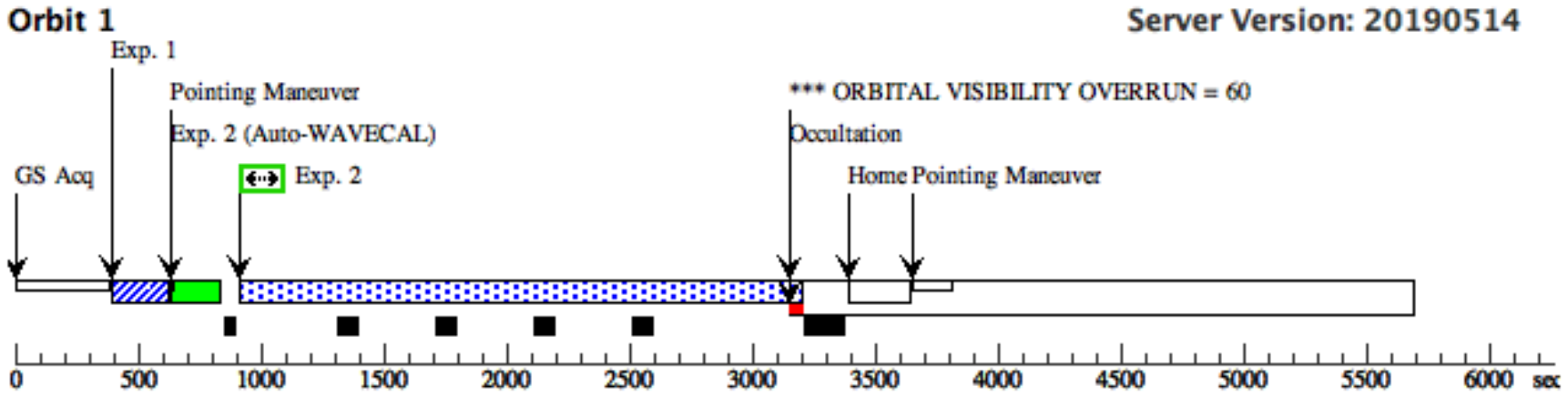
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	V-AA-TAU	RA: 04 34 55.4240 (68.7309333d)	Proper Motion RA: 1.4 mas/yr	V=12.2	Reference Frame: ICRS
		Dec: +24 28 53.16 (24.48143d)	Proper Motion Dec: -14.7 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

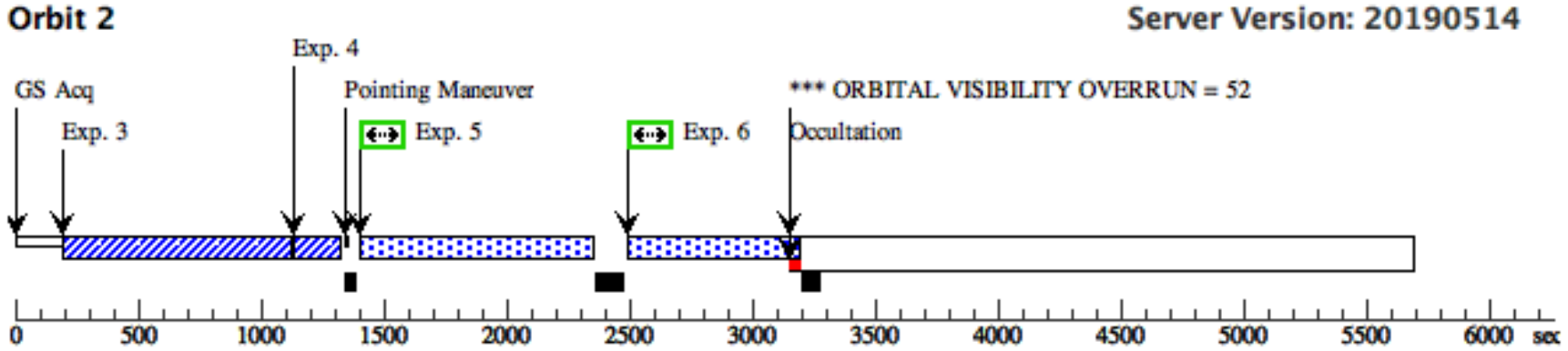
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PRE-MAIN SEQUENCE STAR, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

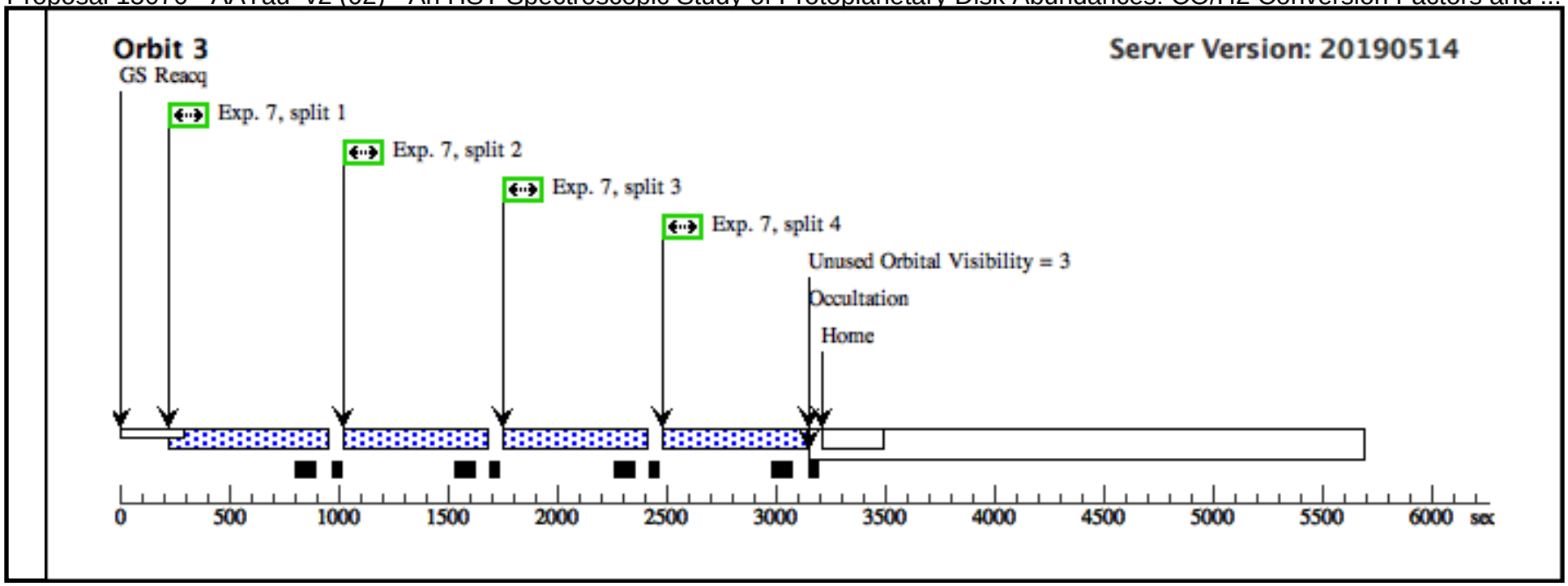
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	AATAU-STIS_ACQ (STIS.ta.1003611)	(2) V-AA-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR				0.5 Secs (0.5 Secs) *[==>]*	***[1]***
2	AATAU-NUV_1 (STIS.sp.1003610)	(2) V-AA-TAU	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=400			2319 Secs (2275 Secs) *[==>2275.0 Secs]*	***[1]***
3	AATAU-ACQ/SEARCH2 (COS.ta.435475)	(2) V-AA-TAU	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3			50 Secs (50 Secs) *[==>]*	***[2]***
Comments: Target NUV spectrum from DAO (GO 11616) spectra w/STIS G230L. - kf - 06/27/12 *Revised to take average IUE flux from 1982 - 1989,with PSA/MIRRORB per instruction of contact scientist - kf - 10/22/12*									
4	AATAU-ACQ/IMAGE2 (COS.ta.435475)	(2) V-AA-TAU	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) *[==>]*	***[2]***
Comments: Revised to take average IUE flux from 1982 - 1989,with PSA/MIRRORB per instruction of contact scientist - kf - 10/22/12									
5	AATAU-G160M2-1 (COS.sp.411967)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (737 Secs) *[==>737.0 Secs]*	***[2]***
6	AATAU-G160M2-1 (COS.sp.411967)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			715 Secs (652 Secs) *[==>652.0 Secs]*	***[2]***
7	AATAU-G160M2-2 (COS.sp.411967)	(2) V-AA-TAU	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=470			632 Secs (2416 Secs) *[==>604.0 Secs (Split 1)]* *[==>604.0 Secs (Split 2)]* *[==>604.0 Secs (Split 3)]* *[==>604.0 Secs (Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20190514
GS Reacq
Exp. 7, split 1
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
Unused Orbital Visibility = 3
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, CWTau_v1 (03), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

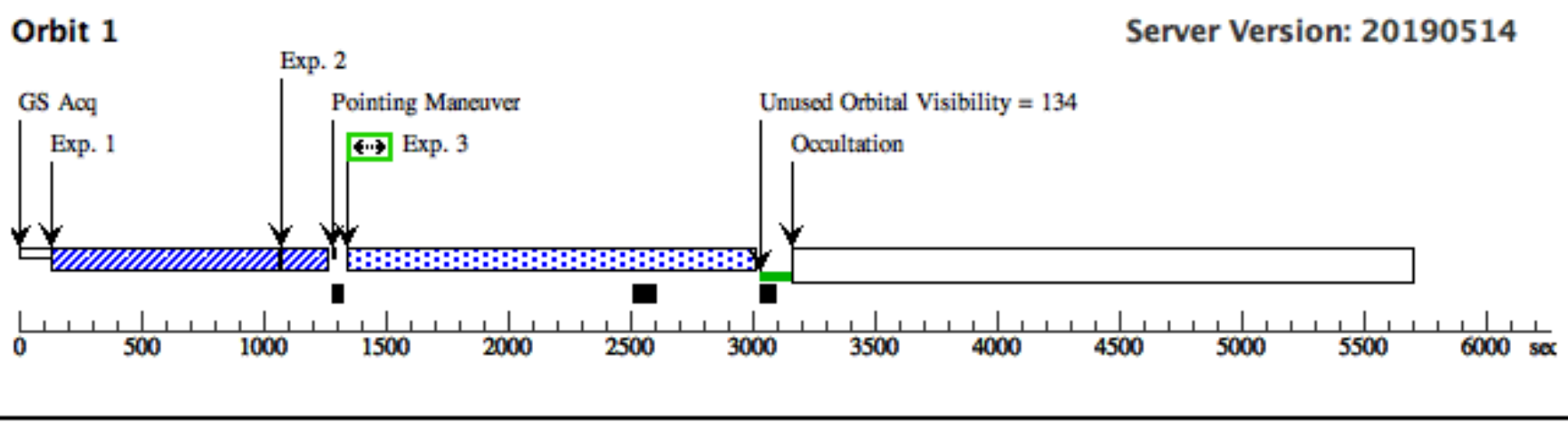
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	V-CW-TAU	RA: 04 14 17.0030 (63.5708458d)	Proper Motion RA: 15.2 mas/yr	V=12.36	Reference Frame: ICRS
		Dec: +28 10 57.84 (28.18273d)	Proper Motion Dec: -27.5 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

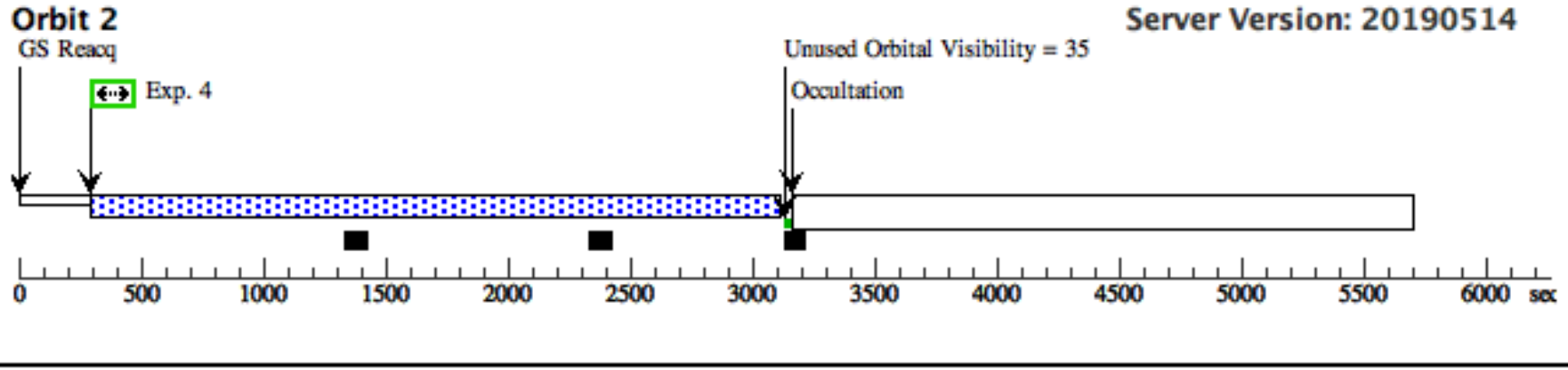
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

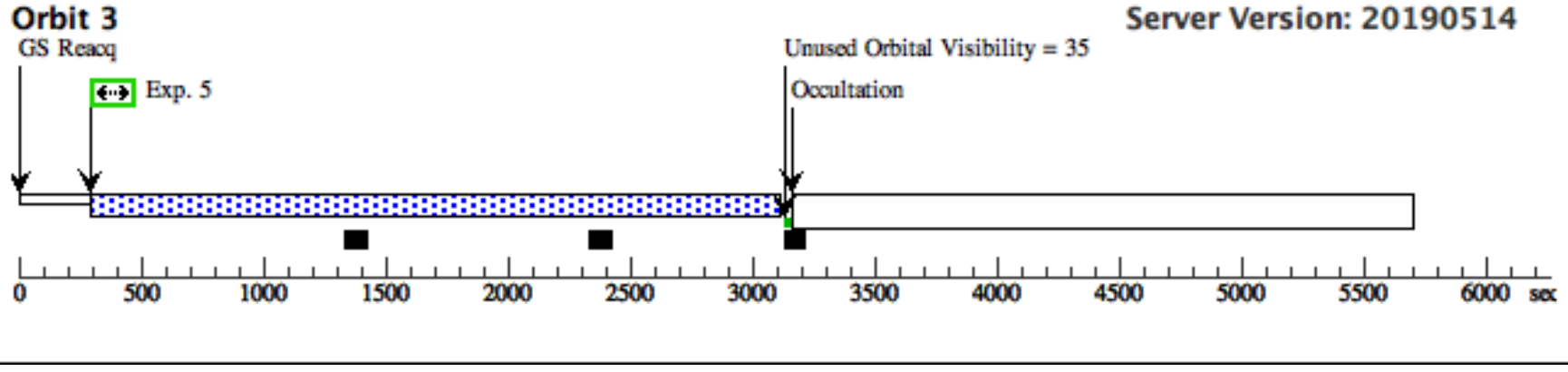
Exposures

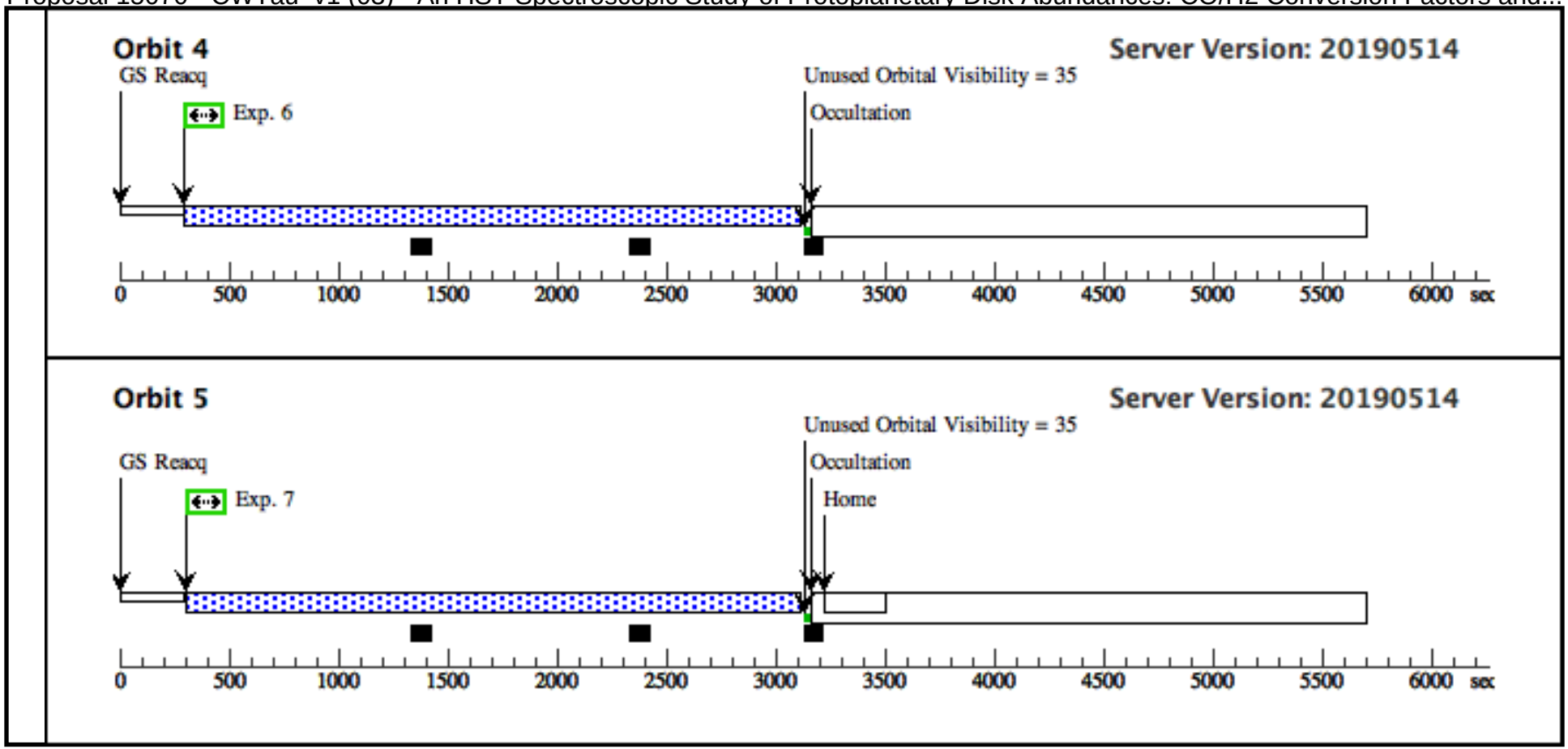
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	CWTAU-ACQ/SEARCH (COS.ta.435475)	(3) V-CW-TAU	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Matched to very similar AA Tau observations. KF - July 2017								
2	CWTAU-ACQ/IMAGE (COS.ta.435475)	(3) V-CW-TAU	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Matched to very similar AA Tau observations. KF - July 2017								
3	CWTAU-G130M-1 (COS.sp.411966)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1490 Secs (1490 Secs) *[==>]*	*[1]*
4	CWTAU-G130M-2 (COS.sp.411966)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2764 Secs (2764 Secs) *[==>]*	*[2]*
5	CWTAU-G130M-3 (COS.sp.411966)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2764 Secs (2764 Secs) *[==>]*	*[3]*
6	CWTAU-G130M-4 (COS.sp.411966)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2764 Secs (2764 Secs) *[==>]*	*[4]*
7	CWTAU-G130M-5 (COS.sp.411966)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2764 Secs (2764 Secs) *[==>]*	*[5]*

Orbit Structure








Orbit 4
Server Version: 20190514
GS Reacq
Exp. 6
Unused Orbital Visibility = 35
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 5
Server Version: 20190514
GS Reacq
Exp. 7
Unused Orbital Visibility = 35
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, CWTau_v2 (04), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: AFTER 03 BY 0 D TO 3 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Fixed Targets

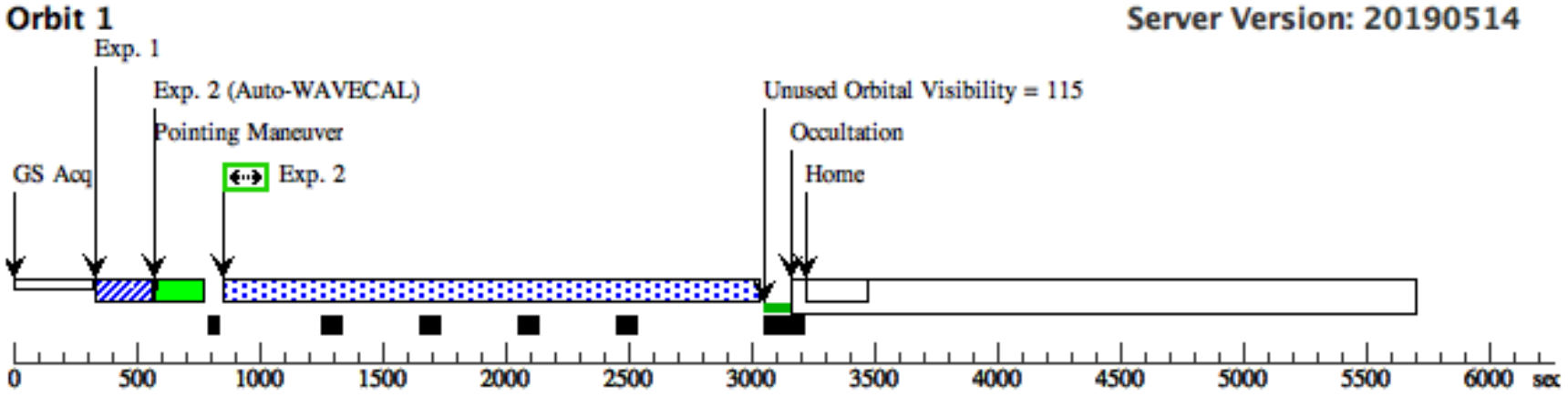
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	V-CW-TAU	RA: 04 14 17.0030 (63.5708458d) Dec: +28 10 57.84 (28.18273d) Equinox: J2000	Proper Motion RA: 15.2 mas/yr Proper Motion Dec: -27.5 mas/yr Epoch of Position: 2000	V=12.36	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, 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	CWTAU-STIS_ACQ (STIS.ta.1003611)	(3) V-CW-TAU	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		0.5 Secs (0.5 Secs) *[==>]*	 ***[1]***
2	CWTAU-NUV_1 (STIS.sp.1003610)	(3) V-CW-TAU	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=400			2168 Secs (2168 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 15070, CWTau_v3 (05), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: AFTER 03 BY 0 D TO 3 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Fixed Targets

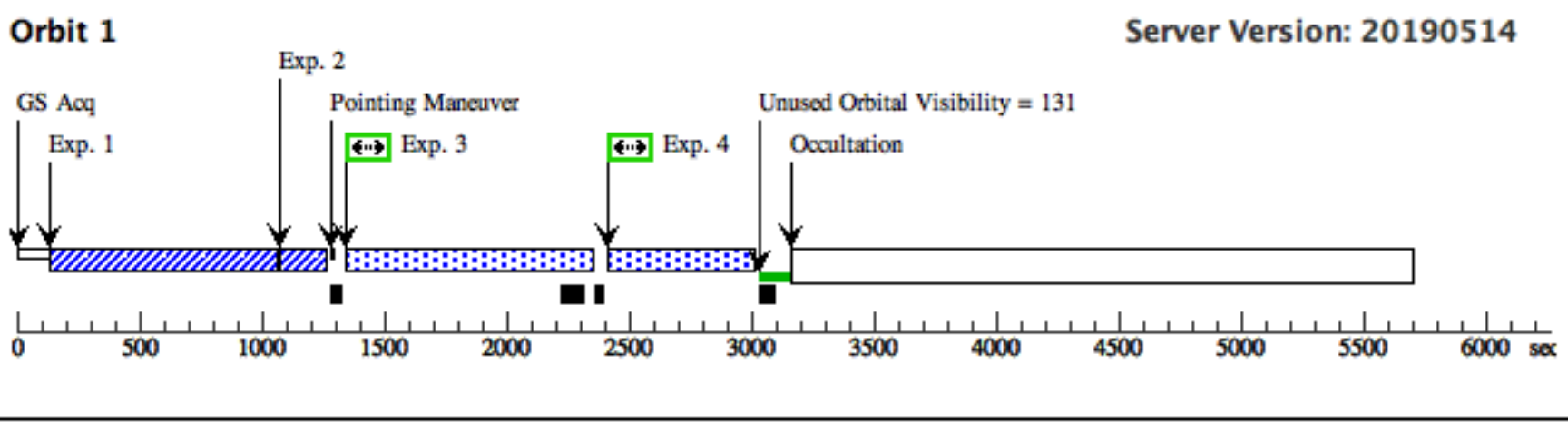
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	V-CW-TAU	RA: 04 14 17.0030 (63.5708458d)	Proper Motion RA: 15.2 mas/yr	V=12.36	Reference Frame: ICRS
		Dec: +28 10 57.84 (28.18273d)	Proper Motion Dec: -27.5 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

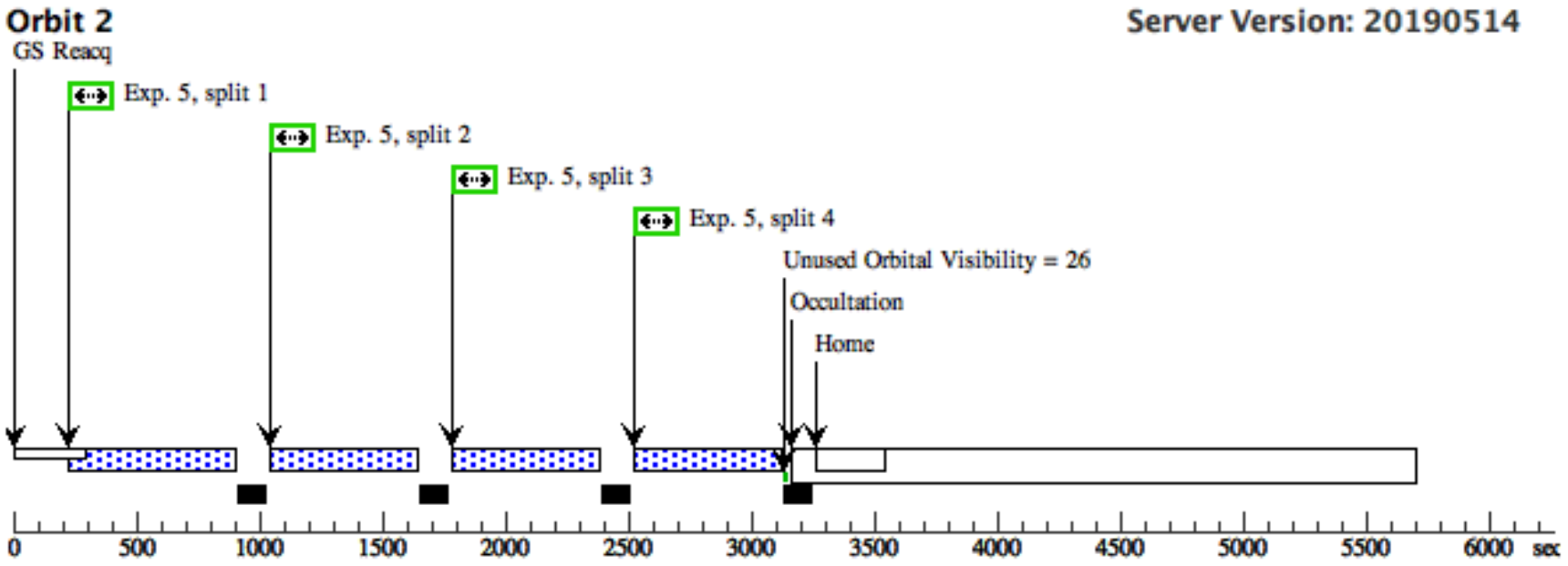
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	CWTAU-ACQ/SEARCH2 (COS.ta.435475)	(3) V-CW-TAU	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Matched to very similar AA Tau observations. KF - July 2017								
2	CWTAU-ACQ/IMAGE2 (COS.ta.435475)	(3) V-CW-TAU	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) *[==>]*	*[1]*
	Comments: Matched to very similar AA Tau observations. KF - July 2017								
3	CWTAU-G160M2-1 (COS.sp.411967)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (800 Secs) *[==>]*	*[1]*
4	CWTAU-G160M2-1 (COS.sp.411967)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			550 Secs (550 Secs) *[==>]*	*[1]*
5	CWTAU-G160M2-2 (COS.sp.411967)	(3) V-CW-TAU	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=517			550 Secs (2200 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure





Visit

Proposal 15070, Sz68_v1 (06), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(Sz68_v1 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Sz68_v1 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Sz68_v1 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Sz68_v1 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

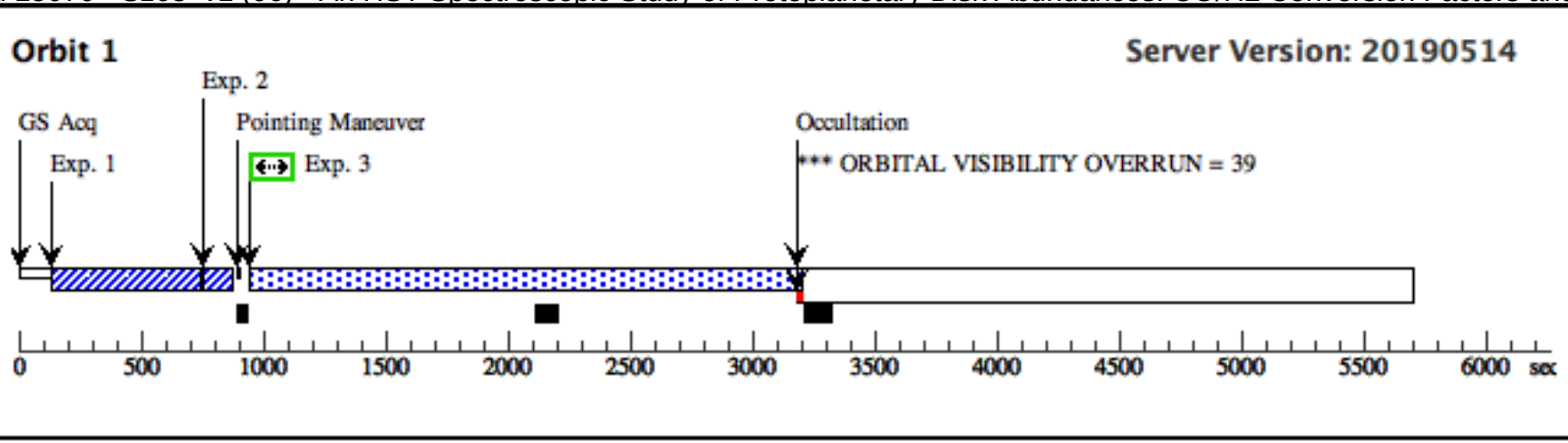
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SZ-68	RA: 15 45 12.8694 (236.3036225d) Dec: -34 17 30.59 (-34.29183d) Equinox: J2000	Proper Motion RA: -12.97 mas/yr Proper Motion Dec: -17.21 mas/yr Parallax: 0.00708" Epoch of Position: 2000	V=10.224	Reference Frame: ICRS

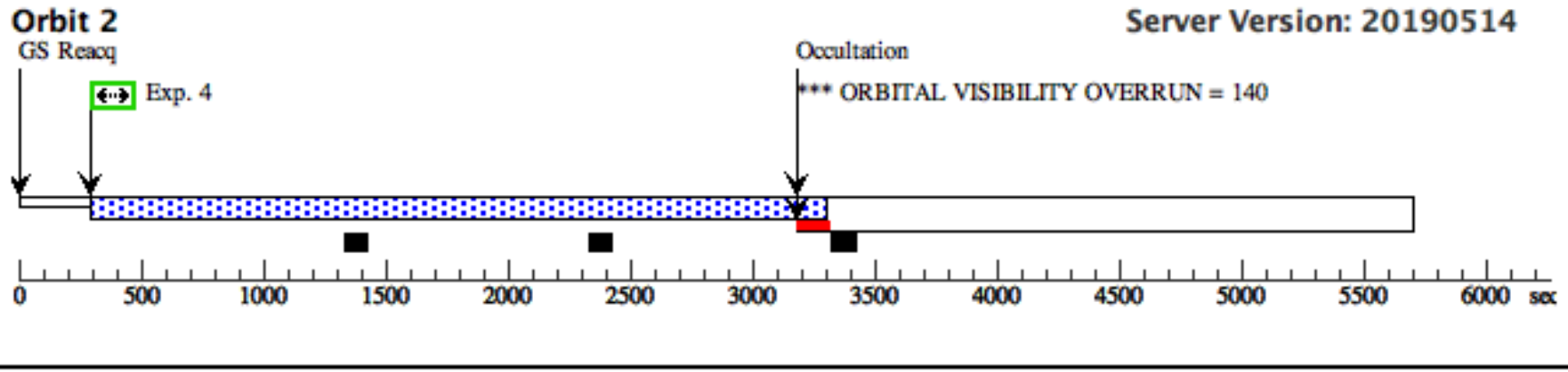
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

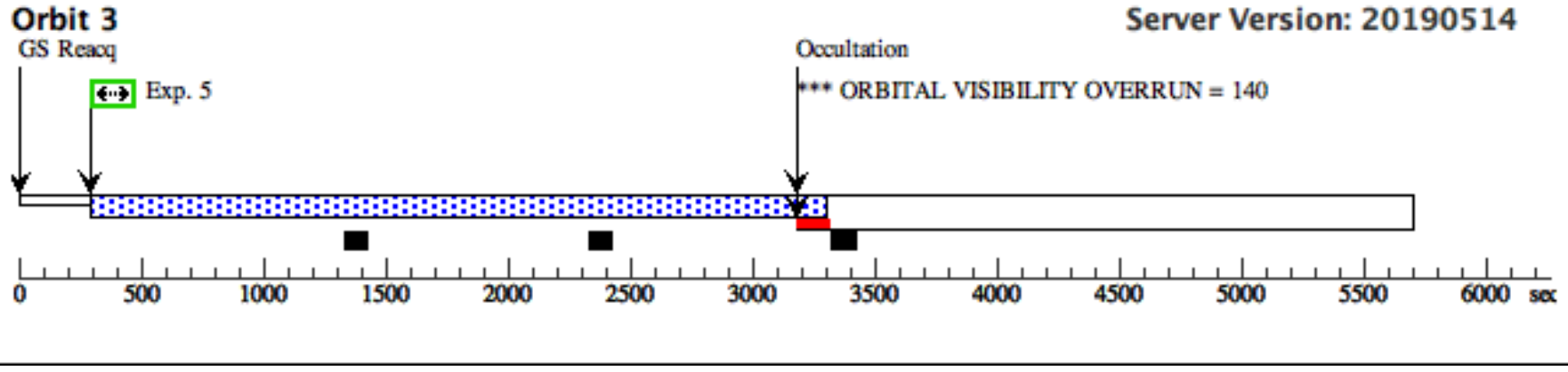
Exposures

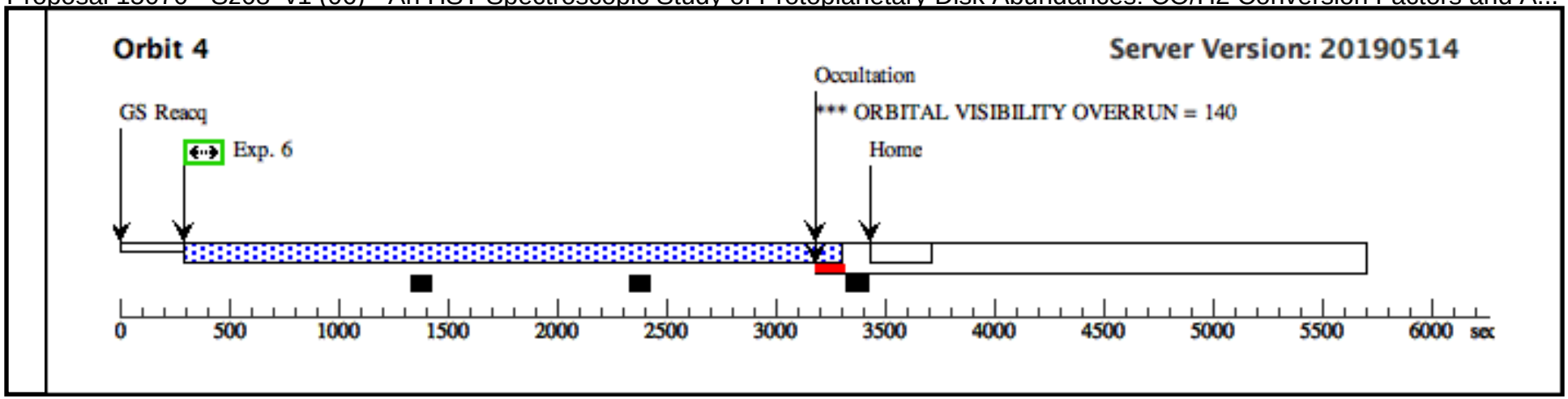
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	SZ68-ACQ/SEARCH (COS.ta.1035634)	(4) SZ-68	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		14 Secs (14 Secs) *[==>]*	 ***[1]***
	Comments: Revised based on ETC template star of appropriate B-mag brightness. - KF July 2017								
2	SZ68-ACQ/IMAGE (COS.ta.1035634)	(4) SZ-68	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				14 Secs (14 Secs) *[==>]*	 ***[1]***
	Comments: Revised based on ETC template star of appropriate B-mag brightness. - KF July 2017								
3	SZ68-G130M-1 (COS.sp.411966)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			2074 Secs (2074 Secs) *[==>]*	 ***[1]***
4	SZ68-G130M-2 (COS.sp.411966)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2954 Secs (2954 Secs) *[==>]*	 ***[2]***
5	SZ68-G130M-3 (COS.sp.411966)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2954 Secs (2954 Secs) *[==>]*	 ***[3]***
6	SZ68-G130M-4 (COS.sp.411966)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2954 Secs (2954 Secs) *[==>]*	 ***[4]***

Orbit Structure








Orbit 4
Server Version: 20190514
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 140
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, Sz68_v2 (07), completed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER 06 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(Sz68_v2 (07)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(Sz68_v2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Sz68_v2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Sz68_v2 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

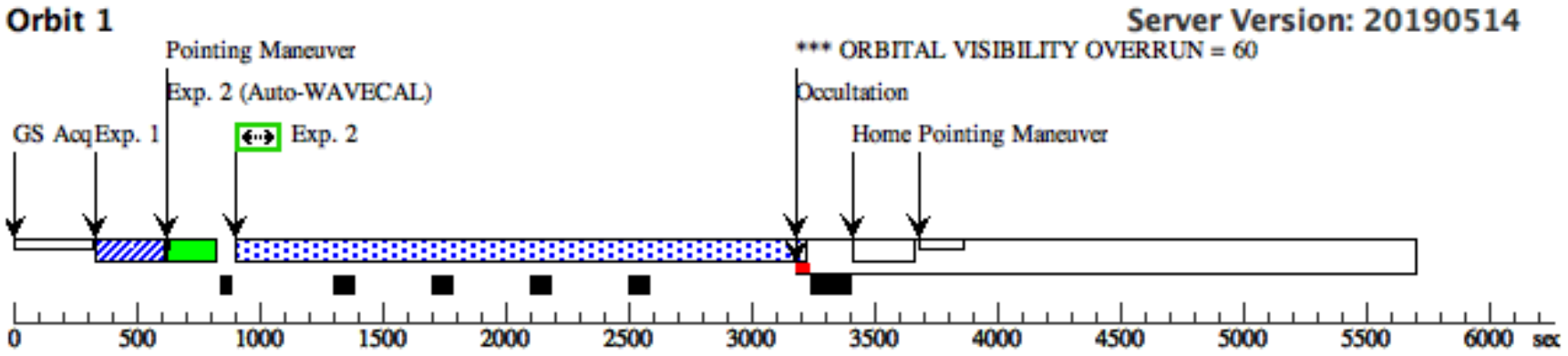
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SZ-68	RA: 15 45 12.8694 (236.3036225d) Dec: -34 17 30.59 (-34.29183d) Equinox: J2000	Proper Motion RA: -12.97 mas/yr Proper Motion Dec: -17.21 mas/yr Parallax: 0.00708" Epoch of Position: 2000	V=10.224	Reference Frame: ICRS

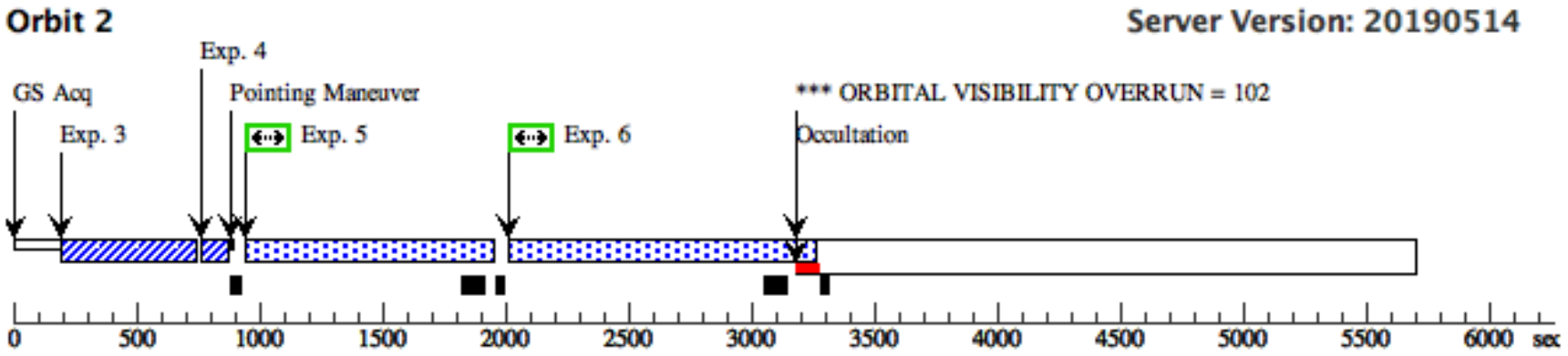
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, PROTOPLANETARY DISK, T TAURI STAR]
Extended=NO

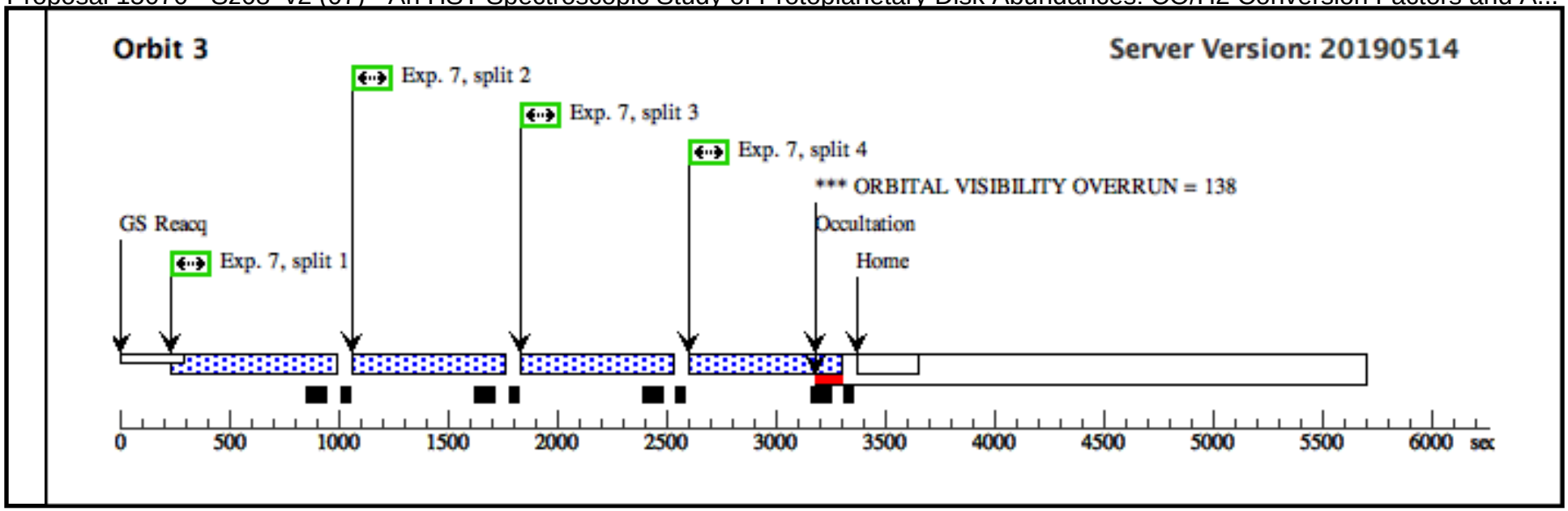
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Sz68-STIS_ACQ (STIS.ta.1003655)	(4) SZ-68	STIS/CCD, ACQ, F28X50OIII	MIRROR		GS ACQ SCENARIO BASE1B3		2 Secs (2 Secs) *[==>]*	*[1]*
2	Sz68-NUV_1 (STIS.sp.1003610)	(4) SZ-68	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=400			2307 Secs (2307 Secs) *[==>]*	*[1]*
3	Sz68-ACQ/SEARCH2 (COS.ta.1035634)	(4) SZ-68	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	SCAN-SIZE=3			8 Secs (8 Secs) *[==>]*	*[2]*
Comments: Revised based on ETC template star of appropriate B-mag brightness. - KF July 2017									
4	Sz68-ACQ/IMAGE2 (COS.ta.1035634)	(4) SZ-68	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				8 Secs (8 Secs) *[==>]*	*[2]*
Comments: Revised based on ETC template star of appropriate B-mag brightness. - KF July 2017									
5	Sz68-G160M2-1 (COS.sp.411967)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (800 Secs) *[==>]*	*[2]*
6	Sz68-G160M2-1 (COS.sp.411967)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			1200 Secs (1200 Secs) *[==>]*	*[2]*
7	Sz68-G160M2-2 (COS.sp.411967)	(4) SZ-68	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=ALL; BUFFER-TIME=520			645 Secs (2580 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20190514
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
*** ORBITAL VISIBILITY OVERRUN = 138
GS Reacq
Occultation
Exp. 7, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v1 (08), failed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TCra_v1 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

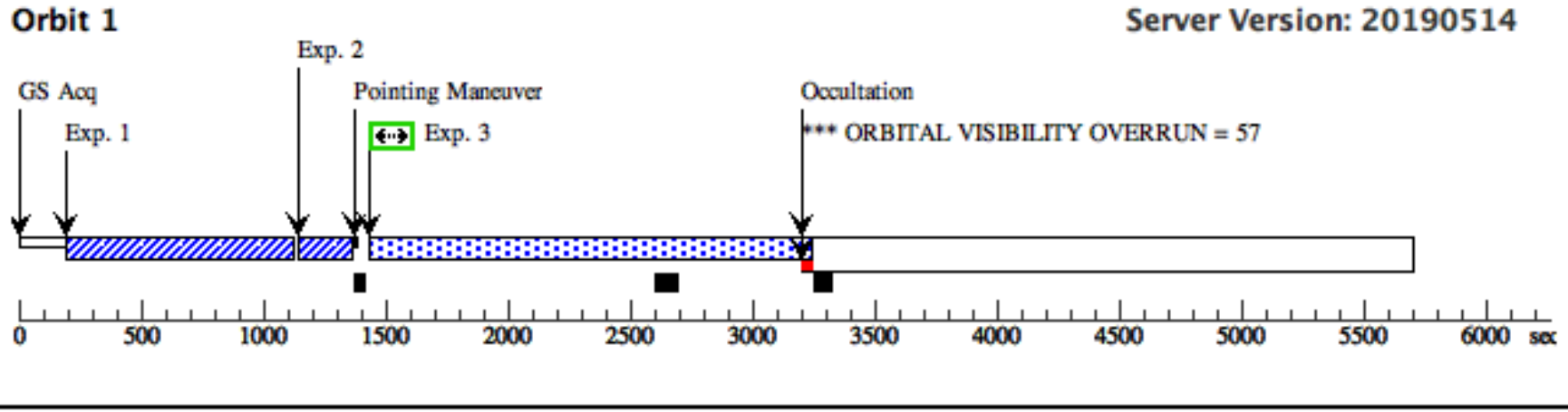
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d)	Proper Motion RA: 5.3 mas/yr	V=11.67	Reference Frame: ICRS
		Dec: -36 57 49.93 (-36.96387d)	Proper Motion Dec: -24.9 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

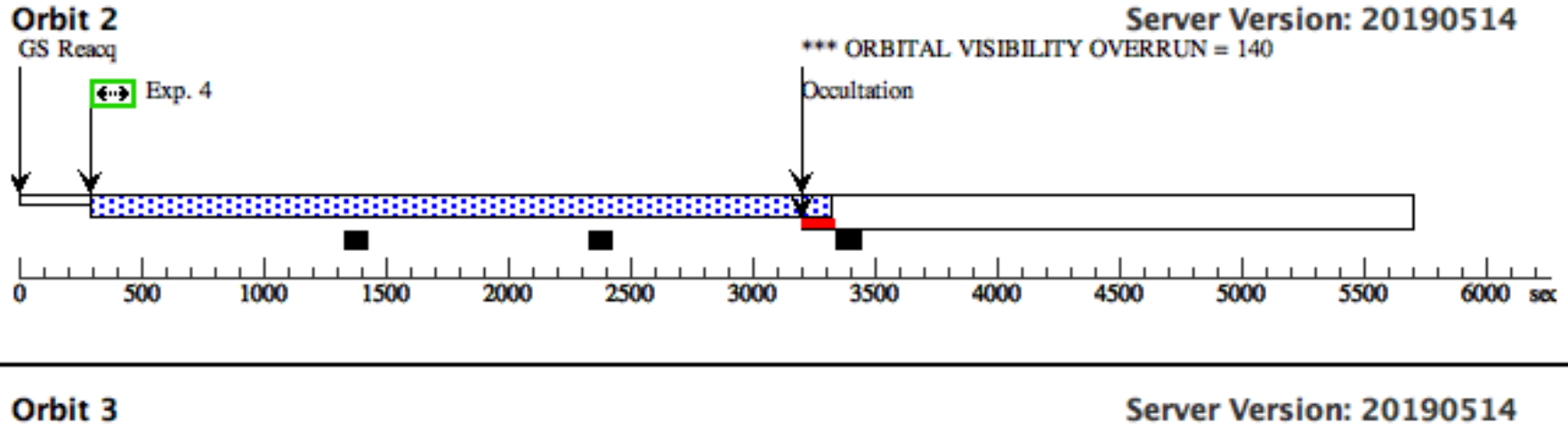
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

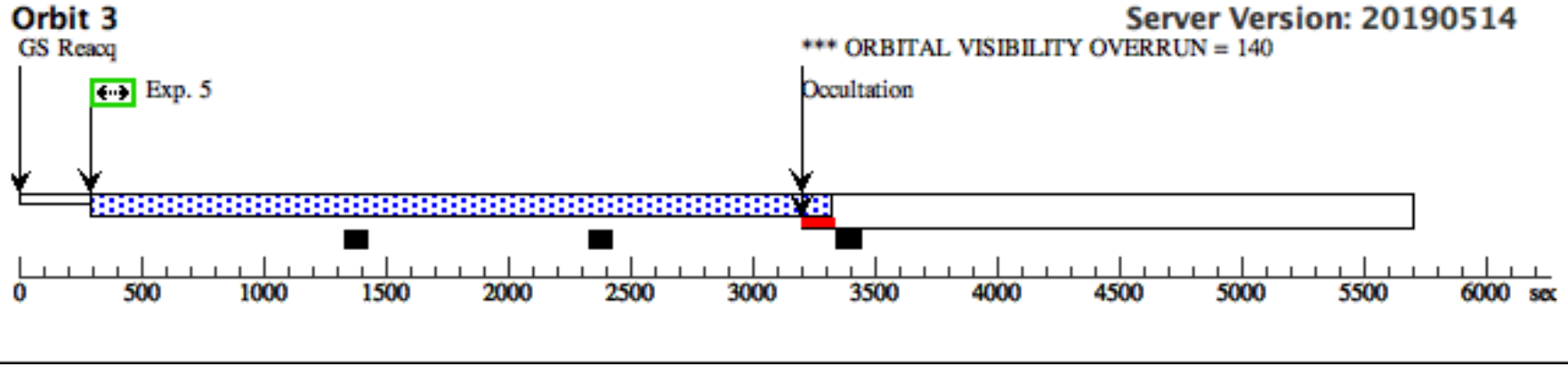
Exposures

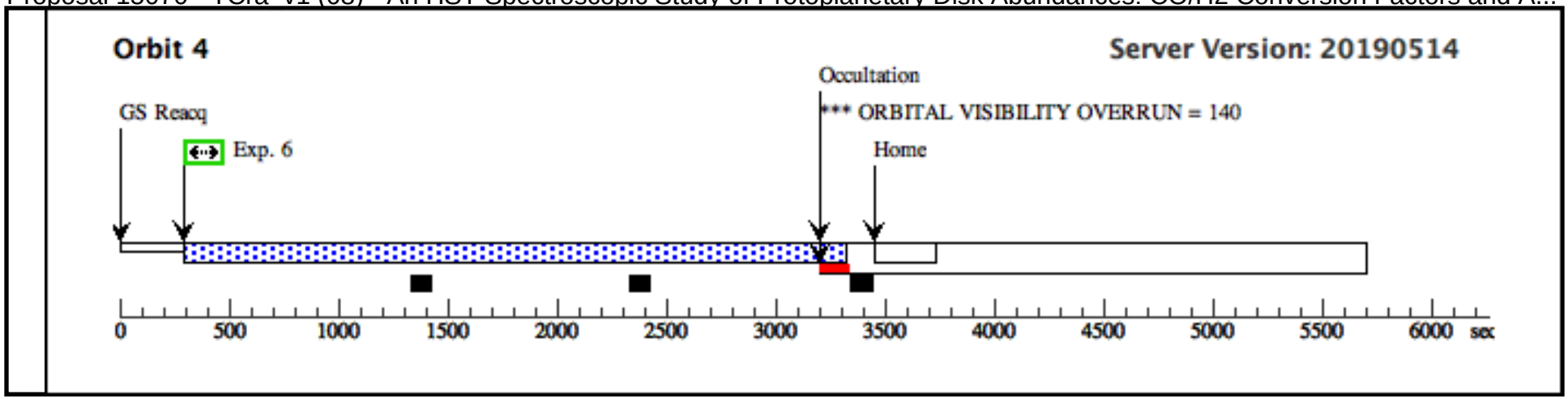
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-ACQ/SEARCH (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		57 Secs (57 Secs) *[==>]*	*[1]*
2	TCra-ACQ/IMAGE (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	*[1]*
3	TCra-G130M-1 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1622 Secs (1622 Secs) *[==>]*	*[1]*
4	TCra-G130M-2 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[2]*
5	TCra-G130M-3 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[3]*
6	TCra-G130M-4 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[4]*

Orbit Structure








Orbit 4
Server Version: 20190514
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 140
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v1 (Z8), failed Fri Oct 11 20:00:45 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TCra_v1 (Z8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (Z8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (Z8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(TCra_v1 (Z8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

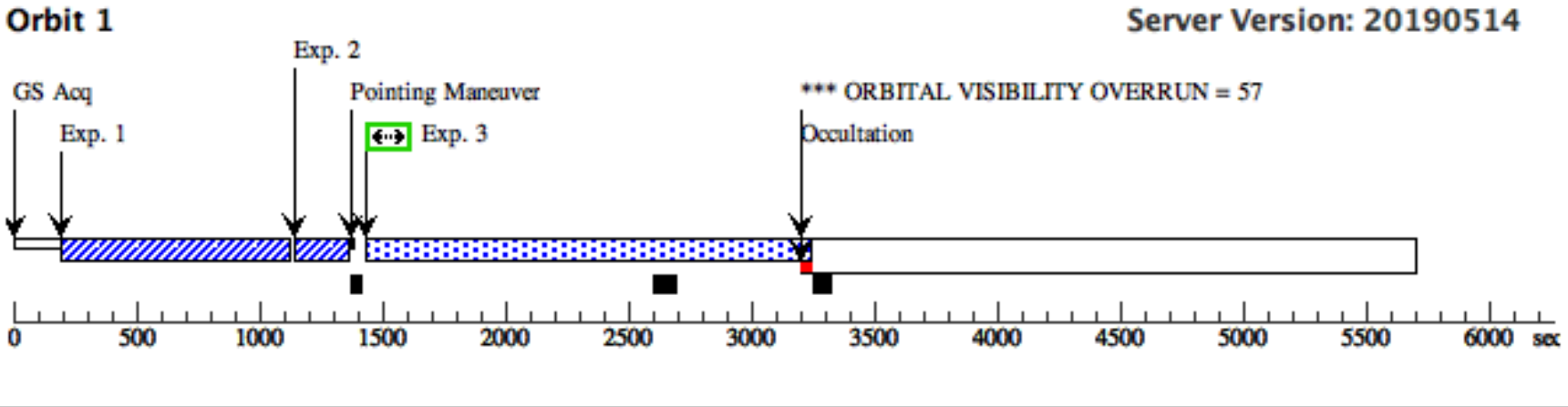
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d)	Proper Motion RA: 5.3 mas/yr	V=11.67	Reference Frame: ICRS
		Dec: -36 57 49.93 (-36.96387d)	Proper Motion Dec: -24.9 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

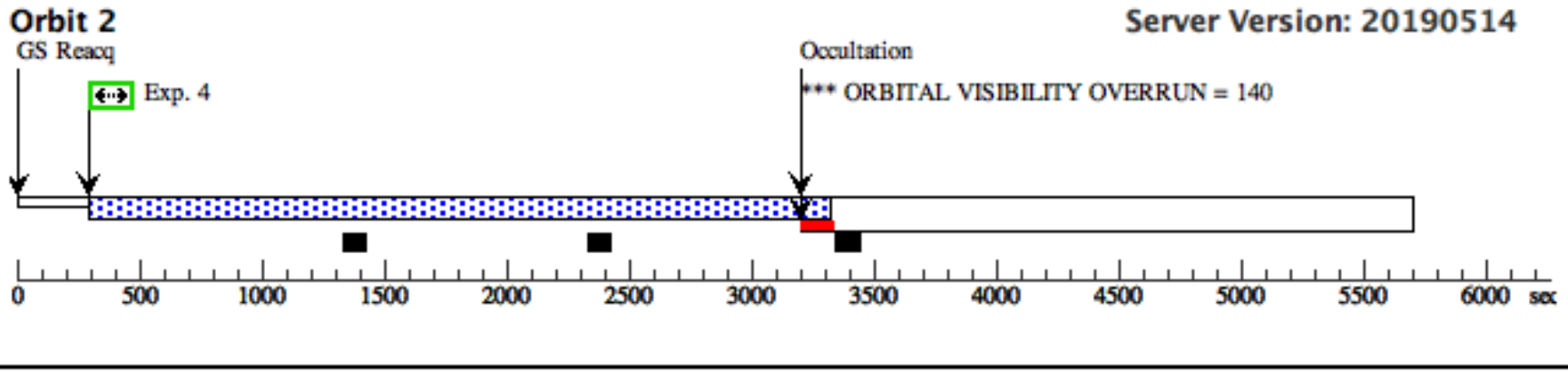
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

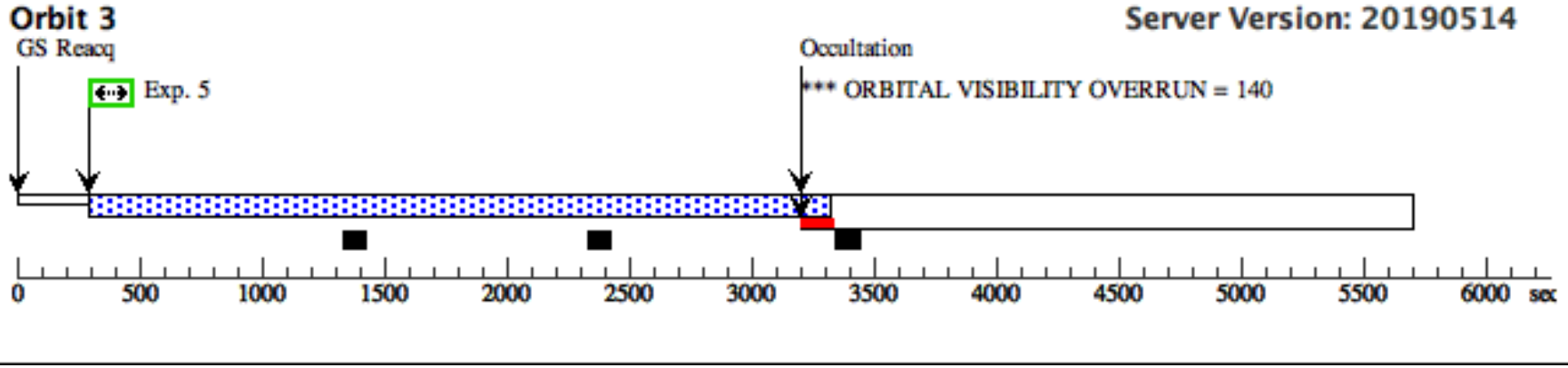
Exposures

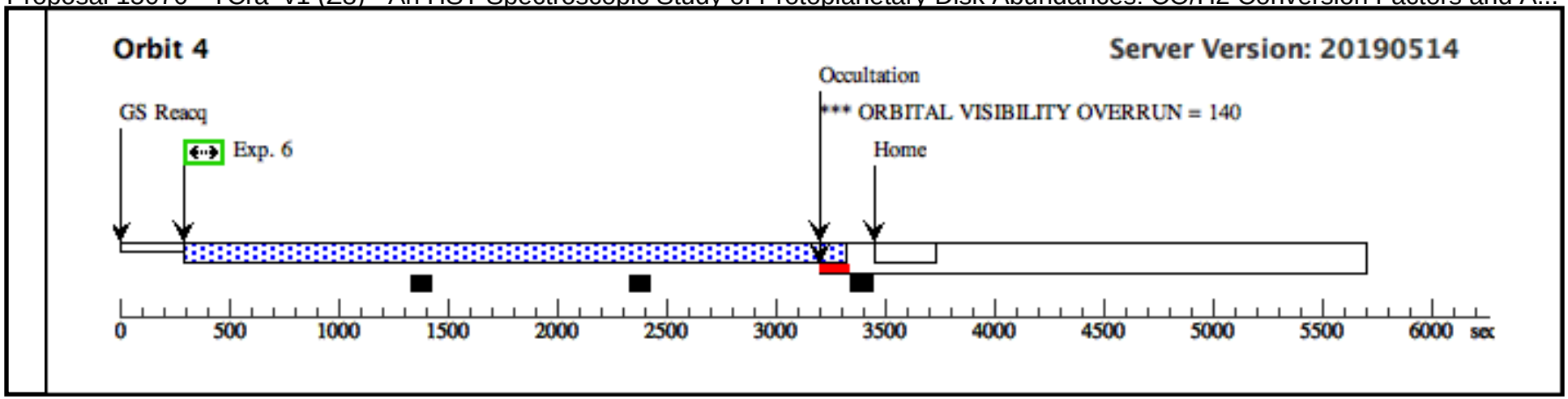
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-ACQ/SEARCH (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		57 Secs (57 Secs) *[==>]*	*[1]*
2	TCra-ACQ/IMAGE (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	*[1]*
3	TCra-G130M-1 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1622 Secs (1622 Secs) *[==>]*	*[1]*
4	TCra-G130M-2 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[2]*
5	TCra-G130M-3 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[3]*
6	TCra-G130M-4 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	*[4]*

Orbit Structure








Orbit 4
Server Version: 20190514
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 140
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v1 (T8) Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: This is a HOPR for failed visit Z8. Z8 is a HOPR for failed visit 08.

Diagnostics

(TCra_v1 (T8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v1 (T8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v1 (T8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v1 (T8)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

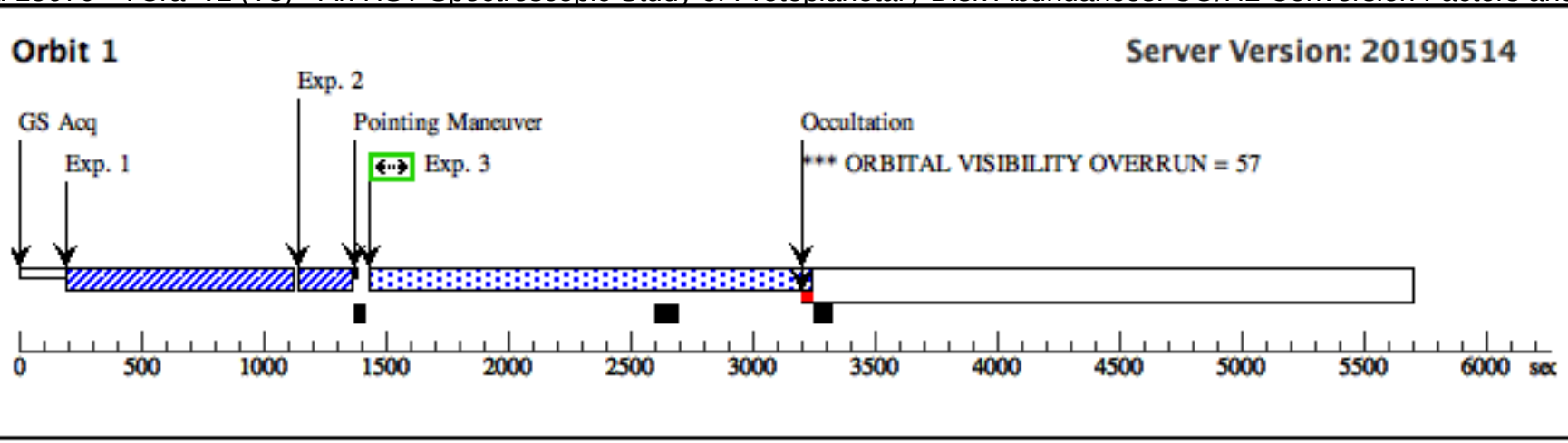
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d)	Proper Motion RA: 5.3 mas/yr	V=11.67	Reference Frame: ICRS
		Dec: -36 57 49.93 (-36.96387d)	Proper Motion Dec: -24.9 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

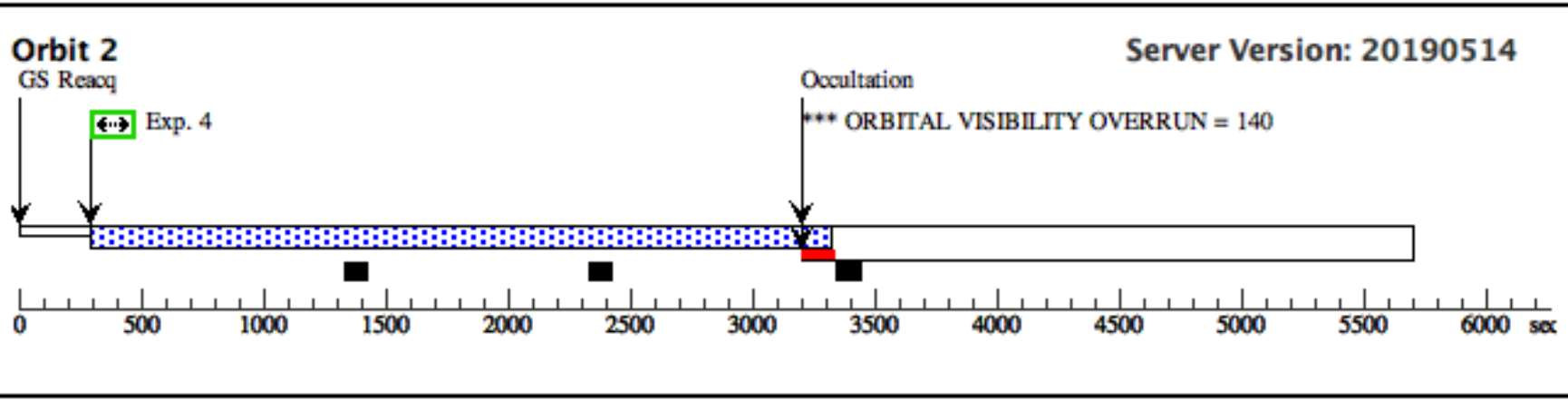
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

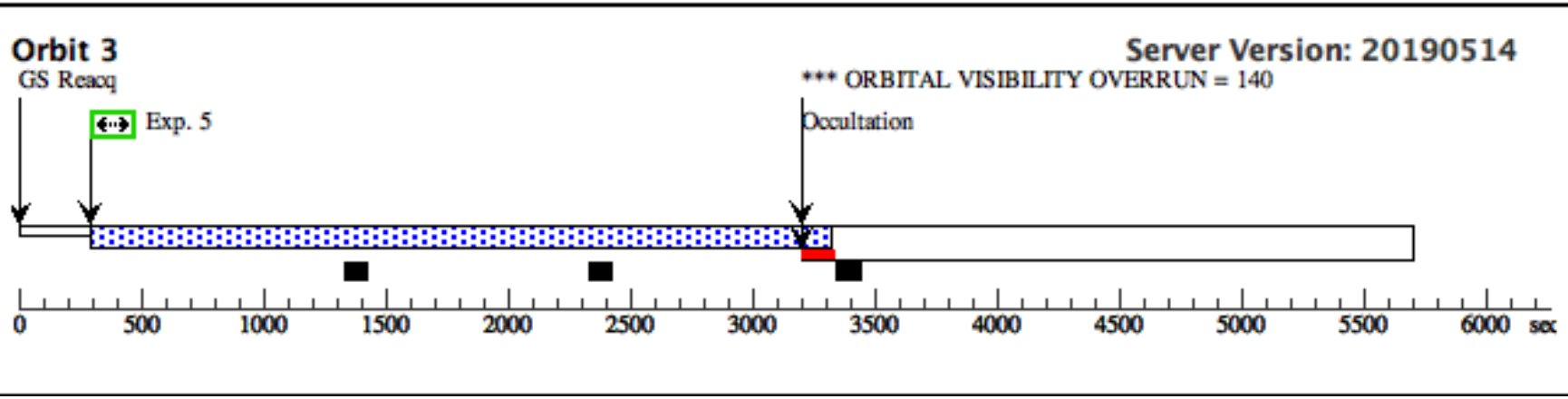
Exposures

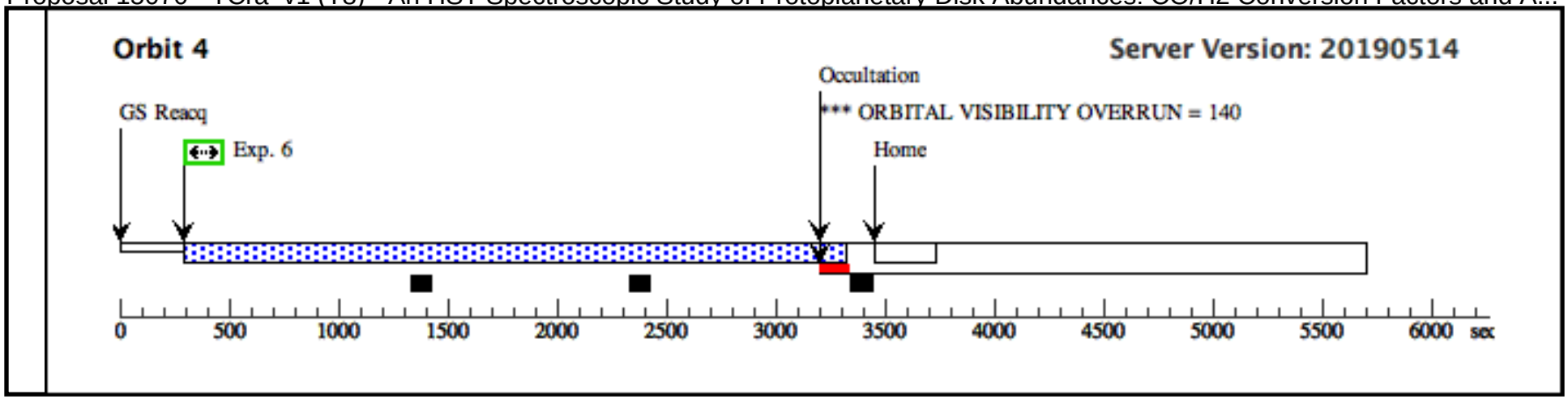
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-ACQ/SEARCH (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		57 Secs (57 Secs) *[==>]*	 ***[1]***
2	TCra-ACQ/IMAGE (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	 ***[1]***
3	TCra-G130M-1 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1622 Secs (1622 Secs) *[==>]*	 ***[1]***
4	TCra-G130M-2 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	 ***[2]***
5	TCra-G130M-3 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	 ***[3]***
6	TCra-G130M-4 (COS.sp.41196 6)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2974 Secs (2974 Secs) *[==>]*	 ***[4]***

Orbit Structure








Orbit 4
Server Version: 20190514
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 140
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v2 (09), failed Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER 08 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(TCra_v2 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

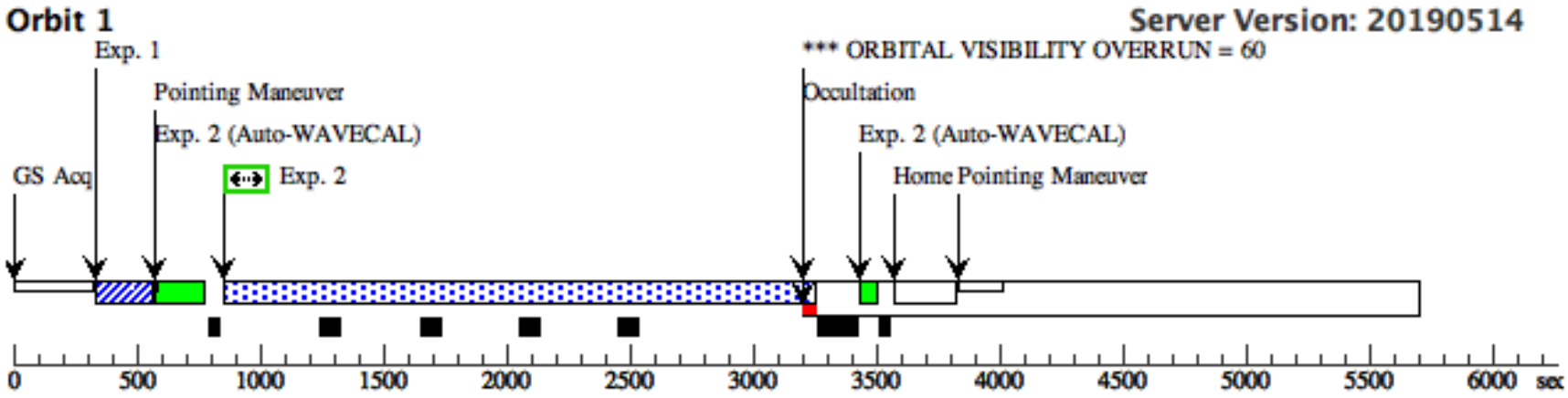
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d) Dec: -36 57 49.93 (-36.96387d) Equinox: J2000	Proper Motion RA: 5.3 mas/yr Proper Motion Dec: -24.9 mas/yr Epoch of Position: 2000	V=11.67	Reference Frame: ICRS

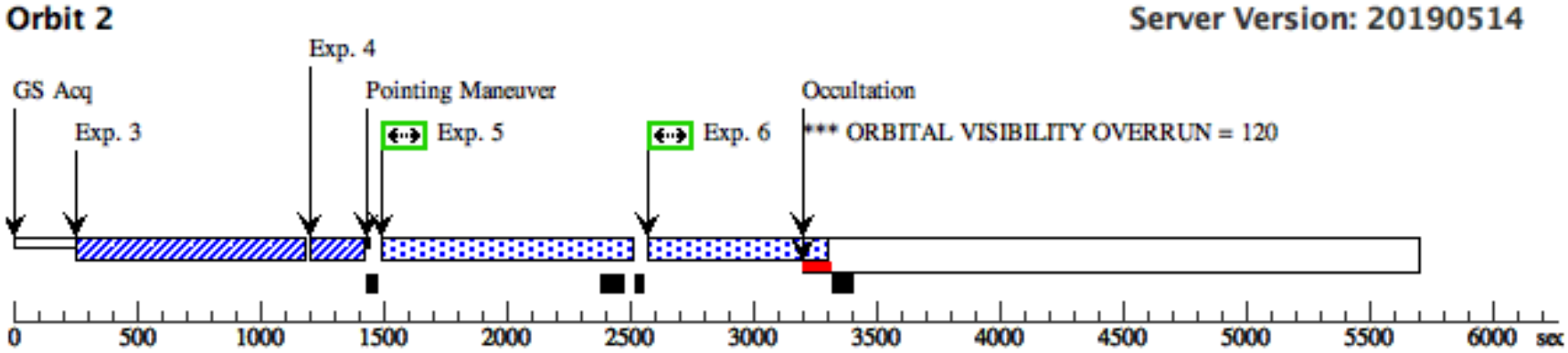
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

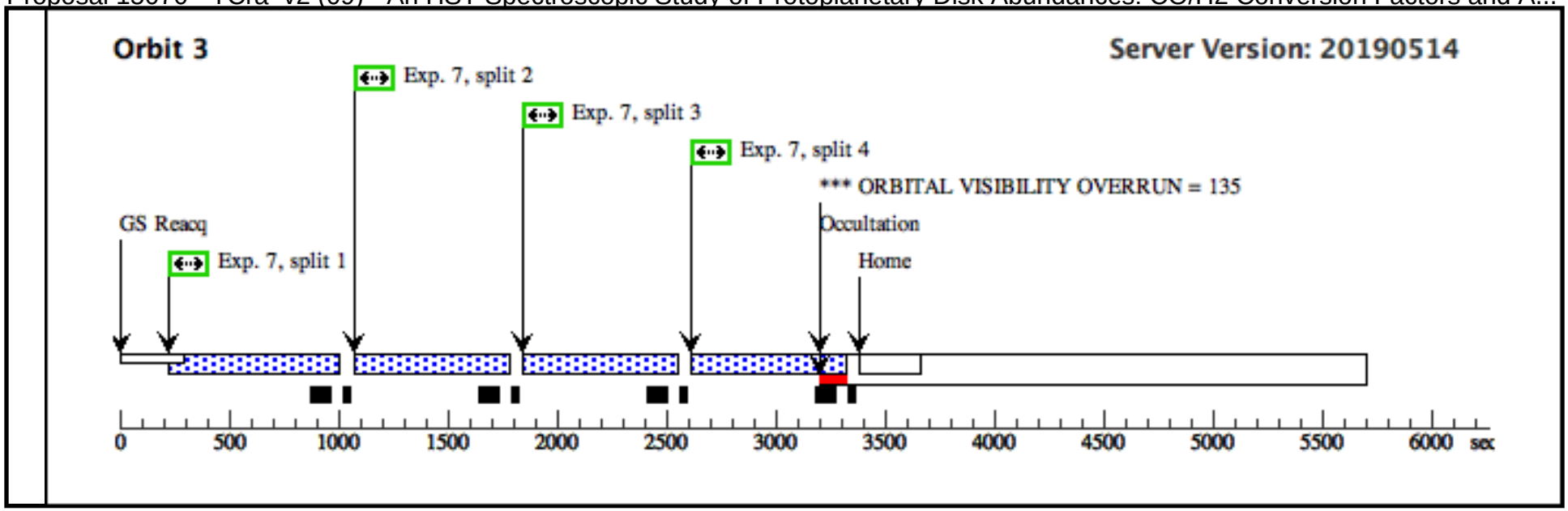
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-STIS_ACQ (STIS.ta.1003632)	(5) V-T-CRA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		0.2 Secs (0.2 Secs) *[==>]*	*[1]*
2	TCra-NUV_1 (STIS.sp.1003610)	(5) V-T-CRA	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=400			2380 Secs (2380 Secs) *[==>]*	*[1]*
3	TCra-ACQ/SEARCH2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3			57 Secs (57 Secs) *[==>]*	*[2]*
4	TCra-ACQ/IMAGE2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	*[2]*
5	TCra-G160M2-1 (COS.sp.4111967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (800 Secs) *[==>]*	*[2]*
6	TCra-G160M2-1 (COS.sp.4111967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			682 Secs (682 Secs) *[==>]*	*[2]*
7	TCra-G160M2-2 (COS.sp.4111967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=540			656 Secs (2624 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20190514
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
*** ORBITAL VISIBILITY OVERRUN = 135
GS Reacq
Exp. 7, split 1
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v2 (C9), failed Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER Z8 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(TCra_v2 (C9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (C9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (C9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

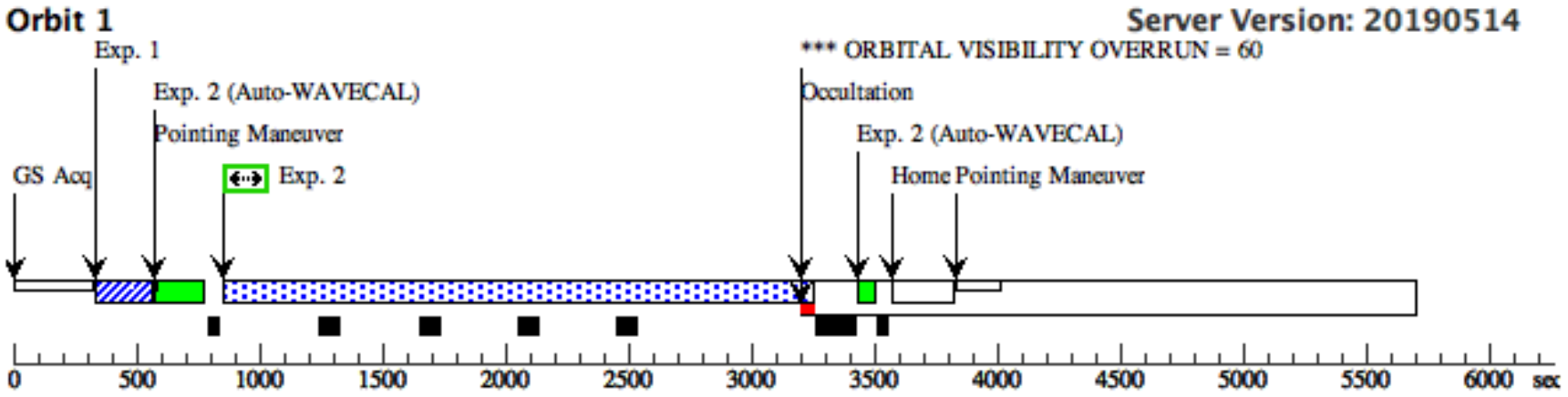
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d) Dec: -36 57 49.93 (-36.96387d) Equinox: J2000	Proper Motion RA: 5.3 mas/yr Proper Motion Dec: -24.9 mas/yr Epoch of Position: 2000	V=11.67	Reference Frame: ICRS

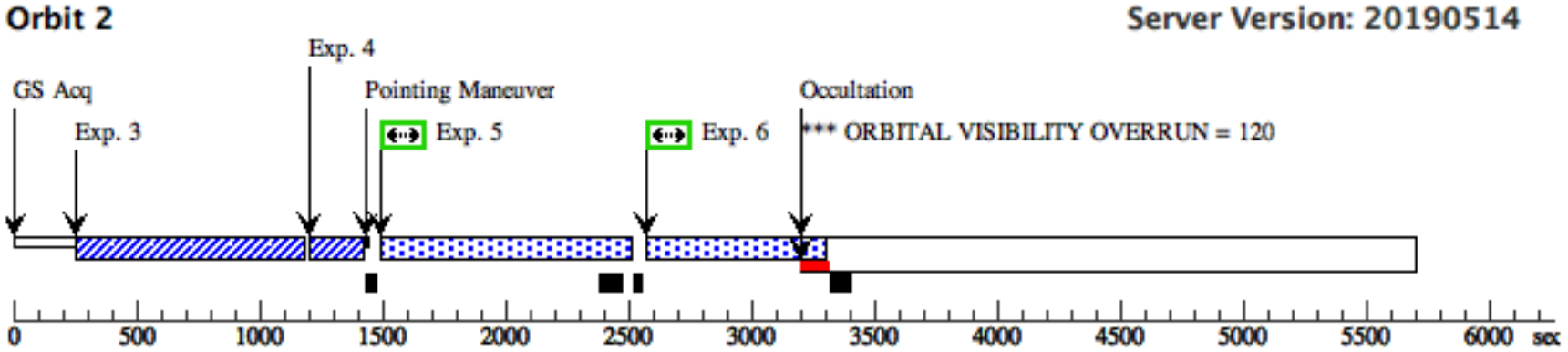
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

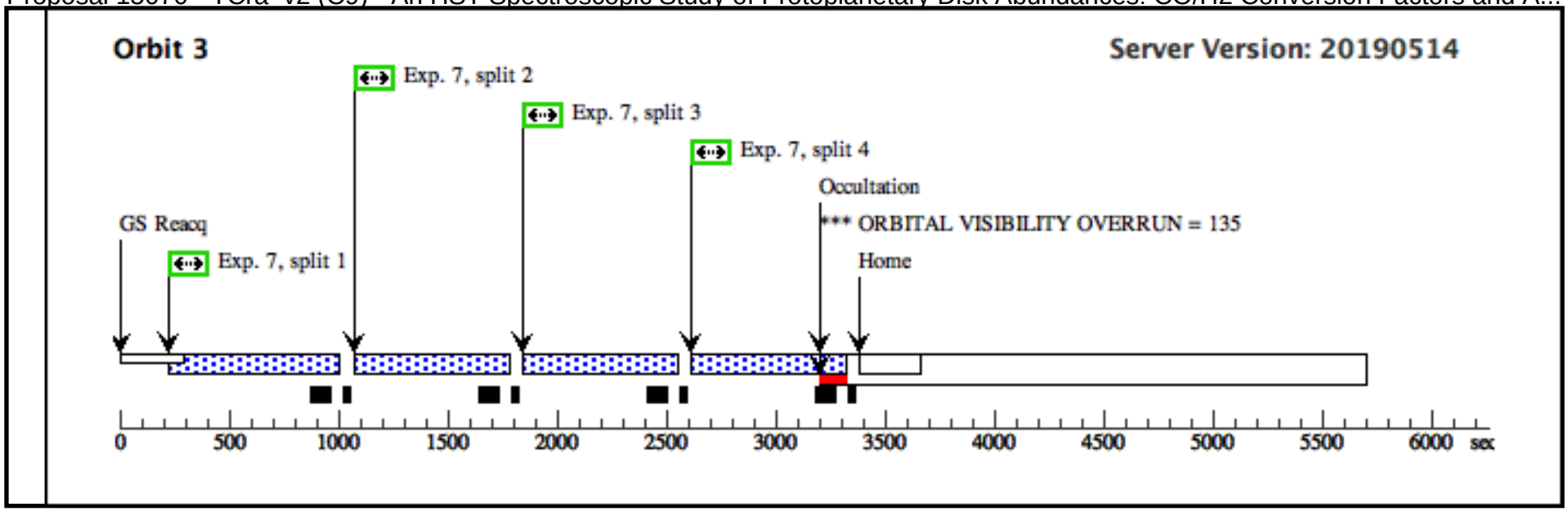
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-STIS_ACQ (STIS.ta.1003632)	(5) V-T-CRA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		0.2 Secs (0.2 Secs) *[==>]*	 ***[1]***
2	TCra-NUV_1 (STIS.sp.1003610)	(5) V-T-CRA	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=4000			2380 Secs (2380 Secs) *[==>]*	 ***[1]***
3	TCra-ACQ/SEARCH2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	NEW OBSET; OBSET ID D9		57 Secs (57 Secs) *[==>]*	 ***[2]***
4	TCra-ACQ/IMAGE2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	 ***[2]***
5	TCra-G160M2-1 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (800 Secs) *[==>]*	 ***[2]***
6	TCra-G160M2-1 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			682 Secs (682 Secs) *[==>]*	 ***[2]***
7	TCra-G160M2-2 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=540			656 Secs (2624 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20190514
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
Occultation
*** ORBITAL VISIBILITY OVERRUN = 135
GS Reacq
Exp. 7, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TCra_v2 (T9) Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER T8 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

This is a HOPR for failed visits C9. C9 was a HOPR for failed visits 09.

Diagnostics

(TCra_v2 (T9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (T9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(TCra_v2 (T9)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

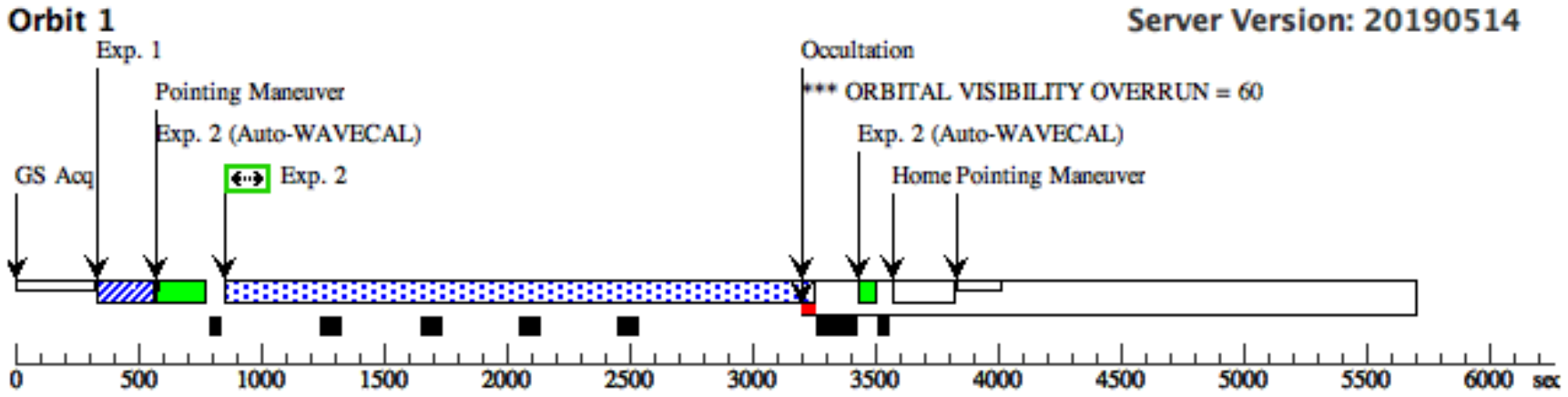
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-T-CRA	RA: 19 01 58.7780 (285.4949083d)	Proper Motion RA: 5.3 mas/yr	V=11.67	Reference Frame: ICRS
		Dec: -36 57 49.93 (-36.96387d)	Proper Motion Dec: -24.9 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

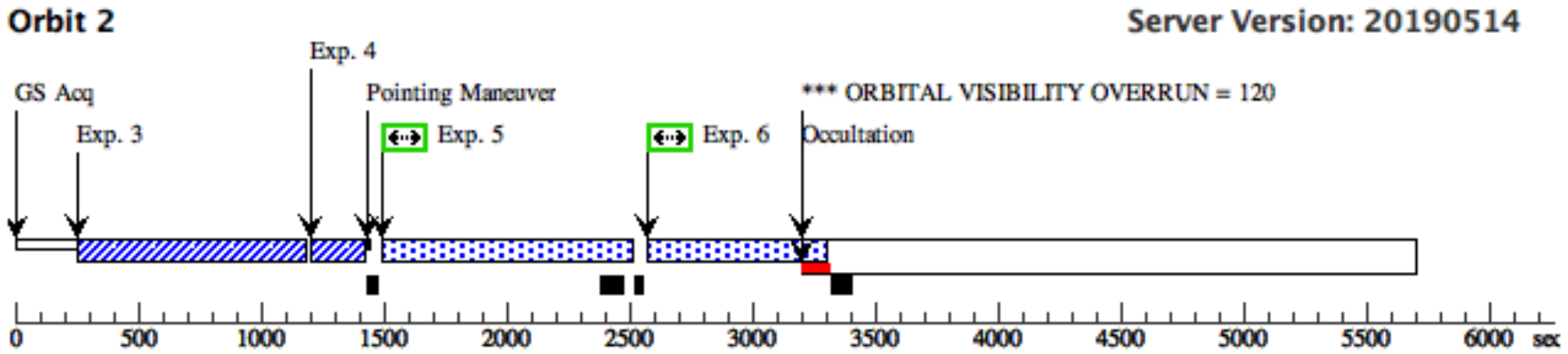
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

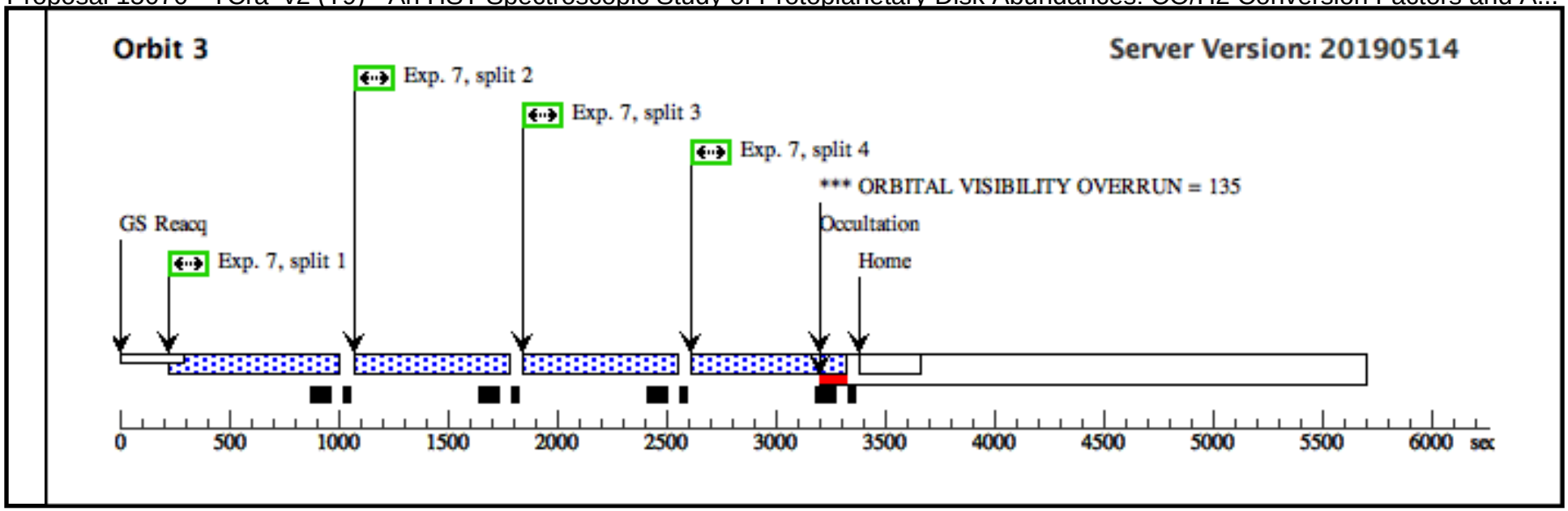
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TCra-STIS_ACQ (STIS.ta.1003632)	(5) V-T-CRA	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		0.2 Secs (0.2 Secs) *[==>]*	***[1]***
2	TCra-NUV_1 (STIS.sp.1003610)	(5) V-T-CRA	STIS/NUV-MAMA, TIME-TAG, 52X0.2	G230M 3055 A	BUFFER-TIME=400			2380 Secs (2380 Secs) *[==>]*	***[1]***
3	TCra-ACQ/SEARCH2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	NEW OBSET; OBSET ID 9U		57 Secs (57 Secs) *[==>]*	***[2]***
4	TCra-ACQ/IMAGE2 (COS.ta.1107308)	(5) V-T-CRA	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				57 Secs (57 Secs) *[==>]*	***[2]***
5	TCra-G160M2-1 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			800 Secs (800 Secs) *[==>]*	***[2]***
6	TCra-G160M2-1 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			682 Secs (682 Secs) *[==>]*	***[2]***
7	TCra-G160M2-2 (COS.sp.411967)	(5) V-T-CRA	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=540			656 Secs (2624 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20190514
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
*** ORBITAL VISIBILITY OVERRUN = 135
GS Reacq
Occultation
Exp. 7, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TOri_v1 (10), scheduled Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

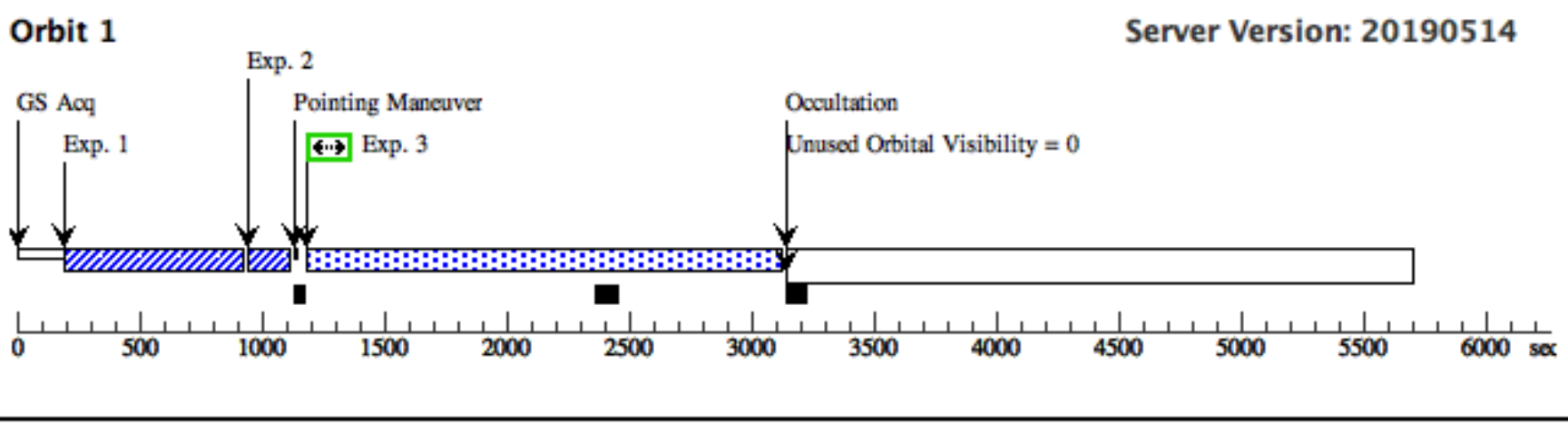
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-T-ORI	RA: 05 35 50.4390 (83.9601625d) Dec: -05 28 34.94 (-5.47637d) Equinox: J2000	Proper Motion RA: 4.5 mas/yr Proper Motion Dec: -1.3 mas/yr Epoch of Position: 2000	V=11.248	Reference Frame: ICRS

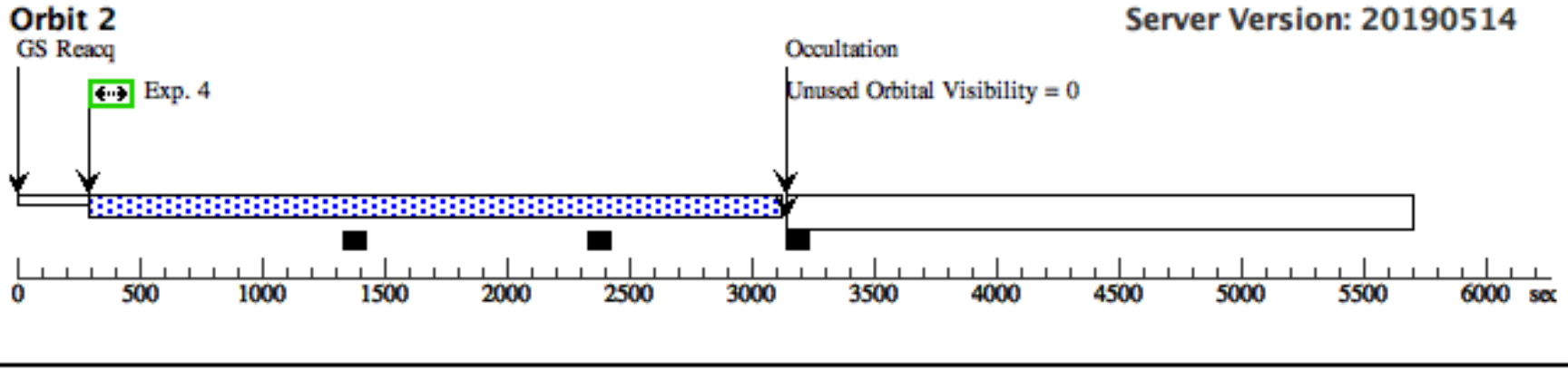
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, T TAURI STAR]
Extended=NO

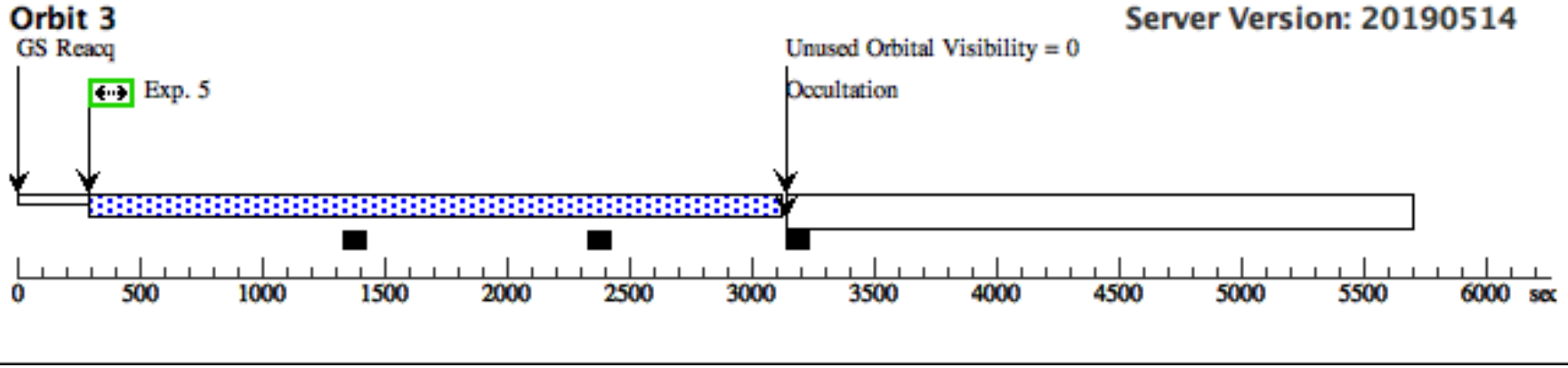
Exposures

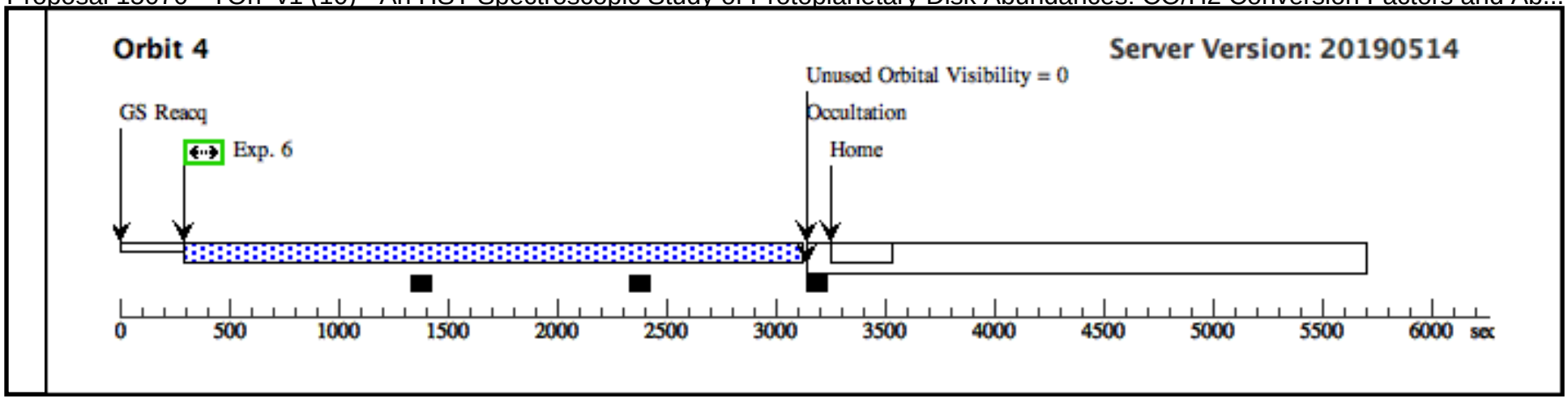
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TOri-ACQ/SEARCH (COS.ta.1003640)	(6) V-T-ORI	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		35 Secs (35 Secs) *[==>]*	*[1]*
2	TCra-ACQ/IMAGE (COS.ta.1003640)	(6) V-T-ORI	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				35 Secs (35 Secs) *[==>]*	*[1]*
3	TOri-G130M-1 (COS.sp.411966)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1762 Secs (1752 Secs) *[==>1752.0 Secs]*	*[1]*
4	TOri-G130M-2 (COS.sp.411966)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2869 Secs (2779 Secs) *[==>2779.0 Secs]*	*[2]*
5	TOri-G130M-3 (COS.sp.411966)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2869 Secs (2779 Secs) *[==>2779.0 Secs]*	*[3]*
6	TOri-G130M-4 (COS.sp.411966)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=4; BUFFER-TIME=1000			2869 Secs (2779 Secs) *[==>2779.0 Secs]*	*[4]*

Orbit Structure








Orbit 4
Server Version: 20190514
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15070, TOri_v2 (11), scheduling Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: AFTER 10 BY 0 D TO 102 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Fixed Targets

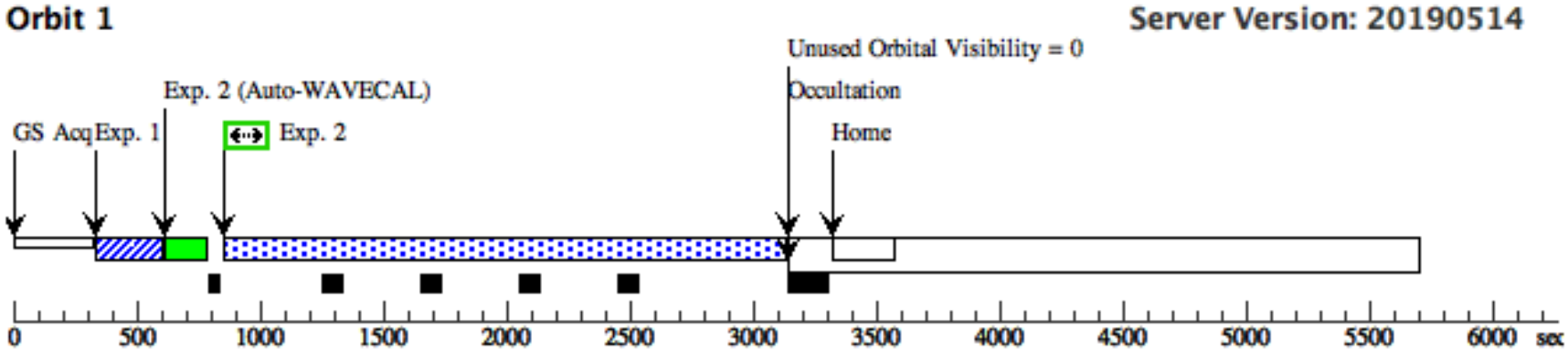
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-T-ORI	RA: 05 35 50.4390 (83.9601625d) Dec: -05 28 34.94 (-5.47637d) Equinox: J2000	Proper Motion RA: 4.5 mas/yr Proper Motion Dec: -1.3 mas/yr Epoch of Position: 2000	V=11.248	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, 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	TOri-STIS_ACQ (STIS.ta.1003643)	(6) V-T-ORI	STIS/CCD, ACQ, F28X50OII	MIRROR		GS ACQ SCENARIO BASE1B3		2 Secs (2 Secs) *[==>]*	 ***[1]***
2	TOri-NUV_1 (STIS.sp.1003644)	(6) V-T-ORI	STIS/NUV-MAMA, TIME-TAG, 0.2X0.2	E230M 2707 A	BUFFER-TIME=400			2292 Secs (2262 Secs) *[==>2262.0 Secs]*	 ***[1]***

Orbit Structure



Visit

Proposal 15070, TOri_v3 (12), scheduled Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: AFTER 10 BY 0 D TO 3 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(TOri_v3 (12)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

Fixed Targets

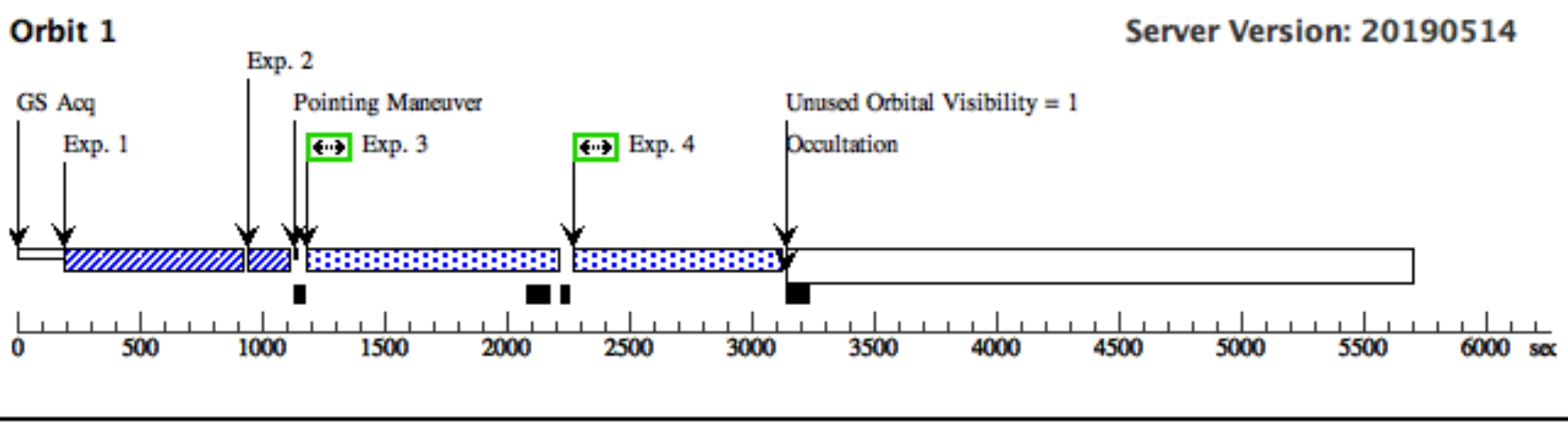
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-T-ORI	RA: 05 35 50.4390 (83.9601625d) Dec: -05 28 34.94 (-5.47637d) Equinox: J2000	Proper Motion RA: 4.5 mas/yr Proper Motion Dec: -1.3 mas/yr Epoch of Position: 2000	V=11.248	Reference Frame: ICRS

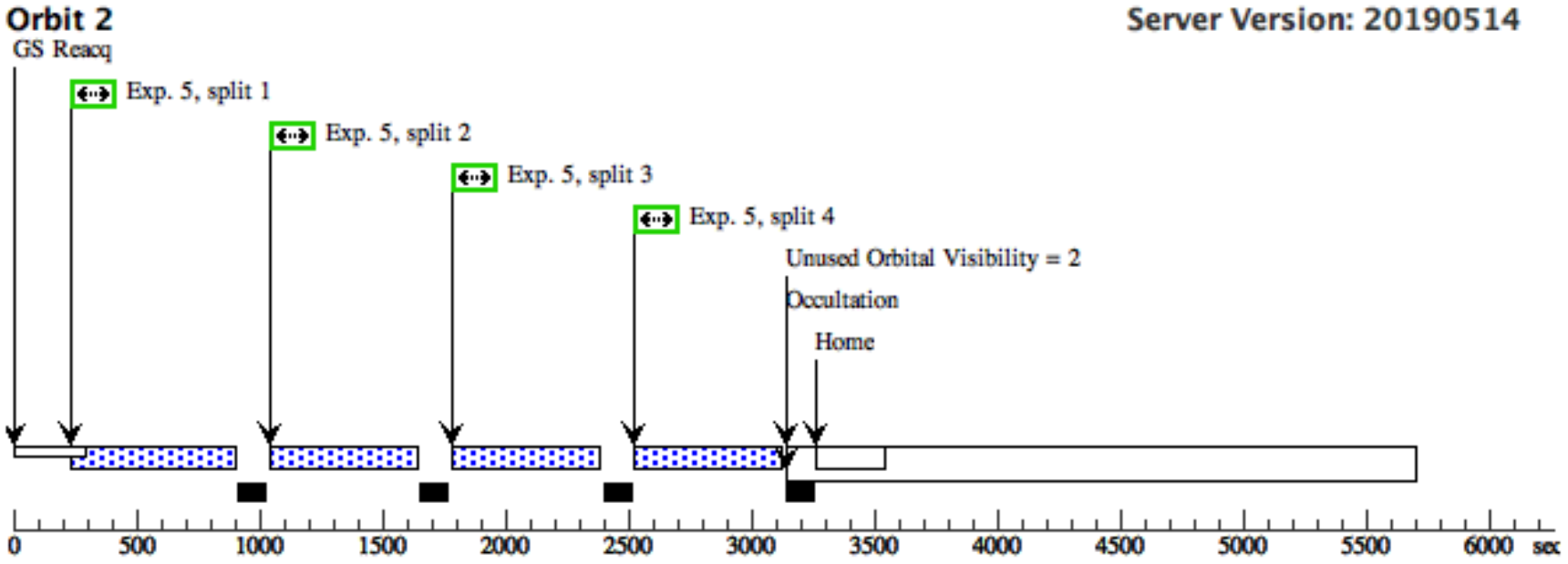
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, T TAURI STAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TOri-ACQ/SEARCH2 (COS.ta.1003640)	(6) V-T-ORI	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		35 Secs (35 Secs) *[==>]*	*[1]*
2	TOri-ACQ/IMAGE2 (COS.ta.1003640)	(6) V-T-ORI	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				35 Secs (35 Secs) *[==>]*	*[1]*
3	TOri-G160M2-1 (COS.sp.411967)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=1; BUFFER-TIME=690			785 Secs (808 Secs) *[==>808.0 Secs]*	*[1]*
4	TOri-G160M2-1 (COS.sp.411967)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=2; BUFFER-TIME=1000			777 Secs (800 Secs) *[==>800.0 Secs]*	*[1]*
5	TOri-G160M2-2 (COS.sp.411967)	(6) V-T-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=ALL; BUFFER-TIME=530			623 Secs (2204 Secs) *[==>551.0 Secs (Split 1)]* *[==>551.0 Secs (Split 2)]* *[==>551.0 Secs (Split 3)]* *[==>551.0 Secs (Split 4)]*	*[2]*

Orbit Structure





Visit

Proposal 15070, HKOri_v1 (13), completed Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(HKOri_v1 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(HKOri_v1 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(HKOri_v1 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

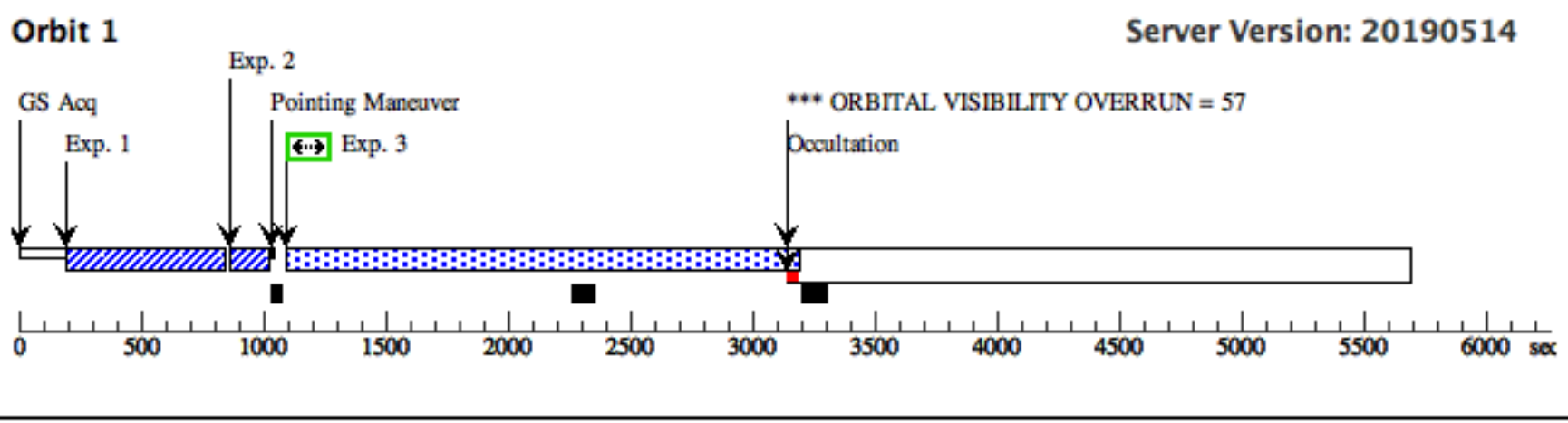
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	V-HK-ORI	RA: 05 31 28.0520 (82.8668833d)	Proper Motion RA: -2.2 mas/yr	V=11.1	Reference Frame: ICRS
		Dec: +12 09 10.25 (12.15285d)	Proper Motion Dec: 1.1 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

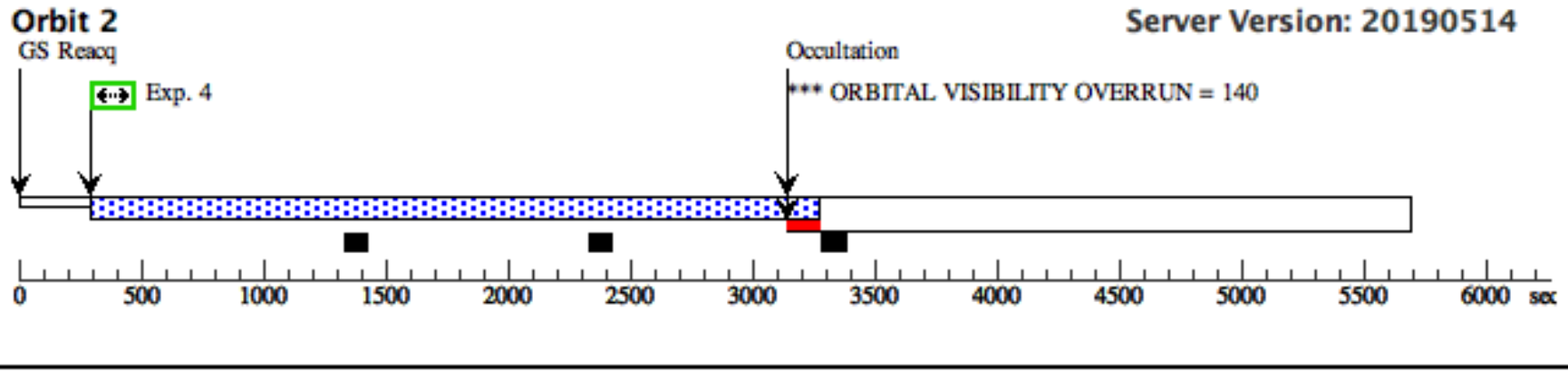
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

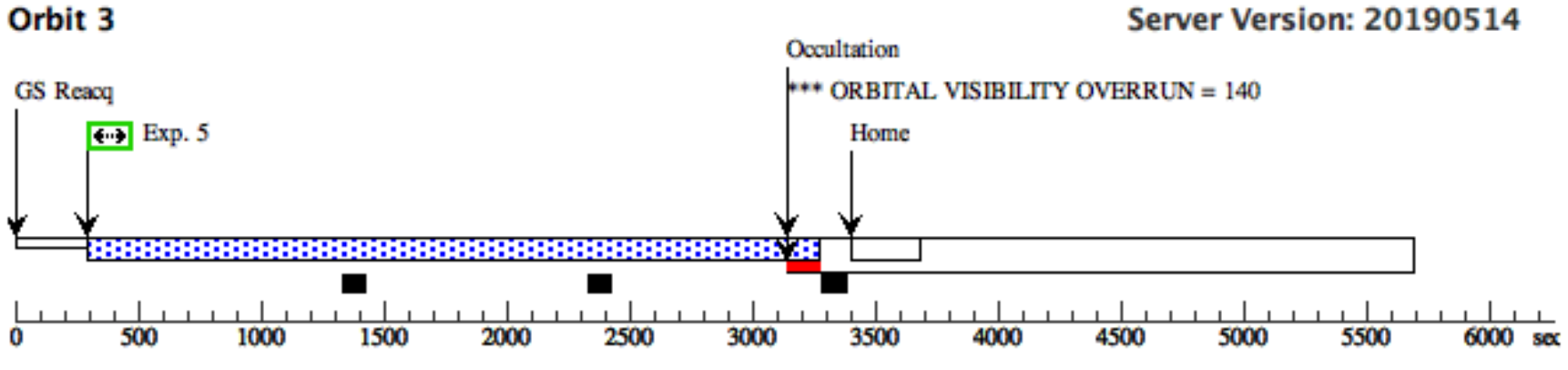
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	HKOri-ACQ/SEARCH (COS.ta.1003667)	(7) V-HK-ORI	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		26 Secs (26 Secs)	
								[==>]	***[1]***
2	HKOri-ACQ/IMAGE (COS.ta.1003667)	(7) V-HK-ORI	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				26 Secs (26 Secs)	
								[==>]	***[1]***
3	HKOri-G130M-1 (COS.sp.411966)	(7) V-HK-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=1; BUFFER-TIME=1000			1912 Secs (1912 Secs)	
								[==>]	***[1]***
4	HKOri-G130M-2 (COS.sp.411966)	(7) V-HK-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=2; BUFFER-TIME=1000			2923 Secs (2923 Secs)	
								[==>]	***[2]***
5	HKOri-G130M-3 (COS.sp.411966)	(7) V-HK-ORI	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=1000			2923 Secs (2923 Secs)	
								[==>]	***[3]***

Orbit Structure







Visit

Proposal 15070, HKOri_v2 (14), completed Fri Oct 11 20:00:46 GMT 2019

Diagnostic Status: Warning

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

Special Requirements: AFTER 13 BY 0 D TO 2 D

Comments: BOT checked, kf, 06/29/12. The only violation is a mis-typing of the target star, which has been observed safely with COS.

Diagnostics

(HKOri_v2 (14)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	V-HK-ORI	RA: 05 31 28.0520 (82.8668833d) Dec: +12 09 10.25 (12.15285d) Equinox: J2000	Proper Motion RA: -2.2 mas/yr Proper Motion Dec: 1.1 mas/yr Epoch of Position: 2000	V=11.1	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=EXT-STAR
Description=[DISK, HERBIG AE/BE, PROTOPLANETARY DISK]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	HKOri-STIS_ACQ (STIS.ta.1003643)	(7) V-HK-ORI	STIS/CCD, ACQ, F28X50OII	MIRROR		GS ACQ SCENARIO BASE1B3		2 Secs (2 Secs) *[==>]*	*[1]*
2	HKOri-NUV_1 (STIS.sp.1003644)	(7) V-HK-ORI	STIS/NUV-MAMA, TIME-TAG, 0.2X0.2	E230M 2707 A	BUFFER-TIME=400			2326 Secs (2326 Secs) *[==>]*	*[1]*
3	HKOri-ACQ/SEARCH 2 (COS.ta.1003667)	(7) V-HK-ORI	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=3	GS ACQ SCENARIO BASE1B3		26 Secs (26 Secs) *[==>]*	*[2]*
4	HKOri-ACQ/IMAGE2 (COS.ta.1003667)	(7) V-HK-ORI	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				26 Secs (26 Secs) *[==>]*	*[2]*
5	HKOri-G160M2-1 (COS.sp.411967)	(7) V-HK-ORI	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=ALL; BUFFER-TIME=232			344 Secs (1376 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure