



16593 - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

Cycle: 29, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

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Proposal 16593 (STScI Edit Number: 2, Created: Tuesday, December 28, 2021 at 10:00:27 PM Eastern Standard Time) - Overview

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
1C	(1) RXJ0438.6+1546	COS/FUV COS/NUV	2	28-Dec-2021 22:00:20.0	yes
1D	(1) RXJ0438.6+1546	COS/FUV COS/NUV	2	28-Dec-2021 22:00:21.0	yes
1S	(1) RXJ0438.6+1546 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	28-Dec-2021 22:00:23.0	yes
AC	(1) RXJ0438.6+1546	COS/FUV COS/NUV	2	28-Dec-2021 22:00:24.0	yes
AD	(1) RXJ0438.6+1546	COS/FUV COS/NUV	2	28-Dec-2021 22:00:25.0	yes
AS	(1) RXJ0438.6+1546 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	28-Dec-2021 22:00:26.0	yes

10 Total Orbits Used

ABSTRACT

The Space Telescope Science Institute (STScI) Director has decided to devote up to 1000 orbits of Director's Discretionary time in observing Cycles 27-29 to a new Hubble Ultraviolet Legacy program focused on star formation and associated stellar physics. This new program, ULLYSES (UV Legacy Library of Young Stars as Essential Standards), will provide a UV spectroscopic reference sample of young (< 10 Myr) high- and low-mass stars. It will target over ~ 150 OB stars in the Magellanic Clouds and lower metallicity galaxies in the Local Group, and ~ 40 T Tauri stars and brown dwarfs in the Milky Way. In addition, ULLYSES will monitor 4 typical T Tauri stars over different rotational phases through at least three rotation periods, and over timescales of months to years. The resulting library will provide template spectra of massive stars at metallicities substantially below the well studied, while the low mass sample will cover a wide range of ages, accretion rates, and masses, including objects down to well below $0.5 M_{\text{sun}}$. The legacy of this large UV dataset on the first 10 Myr of stellar evolution will be enhanced by complementary datasets obtained by the scientific community. In addition to the core goals of the program related to stellar astrophysics of low and high mass stars, this data will also enable exciting science in the fields of ISM, CGM, jets, and exoplanets. ULLYSES will be modeled after the Frontier Fields program: all data obtained will be non-proprietary. The implementation team at STScI is developing high-level science data products and a sophisticated database and website for disseminating data from the ULLYSES program and ancillary datasets for the ULLYSES target sample from space and ground-based facilities.

OBSERVING DESCRIPTION

This proposal includes a subset of the low mass ULLYSES survey stars. Each target will be observed with the COS c1291 + c1589 + c1623 settings, as well as with STIS G230L, G430L, and G750L. All observations will normally be constrained to occur within 1 day.

Signal-to-noise requirements used to determine the desired exposures times were defined as follows:

COS/G130M/c1291: N V 1239 +- 1 A -- S/N=10/6-pix-resel at the peak of the line

COS/G160M/c1589: C IV 1549 +- 1 A -- S/N=20/6-pix-resel at the peak of the line (combined c1589 & c1623)

COS/G160M/c1623: C IV 1549 +- 1 A -- S/N=20/6-pix-resel at the peak of the line (combined c1589 & c1623)

STIS/G230L/52X2: Mg II 2800 +-15 A -- S/N=20/2-pix-resel at the peak of the line

STIS/G430L/52X2: continuum average 4000 +-5 A -- S/N=20/2-pix-resel (2 reads)

STIS/G750L/52X2: continuum average 5700 +-5 A -- S/N=20/2-pix-resel (2 reads)

Additional details about the scientific motivation and technical implementation strategy of the ULLYSES observations can be found at <http://www.stsci.edu/stsci-research/research-topics-and-programs/ullyses>. The ULLYSES program is based on the recommendations of a working

Proposal 16593 (STScI Edit Number: 2, Created: Tuesday, December 28, 2021 at 10:00:27 PM Eastern Standard Time) - Overview group led by Sally Oey; the full text of that group's report can be found at http://www.stsci.edu/files/live/sites/www/files/home/stsci-research/research-topics-and-programs/ullyses/_documents/HSTUV-report-ULLYSES.pdf.

WJF, 2021 Nov 18: Phase windows have been added to prevent Hubble observations from occurring during the window each day when there are no LCOGT sites where the star has airmass < 2 . The exact windows can be worked out with the tool at <https://lco.global/observatory/tools/visibility/>. The starting times, ending times, and window lengths vary nontrivially. Here we model this in a way that is simpler and more conservative without being overly restrictive. The first visibility window opens at 21:35 on 2021 Nov 9 (zero phase = 2459528.3993). The opening time drifts 3.8095 minutes earlier each day (period = 0.997355 d). The window length (upper phase limit) varies per visit, depending on the number of orbits, because we want the visit to end before the window closes:

Visits 1C, 1D: 2 orbits. The window is 20.1 h (1206 min) minus 50 min for the first orbit and 95 min for the second orbit = 1061 min. Phase runs from 0 to $(1061 \text{ min} / (1440 - 3.8095) \text{ min}) = 0.738760$.

Visit 1S: 1 orbit. The window is 20.1 h (1206 min) minus 50 min for the first orbit = 1156 min. Phase runs from 0 to $(1156 \text{ min} / (1440 - 3.8095) \text{ min}) = 0.804907$.

Proposal 16593 - RXJ0438.6+1546-COS (1C) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

Wed Dec 29 03:00:27 GMT 2021

Visit	<p>Proposal 16593, RXJ0438.6+1546-COS (1C), failed</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 10-NOV-2021 AND 21-DEC-2021; Period 0.997355 D AND ZERO-PHASE HJD2459528.3993</p> <p><i>Comments: vstatus; 1C; RXJ0438.6+1546; P/COS approved for submission ; P/RS 21/07/21 ; intrev: completed ; P/CRP 28/07/21</i></p> <p><i>vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; COS ; RS</i></p> <p><i>vcheck; ETC numbers entered in APT?; Yes</i></p> <p><i>vcheck; Any screening violations?; No</i></p> <p><i>vcheck; M-dwarf check complete and added to box folder?; Yes</i></p> <p><i>vcheck; S/N ETC calcs done & documented?; Yes</i></p> <p><i>vcheck; Field images checked & saved?; Yes</i></p> <p><i>vcheck; Selected ACQ strategy?; Yes</i></p> <p><i>vcheck; Possible ACQ or Sci spoilers?; No</i></p> <p><i>vcheck; Field BOT clear?; An M2V star is found jusy beyond the central macro-aperture, which impacts only the BOA ... it has V=14.87 and B-V=2.02 and parallax 7.1925 mas. It is cleared for the BOA using U = 18 via ETC calculations ... 153210 for c1291 and 153211 for c1589</i></p> <p><i>vcheck; Visual BOT check for stars not in catalog?; Yes ... no stars found that are not reported in GSCII</i></p> <p><i>vcheck; Orbit packing finalized?; Yes</i></p> <p><i>vcheck; Buffer times optimized?; Yes</i></p> <p><i>vcheck; Verify visit grouping correct; N/A</i></p> <p><i>vcheck; phase constraint for ground based observations added?; N/A</i></p> <p><i>vcheck; BETWEENS for coordinated observations added?; YES ... Nov 10 to Dec 21, 2021</i></p> <p><i>vcheck; Is visit ready for int. review?; Yes</i></p> <p><i>Allocated COS orbits = 4 (2+2)</i></p>																																		
	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>RXJ0438.6+1546</td> <td>RA: 04 38 39.0723 (69.6628012d)</td> <td>Proper Motion RA: 13.092 mas/yr</td> <td>V=10.863</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: HD285957</td> <td>Dec: +15 46 13.57 (15.77044d)</td> <td>Proper Motion Dec: -19.939 mas/yr</td> <td>SpT=K2; A_V=0.30; V=10.863</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: V1204-TAU</td> <td>Equinox: J2000</td> <td>Parallax: 0.0071520"</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: RXJ0438.6+1546 : HD285957, V1204-Tau</i></p> <p><i>Region: eps Cha</i></p> <p><i>Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=RXJ0438.6+1546&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id</i></p> <p><i>Target coordinates are from Gaia DR2.</i></p> <p><i>Spectral type: K2 ; A_V: 0.3 ; Distance (pc): 140</i></p> <p><i>M*: 1.4 ; log(dm/dt): -9.52</i></p> <p><i>Input file: targets_up_to_May30-2022.csv</i></p> <p><i>LkCa19_etc_scaled_pAV0.20.txt (need to normalize to V = 10.863 in ETC)</i></p> <p><i>Calculation performed 2021-06-18T15:05:41, 0.24</i></p> <p>-----</p> <p><i>tstatus: RXJ0438.6+1546; P/COS approved for submission ; S/STIS internal review complete ; P/RS 09/07/21; S/RS 09/07/21</i></p> <p><i>tcheck; APT/SIMBAD target names: ; RXJ0438.6+1546, HD285957</i></p> <p><i>tcheck; Target info verification status?; verified</i></p> <p><i>tcheck; Coordinates & P.M. verified, epoch checked?; yes, updated to Gaia EDR3 (VizieR J2000 coords)</i></p> <p><i>tcheck; Adopted SED compared to Observations?; N/A ...</i></p> <p><i>Airglow lines removed from spectrum template file used in ETC is LkCa19_scaled_noairglow.txt</i></p> <p><i>Category=STAR</i></p> <p><i>Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]</i></p> <p><i>Extended=NO</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS		Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863			Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"						Epoch of Position: 2000	
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Proposal 16593 - RXJ0438.6+1546-COS (1C) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	NUV PEAK XD (COS.sa.152 3187)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF	PHASE 0 TO 0.7387 60		30.0 Secs (30 Secs) [==>]	[1]
<i>Comments: Exposure time not yet calculated.</i>									
2	NUV PEAK D (COS.sa.152 3186)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			10.0 Secs (10 Secs) [==>]	[1]
3	G160M/158 9-3 (COS.sp.152 5436)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=3			1400 Secs (1400 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i></p>									
4	G160M/158 9-4 (COS.sp.152 5436)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=4			492 Secs (492 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i></p>									
5	G160M/158 9-4 (COS.sp.152 5436)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=4			548 Secs (548 Secs) [==>]	[2]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i></p>									

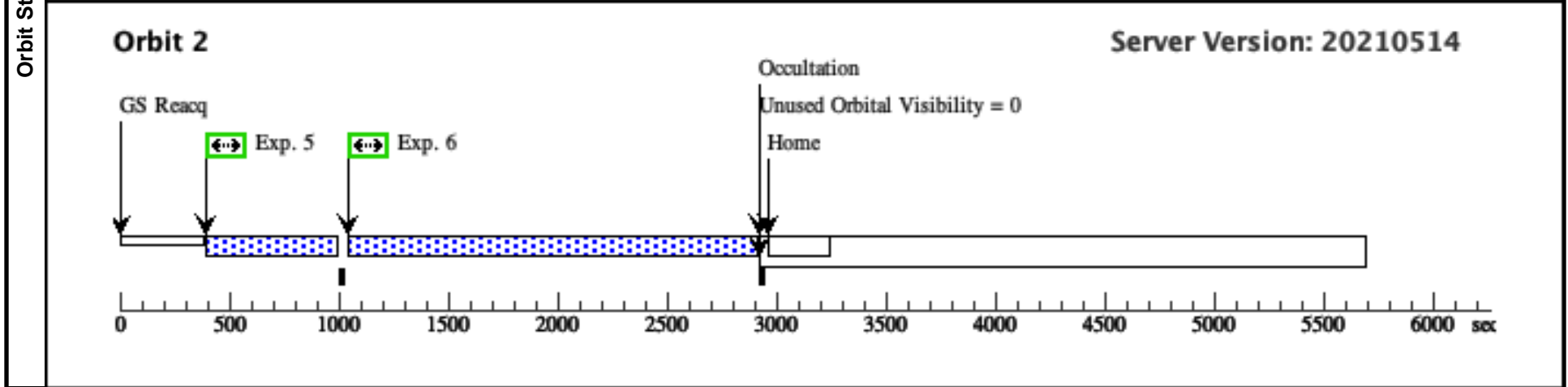
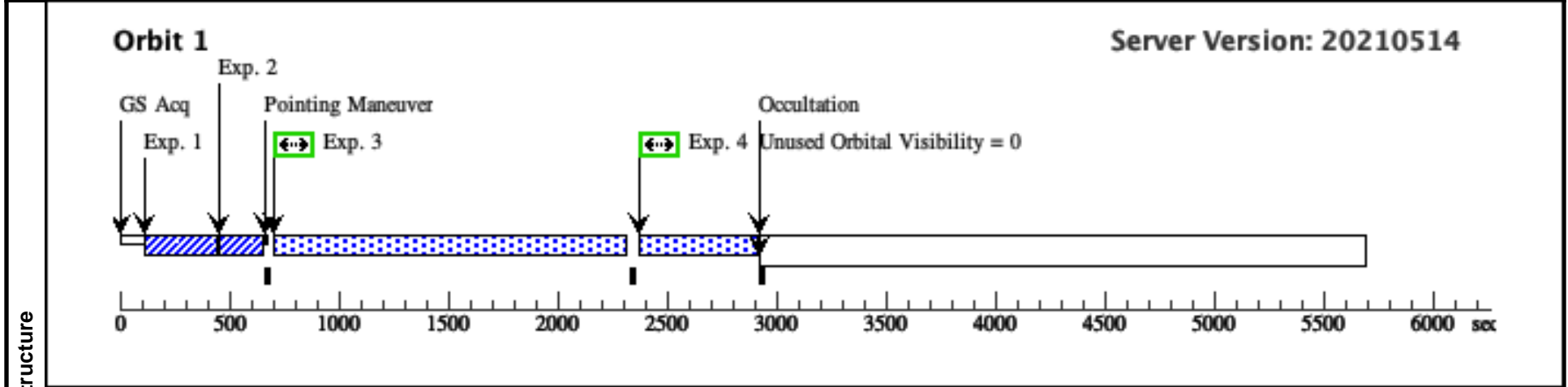
Exposures

Proposal 16593 - RXJ0438.6+1546-COS (1C) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

6	G160M/162 (1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=20	1741 Secs (1741 Secs)
	3-1 (COS.sp.152 5437)	1623 A	000; FP-POS=1	[==>]

[2]

Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
 Input file: targets_up_to_May30-2022.csv
 Spectral type: K5.5; A_V: 1.0; Distance (pc): 114
 M*: 0.9; log(dm/dt): -9.07
 For exptime=4115.8 s, spectral region:
 1549.0 +- 1.0 A achieves SNR=20.0/6-pix-resel for combined c1589 & c1623
 The exptime for this c1623 exposure has been halved because c1589 & c1623 target the same line.
 A factor of 2.0 has been applied to the exptime in each exposure.
 global countrate (brightest segment): 68.2 cts/s/segment
 brightest pixel: 0.002 cts/s/pix at 1446.2 A
 Calculation performed 2021-06-18T15:05:39, v0.24



Visit	<p>Proposal 16593, RXJ0438.6+1546-COS (1D), failed</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 10-NOV-2021 AND 21-DEC-2021; Period 0.997355 D AND ZERO-PHASE HJD2459528.3993</p> <p><i>Comments: vstatus; 1C; RXJ0438.6+1546; P/COS approved for submission ; P/RS 21/07/21 ; intrev: completed ; P/CRP 28/07/21</i></p> <p><i>vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; COS ; RS</i></p> <p><i>vcheck; ETC numbers entered in APT?; Yes</i></p> <p><i>vcheck; Any screening violations?; No</i></p> <p><i>vcheck; M-dwarf check complete and added to box folder?; Yes</i></p> <p><i>vcheck; S/N ETC calcs done & documented?; Yes</i></p> <p><i>vcheck; Field images checked & saved?; Yes</i></p> <p><i>vcheck; Selected ACQ strategy?; Yes</i></p> <p><i>vcheck; Possible ACQ or Sci spoilers?; No</i></p> <p><i>vcheck; Field BOT clear?; An M2V star is found jusy beyond the central macro-aperture, which impacts only the BOA ... it has V=14.87 and B-V=2.02 and parallax 7.1925 mas. It is cleared for the BOA using U = 18 via ETC calculations ... 153210 for c1291 and 153211 for c1589</i></p> <p><i>vcheck; Visual BOT check for stars not in catalog?; Yes ... no stars found that are not reported in GSCII</i></p> <p><i>vcheck; Orbit packing finalized?; Yes</i></p> <p><i>vcheck; Buffer times optimized?; Yes</i></p> <p><i>vcheck; Verify visit grouping correct; N/A</i></p> <p><i>vcheck; phase constraint for ground based observations added?; N/A</i></p> <p><i>vcheck; BETWEENS for coordinated observations added?; YES ... Nov 10 to Dec 21, 2021</i></p> <p><i>vcheck; Is visit ready for int. review?; Yes</i></p> <p><i>Allocated COS orbits = 4 (2+2)</i></p>																																		
	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>RXJ0438.6+1546</td> <td>RA: 04 38 39.0723 (69.6628012d)</td> <td>Proper Motion RA: 13.092 mas/yr</td> <td>V=10.863</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: HD285957</td> <td>Dec: +15 46 13.57 (15.77044d)</td> <td>Proper Motion Dec: -19.939 mas/yr</td> <td>SpT=K2; A_V=0.30; V=10.863</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: V1204-TAU</td> <td>Equinox: J2000</td> <td>Parallax: 0.0071520"</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: RXJ0438.6+1546 : HD285957, V1204-Tau</i></p> <p><i>Region: eps Cha</i></p> <p><i>Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=RXJ0438.6+1546&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id</i></p> <p><i>Target coordinates are from Gaia DR2.</i></p> <p><i>Spectral type: K2 ; A_V: 0.3 ; Distance (pc): 140</i></p> <p><i>M*: 1.4 ; log(dm/dt): -9.52</i></p> <p><i>Input file: targets_up_to_May30-2022.csv</i></p> <p><i>LkCa19_etc_scaled_pAV0.20.txt (need to normalize to V = 10.863 in ETC)</i></p> <p><i>Calculation performed 2021-06-18T15:05:41, 0.24</i></p> <p>-----</p> <p><i>tstatus: RXJ0438.6+1546; P/COS approved for submission ; S/STIS internal review complete ; P/RS 09/07/21; S/RS 09/07/21</i></p> <p><i>tcheck; APT/SIMBAD target names: ; RXJ0438.6+1546, HD285957</i></p> <p><i>tcheck; Target info verification status?; verified</i></p> <p><i>tcheck; Coordinates & P.M. verified, epoch checked?; yes, updated to Gaia EDR3 (VizieR J2000 coords)</i></p> <p><i>tcheck; Adopted SED compared to Observations?; N/A ...</i></p> <p><i>Airglow lines removed from spectrum template file used in ETC is LkCa19_scaled_noairglow.txt</i></p> <p><i>Category=STAR</i></p> <p><i>Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]</i></p> <p><i>Extended=NO</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS		Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863			Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"						Epoch of Position: 2000	
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																														
(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS																														
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			Epoch of Position: 2000																																
Fixed Targets																																			

Proposal 16593 - RXJ0438.6+1546-COS (1D) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

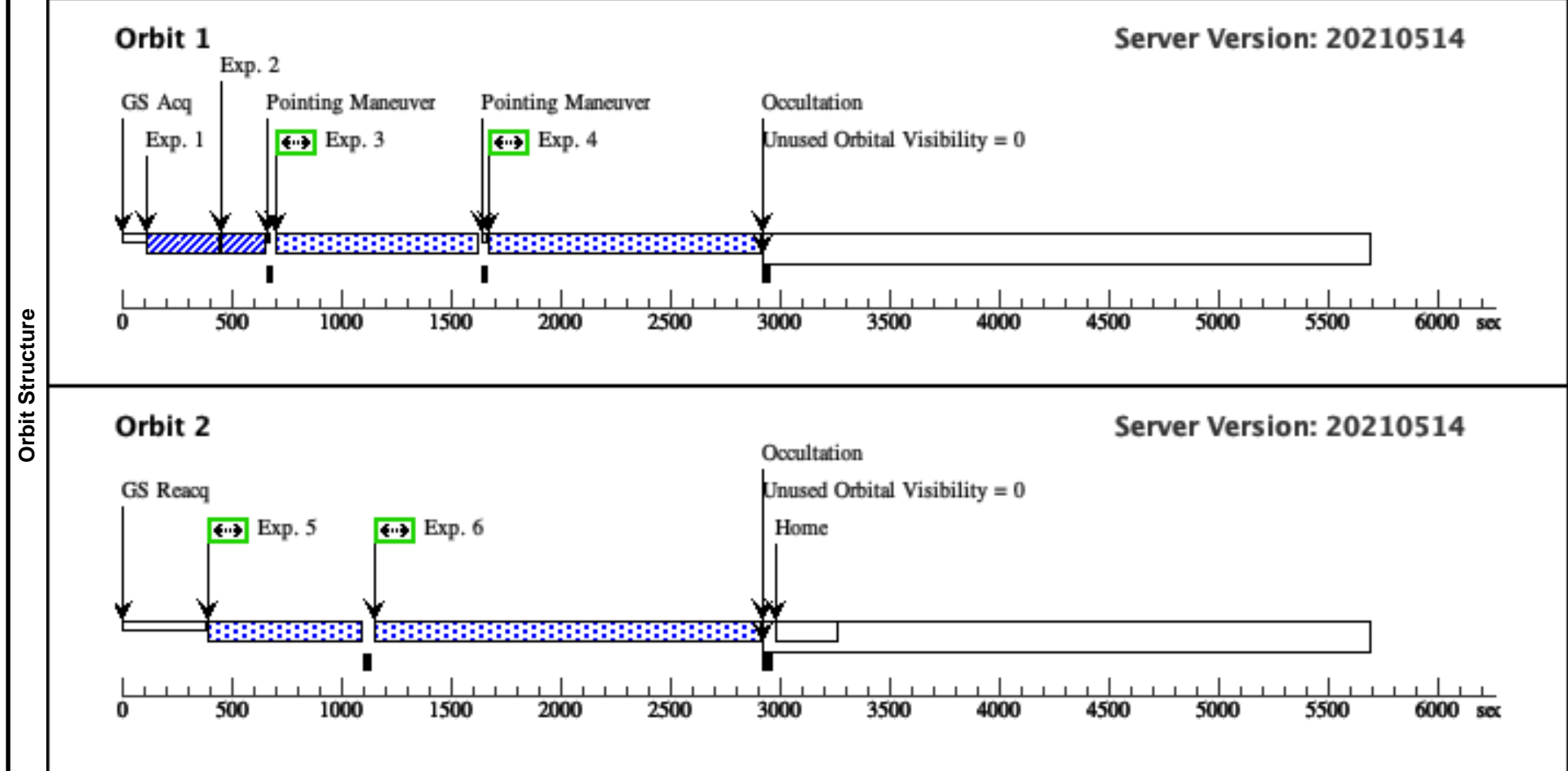
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	NUV PEAK XD (COS.sa.152 3187)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF	PHASE 0 TO 0.7387 60		30.0 Secs (30 Secs) [==>]	[1]
<i>Comments: Exposure time not yet calculated.</i>									
2	NUV PEAK D (COS.sa.152 3186)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			10.0 Secs (10 Secs) [==>]	[1]
3	G160M/162 3-2 (COS.sp.152 3179)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=20 000; FP-POS=2			699 Secs (699 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None</i></p> <p><i>Input file: targets_up_to_May30-2022.csv</i></p> <p><i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i></p> <p><i>M*: 0.9; log(dm/dt): -9.07</i></p> <p><i>For exptime=4115.8 s, spectral region:</i></p> <p><i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i></p> <p><i>The exptime for this c1623 exposure has been halved because c1589 & c1623 target the same line.</i></p> <p><i>A factor of 2.0 has been applied to the exptime in each exposure.</i></p> <p><i>global countrate (brightest segment): 68.2 cts/s/segment</i></p> <p><i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i></p> <p><i>Calculation performed 2021-06-18T15:05:39, v0.24</i></p>									
4	G130M/129 1-3 (COS.sp.152 3181)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=56 52; FP-POS=3			1050 Secs (1050 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None</i></p> <p><i>Input file: targets_up_to_May30-2022.csv</i></p> <p><i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i></p> <p><i>M*: 0.9; log(dm/dt): -9.07</i></p> <p><i>For exptime=6348.6 s, spectral region:</i></p> <p><i>1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel</i></p> <p><i>A factor of 2.0 has been applied to the exptime in each exposure.</i></p> <p><i>global countrate (brightest segment): 291.7 cts/s/segment</i></p> <p><i>brightest pixel: 0.005 cts/s/pix at 1304.8 A</i></p> <p><i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p>									
5	G130M/129 1-3 (COS.sp.152 3181)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=56 52; FP-POS=3			649 Secs (649 Secs) [==>]	[2]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None</i></p> <p><i>Input file: targets_up_to_May30-2022.csv</i></p> <p><i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i></p> <p><i>M*: 0.9; log(dm/dt): -9.07</i></p> <p><i>For exptime=6348.6 s, spectral region:</i></p> <p><i>1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel</i></p> <p><i>A factor of 2.0 has been applied to the exptime in each exposure.</i></p> <p><i>global countrate (brightest segment): 291.7 cts/s/segment</i></p> <p><i>brightest pixel: 0.005 cts/s/pix at 1304.8 A</i></p> <p><i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p>									

Exposures

Proposal 16593 - RXJ0438.6+1546-COS (1D) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

6	G130M/129 (1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA 1-4 (COS.sp.152 3181)	G130M 1291 A	BUFFER-TIME=56 52; FP-POS=4	1709 Secs (1709 Secs) [==>]	[2]
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Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
 Input file: targets_up_to_May30-2022.csv
 Spectral type: K5.5; A_V: 1.0; Distance (pc): 114
 M*: 0.9; log(dm/dt): -9.07
 For exptime=6348.6 s, spectral region:
 1239.0 +- 1.0 A achieves SNR=10.0/6-pix-resel
 A factor of 2.0 has been applied to the exptime in each exposure.
 global countrate (brightest segment): 291.7 cts/segment
 brightest pixel: 0.005 cts/pix at 1304.8 A
 Calculation performed 2021-06-18T15:05:41, v0.24



Proposal 16593 - RXJ0438.6+1546-STIS (1S) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

Wed Dec 29 03:00:27 GMT 2021

Proposal 16593, RXJ0438.6+1546-STIS (1S), failed
Diagnostic Status: No Diagnostics
 Scientific Instruments: STIS/NUV-MAMA, STIS/CCD
 Special Requirements: SCHED 100%; ORIENT 244.7D TO 244.9 D; ORIENT 64.7D TO 64.9 D; BETWEEN 10-NOV-2021 AND 21-DEC-2021; Period 0.997355 D AND ZERO-PHASE HJD2459528.3993; GROUP 1S,1C,1D WITHIN 1D
 Comments: vstatus; 1S; RXJ0438.6+1546; S/STIS approved for submission; S/DW 22/07/21 ; intrev: completed ; P/CRP 28/07/21
 vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; STIS ; DW
 vcheck; ETC numbers entered in APT?; yes
 vcheck; Any screening violations?; no
 vcheck; M-dwarf check complete and added to box folder?; check complete ...
 primary target is K2, but secondary target is ~M3 (using Gaia Bp-Rp=2.46 and intrinsic colors of Mamajek)
 with G=13.7, V will be about 14.8 -- which is ~1 mag fainter than limit for mid M dwarf safety for G230L/52x2
 vcheck; S/N ETC calcs done & documented?; yes -- using CHX18N template scaled to BVI photometry, with EBV=0.1 ...
 for G230L, S/N=20 at 2810 A in 208 sec
 for G430L, S/N=20 at 4000 A in 3.9 sec
 for G750L, S/N=20 at 5700 A in 0.7-1.4 sec
 vcheck; Field images checked & saved?; yes
 vcheck; Selected ACQ strategy?; yes -- direct acq, F25ND3, 5 sec should yield S/N>60
 vcheck; Possible ACQ or Sci spoilers?; no -- target is brightest object in acq box and field
 vcheck; Field BOT clear?; yes
 vcheck; Visual BOT check for stars not in catalog?; yes -- checked Gaia EDR3 -- other stars within 25" have G=15.4-19.5
 vcheck; Orbit packing finalized?; yes -- expect S/N~50-60 at target wavelengths in all three exposures
 vcheck; Buffer times optimized?; yes -- 0.8 * 705 = 564 sec for G230L
 vcheck; Verify visit grouping correct; n/a
 vcheck; phase constraint for ground based observations added?; N/A
 vcheck; BETWEENS for coordinated observations added?; YES -- Nov 10 to Dec 21, 2021 ...
 ORIENT constraint to get both primary target and M3 star at 9.8" with similar parallax and proper motion
 combined constraints yield possible window from 08Dec-17Dec, 2021
 vcheck; Is visit ready for int. review?; yes
 Allocated STIS orbits = 1

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS
	Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863	
	Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"		
			Epoch of Position: 2000		
<p>Comments: RXJ0438.6+1546 : HD285957, V1204-Tau Region: eps Cha Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=RXJ0438.6+1546&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id Target coordinates are from Gaia DR2. Spectral type: K2 ; A_V: 0.3 ; Distance (pc): 140 M*: 1.4 ; log(dm/dt): -9.52 Input file: targets_up_to_May30-2022.csv LkCa19_etc_scaled_pAV0.20.txt (need to normalize to V = 10.863 in ETC) Calculation performed 2021-06-18T15:05:41, 0.24</p> <hr/> <p>tstatus; RXJ0438.6+1546; P/COS approved for submission ; S/STIS internal review complete ; P/RS 09/07/21; S/RS 09/07/21 tcheck; APT/SIMBAD target names: ; RXJ0438.6+1546, HD285957 tcheck; Target info verification status?; verified tcheck; Coordinates & P.M. verified, epoch checked?; yes, updated to Gaia EDR3 (VizieR J2000 coords) tcheck; Adopted SED compared to Observations?; N/A ... Airglow lines removed from spectrum template file used in ETC is LkCa19_scaled_noairglow.txt Category=STAR Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR] Extended=NO</p>					

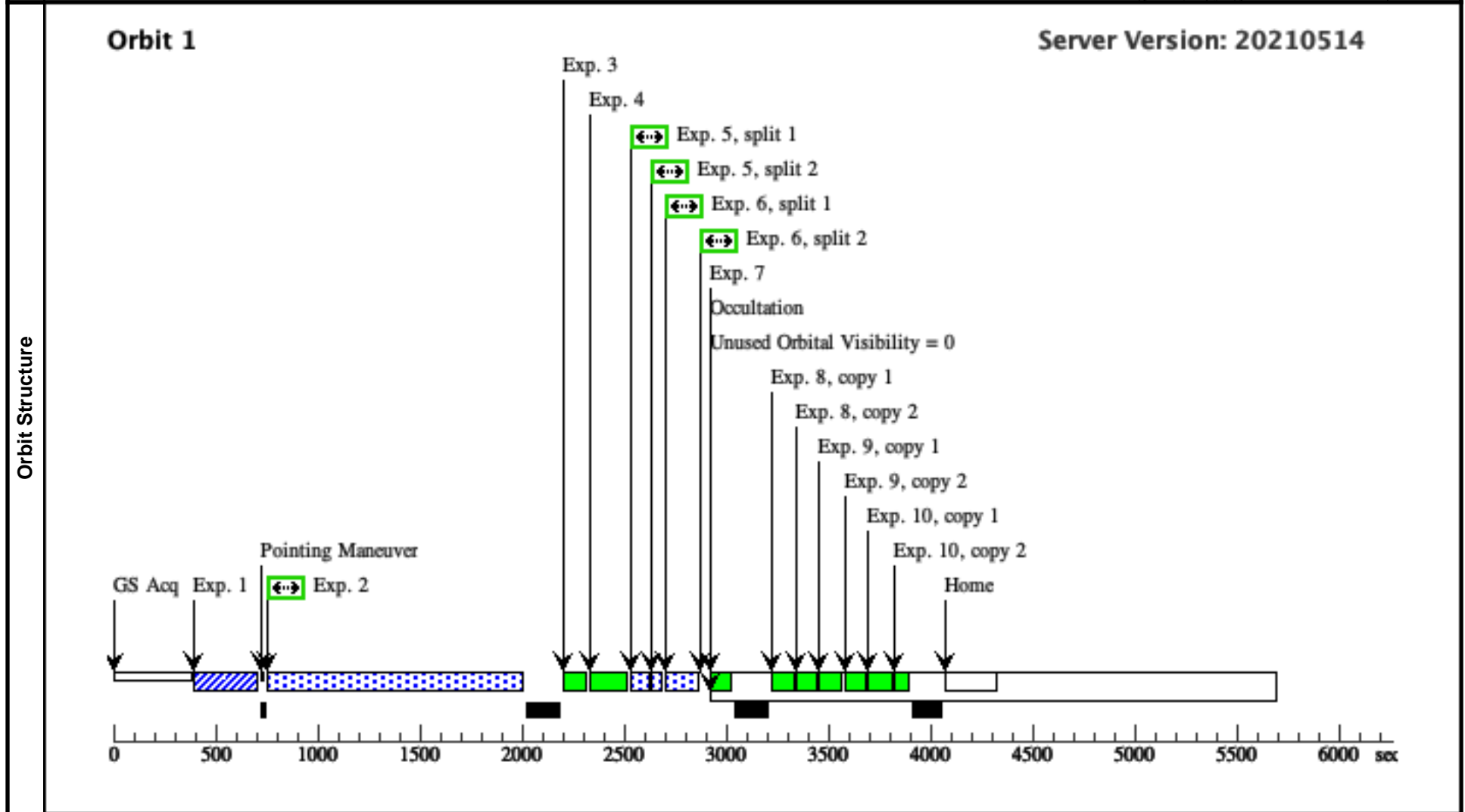
Proposal 16593 - RXJ0438.6+1546-STIS (1S) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1526299)	(1) RXJ0438.6+1546	STIS/CCD, ACQ, F25ND3	MIRROR		PHASE 0 TO 0.8049 07		5.0 Secs (5 Secs) [==>]	[1]
<i>Comments: CHX18N template, scaled to I=9.62, which gives S/N=40 in 1.8s (0.75 s scaling to B, 1.1 s scaling to V)</i>									
2	G230L/2376 (1526301)	(1) RXJ0438.6+1546	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=56 4.0			1100.0 Secs (1100 Secs) [==>]	[1]
<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59670</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114</i> <i>M*: 0.9 ; log(dm/dt): -9.07</i> <i>For exptime=185.8 s, spectral region:</i> <i>2800.0 +- 15.0 A achieves SNR=20.0 / 2-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 2359.7 cts/s/segment</i> <i>brightest pixel: 0.446 cts/s/pix at 2796.8 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i> <i>using CHX18N template, scaled to B=11.75 and EBV=0.1, yields S/N=20 at 2810A in 208 s,</i> <i>with brightest pix 2.24 cts/s and entire detector 514+2324 cts/s (source+background) and buffer time 705 s</i>									
3	G230L/2376 WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				[==>]	[1]
4	G430L/4300 WAVECAL	WAVE	STIS/CCD, ACCUM, 52X0.1	G430L 4300 A				[==>]	[1]
5	G430L/4300 (1526309)	(1) RXJ0438.6+1546	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1			36.0 Secs (36 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59670</i> <i>WARNING: operating mode = ACCUM</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114</i> <i>M*: 0.9 ; log(dm/dt): -9.07</i> <i>For exptime=50.2 s, n_reads=2, spectral region:</i> <i>4000.0 +- 5.0 A achieves SNR=20.0 / 2-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 46110.2 cts/s/segment</i> <i>brightest pixel: 23.498 cts/s/pix at 4560.5 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i> <i>using CHX18N template, scaled to B=11.75 and EBV=0.1, yields S/N=20 at 4000A in 3.9 s, saturation in 95 s</i>									
6	G750L/7751 (1526310)	(1) RXJ0438.6+1546	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1			10.0 Secs (10 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g750l,c7751,52x2,mjd#59670</i> <i>WARNING: operating mode = ACCUM</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114</i> <i>M*: 0.9 ; log(dm/dt): -9.07</i> <i>For exptime=3.3 s, n_reads=2, spectral region:</i> <i>5700.0 +- 5.0 A achieves SNR=20.0 / 2-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 127415.6 cts/s/segment</i> <i>brightest pixel: 242.239 cts/s/pix at 6563.9 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i> <i>using CHX18N template, scaled to V=10.86 and EBV=0.1, yields S/N=20 at 5700A in 0.7 s (1.4 s for scaling by I=9.62)</i>									

Exposures

Proposal 16593 - RXJ0438.6+1546-STIS (1S) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

7	G750L/7751 WAVE WAVECAL	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A	[==>]	[1]
8	G750L/7751 CCDFLAT CCDFLAT 1	STIS/CCD, ACCUM, 0.3X0.09	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]
9	G750L/7751 CCDFLAT CCDFLAT 2	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]
10	G750L/7751 CCDFLAT CCDFLAT 3	STIS/CCD, ACCUM, 52X2	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]



Visit	<p>Proposal 16593, RXJ0438.6+1546-COS (AC), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%</p> <p><i>Comments: vstatus; 1C; RXJ0438.6+1546; P/COS approved for submission ; P/RS 21/07/21 ; intrev: completed ; P/CRP 28/07/21 vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; COS ; RS vcheck; ETC numbers entered in APT?; Yes vcheck; Any screening violations?; No vcheck; M-dwarf check complete and added to box folder?; Yes vcheck; S/N ETC calcs done & documented?; Yes vcheck; Field images checked & saved?; Yes vcheck; Selected ACQ strategy?; Yes vcheck; Possible ACQ or Sci spoilers?; No vcheck; Field BOT clear?; An M2V star is found jusy beyond the central macro-aperture, which impacts only the BOA ... it has V=14.87 and B-V=2.02 and parallax 7.1925 mas. It is cleared for the BOA using U = 18 via ETC calculations ... 153210 for c1291 and 153211 for c1589 vcheck; Visual BOT check for stars not in catalog?; Yes ... no stars found that are not reported in GSCII vcheck; Orbit packing finalized?; Yes vcheck; Buffer times optimized?; Yes vcheck; Verify visit grouping correct; N/A vcheck; phase constraint for ground based observations added?; N/A vcheck; BETWEENS for coordinated observations added?; YES ... Nov 10 to Dec 21, 2021 vcheck; Is visit ready for int. review?; Yes Allocated COS orbits = 4 (2+2)</i></p>																																		
	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>RXJ0438.6+1546</td> <td>RA: 04 38 39.0723 (69.6628012d)</td> <td>Proper Motion RA: 13.092 mas/yr</td> <td>V=10.863</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: HD285957</td> <td>Dec: +15 46 13.57 (15.77044d)</td> <td>Proper Motion Dec: -19.939 mas/yr</td> <td>SpT=K2; A_V=0.30; V=10.863</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: V1204-TAU</td> <td>Equinox: J2000</td> <td>Parallax: 0.0071520"</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2000</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: RXJ0438.6+1546 : HD285957, V1204-Tau Region: eps Cha Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=RXJ0438.6+1546&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id Target coordinates are from Gaia DR2. Spectral type: K2 ; A_V: 0.3 ; Distance (pc): 140 M*: 1.4 ; log(dm/dt): -9.52 Input file: targets_up_to_May30-2022.csv LkCa19_etc_scaled_pAV0.20.txt (need to normalize to V = 10.863 in ETC) Calculation performed 2021-06-18T15:05:41, 0.24</i></p> <p>----- <i>tstatus: RXJ0438.6+1546; P/COS approved for submission ; S/STIS internal review complete ; P/RS 09/07/21; S/RS 09/07/21 tcheck; APT/SIMBAD target names: ; RXJ0438.6+1546, HD285957 tcheck; Target info verification status?; verified tcheck; Coordinates & P.M. verified, epoch checked?; yes, updated to Gaia EDR3 (VizieR J2000 coords) tcheck; Adopted SED compared to Observations?; N/A ... Airglow lines removed from spectrum template file used in ETC is LkCa19_scaled_noairglow.txt Category=STAR Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR] Extended=NO</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS		Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863			Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"						Epoch of Position: 2000	
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																														
(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS																														
	Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863																															
	Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"																																
			Epoch of Position: 2000																																
Fixed Targets																																			

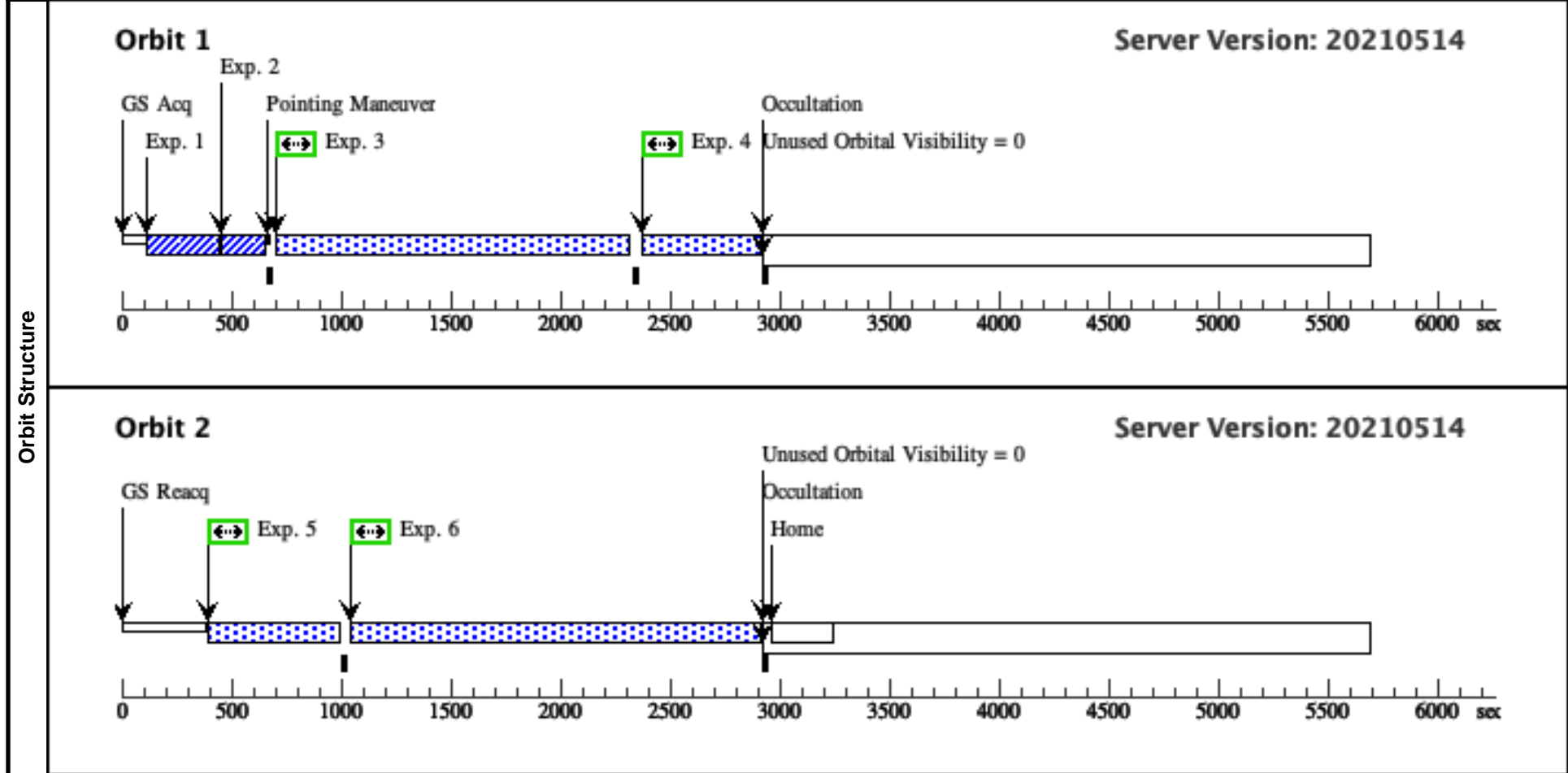
Proposal 16593 - RXJ0438.6+1546-COS (AC) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	NUV PEAK XD (COS.sa.152 3187)	(1) RXJ0438.6+1546 COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			30.0 Secs (30 Secs) [==>]	[1]
	<i>Comments: Exposure time not yet calculated.</i>								
	2	NUV PEAK D (COS.sa.152 3186)	(1) RXJ0438.6+1546 COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			10.0 Secs (10 Secs) [==>]	[1]
	3	G160M/158 9-3 (COS.sp.152 5436)	(1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=3			1400 Secs (1400 Secs) [==>]	[1]
	<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i>								
4	G160M/158 9-4 (COS.sp.152 5436)	(1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=4			492 Secs (492 Secs) [==>]	[1]	
<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i>									
5	G160M/158 9-4 (COS.sp.152 5436)	(1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=20 000; FP-POS=4			548 Secs (548 Secs) [==>]	[2]	
<i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4021.6 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 69.1 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:37, v0.24</i>									

Proposal 16593 - RXJ0438.6+1546-COS (AC) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

6	G160M/162 (1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA 3-1 (COS.sp.152 5437)	G160M 1623 A	BUFFER-TIME=20 000; FP-POS=1	1741 Secs (1741 Secs)	[2]
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Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
 Input file: targets_up_to_May30-2022.csv
 Spectral type: K5.5; A_V: 1.0; Distance (pc): 114
 M*: 0.9; log(dm/dt): -9.07
 For exptime=4115.8 s, spectral region:
 1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623
 The exptime for this c1623 exposure has been halved because c1589 & c1623 target the same line.
 A factor of 2.0 has been applied to the exptime in each exposure.
 global countrate (brightest segment): 68.2 cts/s/segment
 brightest pixel: 0.002 cts/s/pix at 1446.2 A
 Calculation performed 2021-06-18T15:05:39, v0.24



Visit	<p>Proposal 16593, RXJ0438.6+1546-COS (AD), implementation</p> <p>Diagnostic Status: No Diagnostics</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%</p> <p><i>Comments: vstatus; 1C; RXJ0438.6+1546; P/COS approved for submission ; P/RS 21/07/21 ; intrev: completed ; P/CRP 28/07/21 vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; COS ; RS vcheck; ETC numbers entered in APT?; Yes vcheck; Any screening violations?; No vcheck; M-dwarf check complete and added to box folder?; Yes vcheck; S/N ETC calcs done & documented?; Yes vcheck; Field images checked & saved?; Yes vcheck; Selected ACQ strategy?; Yes vcheck; Possible ACQ or Sci spoilers?; No vcheck; Field BOT clear?; An M2V star is found jusy beyond the central macro-aperture, which impacts only the BOA ... it has V=14.87 and B-V=2.02 and parallax 7.1925 mas. It is cleared for the BOA using U = 18 via ETC calculations ... 153210 for c1291 and 153211 for c1589 vcheck; Visual BOT check for stars not in catalog?; Yes ... no stars found that are not reported in GSCII vcheck; Orbit packing finalized?; Yes vcheck; Buffer times optimized?; Yes vcheck; Verify visit grouping correct; N/A vcheck; phase constraint for ground based observations added?; N/A vcheck; BETWEENS for coordinated observations added?; YES ... Nov 10 to Dec 21, 2021 vcheck; Is visit ready for int. review?; Yes Allocated COS orbits = 4 (2+2)</i></p>																																		
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Proposal 16593 - RXJ0438.6+1546-COS (AD) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	NUV PEAK XD (COS.sa.152 3187)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKXD, PSA	G230L 3360 A	STRIPE=DEF			30.0 Secs (30 Secs) [==>]	[1]
<i>Comments: Exposure time not yet calculated.</i>									
2	NUV PEAK D (COS.sa.152 3186)	(1) RXJ0438.6+1546	COS/NUV, ACQ/PEAKD, PSA	G230L 3360 A	CENTER=DEF; NUM-POS=5; STEP-SIZE=0.9			10.0 Secs (10 Secs) [==>]	[1]
3	G160M/162 3-2 (COS.sp.152 3179)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=20 000; FP-POS=2			699 Secs (699 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=4115.8 s, spectral region:</i> <i>1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623</i> <i>The exptime for this c1623 exposure has been halved because c1589 & c1623 target the same line.</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 68.2 cts/s/segment</i> <i>brightest pixel: 0.002 cts/s/pix at 1446.2 A</i> <i>Calculation performed 2021-06-18T15:05:39, v0.24</i></p>									
4	G130M/129 1-3 (COS.sp.152 3181)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=56 52; FP-POS=3			1050 Secs (1050 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=6348.6 s, spectral region:</i> <i>1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 291.7 cts/s/segment</i> <i>brightest pixel: 0.005 cts/s/pix at 1304.8 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p>									
5	G130M/129 1-3 (COS.sp.152 3181)	(1) RXJ0438.6+1546	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=56 52; FP-POS=3			649 Secs (649 Secs) [==>]	[2]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5; A_V: 1.0; Distance (pc): 114</i> <i>M*: 0.9; log(dm/dt): -9.07</i> <i>For exptime=6348.6 s, spectral region:</i> <i>1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 291.7 cts/s/segment</i> <i>brightest pixel: 0.005 cts/s/pix at 1304.8 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p>									

Exposures

Proposal 16593 - RXJ0438.6+1546-COS (AD) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

6 G130M/129 (1) RXJ0438.6+1546 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=56
 1-4 1291 A 52;
 (COS.sp.152 FP-POS=4
 3181)

1709 Secs (1709 Secs)

[==>]

[2]

Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)

Input file: targets_up_to_May30-2022.csv

Spectral type: K5.5; A_V: 1.0; Distance (pc): 114

M*: 0.9; log(dm/dt): -9.07

For exptime=6348.6 s, spectral region:

1239.0 +- 1.0 A achieves SNR=10.0/6-pix-resel

A factor of 2.0 has been applied to the exptime in each exposure.

global countrate (brightest segment): 291.7 cts/s/segment

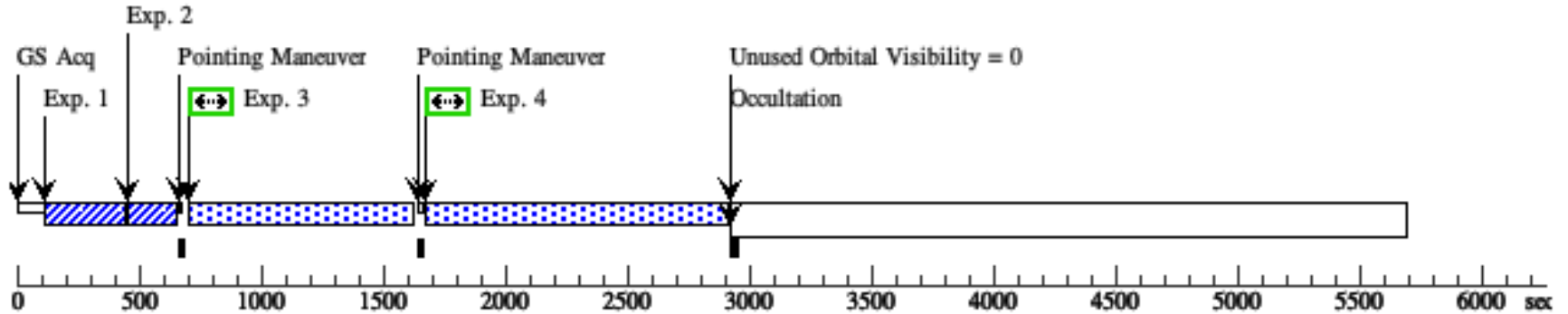
brightest pixel: 0.005 cts/s/pix at 1304.8 A

Calculation performed 2021-06-18T15:05:41, v0.24

Orbit Structure

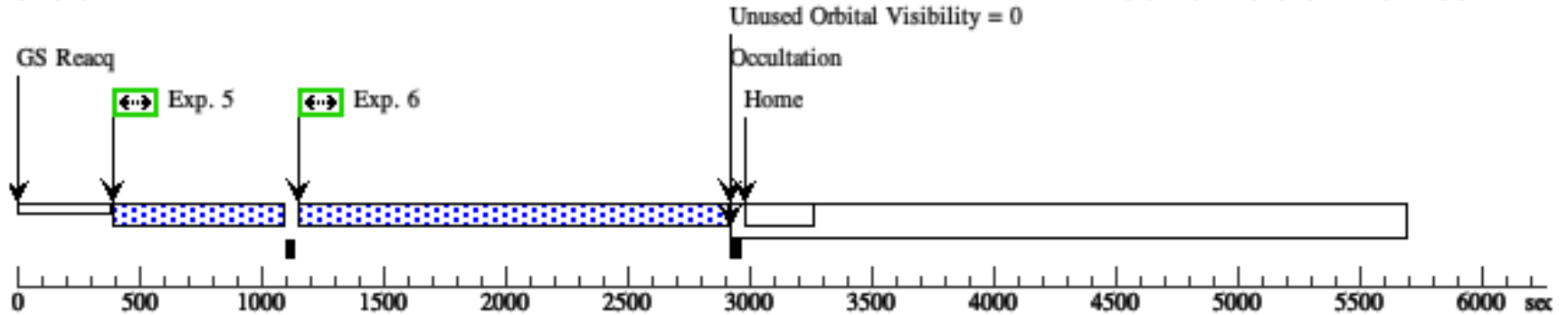
Orbit 1

Server Version: 20210514



Orbit 2

Server Version: 20210514



Proposal 16593, RXJ0438.6+1546-STIS (AS), implementation

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; ORIENT 244.7D TO 244.9 D; ORIENT 64.7D TO 64.9 D; BEFORE 31-JAN-2022; GROUP AS,AC,AD WITHIN 1D

Comments: vstatus; 1S; RXJ0438.6+1546; S/STIS approved for submission; S/DW 22/07/21 ; intrev: completed ; P/CRP 28/07/21
vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ0438.6+1546 ; STIS ; DW
vcheck; ETC numbers entered in APT?; yes
vcheck; Any screening violations?; no
vcheck; M-dwarf check complete and added to box folder?; check complete ...
primary target is K2, but secondary target is ~M3 (using Gaia Bp-Rp=2.46 and intrinsic colors of Mamajek)
with G=13.7, V will be about 14.8 -- which is ~1 mag fainter than limit for mid M dwarf safety for G230L/52x2
vcheck; S/N ETC calcs done & documented?; yes -- using CHX18N template scaled to BVI photometry, with EBV=0.1 ...
for G230L, S/N=20 at 2810 A in 208 sec
for G430L, S/N=20 at 4000 A in 3.9 sec
for G750L, S/N=20 at 5700 A in 0.7-1.4 sec
vcheck; Field images checked & saved?; yes
vcheck; Selected ACQ strategy?; yes -- direct acq, F25ND3, 5 sec should yield S/N>60
vcheck; Possible ACQ or Sci spoilers?; no -- target is brightest object in acq box and field
vcheck; Field BOT clear?; yes
vcheck; Visual BOT check for stars not in catalog?; yes -- checked Gaia EDR3 -- other stars within 25" have G=15.4-19.5
vcheck; Orbit packing finalized?; yes -- expect S/N~50-60 at target wavelengths in all three exposures
*vcheck; Buffer times optimized?; yes -- 0.8 * 705 = 564 sec for G230L*
vcheck; Verify visit grouping correct; n/a
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; YES -- Nov 10 to Dec 21, 2021 ...
ORIENT constraint to get both primary target and M3 star at 9.8" with similar parallax and proper motion
combined constraints yield possible window from 08Dec-17Dec, 2021
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 1

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ0438.6+1546	RA: 04 38 39.0723 (69.6628012d)	Proper Motion RA: 13.092 mas/yr	V=10.863	Reference Frame: ICRS
	Alt Name1: HD285957	Dec: +15 46 13.57 (15.77044d)	Proper Motion Dec: -19.939 mas/yr	SpT=K2; A_V=0.30; V=10.863	
	Alt Name2: V1204-TAU	Equinox: J2000	Parallax: 0.0071520"		
			Epoch of Position: 2000		
	<i>Comments: RXJ0438.6+1546 : HD285957, V1204-Tau</i>				
	<i>Region: eps Cha</i>				
	<i>Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=RXJ0438.6+1546&NbIdent=1&Radius=2&Radius.unit=arcmin&submit=submit+id</i>				
	<i>Target coordinates are from Gaia DR2.</i>				
	<i>Spectral type: K2 ; A_V: 0.3 ; Distance (pc): 140</i>				
	<i>M*: 1.4 ; log(dm/dt): -9.52</i>				
	<i>Input file: targets_up_to_May30-2022.csv</i>				
	<i>LkCa19_etc_scaled_pAV0.20.txt (need to normalize to V = 10.863 in ETC)</i>				
	<i>Calculation performed 2021-06-18T15:05:41, 0.24</i>				

	<i>tstatus: RXJ0438.6+1546; P/COS approved for submission ; S/STIS internal review complete ; P/RS 09/07/21; S/RS 09/07/21</i>				
	<i>tcheck; APT/SIMBAD target names: ; RXJ0438.6+1546, HD285957</i>				
	<i>tcheck; Target info verification status?; verified</i>				
	<i>tcheck; Coordinates & P.M. verified, epoch checked?; yes, updated to Gaia EDR3 (VizieR J2000 coords)</i>				
	<i>tcheck; Adopted SED compared to Observations?; N/A ...</i>				
	<i>Airglow lines removed from spectrum template file used in ETC is LkCa19_scaled_noairglow.txt</i>				
	<i>Category=STAR</i>				
	<i>Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]</i>				
	<i>Extended=NO</i>				

Proposal 16593 - RXJ0438.6+1546-STIS (AS) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (1526299)	(1) RXJ0438.6+1546	STIS/CCD, ACQ, F25ND3	MIRROR				5.0 Secs (5 Secs) [==>]	[1]
<i>Comments: CHX18N template, scaled to I=9.62, which gives S/N=40 in 1.8s (0.75 s scaling to B, 1.1 s scaling to V)</i>									
2	G230L/2376 (1526301)	(1) RXJ0438.6+1546	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=54 9.0			1100.0 Secs (1100 Secs) [==>]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59670</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114</i> <i>M*: 0.9 ; log(dm/dt): -9.07</i> <i>For exptime=185.8 s, spectral region:</i> <i>2800.0 +- 15.0 A achieves SNR=20.0 / 2-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 2359.7 cts/s/segment</i> <i>brightest pixel: 0.446 cts/s/pix at 2796.8 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p> <p><i>using CHX18N template, scaled to B=11.75 and EBV=0.1, yields S/N=20 at 2810A in 208 s,</i> <i>with brightest pix 2.24 cts/s and entire detector 514+2324 cts/s (source+background) and buffer time 705 s</i></p> <p><i>2021-Dec-22: BUFFER-TIME updated from 564s to 549s in order to make it less than t_exp/2 (STIS IHB Ch. 11)</i></p>									
3	G230L/2376 WAVECAL	WAVE	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				[==>]	[1]
4	G430L/4300 WAVECAL	WAVE	STIS/CCD, ACCUM, 52X0.1	G430L 4300 A				[==>]	[1]
5	G430L/4300 (1526309)	(1) RXJ0438.6+1546	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1			36.0 Secs (36 Secs) [==>(Split 1)] [==>(Split 2)]	[1]
<p><i>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59670</i> <i>WARNING: operating mode = ACCUM</i> <i>Input file: targets_up_to_May30-2022.csv</i> <i>Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114</i> <i>M*: 0.9 ; log(dm/dt): -9.07</i> <i>For exptime=50.2 s, n_reads=2, spectral region:</i> <i>4000.0 +- 5.0 A achieves SNR=20.0 / 2-pix-resel</i> <i>A factor of 2.0 has been applied to the exptime in each exposure.</i> <i>global countrate (brightest segment): 46110.2 cts/s/segment</i> <i>brightest pixel: 23.498 cts/s/pix at 4560.5 A</i> <i>Calculation performed 2021-06-18T15:05:41, v0.24</i></p> <p><i>using CHX18N template, scaled to B=11.75 and EBV=0.1, yields S/N=20 at 4000A in 3.9 s, saturation in 95 s</i></p>									

Exposures

Proposal 16593 - RXJ0438.6+1546-STIS (AS) - ULLYSES T Tauri Survey Star RX J0438.6+1546 in Taurus

6	G750L/7751 (1) RXJ0438.6+1546 STIS/CCD, ACCUM, 52X2 (1526310)	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1	10.0 Secs (10 Secs)	
				[==>(Split 1)]	[1]
<p>Comments: hd104237e_lya2_etc_scaled_pAV0.50.txt; stis.ccd,g750l,c7751,52x2,mjd#59670 WARNING: operating mode = ACCUM Input file: targets_up_to_May30-2022.csv Spectral type: K5.5 ; A_V: 1.0 ; Distance (pc): 114 M*: 0.9 ; log(dm/dt): -9.07 For exptime=3.3 s, n_reads=2, spectral region: 5700.0 +- 5.0 A achieves SNR=20.0 / 2-pix-resel A factor of 2.0 has been applied to the exptime in each exposure. global countrate (brightest segment): 127415.6 cts/s/segment brightest pixel: 242.239 cts/s/pix at 6563.9 A Calculation performed 2021-06-18T15:05:41, v0.24</p>					
using CHX18N template, scaled to V=10.86 and EBV=0.1, yields S/N=20 at 5700A in 0.7 s (1.4 s for scaling by I=9.62)					
7	G750L/7751 WAVE WAVECAL	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A	[==>]	[1]
8	G750L/7751 CCDFLAT CCDFLAT 1	STIS/CCD, ACCUM, 0.3X0.09	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]
9	G750L/7751 CCDFLAT CCDFLAT 2	STIS/CCD, ACCUM, 52X0.1	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]
10	G750L/7751 CCDFLAT CCDFLAT 3	STIS/CCD, ACCUM, 52X2	G750L 7751 A	[==>(Copy 1)] [==>(Copy 2)]	[1]

