16594 - ULLYSES T Tauri Survey Star V505 Ori in Sigma Ori

Cycle: 29, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
1C	(1) V505-ORI	COS/FUV COS/NUV	3	19-Oct-2021 10:00:49.0	yes
1S	(1) V505-ORI CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	19-Oct-2021 10:00:50.0	yes

4 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_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 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 Oct 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 21:15 on 2021 Nov 13 (zero phase = 2459532.3854). The opening time drifts 2.1875 minutes earlier each day (period = 0.998481 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:

Visit 1C: 3 orbits. The window is 20.5 h (1230 min) minus 50 min for the first orbit and 95 min for each of two additional orbits = 990 min. Phase runs from 0 to (990 min / (1440 - 2.1875) min) = 0.688546.

Visit 1S: 1 orbis. The window is 20.5 h (1230 min) minus 50 min for the first orbit = 1180 min. Phase runs from 0 to (1180 min / (1440 - 2.1875) min) = 0.820691.

Visit

Proposal 16594, V505-ORI-COS (1C), implementation Tue Oct 19 14:00:51 GMT 2021

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 14-NOV-2021:00:00:00 AND 15-JAN-2022:00:00:00; Period 0.998481 D AND ZERO-PHASE HJD2459532.3854

Comments: vstatus; 1C; V505-ORI; P/COS approved for submission; P/DS 29/07/21 ; intrev: complete ; P/RS 29/07/21
vcheck; Enter targ name & Inst. & Resp. Sci.; V505-Ori ; COS ; DS
vcheck; ETC numbers entered in APT?; Yes
vcheck; Any screening violations?; No
vcheck; M-dwarf check complete and added to box folder?; N/A, K star
vcheck; S/N ETC calcs done & documented?; Yes
vcheck; Field images checked & saved?; Yes ...
located in: box/ullyses_tech/ullyses_proposals/survey_c29/16594/v505-ori/
vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40 to allow for brightness variations. Even with 4X upper limit spectrum B.P. only 11.4 cnts/pix/s
vcheck; Possible ACQ or Sci spoilers?; None
vcheck; Field BOT clear?; Yes
vcheck; Visual BOT check for stars not in catalog?; Clear
vcheck; Orbit packing finalized?; yes ...
Obtained 1.19x G160M request & 1.09x G130M request
vcheck; Buffer times optimized?; Yes
vcheck; Verify visit grouping correct; Yes ...
Group 1C, 1S WITHIN 1D added to visit 1S
vcheck; phase constraint for ground based observations added?; Yes
vcheck; BETWEENS for coordinated observations added?; Yes ...
between 14 Nov 2021 00:00:00 and 15 Jan 2022 00:00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 3
NOTE: This visit is a duplicate of Visit 3C from 16113 intended to double COS exposure time on this target. However, the G160M/1611 exposures have been replaced by G160M/1598 & G160M/1623 exposures

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V505-ORI	RA: 05 38 27.2573 (84.6135721d)	Proper Motion RA: 1.128755278 mas/yr	V=14.16	Reference Frame: ICRS
	Alt Name1: SO518	Dec: -02 45 9.72 (-2.75270d)	Proper Motion Dec: -0.6748409872 mas/yr	SpT=K6.0; A_V=0.00; V=14.16 ; R=13.54; I=12.85; J=12.0; i_D ENIS=12.847	
	Alt Name2: J05382725-0245096	Equinox: J2000	Parallax: 0.0025163961339999996"		
			Epoch of Position: 2015.5		

Comments: V505 Ori : SO518, J05382725-0245096
Region: sigma Ori
Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J05382725-0245096&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
so518_lya2_etc.txt
Calculation performed 2020-07-30T14:20:41, v0.4
---
tstatus; V505-ORI; P/COS approved for submission; S/STIS approved for submission; P/DS 20/07/21; S/DS 20/07/21
tcheck; APT/SIMBAD target names: ; OK, also Haro 5-10, Kiso A-0976 328, and [HHM2007] 518
tcheck; Target info verification status?; OK
tcheck; Coordinates & P.M. verified, epoch checked?; OK
tcheck; Adopted SED compared to Observations?; Yes,V, R, and I in fair agreement, sloane u also appears good ...
Checked old SED (not current A_V scaled) used by CP for implementation in 16113, located in: box/ullyses_tech/ullyses_proposals/survey_c29/16594/v505-ori/
Category=STAR
Description=[T TAURI STAR, PRE-MAIN SEQUENCE 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	ACQ/Image (COS.ta.1459346)	(1) V505-ORI	COS/NUV, ACQ/IMAGE, PSA	MIRRORB		PHASE 0 TO 0.688546		73.9 Secs (73.9 Secs) *[==>]*	***[1]***
	Comments: PSA, MIRRORB, so518_lya2_etc.txt, no-renorm, S/N=40 gives COS.ta.1459346, peak local=3 (margin of 16x), 73.9s *PSA, MIRRORB, so518_lya2_x4.00_etc.txt, Texp = 73.9s gives COS.ta.1460253, peak local = 11.4* *Alt with BOA, MIRRORA puts unknown in PSA, but this star has SDSS u fainter than 22.1, so not an issue*								
2	G160M/1589-3 (COS.sp.1526006)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=1230; FP-POS=3			1340 Secs (1340 Secs) *[==>]*	***[1]***
	Comments: 4X BOP Calc so518_lya2_x4.00_etc.txt COS.sp.1526006, BP = 0.100 cnts/pixel/s *default soectrum S/N calc COS.sp.1526010* *so518_lya2_etc.txt; cos,fuv,g160m,c1611,psa,mjd#59305; fp-pos=None, segment=None)* *Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv* *Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385* *M*: 0.754 ; log(dm/dt): -8.54* *For exptime=2234.1 s, spectral region:* *1549.0 +- 1.0 A achieves SNR=30.0 / 6-pix-resel* *A factor of 2.0 has been applied to the exptime in each exposure.* *global countrate (brightest segment): 139.9 cts/s/segment* *brightest pixel: 0.026 cts/s/pix at 1446.2 A* *Calculation performed 2020-07-30T14:20:38, v0.9*								
3	G160M/1589-4 (COS.sp.1526012)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=4558; FP-POS=4			577 Secs (577 Secs) *[==>]*	***[1]***
	Comments: 4X BOP Calc so518_lya2_x4.00_etc.txt COS.sp.1526012, BP = 0.100 cnts/pixel/s *default soectrum S/N calc COS.sp.1526013* *sso518_lya2_etc.txt; cos,fuv,g160m,c1611,psa,mjd#59305; fp-pos=None, segment=None)* *Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv* *Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385* *M*: 0.754 ; log(dm/dt): -8.54* *For exptime=2234.1 s, spectral region:* *1549.0 +- 1.0 A achieves SNR=30.0 / 6-pix-resel* *A factor of 2.0 has been applied to the exptime in each exposure.* *global countrate (brightest segment): 139.9 cts/s/segment* *brightest pixel: 0.026 cts/s/pix at 1446.2 A* *Calculation performed 2020-07-30T14:20:38, v0.9*								
4	G160M/1589-4 (COS.sp.1526016)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=4558; FP-POS=4			804 Secs (804 Secs) *[==>]*	***[2]***
	Comments: 4X BOP Calc so518_lya2_x4.00_etc.txt COS.sp.1526016, BP = 0.100 cnts/pixel/s *default soectrum S/N calc COS.sp.1526017* *sso518_lya2_etc.txt; cos,fuv,g160m,c1611,psa,mjd#59305; fp-pos=None, segment=None)* *Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv* *Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385* *M*: 0.754 ; log(dm/dt): -8.54* *For exptime=2234.1 s, spectral region:* *1549.0 +- 1.0 A achieves SNR=30.0 / 6-pix-resel* *A factor of 2.0 has been applied to the exptime in each exposure.* *global countrate (brightest segment): 139.9 cts/s/segment* *brightest pixel: 0.026 cts/s/pix at 1446.2 A* *Calculation performed 2020-07-30T14:20:38, v0.9*								

5	G160M/162 3-1 (COS.sp.152 6019)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=5268; FP-POS=1	1464 Secs (1464 Secs) *[==>]*	***[2]***

Comments: 4X BOP Calc so518_lya2_x4.00_etc.txt COS.sp.1526019, BP = 0.094 cnts/pixel/s default soectrum S/N calc COS.sp.1526020

sso518_lya2_etc.txt; cos,fuv,g160m,c1611,psa,mjd#59305; fp-pos=None, segment=None)
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=2234.1 s, spectral region:
1549.0 +- 1.0 A achieves SNR=30.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 139.9 cts/s/segment
brightest pixel: 0.026 cts/s/pix at 1446.2 A
Calculation performed 2020-07-30T14:20:38, v0.9

6	G160M/162 3-2 (COS.sp.153 0644)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1180; FP-POS=2	1290 Secs (1290 Secs) *[==>]*	***[3]***

Comments: 4X BOP Calc so518_lya2_x4.00_etc.txt COS.sp.1526021, PB = 0.094 cnts/pixel/s default soectrum S/N calc COS.sp.1530643

sso518_lya2_etc.txt; cos,fuv,g160m,c1611,psa,mjd#59305; fp-pos=None, segment=None)
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=2234.1 s, spectral region:
1549.0 +- 1.0 A achieves SNR=30.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 139.9 cts/s/segment
brightest pixel: 0.026 cts/s/pix at 1446.2 A
Calculation performed 2020-07-30T14:20:38, v0.9

7	G130M/129 1-3 (COS.sp.145 9488)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1294; FP-POS=3	405 Secs (405 Secs) *[==>]*	***[3]***

Comments: Baseline ETC COS.sp.1459352 gives B.P.=0.111 or about 6X below limits ...
4x spectrum so518_lya2_x4.00_etc.txt: COS.sp.1459488, B.P. = 0.143 cnts/pixel/s

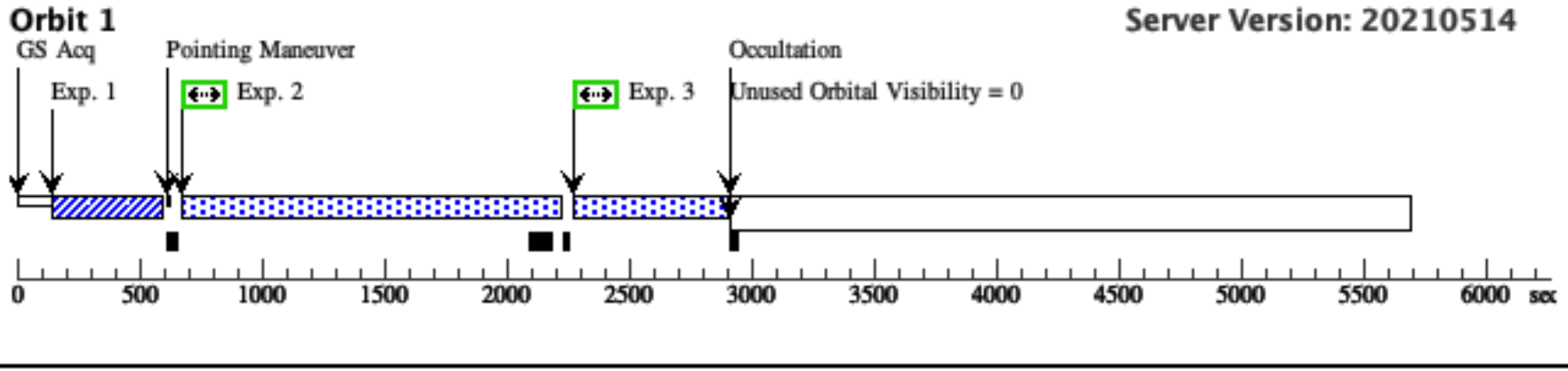
so518_lya2_etc.txt; cos,fuv,g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None)
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=372.2 s, spectral region:
1239.0 +- 1.0 A achieves SNR=15.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 652.9 cts/s/segment
brightest pixel: 0.130 cts/s/pix at 1304.8 A
Calculation performed 2020-07-30T14:20:41, v0.9

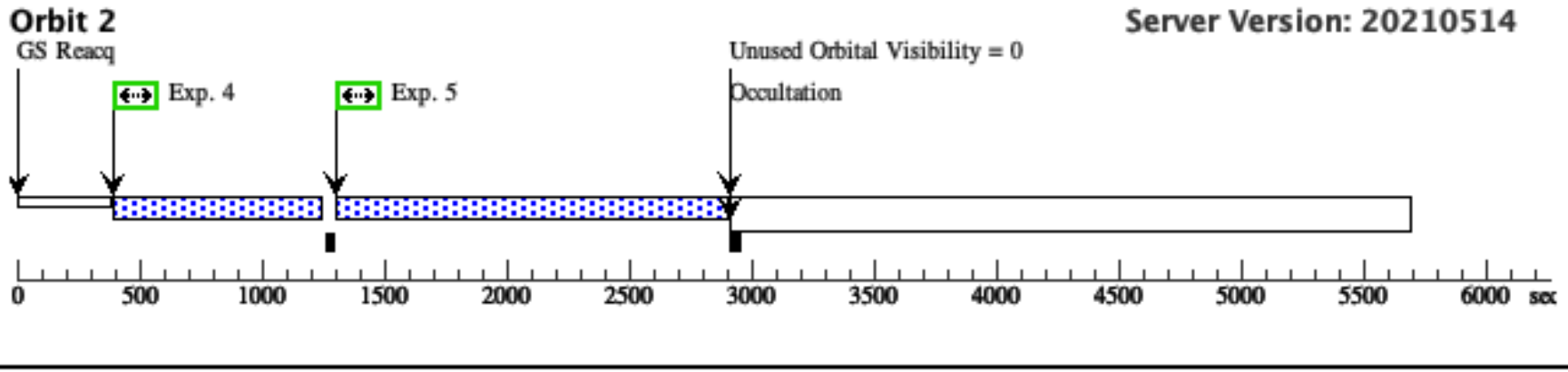
	8	G130M/129 1-4 (COS.sp.1459488)	(1) V505-ORI	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1294; FP-POS=4	405 Secs (405 Secs) [==>]

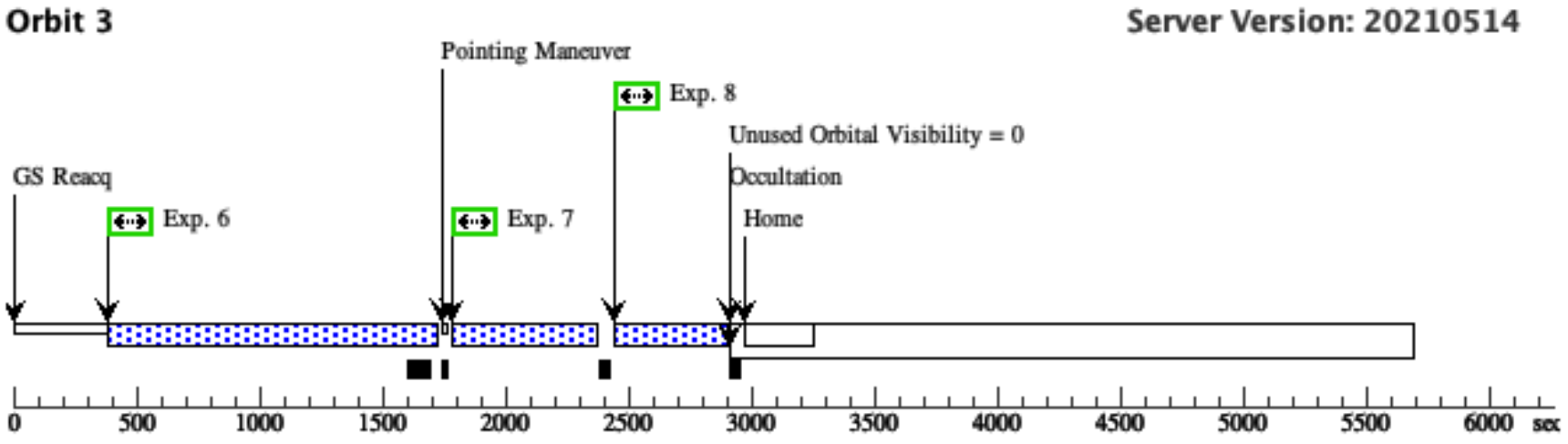
Comments: Baseline ETC COS.sp.1459352 gives B.P.=0.111 or about 6X below limits ... (possibly includes geo-coronal O I in input spectrum as well as ETC)
4x spectrum so518_lya2_x4.00_etc.txt: COS.sp.1459488, B.P. = 0.143 cnts/pixel/s or 4.66X below local limit

so518_lya2_etc.txt; cos,fuv,g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None)
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=372.2 s, spectral region:
1239.0 +- 1.0 A achieves SNR=15.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 652.9 cts/s/segment
brightest pixel: 0.130 cts/s/pix at 1304.8 A
Calculation performed 2020-07-30T14:20:41, v0.9

Orbit Structure







Visit

Proposal 16594, V505-ORI-STIS (1S), implementation Tue Oct 19 14:00:51 GMT 2021

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; BETWEEN 14-NOV-2021:00:00:00 AND 15-JAN-2022:00:00:00; Period 0.998481 D AND ZERO-PHASE HJD2459532.3854; GROUP 1S,1C WITHIN 1D

Comments: vstatus; 1S; V505-ORI; S/STIS approved for submission; S/DS 29/07/21 ; intrev: complete ; S/RS 29/07/21
vcheck; Enter targ name & Inst. & Resp. Sci.; V505 Ori ; STIS ; DS
vcheck; ETC numbers entered in APT?; Yes
vcheck; Any screening violations?; No
vcheck; M-dwarf check complete and added to box folder?; N/A, K star
vcheck; S/N ETC calcs done & documented?; Yes
vcheck; Field images checked & saved?; Yes ...
located in: box/ullyses_tech/ullyses_proposals/survey_c29/16594/v505-ori/
vcheck; Selected ACQ strategy?; F28X50LP, S/N=80
vcheck; Possible ACQ or Sci spoilers?; None
vcheck; Field BOT clear?; yes
vcheck; Visual BOT check for stars not in catalog?; Clear
vcheck; Orbit packing finalized?; Yes
vcheck; Buffer times optimized?; Yes
vcheck; Verify visit grouping correct; Yes ...
Group 1S, 1C WITHIN 1D added to visit 1S
vcheck; phase constraint for ground based observations added?; Yes
vcheck; BETWEENS for coordinated observations added?; Yes ...
between 14 Nov 2021 00:00:00 and 15 Jan 2022 00:00:00
vcheck; Is visit ready for int. review?; Yes
Allocated STIS orbits = 1
NOTE: This visit is a duplicate of Visit 3S from 16113 intended to double STIS exposure time on this target. Only a G750L/7751 51x0.1 CCDFLAT was added to conform with current strategy

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V505-ORI	RA: 05 38 27.2573 (84.6135721d)	Proper Motion RA: 1.128755278 mas/yr	V=14.16	Reference Frame: ICRS
	Alt Name1: SO518	Dec: -02 45 9.72 (-2.75270d)	Proper Motion Dec: -0.6748409872 mas/yr	SpT=K6.0; A_V=0.00; V=14.16 ; R=13.54; I=12.85; J=12.0; i_D ENIS=12.847	
	Alt Name2: J05382725-0245096	Equinox: J2000	Parallax: 0.0025163961339999996"		
			Epoch of Position: 2015.5		

Comments: V505 Ori : SO518, J05382725-0245096
Region: sigma Ori
Simbad: https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J05382725-0245096&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
so518_lya2_etc.txt
Calculation performed 2020-07-30T14:20:41, v0.4
---
tstatus; V505-ORI; P/COS approved for submission; S/STIS approved for submission; P/DS 20/07/21; S/DS 20/07/21
tcheck; APT/SIMBAD target names: ; OK, also Haro 5-10, Kiso A-0976 328, and [HHM2007] 518
tcheck; Target info verification status?; OK
tcheck; Coordinates & P.M. verified, epoch checked?; OK
tcheck; Adopted SED compared to Observations?; Yes,V, R, and I in fair agreement, sloane u also appears good ...
Checked old SED (not current A_V scaled) used by CP for implementation in 16113, located in: box/ullyses_tech/ullyses_proposals/survey_c29/16594/v505-ori/
Category=STAR
Description=[T TAURI STAR, PRE-MAIN SEQUENCE 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	ACQ (STIS.ta.1459461)	(1) V505-ORI	STIS/CCD, ACQ, F28X50LP	MIRROR		PHASE 0 TO 0.820691		0.3 Secs (0.3 Secs) *[==>]*	*[1]*
	Comments: S/N=80 for basline flux level requires 0.23 s								
2	G230L/2376 (STIS.sp.1459550)	(1) V505-ORI	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=494			987 Secs (987 Secs) *[==>]*	*[1]*
	Comments: Nominal ETC calc STIS.sp.1459465 *4X Source ETC Calc STIS.sp.1459550, B.P. = 5.3 cnts/pixel/s* *Brightest pixel = 1.322* *so518_lya2_etc.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59305* *Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv* *Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385* *M*: 0.754 ; log(dm/dt): -8.54* *For exptime=61.6 s, spectral region:* *2800.0 +- 15.0 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): 2503.1 cts/s/segment* *brightest pixel: 1.322 cts/s/pix at 2796.8 A* *Calculation performed 2020-07-30T14:20:41, v0.9*								
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 (STIS.sp.1462916)	(1) V505-ORI	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4			200 Secs (200 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	*[1]*
	Comments: Normalize K6 Castelli-Kurucz model to observed V=14.06 with S/N=20 at 4000A and double resulting exposure time *Also check case with accretion spectrum so1153_lya2_x4.00_etc.txt: get ETC# STIS.sp.1470335 - 542s to saturation for gain=1 (vs planned 100s exposures), so plenty of margin even with the 4x spectrum* *so518_lya2_etc.txt; stis,ccd,g430l,c4300,52x2,mjd#59305* *WARNING: operating mode = ACCUM* *Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv* *Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385* *M*: 0.754 ; log(dm/dt): -8.54* *For exptime=40.1 s, n_reads=2, spectral region:* *4000.0 +- 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): 44241.3 cts/s/segment* *brightest pixel: 25.603 cts/s/pix at 4560.5 A* *Calculation performed 2020-07-30T14:20:41, v0.9*								

6	G750L/7751 (1) V505-ORI (STIS.sp.14 62915)	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4	33.4 Secs (33.4 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Comments: Normalize K6 Castelli-Kurucz model to observed I= 12.85 with S/N=20 at 5700A and double resulting exposure time
Also check case with accretion spectrum so1153_lya2_x4.00_etc.txt: get ETC# STIS.sp.1470338 - 85s to saturation for gain=1 (vs planned 16.7s exposures), so plenty of margin even with the 4x spectrum

so518_lya2_etc.txt; stis,ccd,g750l,c7751,52x2,mjd#59305
WARNING: operating mode = ACCUM
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=4.6 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): 73340.7 cts/s/segment
brightest pixel: 127.387 cts/s/pix at 6563.9 A
Calculation performed 2020-07-30T14:20:41, v0.9

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]***

Comments: so518_lya2_etc.txt; stis,ccd,g750l,c7751,52x2,mjd#59305
WARNING: operating mode = ACCUM
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=4.6 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): 73340.7 cts/s/segment
brightest pixel: 127.387 cts/s/pix at 6563.9 A
Calculation performed 2020-07-30T14:20:41, v0.9

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]***

Comments: so518_lya2_etc.txt; stis,ccd,g750l,c7751,52x2,mjd#59305
WARNING: operating mode = ACCUM
Input file: combined_todo_survey_tess_sort_v2_Gaia_J_CP_edit.csv
Spectral type: K6.0 ; A_V: 0.0 ; Distance (pc): 385
M: 0.754 ; log(dm/dt): -8.54*
For exptime=4.6 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): 73340.7 cts/s/segment
brightest pixel: 127.387 cts/s/pix at 6563.9 A
Calculation performed 2020-07-30T14:20:41, v0.9

Orbit Structure