



## 16478 - ULLYSES Two M5 T Tauri Survey Stars in Cha I

Cycle: 28, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

### INVESTIGATORS

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Proposal 16478 (STScI Edit Number: 0, Created: Tuesday, April 27, 2021 at 12:01:23 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) HN5 (3) UCAC3-27-26848	COS/FUV COS/NUV	3	27-Apr-2021 13:01:17.0	yes
1S	(1) HN5 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	27-Apr-2021 13:01:19.0	yes
2C	(2) V-IN-CHA	COS/FUV COS/NUV	2	27-Apr-2021 13:01:20.0	yes
2D	(2) V-IN-CHA	COS/FUV COS/NUV	2	27-Apr-2021 13:01:21.0	yes
2S	(2) V-IN-CHA CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	27-Apr-2021 13:01:23.0	yes

9 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<sub>sun</sub>. 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](http://www.stsci.edu/files/live/sites/www/files/home/stsci-research/research-topics-and-programs/ullyses/_documents/HSTUV-report-ULLYSES.pdf).

<b>Visit</b>	<p><b>Proposal 16478, HN5-COS (1C), implementation</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-MAY-2021:07:00:00 AND 09-JUN-2021:05:35:00; BETWEEN 10-JUN-2021:09:10:00 AND 24-JUN-2021:00:55:00</p> <p><i>Comments: vstatus; 1C; HN5; P/COS approved for submission; P/AH 08/03/21 ; intrev: complete ; P/CP 20/04/21</i></p> <p><i>vcheck; Enter targ name &amp; Inst. &amp; Resp. Sci.; HN5 ; COS ; AH</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>located at: box/ullyses_tech/ullyses_proposals/survey/revise-mstar-bop.xls</i></p> <p><i>vcheck; S/N ETC calcs done &amp; documented?; Yes</i></p> <p><i>vcheck; Field images checked &amp; saved?; Yes ...</i></p> <p><i>located at: box/ullyses_tech/ullyses_proposals/survey/16478/images/HN5/</i></p> <p><i>vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40</i></p> <p><i>vcheck; Possible ACQ or Sci spoilers?; No</i></p> <p><i>vcheck; Field BOT clear?; Yes</i></p> <p><i>vcheck; Visual BOT check for stars not in catalog?; Yes</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; Yes ...</i></p> <p><i>STIS visit has GROUP 1S, 1C, 1D WITHIN 1D</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 ...</i></p> <p><i>27 MAY 2021 07:00 to 09 JUN 2021 05:35 and 10 JUN 2021 09:10 to 24 JUN 2021 00:55</i></p> <p><i>vcheck; Is visit ready for int. review?; Yes</i></p> <p><i>Allocated COS orbits = 3</i></p>
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Proposal 16478 - HN5-COS (1C) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HN5	RA: 11 06 41.6963 (166.6737346d)	Proper Motion RA: -20.98022743 mas/yr	V=15.62	Reference Frame: ICRS
	Alt Name1: GX-CHA Alt Name2: J11064180-7635489	Dec: -76 35 49.08 (-76.59697d) Equinox: J2000	Proper Motion Dec: -0.675501165 mas/yr Parallax: 0.005120739868" Epoch of Position: 2015.5	SpT=M5; A_V=0.00; V=15.6; J=11.6	
<p><i>Comments: Hn5 : GX Cha, J11064180-7635489</i>  <i>Region: Cha I</i>  <i>Simbad: <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11064180-7635489&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11064180-7635489&amp;submit=submit+id</a></i>  <i>Target coordinates are from Gaia DR2.</i>  <i>Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160</i>  <i>M*: 0.16 ; log(dm/dt): -9.28</i>  <i>Input file: spring-survey-todo-crp04feb21.csv</i>  <i>hm5_lya2_etc_scaled_pAV0.50.txt</i>  <i>Calculation performed 2021-02-12T16:29:02, v0.6</i></p> <hr/> <p><i>tstatus: HN5; P/COS approved for submission; S/STIS approved for submission; P/AH 08/03/21; S/AH 23/03/21</i>  <i>tcheck; APT/SIMBAD target names: ; Hn 5 ...</i>  <i>Default SIMBAD name is Hn 5, aka 2MASS J11064180-7635489, V* GX Cha</i>  <i>tcheck; Target info verification status?: OK ...</i>  <i>spectral type and magnitudes seem to be consistent</i>  <i>Flam(B) = 7.7e-16 at 4444 Angstroms and Flam(V) = 5.1e-16 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD</i>  <i>tcheck; Coordinates &amp; P.M. verified, epoch checked?: OK ...</i>  <i>SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here</i>  <i>tcheck; Adopted SED compared to Observations?: Yes</i>  <i>Category=STAR</i>  <i>Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]</i>  <i>Extended=NO</i></p>					
(3)	UCAC3-27-26848	RA: 11 06 42.6794 (166.6778308d)	Proper Motion RA: -0.002727502784181952 sec of time/yr	V=12.26	Reference Frame: ICRS
		Dec: -76 36 12.42 (-76.60345d) Equinox: J2000	Proper Motion Dec: 0.007273000000000001 arcsec/yr Epoch of Position: 2015.5	SpT=GV; A_V=2.484412; G=12.4561; I=11.43; J=10.129; H=9.590; K=9.350; V=12.2582954365055	
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>This offset acquisition star was found in the Aladin viewer for Hn5 because it is bright and nearby to the primary science target. Hn5 was deemed unsuitable for use with COS ACQ/Image. UCAC3 27-26848 was found with the StarHorse database to have the following parameters:</i>  <i>Teff = 5889; Gaia G-mag = 12.299; log g = 3.684839; Bp - Rp = 0.580051; A_v = 2.484412; metallicity = -1.268628; mass = 0.878982 M_o; RA = 166.6778310005; Dec = -76.60344902996.</i>  <i>Based on an estimate using the "dist" tool in Aladin, it is 22.83 arcseconds away from Hn5. Based on a relationship given by Will Fischer, its estimated Johnson V-band (computed based on Gaia G-band and (Bp-Rp) = 12.2582954365055. Its spectral type is assumed to be G0V, with a (B-V) = 0.595. This then therefore gives a Johnson B-magnitude = 12.8533. Assuming Galactic extinction, this gives E(B-V) = 0.77637875.</i>  <i>For the COS ETC, I used a Castelli and Kurucz model stellar spectrum of a G0V 6000 4.5, which matches this star's parameters well. I also tested with a Pickles model G0V 5807.64 K, which gave similar results. The specific ETC calculations for S/N and B.P. are summarized in the ACQ/Image comments.</i>  <i>Category=STAR</i>  <i>Description=[G V-IV]</i>  <i>Extended=NO</i></p>					

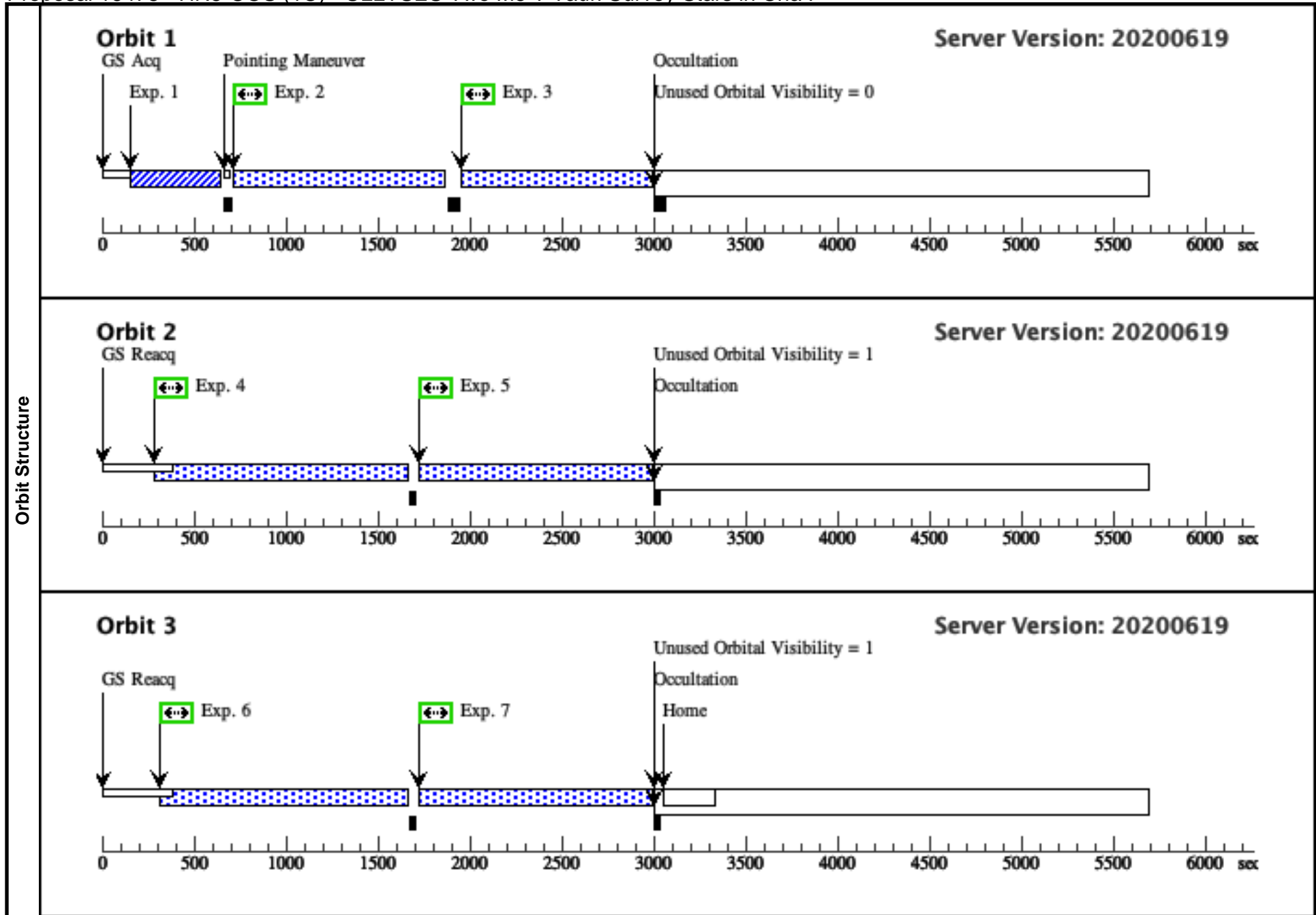
Fixed Targets

Proposal 16478 - HN5-COS (1C) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	ACQ/Image (3) UCAC3-27-2684 (COS.ta.151 8 2977)	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				96.2 Secs (96.2 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.ta.1486287, B.P. = 14.919 Baseline SED with S/N = 40 COS.ta.1486263 requires 158.9 seconds, B.P. = 1.413 Offset target acquisition from COS.ta.1512977 requires 96.2 seconds, B.P. = 2.324</p>								
	2	G130M/129 (1) HN5 1-3 (COS.sp.151 3110)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=19 08; FP-POS=3			983 Secs (983 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.sp.1513110, B.P. = 0.147 Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1513109, B.P. = 0.095. Total S/N achieved in G130M exposures ~12.6/resel @1239 A hm5_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160 M*: 0.16 ; log(dm/dt): -9.28 For exptime=765.4 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): 372.9 cts/s/segment brightest pixel: 0.031 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:02, v0.21</p>								
3	G130M/129 (1) HN5 1-4 (COS.sp.149 2551)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=19 08; FP-POS=4			983 Secs (983 Secs) [==>]	[1]	
<p>Comments: BOP check with 4x spectrum COS.sp.1513110, B.P. = 0.147 Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1513109, B.P. = 0.095. Total S/N achieved in G130M exposures ~12.6/resel @1239 A hm5_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160 M*: 0.16 ; log(dm/dt): -9.28 For exptime=765.4 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): 372.9 cts/s/segment brightest pixel: 0.031 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:02, v0.21</p>									
4	G160M/158 (1) HN5 9-3 (COS.sp.149 2555)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=56 11; FP-POS=3			1217 Secs (1217 Secs) [==>]	[2]	
<p>Comments: BOP check with 4x spectrum COS.sp.1492555, B.P. = 0.109 Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1492554, B.P. = 0.008. Total S/N achieved in G160M exposures ~26.3/resel @1548.5 A hm5_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59305; fp-pos=None, segment=None Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160 M*: 0.16 ; log(dm/dt): -9.28 For exptime=1020.0 s, spectral region: 1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 &amp; c1623 The exptime for this c1589 exposure has been halved because c1589 &amp; c1623 target the same line. A factor of 2.0 has been applied to the exptime in each exposure. global countrate (brightest segment): 100.1 cts/s/segment brightest pixel: 0.008 cts/s/pix at 1446.2 A Calculation performed 2021-02-12T16:28:58, v0.21</p>									

Proposal 16478 - HN5-COS (1C) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

5	G160M/158 (1) HN5 9-4 (COS.sp.149 2555)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=56 11; FP-POS=4	1217 Secs (1217 Secs) [==>]	[2]
<p>Comments: BOP check with 4x spectrum COS.sp.1492555, B.P. = 0.109                      Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1492554, B.P. = 0.008. Total S/N achieved in G160M exposures ~26.3/resel @1548.5 A</p> <p>hn5_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1589,psa,mjd#59305; fp-pos=None, segment=None)                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      For exptime=1020.0 s, spectral region:                      1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 &amp; c1623                      The exptime for this c1589 exposure has been halved because c1589 &amp; c1623 target the same line.                      A factor of 2.0 has been applied to the exptime in each exposure.                      global countrate (brightest segment): 100.1 cts/s/segment                      brightest pixel: 0.008 cts/s/pix at 1446.2 A                      Calculation performed 2021-02-12T16:28:58, v0.21</p>						
6	G160M/162 (1) HN5 3-1 (COS.sp.149 2558)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=65 91; FP-POS=1	1218 Secs (1218 Secs) [==>]	[3]
<p>Comments: BOP check with 4x spectrum COS.sp.1492558, B.P. = 0.108                      Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1492557, B.P. = 0.008. Total S/N achieved in G160M exposures ~26.3/resel @1548.5 A</p> <p>hn5_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59305; fp-pos=None, segment=None)                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      For exptime=1047.6 s, spectral region:                      1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 &amp; c1623                      The exptime for this c1623 exposure has been halved because c1589 &amp; c1623 target the same line.                      A factor of 2.0 has been applied to the exptime in each exposure.                      global countrate (brightest segment): 95.6 cts/s/segment                      brightest pixel: 0.008 cts/s/pix at 1446.2 A                      Calculation performed 2021-02-12T16:29:00, v0.21</p>						
7	G160M/162 (1) HN5 3-2 (COS.sp.149 2558)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=65 91; FP-POS=2	1218 Secs (1218 Secs) [==>]	[3]
<p>Comments: BOP check with 4x spectrum COS.sp.1492558, B.P. = 0.108                      Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1492557, B.P. = 0.008. Total S/N achieved in G160M exposures ~26.3/resel @1548.5 A</p> <p>hn5_lya2_etc_scaled_pAV0.50.txt; cos.fuv,g160m,c1623,psa,mjd#59305; fp-pos=None, segment=None)                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      For exptime=1047.6 s, spectral region:                      1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 &amp; c1623                      The exptime for this c1623 exposure has been halved because c1589 &amp; c1623 target the same line.                      A factor of 2.0 has been applied to the exptime in each exposure.                      global countrate (brightest segment): 95.6 cts/s/segment                      brightest pixel: 0.008 cts/s/pix at 1446.2 A                      Calculation performed 2021-02-12T16:29:00, v0.21</p>						





**Proposal 16478, HN5-STIS (1S), implementation**  
**Diagnostic Status: No Diagnostics**  
 Scientific Instruments: STIS/NUV-MAMA, STIS/CCD  
 Special Requirements: SCHED 100%; BETWEEN 27-MAY-2021:07:00:00 AND 09-JUN-2021:08:45:00; BETWEEN 10-JUN-2021:09:10:00 AND 24-JUN-2021:04:05:00; GROUP 1S,1C WITHIN 1D  
*Comments: vstatus; 1S; HN5; S/STIS approved for submission; S/AH 23/03/21 ; intrev: complete ; P/CP 20/04/21*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; HN5 ; STIS ; AH*  
*vcheck; ETC numbers entered in APT?; Yes*  
*vcheck; Any screening violations?; No*  
*vcheck; M-dwarf check complete and added to box folder?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/revise-mstar-bop.xls*  
*vcheck; S/N ETC calcs done & documented?; Yes*  
*vcheck; Field images checked & saved?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/16478/images/HN5/*  
*vcheck; Selected ACQ strategy?; R-mag with F28X50LP, S/N=80*  
*vcheck; Possible ACQ or Sci spoilers?; No*  
*vcheck; Field BOT clear?; Yes*  
*vcheck; Visual BOT check for stars not in catalog?; Yes*  
*vcheck; Orbit packing finalized?; Yes*  
*vcheck; Buffer times optimized?; Yes*  
*vcheck; Verify visit grouping correct; Yes ...*  
*STIS visit has GROUP 1S, 1C WITHIN 1D*  
*vcheck; phase constraint for ground based observations added?; N/A*  
*vcheck; BETWEENS for coordinated observations added?; Yes ...*  
*27 MAY 2021 07:00 to 09 JUN 2021 08:45 and 10 JUN 2021 09:10 to 24 JUN 2021 04:05*  
*vcheck; Is visit ready for int. review?; Yes*  
 Allocated STIS orbits = 1

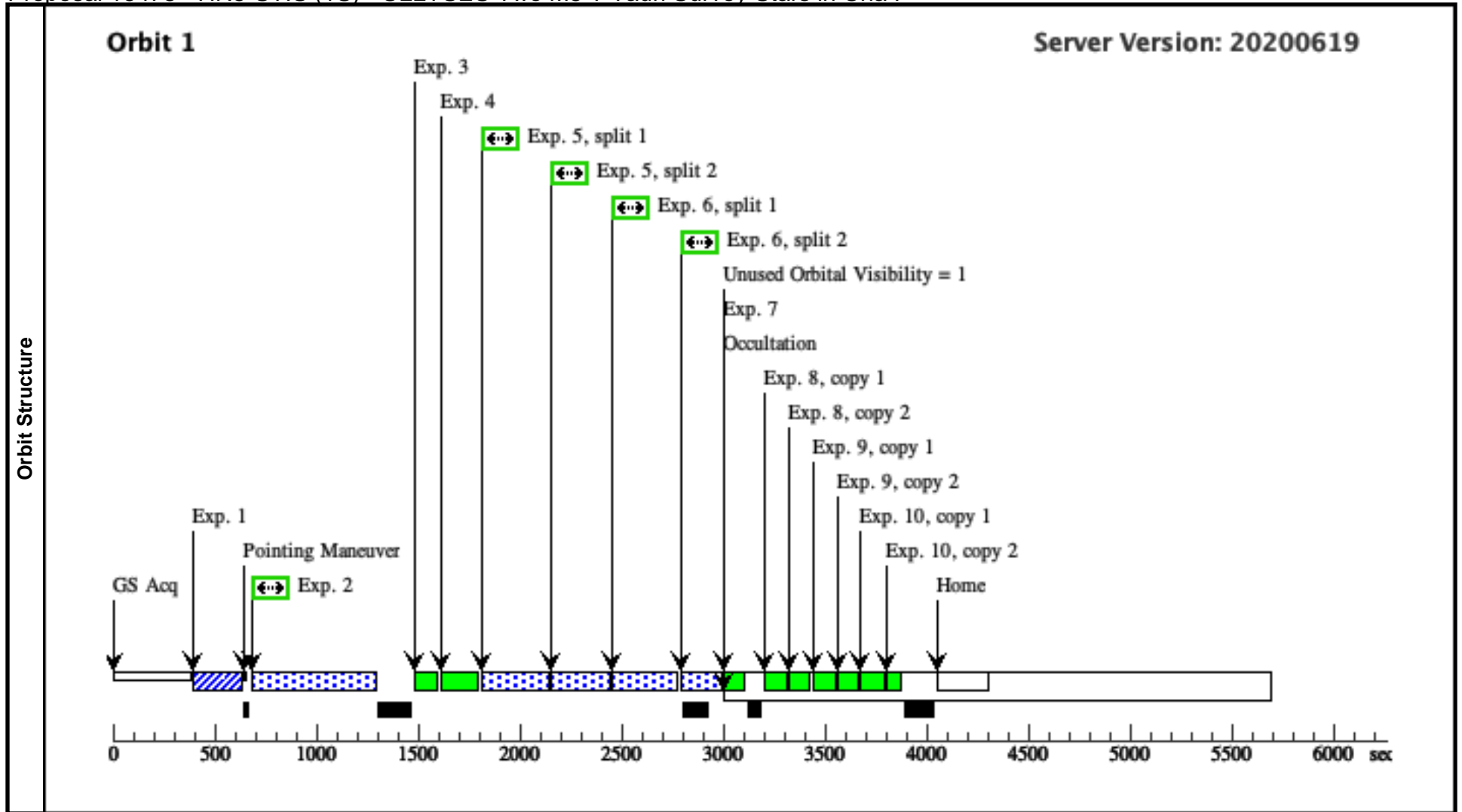
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HN5	RA: 11 06 41.6963 (166.6737346d)	Proper Motion RA: -20.98022743 mas/yr	V=15.62	Reference Frame: ICRS
	Alt Name1: GX-CHA	Dec: -76 35 49.08 (-76.59697d)	Proper Motion Dec: -0.675501165 mas/yr	SpT=M5; A_V=0.00; V=15.6; J=11.6	
	Alt Name2: J11064180-7635489	Equinox: J2000	Parallax: 0.005120739868"		
			Epoch of Position: 2015.5		
<p><i>Comments: Hn5 : GX Cha, J11064180-7635489</i>                      Region: Cha I                      Simbad: <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11064180-7635489&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11064180-7635489&amp;submit=submit+id</a>                      Target coordinates are from Gaia DR2.                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      Input file: spring-survey-todo-crp04feb21.csv                      hm5_lya2_etc_scaled_pAV0.50.txt                      Calculation performed 2021-02-12T16:29:02, v0.6</p> <hr/> <p><i>tstatus; HN5; P/COS approved for submission; S/STIS approved for submission; P/AH 08/03/21; S/AH 23/03/21</i>  <i>tcheck; APT/SIMBAD target names: ; Hn 5 ...</i>                      Default SIMBAD name is Hn 5, aka 2MASS J11064180-7635489, V* GX Cha  <i>tcheck; Target info verification status?; OK ...</i>                      spectral type and magnitudes seem to be consistent                      Flam(B) = 7.7e-16 at 4444 Angstroms and Flam(V) = 5.1e-16 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD  <i>tcheck; Coordinates &amp; P.M. verified, epoch checked?; OK ...</i>                      SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here  <i>tcheck; Adopted SED compared to Observations?; Yes</i>                      Category=STAR                      Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]                      Extended=NO</p>					

Proposal 16478 - HN5-STIS (1S) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ (1) HN5 (STIS.ta.1488445)	STIS/CCD, ACQ, F28X50LP	MIRROR				2.7 Secs (2.7 Secs) [==>]	[1]	
	<p>Comments: 4x BOP check: STIS.ta.1488445, B.P. = 3,460.816                      Baseline SED (Castelli-Kurucz M6V 3500 5.0 spectrum renormalized to Johnson R = 15.83 vegamag) with S/N = 80: STIS.ta.1486464 requires 2.7 seconds, B.P. = 869.375</p>									
	2	G230L/2376 (1) HN5 (STIS.sp.1492564)	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=66 3			458 Secs (458 Secs) [==>]	[1]	
	<p>Comments: BOP check with 4x spectrum: STIS.sp.1492564, B.P. = 9.091                      Baseline ETC calc with spectrum: STIS.sp.1492563, B.P. = 0.938</p> <p>hn5_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59305                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      For exptime=86.8 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): 2410.7 cts/s/segment                      brightest pixel: 0.942 cts/s/pix at 2796.8 A                      Calculation performed 2021-02-12T16:29:02, v0.21</p>									
	3	G230L/2376 WAVE WAVECAL	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				[==>]	[1]	
4	G430L/4300 WAVE WAVECAL	STIS/CCD, ACCUM, 52X0.1	G430L 4300 A				[==>]	[1]		
5	G430L/4300 (1) HN5 (STIS.sp.1492569)	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4			507 Secs (507 Secs) [==>(Split 1)] [==>(Split 2)]	[1]		
<p>Comments: Calculation with baseline SED (scaled with additional A_v = 0.50), normalized to Flam(B) = 7.7e-16 ergs/s/cm^2/Ang, for G430L: STIS.sp.1492568, B.P. = 1.938.                      BOP calculation with 4x SED (without additional A_v = 0.50) no normalization: STIS.sp.1492569, B.P. = 217.244.</p> <p>hn5_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59305                      WARNING: operating mode = ACCUM                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 160                      M*: 0.16 ; log(dm/dt): -9.28                      For exptime=36.5 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): 45988.0 cts/s/segment                      brightest pixel: 27.664 cts/s/pix at 4560.5 A                      Calculation performed 2021-02-12T16:29:02, v0.21</p>										

Proposal 16478 - HN5-STIS (1S) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

6	G750L/7751 (1) HN5 (STIS.sp.14 92574)	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4	334 Secs (334 Secs)	
					[==>(Split 1)]	[1]
<p><i>Comments: Calculation with baseline SED (scaled with additional A<sub>v</sub> = 0.50), normalized to Flam(B) = 5.1e-16 ergs/s/cm<sup>2</sup>/Ang, for G750L: STIS.sp.1492573, B.P. = 2.751 BOP calculation with 4x SED (without additional A<sub>v</sub> = 0.50) no normalization: STIS.sp.1492574, B.P. = 1,397.166.</i></p> <p><i>hn5_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g750l,c7751,52x2,mjd#59305</i>  <i>WARNING: operating mode = ACCUM</i>  <i>Input file: spring-survey-todo-crp04feb21.csv</i>  <i>Spectral type: M5 ; A<sub>v</sub>: 0.0 ; Distance (pc): 160</i>  <i>M*: 0.16 ; log(dm/dt): -9.28</i>  <i>For exptime=3.6 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): 102738.1 cts/s/segment</i>  <i>brightest pixel: 206.647 cts/s/pix at 6563.9 A</i>  <i>Calculation performed 2021-02-12T16:29:02, v0.21</i></p>						
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]



**Proposal 16478, V-IN-CHA-COS (2C), implementation**

**Diagnostic Status: No Diagnostics**

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 27-MAY-2021:07:00:00 AND 09-JUN-2021:07:10:00; BETWEEN 10-JUN-2021:09:10:00 AND 24-JUN-2021:02:30:00

*Comments: vstatus; 2C; V-IN-CHA; P/COS approved for submission; P/AH 23/03/21 ; intrev: complete ; P/CP 20/04/21*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; V-IN-CHA ; COS ; AH*  
*vcheck; ETC numbers entered in APT?; Yes*  
*vcheck; Any screening violations?; No*  
*vcheck; M-dwarf check complete and added to box folder?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/revise-mstar-bop.xls*  
*vcheck; S/N ETC calcs done & documented?; Yes*  
*vcheck; Field images checked & saved?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/16478/images/V-IN-CHA/*  
*vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40*  
*vcheck; Possible ACQ or Sci spoilers?; No*  
*vcheck; Field BOT clear?; Yes*  
*vcheck; Visual BOT check for stars not in catalog?; Yes*  
*vcheck; Orbit packing finalized?; Yes*  
*vcheck; Buffer times optimized?; Yes*  
*vcheck; Verify visit grouping correct; Yes ...*  
*STIS visit has GROUP 2S, 2C, 2D WITHIN 1D*  
*vcheck; phase constraint for ground based observations added?; N/A*  
*vcheck; BETWEENS for coordinated observations added?; Yes ...*  
*27 MAY 2021 07:00 to 09 JUN 2021 07:10 and 10 JUN 2021 09:10 to 24 JUN 2021 02:30*  
*vcheck; Is visit ready for int. review?; Yes*  
*Allocated COS orbits = 4*

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	V-IN-CHA	RA: 11 12 9.7349 (168.0405621d)	Proper Motion RA: -21.71459063 mas/yr	V=16.45	Reference Frame: ICRS
	Alt Name1: T50	Dec: -76 34 36.51 (-76.57681d)	Proper Motion Dec: -0.761372105 mas/yr	SpT=M5; A_V=0.10; V=16.4; J=11.0	
	Alt Name2: J11120984-7634366	Equinox: J2000	Parallax: 0.005175238783"		
			Epoch of Position: 2015.5		
	<p><i>Comments: T50 : IN Cha, J11120984-7634366</i>  <i>Region: Cha I</i>  <i>Simbad: <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id</a></i>  <i>Target coordinates are from Gaia DR2.</i>  <i>Spectral type: M5 ; A_V: 0.1 ; Distance (pc): 160</i>  <i>M*: 0.17 ; log(dm/dt): -9.34</i>  <i>Input file: spring-survey-todo-crp04feb21.csv</i>  <i>t50_lya2_etc_scaled_pAV0.50.txt</i>  <i>Calculation performed 2021-02-12T16:29:13, v0.6</i></p> <hr/> <p><i>tstatus; V-IN-CHA; P/COS approved for submission; S/STIS approved for submission; P/AH 08/03/21; S/AH 23/08/21</i>  <i>tcheck; APT/SIMBAD target names: ; V-IN-CHA ...</i>  <i>Default SIMBAD name is SZ40, aka 2MASS J11120984-7634366, V* IN Cha, T50</i>  <i>tcheck; Target info verification status?; OK ...</i>  <i>spectral type and magnitudes seem to be consistent</i>  <i>Flam(B) = 2.6e-16 at 4444 Angstroms and Flam(V) = 1.2e-15 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD</i>  <i>tcheck; Coordinates &amp; P.M. verified, epoch checked?; OK ...</i>  <i>SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here</i>  <i>tcheck; Adopted SED compared to Observations?; Yes</i>  <i>Category=STAR</i>  <i>Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]</i>  <i>Extended=NO</i></p>				

Proposal 16478 - V-IN-CHA-COS (2C) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	ACQ/Image (2) V-IN-CHA (COS.ta.148 6305)	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				217.9 Secs (217.9 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.ta.1486305, B.P. = 10.839 Baseline SED with S/N = 40 COS.ta.1486300 requires 217.9 seconds, B.P. = 1.035</p>								
	2	G130M/129 (2) V-IN-CHA 1-3 (COS.sp.149 2578)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=27 34; FP-POS=3			871 Secs (871 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.sp.1492604, B.P. = 0.096 Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1492577, B.P. = 0.095. Total S/N achieved in G130M exposures ~14.3/resel @ 1239 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5; A_V: 0.1; Distance (pc): 160 M*: 0.17; log(dm/dt): -9.34 For exptime=1209.7 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): 342.4 cts/s/segment brightest pixel: 0.020 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:12, v0.21</p>								
3	G130M/129 (2) V-IN-CHA 1-4 (COS.sp.149 2578)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=27 34; FP-POS=4			871 Secs (871 Secs) [==>]	[1]	
<p>Comments: BOP check with 4x spectrum COS.sp.1492604, B.P. = 0.096 Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1492577, B.P. = 0.095. Total S/N achieved in G130M exposures ~14.3/resel @ 1239 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5; A_V: 0.1; Distance (pc): 160 M*: 0.17; log(dm/dt): -9.34 For exptime=1209.7 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): 342.4 cts/s/segment brightest pixel: 0.020 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:12, v0.21</p>									
4	G160M/158 (2) V-IN-CHA 9-3 (COS.sp.149 2580)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=75 95; FP-POS=3			1217 Secs (1217 Secs) [==>]	[2]	
<p>Comments: BOP check with 4x spectrum COS.sp.1492580, B.P. = 0.074 Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1492579, B.P. = 0.005. Total S/N achieved in G160M exposures ~15.9/resel @ 1548.5 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g160m,c1589,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5; A_V: 0.1; Distance (pc): 160 M*: 0.17; log(dm/dt): -9.34 For exptime=1437.0 s, spectral region: 1549.0 +- 1.0 A achieves SNR=20.0/6-pix-resel for combined c1589 &amp; c1623 The exptime for this c1589 exposure has been halved because c1589 &amp; c1623 target the same line. A factor of 2.0 has been applied to the exptime in each exposure. global countrate (brightest segment): 91.8 cts/s/segment brightest pixel: 0.005 cts/s/pix at 1446.2 A Calculation performed 2021-02-12T16:29:08, v0.21</p>									

Proposal 16478 - V-IN-CHA-COS (2C) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

5	G160M/158 (2) V-IN-CHA 9-4 (COS.sp.149 2580)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=75 95; FP-POS=4	1217 Secs (1217 Secs) [==>]	[2]
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Comments: BOP check with 4x spectrum COS.sp.1492580, B.P. = 0.074  
Baseline SED (scaled with additional A<sub>v</sub> = 0.50) calculation for G160M/c1589: COS.sp.1492579, B.P. = 0.005. Total S/N achieved in G160M exposures ~15.9/resel @1548.5 A

t50\_lya2\_etc\_scaled\_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59305; fp-pos=None, segment=None

Input file: spring-survey-todo-crp04feb21.csv

Spectral type: M5 ; A<sub>v</sub>: 0.1 ; Distance (pc): 160

M\*: 0.17 ; log(dm/dt): -9.34

For exptime=1437.0 s, spectral region:

1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 & c1623

The exptime for this c1589 exposure has been halved because c1589 & c1623 target the same line.

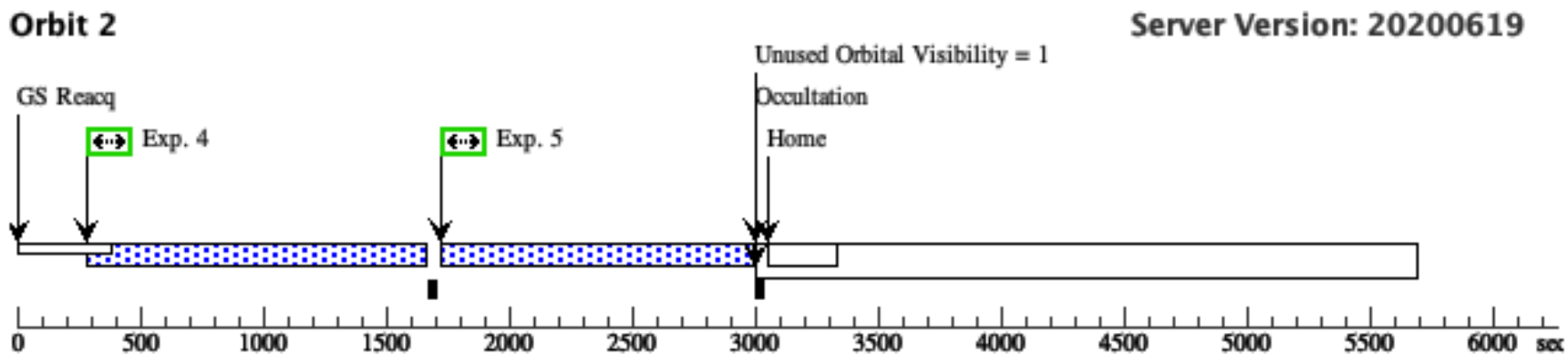
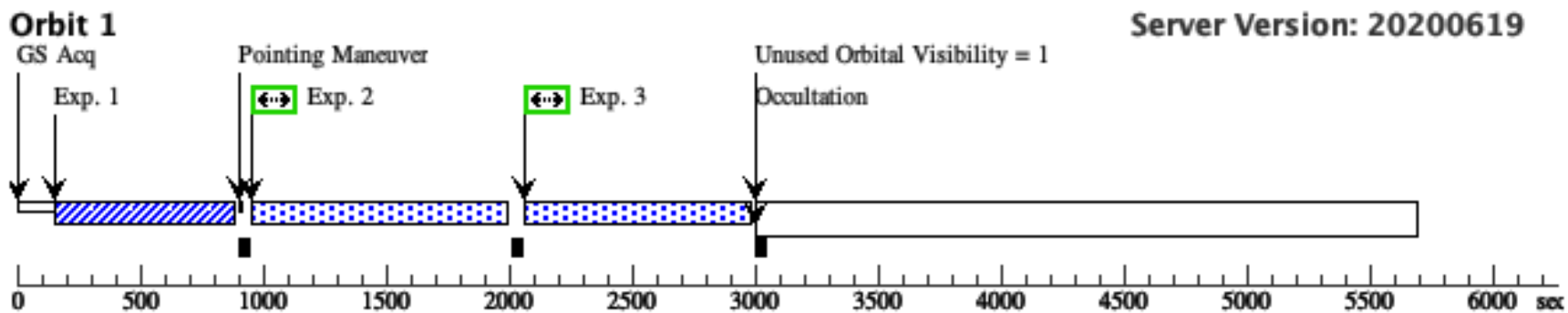
A factor of 2.0 has been applied to the exptime in each exposure.

global countrate (brightest segment): 91.8 cts/s/segment

brightest pixel: 0.005 cts/s/pix at 1446.2 A

Calculation performed 2021-02-12T16:29:08, v0.21

Orbit Structure



**Proposal 16478, V-IN-CHA-COS (2D), implementation**

**Diagnostic Status: No Diagnostics**

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 27-MAY-2021:07:00:00 AND 09-JUN-2021:07:10:00; BETWEEN 10-JUN-2021:09:10:00 AND 24-JUN-2021:02:30:00

*Comments: vstatus; 2D: V-IN-CHA; P/COS approved for submission; P/AH 31/03/21 ; intrev: complete ; P/CP 20/04/21*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; V-IN-CHA ; COS ; AH*  
*vcheck; ETC numbers entered in APT?; Yes*  
*vcheck; Any screening violations?; No*  
*vcheck; M-dwarf check complete and added to box folder?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/revise-mstar-bop.xls*  
*vcheck; S/N ETC calcs done & documented?; Yes*  
*vcheck; Field images checked & saved?; Yes ...*  
*located at: box/ullyses\_tech/ullyses\_proposals/survey/16478/images/V-IN-CHA/*  
*vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40*  
*vcheck; Possible ACQ or Sci spoilers?; No*  
*vcheck; Field BOT clear?; Yes*  
*vcheck; Visual BOT check for stars not in catalog?; Yes*  
*vcheck; Orbit packing finalized?; Yes*  
*vcheck; Buffer times optimized?; Yes*  
*vcheck; Verify visit grouping correct; Yes ...*  
*STIS visit has GROUP 2S, 2C, 2D WITHIN 1D*  
*vcheck; phase constraint for ground based observations added?; N/A*  
*vcheck; BETWEENS for coordinated observations added?; Yes ...*  
*27 MAY 2021 07:00 to 09 JUN 2021 07:10 and 10 JUN 2021 09:10 to 24 JUN 2021 02:30*  
*vcheck; Is visit ready for int. review?; Yes*  
 Allocated COS orbits = 4

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	V-IN-CHA	RA: 11 12 9.7349 (168.0405621d)	Proper Motion RA: -21.71459063 mas/yr	V=16.45	Reference Frame: ICRS
	Alt Name1: T50	Dec: -76 34 36.51 (-76.57681d)	Proper Motion Dec: -0.761372105 mas/yr	SpT=M5; A_V=0.10; V=16.4; J=11.0	
	Alt Name2: J11120984-7634366	Equinox: J2000	Parallax: 0.005175238783"		
			Epoch of Position: 2015.5		
	<p><i>Comments: T50 : IN Cha, J11120984-7634366</i>                      Region: Cha I                      Simbad: <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id</a>                      Target coordinates are from Gaia DR2.                      Spectral type: M5 ; A_V: 0.1 ; Distance (pc): 160                      M*: 0.17 ; log(dm/dt): -9.34                      Input file: spring-survey-todo-crp04feb21.csv                      t50_lya2_etc_scaled_pAV0.50.txt                      Calculation performed 2021-02-12T16:29:13, v0.6</p> <hr/> <p><i>tstatus; V-IN-CHA; P/COS approved for submission; S/STIS approved for submission; P/AH 08/03/21; S/AH 23/08/21</i>  <i>tcheck; APT/SIMBAD target names: ; V-IN-CHA ...</i>                      Default SIMBAD name is SZ40, aka 2MASS J11120984-7634366, V* IN Cha, T50  <i>tcheck; Target info verification status?; OK ...</i>                      spectral type and magnitudes seem to be consistent                      Flam(B) = 2.6e-16 at 4444 Angstroms and Flam(V) = 1.2e-15 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD  <i>tcheck; Coordinates &amp; P.M. verified, epoch checked?; OK ...</i>                      SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here  <i>tcheck; Adopted SED compared to Observations?; Yes</i>                      Category=STAR                      Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]                      Extended=NO</p>				



Proposal 16478 - V-IN-CHA-COS (2D) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	ACQ/Image (2) V-IN-CHA (COS.ta.148 6305)	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				217.9 Secs (217.9 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.ta.1486305, B.P. = 10.839 Baseline SED with S/N = 40 COS.ta.1486300 requires 217.9 seconds, B.P. = 1.035</p>								
	2	G130M/129 (2) V-IN-CHA 1-3 (COS.sp.149 2604)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=27 34; FP-POS=3			872 Secs (872 Secs) [==>]	[1]
	<p>Comments: BOP check with 4x spectrum COS.sp.1492604, B.P. = 0.096 Baseline SED (scaled with additional A<sub>v</sub> = 0.50) calculation for G130M/c1291: COS.sp.1492603, B.P. = 0.095. Total S/N achieved in G130M exposures ~14.3/resel @ 1239 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A<sub>v</sub>: 0.1 ; Distance (pc): 160 M*: 0.17 ; log(dm/dt): -9.34 For exptime=1209.7 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): 342.4 cts/s/segment brightest pixel: 0.020 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:12, v0.21</p>								
3	G130M/129 (2) V-IN-CHA 1-4 (COS.sp.149 2604)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=27 34; FP-POS=4			871 Secs (871 Secs) [==>]	[1]	
<p>Comments: BOP check with 4x spectrum COS.sp.1492604, B.P. = 0.096 Baseline SED (scaled with additional A<sub>v</sub> = 0.50) calculation for G130M/c1291: COS.sp.1492603, B.P. = 0.095. Total S/N achieved in G130M exposures ~14.3/resel @ 1239 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g130m,c1291,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A<sub>v</sub>: 0.1 ; Distance (pc): 160 M*: 0.17 ; log(dm/dt): -9.34 For exptime=1209.7 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): 342.4 cts/s/segment brightest pixel: 0.020 cts/s/pix at 1304.8 A Calculation performed 2021-02-12T16:29:12, v0.21</p>									
4	G160M/162 (2) V-IN-CHA 3-1 (COS.sp.151 4525)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=87 97; FP-POS=1			1217 Secs (1217 Secs) [==>]	[2]	
<p>Comments: BOP check with 4x spectrum COS.sp.1514525, B.P. = 0.073 Baseline SED (scaled with additional A<sub>v</sub> = 0.50) calculation for G160M/c1623: COS.sp.1514524, B.P. = 0.005. Total S/N achieved in G160M exposures ~15.4/resel @ 1548.5 A</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; cos.fuv.g160m,c1623,psa,mjd#59305; fp-pos=None, segment=None) Input file: spring-survey-todo-crp04feb21.csv Spectral type: M5 ; A<sub>v</sub>: 0.1 ; Distance (pc): 160 M*: 0.17 ; log(dm/dt): -9.34 For exptime=1475.8 s, spectral region: 1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel for combined c1589 &amp; c1623 The exptime for this c1623 exposure has been halved because c1589 &amp; c1623 target the same line. A factor of 2.0 has been applied to the exptime in each exposure. global countrate (brightest segment): 88.7 cts/s/segment brightest pixel: 0.005 cts/s/pix at 1446.2 A Calculation performed 2021-02-12T16:29:10, v0.21</p>									

Proposal 16478 - V-IN-CHA-COS (2D) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

5 G160M/162 (2) V-IN-CHA COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=87  
 3-2 1623 A 97;  
 (COS.sp.151 FP-POS=2  
 4525)

1217 Secs (1217 Secs)

[==>]

[2]

Comments: BOP check with 4x spectrum COS.sp.1514525, B.P. = 0.073

Baseline SED (scaled with additional  $A_v = 0.50$ ) calculation for G160M/c1623: COS.sp.1514524, B.P. = 0.005. Total S/N achieved in G160M exposures ~15.4/resel @1548.5 A

t50\_lya2\_etc\_scaled\_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59305; fp-pos=None, segment=None

Input file: spring-survey-todo-crp04feb21.csv

Spectral type: M5 ;  $A_V$ : 0.1 ; Distance (pc): 160

$M^*$ : 0.17 ;  $\log(dm/dt)$ : -9.34

For exptime=1475.8 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): 88.7 cts/s/segment

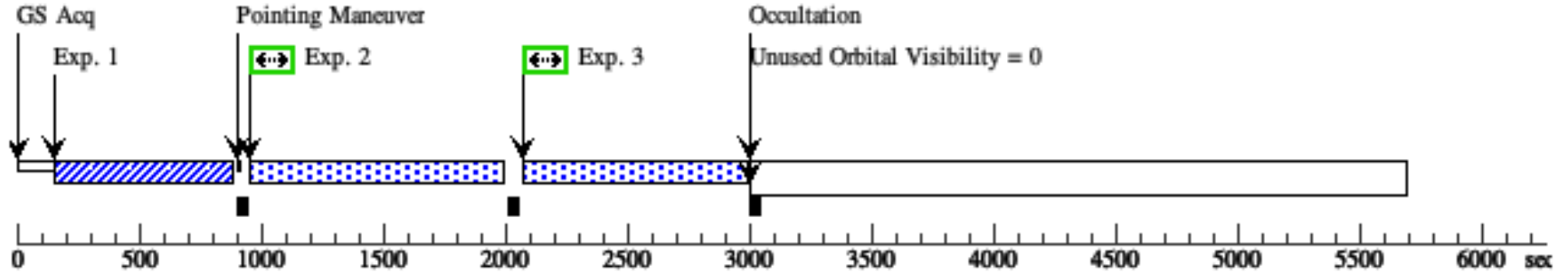
brightest pixel: 0.005 cts/s/pix at 1446.2 A

Calculation performed 2021-02-12T16:29:10, v0.21

Orbit Structure

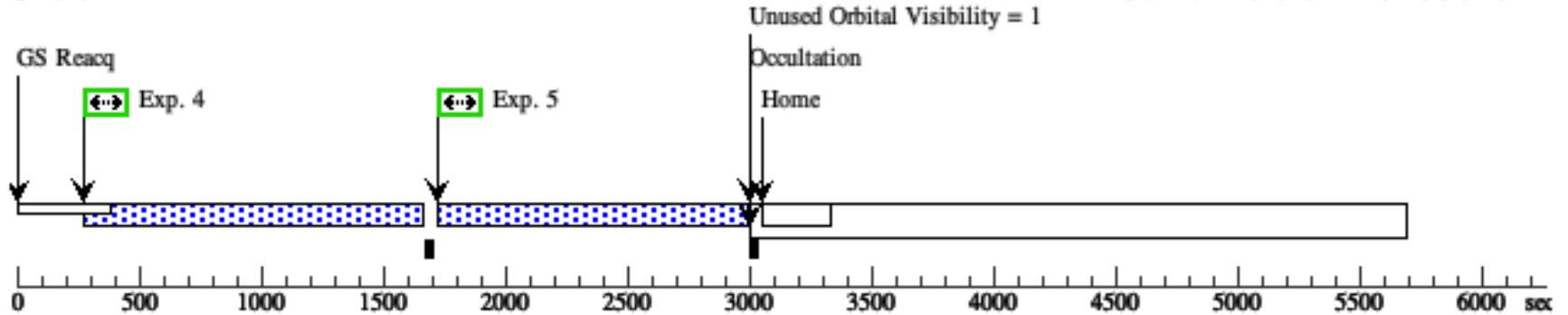
Orbit 1

Server Version: 20200619



Orbit 2

Server Version: 20200619



<b>Visit</b>	<p><b>Proposal 16478, V-IN-CHA-STIS (2S), implementation</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: STIS/NUV-MAMA, STIS/CCD</p> <p>Special Requirements: SCHED 100%; BETWEEN 27-MAY-2021:07:00:00 AND 09-JUN-2021:08:45:00; BETWEEN 10-JUN-2021:09:10:00 AND 24-JUN-2021:04:05:00; GROUP 2S,2C,2D WITHIN 1D</p> <p><i>Comments: vstatus; 1S; V-IN-CHA; S/STIS approved for submission; S/AH 23/03/21 ; intrev: complete ; P/CP 20/04/21</i></p> <p><i>vcheck; Enter targ name &amp; Inst. &amp; Resp. Sci.; V-IN-CHA ; STIS ; AH</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>located at: box/ullyses_tech/ullyses_proposals/survey/revise-mstar-bop.xls</i></p> <p><i>vcheck; S/N ETC calcs done &amp; documented?; Yes</i></p> <p><i>vcheck; Field images checked &amp; saved?; Yes ...</i></p> <p><i>located at: box/ullyses_tech/ullyses_proposals/survey/16478/images/V-IN-CHA/</i></p> <p><i>vcheck; Selected ACQ strategy?; R-mag with F28X50LP, S/N=80</i></p> <p><i>vcheck; Possible ACQ or Sci spoilers?; No</i></p> <p><i>vcheck; Field BOT clear?; Yes</i></p> <p><i>vcheck; Visual BOT check for stars not in catalog?; Yes</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; Yes ...</i></p> <p><i>STIS visit has GROUP 2S, 2C, 2D WITHIN 1D</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 ...</i></p> <p><i>27 MAY 2021 07:00 to 09 JUN 2021 08:45 and 10 JUN 2021 09:10 to 24 JUN 2021 04:05</i></p> <p><i>vcheck; Is visit ready for int. review?; Yes</i></p> <p><i>Allocated STIS orbits = 1</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>(2)</td> <td>V-IN-CHA</td> <td>RA: 11 12 9.7349 (168.0405621d)</td> <td>Proper Motion RA: -21.71459063 mas/yr</td> <td>V=16.45</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: T50</td> <td>Dec: -76 34 36.51 (-76.57681d)</td> <td>Proper Motion Dec: -0.761372105 mas/yr</td> <td>SpT=M5; A_V=0.10; V=16.4; J=11.0</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: J11120984-7634366</td> <td>Equinox: J2000</td> <td>Parallax: 0.005175238783"</td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>Epoch of Position: 2015.5</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>Comments: T50 : IN Cha, J11120984-7634366</i></p> <p><i>Region: Cha I</i></p> <p><i>Simbad: <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=2MASS+J11120984-7634366&amp;submit=submit+id</a></i></p> <p><i>Target coordinates are from Gaia DR2.</i></p> <p><i>Spectral type: M5 ; A_V: 0.1 ; Distance (pc): 160</i></p> <p><i>M*: 0.17 ; log(dm/dt): -9.34</i></p> <p><i>Input file: spring-survey-todo-crp04feb21.csv</i></p> <p><i>t50_lya2_etc_scaled_pAV0.50.txt</i></p> <p><i>Calculation performed 2021-02-12T16:29:13, v0.6</i></p> <p>-----</p> <p><i>tstatus; V-IN-CHA; P/COS approved for submission; S/STIS approved for submission; P/AH 08/03/21; S/AH 23/08/21</i></p> <p><i>tcheck; APT/SIMBAD target names: ; V-IN-CHA ...</i></p> <p><i>Default SIMBAD name is SZ40, aka 2MASS J11120984-7634366, V* IN Cha, T50</i></p> <p><i>tcheck; Target info verification status?; OK ...</i></p> <p><i>spectral type and magnitudes seem to be consistent</i></p> <p><i>Flam(B) = 2.6e-16 at 4444 Angstroms and Flam(V) = 1.2e-15 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD</i></p> <p><i>tcheck; Coordinates &amp; P.M. verified, epoch checked?; OK ...</i></p> <p><i>SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here</i></p> <p><i>tcheck; Adopted SED compared to Observations?; Yes</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	(2)	V-IN-CHA	RA: 11 12 9.7349 (168.0405621d)	Proper Motion RA: -21.71459063 mas/yr	V=16.45	Reference Frame: ICRS		Alt Name1: T50	Dec: -76 34 36.51 (-76.57681d)	Proper Motion Dec: -0.761372105 mas/yr	SpT=M5; A_V=0.10; V=16.4; J=11.0			Alt Name2: J11120984-7634366	Equinox: J2000	Parallax: 0.005175238783"						Epoch of Position: 2015.5	
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																													
(2)	V-IN-CHA	RA: 11 12 9.7349 (168.0405621d)	Proper Motion RA: -21.71459063 mas/yr	V=16.45	Reference Frame: ICRS																													
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			Epoch of Position: 2015.5																															

Proposal 16478 - V-IN-CHA-STIS (2S) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	ACQ (2) V-IN-CHA (STIS.ta.1488446)	STIS/CCD, ACQ, F28X50LP	MIRROR				2.7 Secs (2.7 Secs) [==>]	[1]	
	<p>Comments: 4x BOP check: STIS.ta.1488446, B.P. = 3,397.606                      Baseline SED (Castelli-Kurucz M6V 3500 5.0 spectrum renormalized to Johnson R = 15.85 vegamag) with S/N = 80: STIS.ta.1486466 requires 2.7 seconds, B.P. = 853.508</p>									
	2	G230L/2376 (2) V-IN-CHA (STIS.sp.1492584)	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=65 8			595 Secs (595 Secs) [==>]	[1]	
	<p>Comments: BOP check with 4x spectrum: STIS.sp.1492584, B.P. = 6.910                      Baseline ETC calc with spectrum: STIS.sp.1492583, B.P. = 0.714</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59305                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.1 ; Distance (pc): 160                      M*: 0.17 ; log(dm/dt): -9.34                      For exptime=114.6 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): 2385.6 cts/s/segment                      brightest pixel: 0.716 cts/s/pix at 2796.8 A                      Calculation performed 2021-02-12T16:29:12, v0.21</p>									
	3	G230L/2376 WAVE WAVECAL	STIS/NUV-MAMA, ACCUM, 52X0.1	G230L 2376 A				[==>]	[1]	
4	G430L/4300 WAVE WAVECAL	STIS/CCD, ACCUM, 52X0.1	G430L 4300 A				[==>]	[1]		
5	G430L/4300 (2) V-IN-CHA (STIS.sp.1492589)	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4			599 Secs (599 Secs) [==>(Split 1)] [==>(Split 2)]	[1]		
<p>Comments: Calculation with baseline SED (scaled with additional A_v = 0.50), normalized to Flam(V) = 1.2e-15 ergs/s/cm^2/Ang, for G430L: STIS.sp.1492588, B.P. = 1.655.                      BOP calculation with 4x SED (without additional A_v = 0.50) no normalization: STIS.sp.1492589, B.P. = 178.934.</p> <p>t50_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59305                      WARNING: operating mode = ACCUM                      Input file: spring-survey-todo-crp04feb21.csv                      Spectral type: M5 ; A_V: 0.1 ; Distance (pc): 160                      M*: 0.17 ; log(dm/dt): -9.34                      For exptime=45.2 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): 43115.4 cts/s/segment                      brightest pixel: 22.790 cts/s/pix at 4560.5 A                      Calculation performed 2021-02-12T16:29:12, v0.21</p>										

Proposal 16478 - V-IN-CHA-STIS (2S) - ULLYSES Two M5 T Tauri Survey Stars in Cha I

6	G750L/7751 (2) V-IN-CHA (STIS.sp.14 92591)	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4	106 Secs (106 Secs)	
					[==>(Split 1)]	[1]
<p><i>Comments: Calculation with baseline SED (scaled with additional A<sub>v</sub> = 0.50), normalized to Flam(V) = 1.2e-15 ergs/s/cm<sup>2</sup>/Ang, for G750L: STIS.sp.1492590, B.P. = 64.057. BOP calculation with 4x SED (without additional A<sub>v</sub> = 0.50) no normalization: STIS.sp.1492591, B.P. = 1,223.436.</i></p> <p><i>t50_lya2_etc_scaled_pAV0.50.txt; stis.ccd.g750l,c7751,52x2,mjd#59305</i>  <i>WARNING: operating mode = ACCUM</i>  <i>Input file: spring-survey-todo-crp04feb21.csv</i>  <i>Spectral type: M5 ; A<sub>v</sub>: 0.1 ; Distance (pc): 160</i>  <i>M*: 0.17 ; log(dm/dt): -9.34</i>  <i>For exptime=4.3 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): 94220.3 cts/s/segment</i>  <i>brightest pixel: 180.960 cts/s/pix at 6563.9 A</i>  <i>Calculation performed 2021-02-12T16:29:13, v0.21</i></p>						
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]

