16853 - ULLYSES T Tauri Survey Stars in Lupus II

Cycle: 29, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Julia Christine Roman-Duval (PI) (Contact)	**Space Telescope Science Institute**	**duval@stsci.edu**
Dr. Kenneth Sembach (CoI)	Space Telescope Science Institute	sembach@stsci.edu
Dr. TalaWanda R. Monroe (CoI) (Contact)	Space Telescope Science Institute	tmonroe@stsci.edu
Joanna Taylor (CoI)	Space Telescope Science Institute	jotaylor@stsci.edu
Dr. Travis C Fischer (CoI) (ESA Member)	Space Telescope Science Institute - ESA	tfischer@stsci.edu
Dr. William J. Fischer (CoI) (Contact)	Space Telescope Science Institute	wfischer@stsci.edu
Dr. Alexander W. Fullerton (CoI) (Contact)	Space Telescope Science Institute	fullerton@stsci.edu
Dr. Alessandra Aloisi (CoI)	Space Telescope Science Institute	aloisi@stsci.edu
Christopher Britt (CoI)	Space Telescope Science Institute	cbritt@stsci.edu
Dr. Thomas M. Brown (CoI)	Space Telescope Science Institute	tbrown@stsci.edu
Ivo Busko (CoI)	Space Telescope Science Institute	busko@stsci.edu
Dr. Joleen Carlberg (CoI)	Space Telescope Science Institute	jcarlberg@stsci.edu
Dr. Gisella De Rosa (CoI)	Space Telescope Science Institute	gderosa@stsci.edu
Elaine M Frazer (CoI)	Space Telescope Science Institute	efrazer@stsci.edu
Dr. Svea S Hernandez (CoI)	Space Telescope Science Institute - ESA - JWST	sveash@stsci.edu
Dr. Alec S. Hirschauer (CoI)	Space Telescope Science Institute	ahirschauer@stsci.edu
Dr. Bethan Lesley James (CoI)	Space Telescope Science Institute - ESA - JWST	bjames@stsci.edu
Robert Jedrzejewski (CoI)	Space Telescope Science Institute	rij@stsci.edu
Sean Lockwood (CoI)	Space Telescope Science Institute	lockwood@stsci.edu
Dr. Cristina Oliveira (CoI)	Space Telescope Science Institute	oliveira@stsci.edu
Rachel Plesha (CoI)	Space Telescope Science Institute	rplesha@stsci.edu
Dr. Charles R. Proffitt (CoI)	Space Telescope Science Institute	proffitt@stsci.edu

Name	*Institution*	*E-Mail*
Dr. I. Neill Reid (CoI)	Space Telescope Science Institute	inr@stsci.edu
Dr. Adric R. Riedel (CoI)	Space Telescope Science Institute	riedel@stsci.edu
Allyssa Riley (CoI)	Space Telescope Science Institute	ariley@stsci.edu
Dr. David J. Sahnow (CoI)	Space Telescope Science Institute	sahnow@stsci.edu
Dr. Ravi Sankrit (CoI)	Space Telescope Science Institute	rsankrit@stsci.edu
Dr. Richard Shaw (CoI)	Space Telescope Science Institute	shaw@stsci.edu
Dr. Linda J. Smith (CoI)	Space Telescope Science Institute	lsmith@stsci.edu
Dr. Sangmo Tony Sohn (CoI)	Space Telescope Science Institute	tsohn@stsci.edu
Dr. Debopam Som (CoI)	Space Telescope Science Institute	dsom@stsci.edu
Dr. Leonardo Ubeda (CoI)	Space Telescope Science Institute	lubeda@stsci.edu
Dr. Daniel E. Welty (CoI)	Space Telescope Science Institute	dwelty@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
1C	(1) RXJ1556.1-3655	COS/FUV COS/NUV	3	22-Mar-2022 18:00:20.0	yes
1D	(1) RXJ1556.1-3655	COS/FUV COS/NUV	3	22-Mar-2022 18:00:21.0	yes
1S	(1) RXJ1556.1-3655 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	22-Mar-2022 18:00:23.0	yes
2C	(2) SZ82	COS/FUV COS/NUV	3	22-Mar-2022 18:00:24.0	yes
2D	(2) SZ82	COS/FUV COS/NUV	3	22-Mar-2022 18:00:25.0	yes
2S	(2) SZ82 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	22-Mar-2022 18:00:26.0	yes
3C	(3) SZ84 (4) UCAC4-262-089914-OFFSET	COS/FUV COS/NUV	3	22-Mar-2022 18:00:28.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
3S	(3) SZ84 CCDFLAT WAVE	STIS/CCD STIS/NUV-MAMA	1	22-Mar-2022 18:00:29.0	yes

18 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.

Visit

Proposal 16853, RXJ1556.1-3655-COS (1C), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 1C,1D,1S WITHIN 2D

Comments: vstatus; 1C; RXJ1556.1-3655; P/COS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ1556.1-3655 ; 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/revised-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_c29/16853/images/RXJ1556.1-3655
vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40
vcheck; Possible ACQ or Sci spoilers?; No
vcheck; Field BOT clear?; Yes ...
GSC II assumes O5V spectral type; ETC calculations cleared
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 ...
COS visit has GROUP 1C,1D,1S WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 6

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1556.1-3655	RA: 15 56 2.0841 (239.0086838d) Dec: -36 55 28.62 (-36.92462d) Equinox: J2000	Proper Motion RA: -11.6595157 mas/yr Proper Motion Dec: -22.50325639 mas/yr Parallax: 0.006328735675" Epoch of Position: 2015.5	V=13.703 SpT=M1; A_V=1.00; B=14.79; V=13.70; J=10.40	Reference Frame: ICRS

Comments: RXJ1556.1-3655
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=rxj15561-3655&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
Input file: lowmass_survey_Input-gaia.csv
rxj15561-3655_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:44, v0.8
---
tstatus; RXJ1556.1-3655; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; RXJ1556.1-3655 ...
Default SIMBAD name is WRAY 15-1384, aka 2MASS J15560210-3655282
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 7.64e-11 at 4444 Angstroms and Flam(V) = 9.53e-11 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/RXJ1556.1-3655/
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.1667050)	(1) RXJ1556.1-3655	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				228.7 Secs (228.7 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.ta.1667051, B.P. = 19.958 *M dwarf flare spectrum COS.ta.1667052, B.P. = 4.932* *Baseline SED with S/N = 40 COS.ta.1667050 requires 114.3301 seconds (x2 = 228.6602 seconds, rounded to 228.7 seconds), B.P. = 1.959*								
2	G160M/1589-3 (COS.sp.1667058)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=9897; FP-POS=3			802.4 Secs (802.4 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.sp.1667059, B.P. = 0.062 *M dwarf flare spectrum COS.sp.1667291, B.P. = 0.011* *Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1667058, B.P. = 0.005.* *Total S/N achieved in G160M exposures ~22.8/resel @1548.4243 A* *rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150* *M*: 0.5 ; log(dm/dt): -7.92* *For exptime=1036.8 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): 69.6 cts/s/segment* *brightest pixel: 0.005 cts/s/pix at 1548.4 A* *Calculation performed 2021-10-21T02:37:40, v0.23*								
3	G160M/1589-4 (COS.sp.1667058)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=9897; FP-POS=4			802.4 Secs (802.4 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.sp.1667059, B.P. = 0.062 *M dwarf flare spectrum COS.sp.1667291, B.P. = 0.011* *Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1667058, B.P. = 0.005.* *Total S/N achieved in G160M exposures ~22.8/resel @1548.4243 A* *rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150* *M*: 0.5 ; log(dm/dt): -7.92* *For exptime=1036.8 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): 69.6 cts/s/segment* *brightest pixel: 0.005 cts/s/pix at 1548.4 A* *Calculation performed 2021-10-21T02:37:40, v0.23*								

4	G130M/129 1-3 (COS.sp.166 7064)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=45 89; FP-POS=3	2468.4 Secs (2468.4 Secs) *[==>]*	***[2]***

Comments: BOP check with 4x spectrum COS.sp.1667065, B.P. = 0.090
M dwarf flare spectrum COS.sp.1667293, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667064, B.P. = 0.090.
Total S/N achieved in G130M exposures ~13.5/resel @1238.9430 A

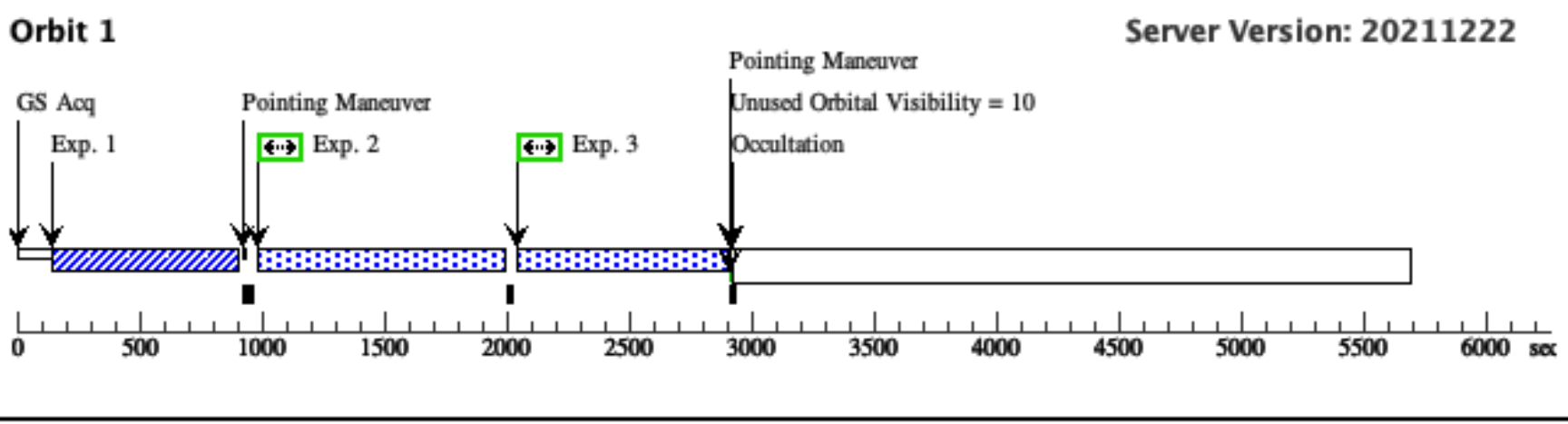
rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=4775.0 s, spectral region:
1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 285.2 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:44, v0.23

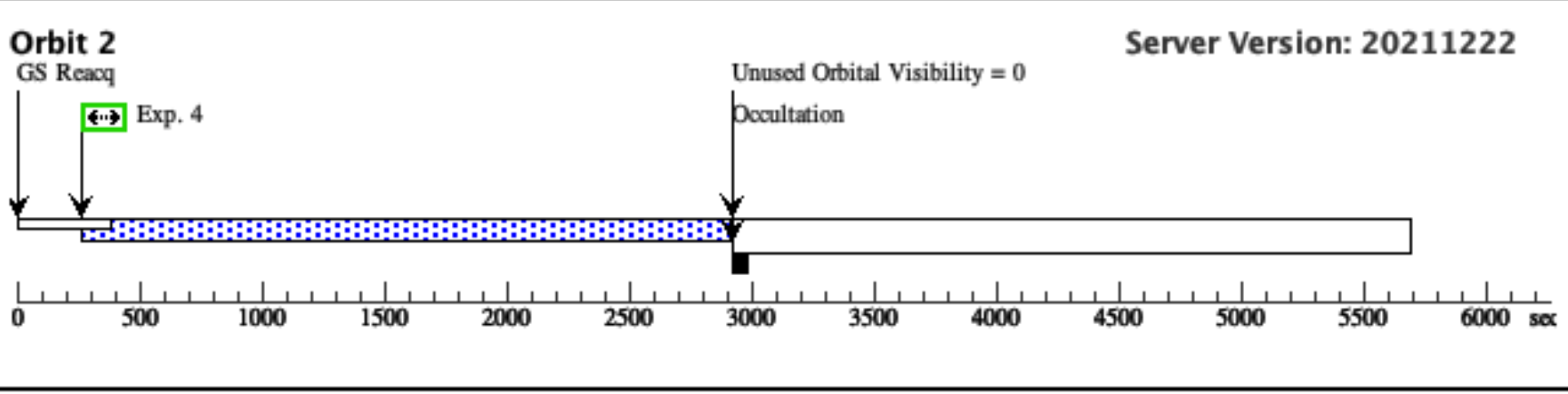
5	G130M/129 1-4 (COS.sp.166 7064)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=45 89; FP-POS=4	2468.4 Secs (2468.4 Secs) *[==>]*	***[3]***

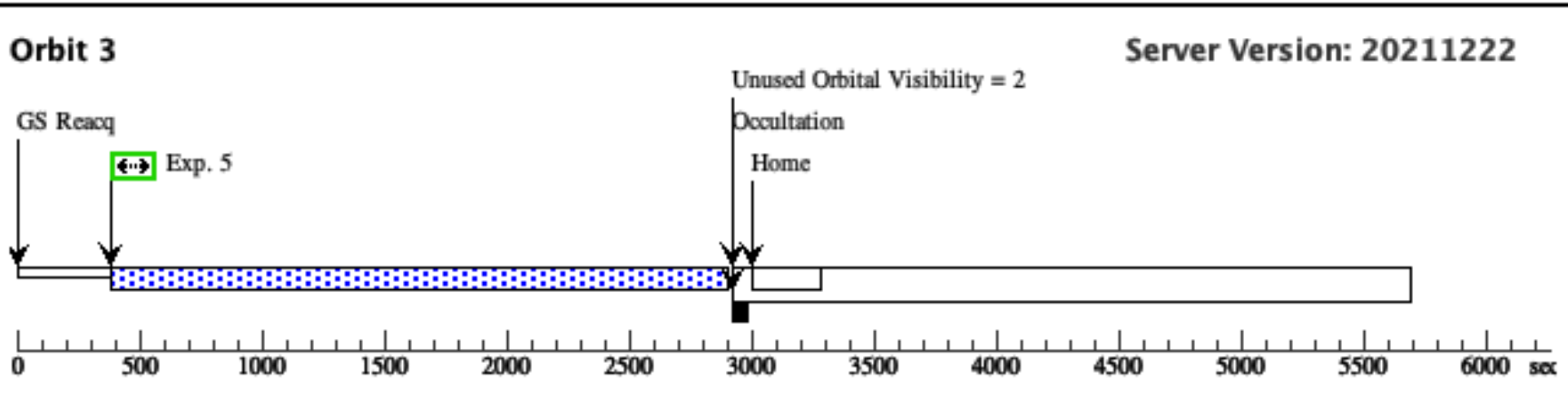
Comments: BOP check with 4x spectrum COS.sp.1667065, B.P. = 0.090
M dwarf flare spectrum COS.sp.1667293, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667064, B.P. = 0.090.
Total S/N achieved in G130M exposures ~13.5/resel @1238.9430 A

rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=4775.0 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): 285.2 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:44, v0.23

Orbit Structure







Visit

Proposal 16853, RXJ1556.1-3655-COS (1D), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 1D,1C,1S WITHIN 2D

Comments: vstatus; 1D; RXJ1556.1-3655; P/COS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ1556.1-3655 ; 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/revised-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_c29/16853/images/RXJ1556.1-3655
vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40
vcheck; Possible ACQ or Sci spoilers?; No
vcheck; Field BOT clear?; Yes ...
GSC II assumes O5V spectral type; ETC calculations cleared
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 ...
COS visit has GROUP 1D,1C,1S WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 6

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1556.1-3655	RA: 15 56 2.0841 (239.0086838d) Dec: -36 55 28.62 (-36.92462d) Equinox: J2000	Proper Motion RA: -11.6595157 mas/yr Proper Motion Dec: -22.50325639 mas/yr Parallax: 0.006328735675" Epoch of Position: 2015.5	V=13.703 SpT=M1; A_V=1.00; B=14.79; V=13.70; J=10.40	Reference Frame: ICRS

Comments: RXJ1556.1-3655
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=rxj15561-3655&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
Input file: lowmass_survey_Input-gaia.csv
rxj15561-3655_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:44, v0.8
---
tstatus; RXJ1556.1-3655; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; RXJ1556.1-3655 ...
Default SIMBAD name is WRAY 15-1384, aka 2MASS J15560210-3655282
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 7.64e-11 at 4444 Angstroms and Flam(V) = 9.53e-11 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/RXJ1556.1-3655/
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.1667050)	(1) RXJ1556.1-3655	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				228.7 Secs (228.7 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.ta.1667051, B.P. = 19.958 *M dwarf flare spectrum COS.ta.1667052, B.P. = 4.932* *Baseline SED with S/N = 40 COS.ta.1667050 requires 114.3301 seconds (x2 = 228.6602 seconds, rounded to 228.7 seconds), B.P. = 1.959*								
2	G160M/1623-1 (COS.sp.1667061)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=10410; FP-POS=1			802.4 Secs (802.4 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.sp.1667062, B.P. = 0.063 *M dwarf flare spectrum COS.sp.1667292, B.P. = 0.011* *Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1667061, B.P. = 0.005.* *Total S/N achieved in G160M exposures ~22.8/resel @1548.4243 A* *rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150* *M*: 0.5 ; log(dm/dt): -7.92* *For exptime=1029.8 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): 69.1 cts/s/segment* *brightest pixel: 0.005 cts/s/pix at 1548.4 A* *Calculation performed 2021-10-21T02:37:42, v0.23*								
3	G160M/1623-2 (COS.sp.1667062)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=10410; FP-POS=2			802.4 Secs (802.4 Secs) *[==>]*	 ***[1]***
	Comments: BOP check with 4x spectrum COS.sp.1667062, B.P. = 0.063 *M dwarf flare spectrum COS.sp.1667292, B.P. = 0.011* *Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1667061, B.P. = 0.005.* *Total S/N achieved in G160M exposures ~22.8/resel @1548.4243 A* *rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150* *M*: 0.5 ; log(dm/dt): -7.92* *For exptime=1029.8 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): 69.1 cts/s/segment* *brightest pixel: 0.005 cts/s/pix at 1548.4 A* *Calculation performed 2021-10-21T02:37:42, v0.23*								

4	G130M/129 1-3 (COS.sp.1667064)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=45 89; FP-POS=3	2468.4 Secs (2468.4 Secs) *[==>]*	 ***[2]***

Comments: BOP check with 4x spectrum COS.sp.1667065, B.P. = 0.090
M dwarf flare spectrum COS.sp.1667293, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667064, B.P. = 0.090.
Total S/N achieved in G130M exposures ~13.5/resel @1238.9430 A

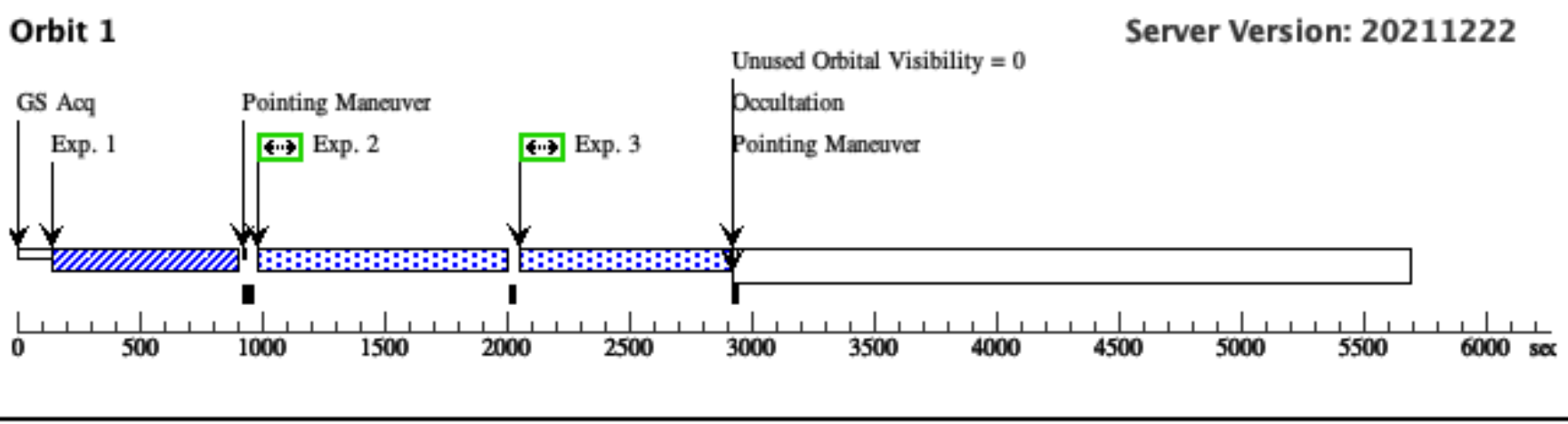
rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=4775.0 s, spectral region:
1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 285.2 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:44, v0.23

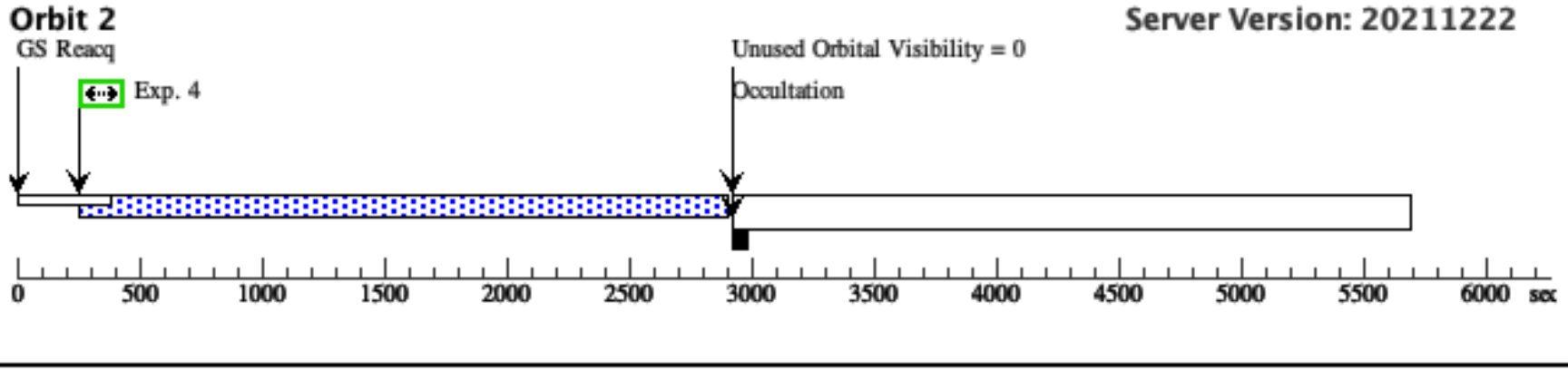
5	G130M/129 1-4 (COS.sp.1667064)	(1) RXJ1556.1-3655	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=45 89; FP-POS=4	2468.4 Secs (2468.4 Secs) *[==>]*	 ***[3]***

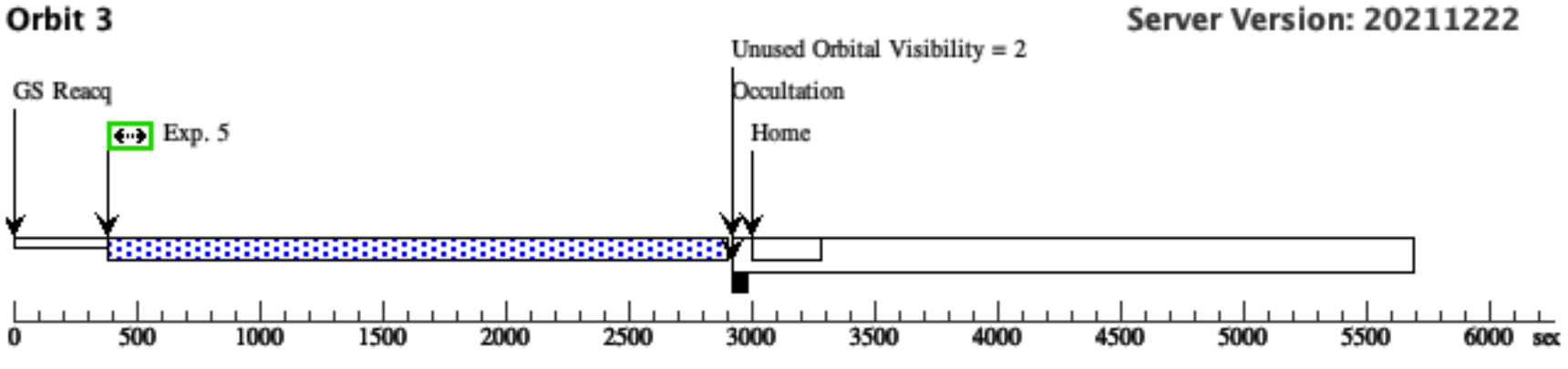
Comments: BOP check with 4x spectrum COS.sp.1667065, B.P. = 0.090
M dwarf flare spectrum COS.sp.1667293, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667064, B.P. = 0.090.
Total S/N achieved in G130M exposures ~13.5/resel @1238.9430 A

rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=4775.0 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): 285.2 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:44, v0.23

Orbit Structure







Visit

Proposal 16853, RXJ1556.1-3655-STIS (1S), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 1S,1C,1D WITHIN 2D

Comments: vstatus; 1S; RXJ1556.1-3655; S/STIS ready for internal review; S/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; RXJ1556.1-3655 ; 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/revised-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_c29/16853/images/RXJ1556.1-3655
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,1D WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated STIS orbits = 1

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RXJ1556.1-3655	RA: 15 56 2.0841 (239.0086838d) Dec: -36 55 28.62 (-36.92462d) Equinox: J2000	Proper Motion RA: -11.6595157 mas/yr Proper Motion Dec: -22.50325639 mas/yr Parallax: 0.006328735675" Epoch of Position: 2015.5	V=13.703 SpT=M1; A_V=1.00; B=14.79; V=13.70; J=10.40	Reference Frame: ICRS

Comments: RXJ1556.1-3655
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=rxj15561-3655&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
Input file: lowmass_survey_Input-gaia.csv
rxj15561-3655_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:44, v0.8
---
tstatus; RXJ1556.1-3655; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; RXJ1556.1-3655 ...
Default SIMBAD name is WRAY 15-1384, aka 2MASS J15560210-3655282
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 7.64e-11 at 4444 Angstroms and Flam(V) = 9.53e-11 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/RXJ1556.1-3655/
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.1667087)	(1) RXJ1556.1-3655	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs (0.2 Secs) *[==>]*	***[1]***

Comments: 4x BOP check: STIS.ta.1667088, B.P. = 85,473.623
Baseline SED (Castelli-Kurucz M2V 3500 4.5 spectrum renormalized to Johnson V = 13.70 vegamag) with S/N = 80: STIS.ta.1667087 requires 0.0866 seconds (x2 = 0.1732 seconds, rounded to 0.2 seconds), B.P. = 25,717.072

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G230L/2376 (STIS.sp.1667081)	(1) RXJ1556.1-3655	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=391			646 Secs (646 Secs) *[==>]*	***[1]***

Comments: BOP check with 4x spectrum: STIS.sp.1667082, B.P. = 7.729
M dwarf flare spectrum STIS.sp.1667295, B.P. = 0.803
Baseline ETC calc with spectrum: STIS.sp.1667081, B.P. = 0.796

rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59670
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=102.9 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): 2489.6 cts/s/segment
brightest pixel: 0.796 cts/s/pix at 2788.8 A
Calculation performed 2021-10-21T02:37:44, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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.1667089)	(1) RXJ1556.1-3655	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1			468 Secs (468 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Comments: Calculation with Castelli-Kurucz M2V 3500 4.5 stellar model, normalized to Johnson/V = 13.70, for G430L: STIS.sp.1667089, B.P. = 16.071
BOP calculation with Castelli-Kurucz M2V 3500 4.5 stellar model, normalized to Johnson/V = 13.70 - 1.5 = 12.20: STIS.sp.1667090, B.P. = 65.778.

rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59670
WARNING: operating mode = ACCUM
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=35.8 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): 52517.0 cts/s/segment
brightest pixel: 33.961 cts/s/pix at 4871.0 A
Calculation performed 2021-10-21T02:37:44, v0.23

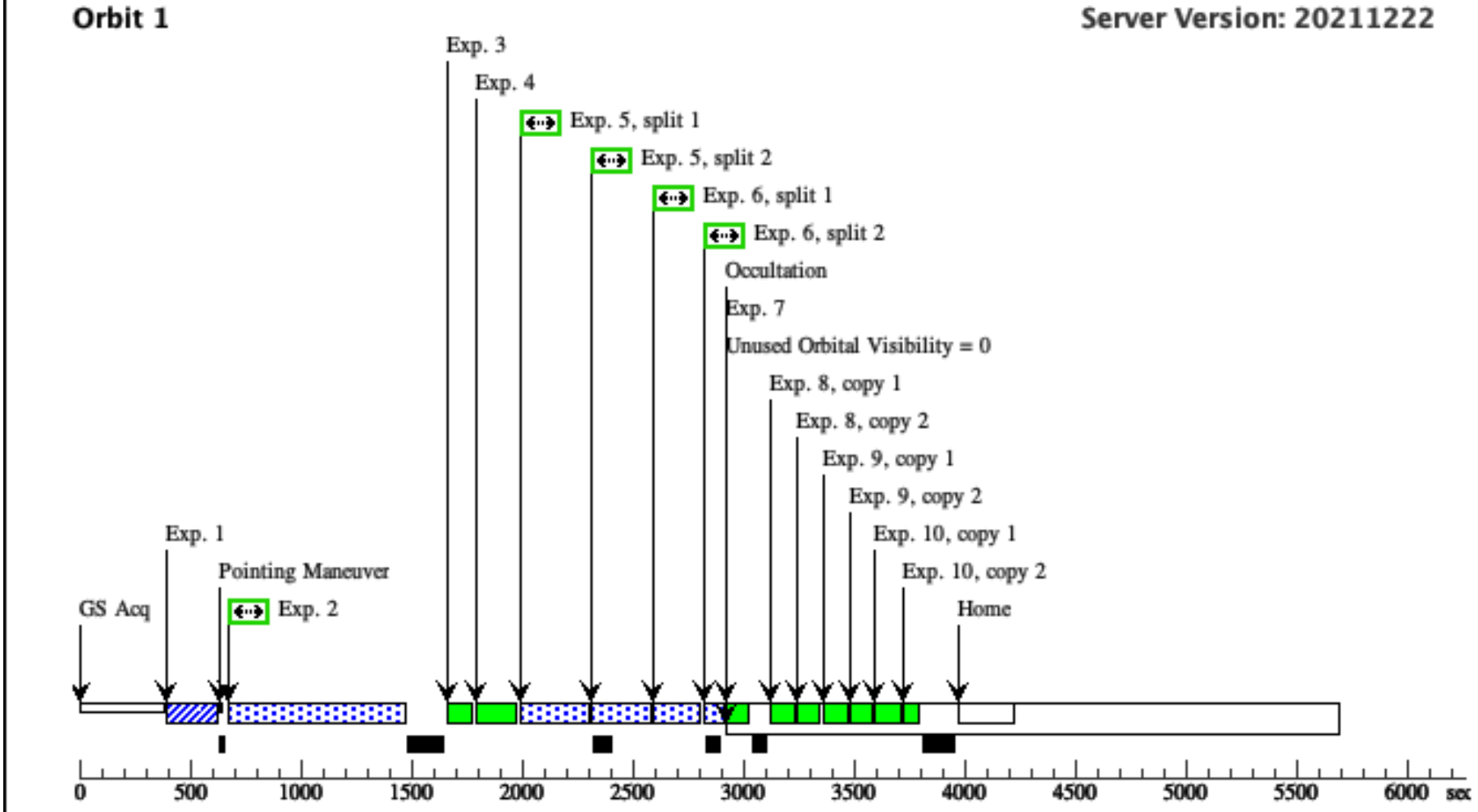
6	G750L/7751 (STIS.sp.16 67093)	(1) RXJ1556.1-3655	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1	115 Secs (115 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Comments: Calculation with Castelli-Kurucz M2V 3500 4.5 stellar model, normalized to Johnson/V = 13.70, for G750L: STIS.sp.1667093, B.P. = 82.776
BOP calculation with Castelli-Kurucz M2V 3500 4.5 stellar model, normalized to Johnson/R = 13.70 - 1.5 = 12.20: STIS.sp.1667094, B.P. = 273.993.

rxj15561-3655_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g750l,c7751,52x2,mjd#59670
WARNING: operating mode = ACCUM
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M1 ; A_V: 1.0 ; Distance (pc): 150
M: 0.5 ; log(dm/dt): -7.92*
For exptime=2.6 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): 149217.1 cts/s/segment
brightest pixel: 295.729 cts/s/pix at 6563.9 A
Calculation performed 2021-10-21T02:37:44, v0.23

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]***

Orbit Structure



Visit

Proposal 16853, SZ82-COS (2C), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 2C,2D,2S WITHIN 2D

Comments: vstatus; 2C; SZ82; P/COS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; SZ82 ; 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/revised-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_c29/16853/images/Sz82
vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40
vcheck; Possible ACQ or Sci spoilers?; No
vcheck; Field BOT clear?; Yes ...
GSC II assumes O5V spectral type; ETC calculations cleared
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 ...
COS visit has GROUP 2C,2D,2S WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 6

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SZ82	RA: 15 56 9.1909 (239.0382954d)	Proper Motion RA: -12.09149731 mas/yr	V=11.633	Reference Frame: ICRS
	Alt Name1: IM-LUP	Dec: -37 56 6.49 (-37.93514d)	Proper Motion Dec: -23.71813335 mas/yr	SpT=K5; A_V=0.90; B=12.99; V=11.63; J=8.783	
		Equinox: J2000	Parallax: 0.006311253988"		
			Epoch of Position: 2015.5		

Comments: SZ82 : IM Lup
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=sz82&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
Input file: lowmass_survey_Input-gaia.csv
sz82_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:16, v0.8
---
tstatus; SZ82; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SZ82 ...
Default SIMBAD name is THA 15-12, aka 2MASS J15560921-3756057
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 3.65e-10 at 4444 Angstroms and Flam(V) = 7.18e-10 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/Sz82/
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.1667098)	(2) SZ82	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				241.0 Secs (241 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.ta.1667099, B.P. = 18.976
Baseline SED with S/N = 40 COS.ta.1667098 requires 120.5142 seconds (x2 = 241.0284 seconds, rounded to 241.0 seconds), B.P. = 1.859

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G160M/1589-3 (COS.sp.1545229)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=9901; FP-POS=3			790.5 Secs (790.5 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.sp.1545230, B.P. = 0.064
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1545229, B.P. = 0.005. Total S/N achieved in G160M exposures ~23.0/resel @1548.5 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=1009.5 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): 69.6 cts/s/segment
brightest pixel: 0.005 cts/s/pix at 1548.4 A
Calculation performed 2021-10-21T02:37:12, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	G160M/1589-4 (COS.sp.1545229)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=9901; FP-POS=4			790.5 Secs (790.5 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.sp.1545230, B.P. = 0.064
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1545229, B.P. = 0.005. Total S/N achieved in G160M exposures ~23.0/resel @1548.5 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=1009.5 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): 69.6 cts/s/segment
brightest pixel: 0.005 cts/s/pix at 1548.4 A
Calculation performed 2021-10-21T02:37:12, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
4	G130M/1291-3 (COS.sp.1667107)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=4555; FP-POS=3			2468.8 Secs (2468.8 Secs) *[==>]*	*[2]*

Comments: BOP check with 4x spectrum COS.sp.1667108, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667107, B.P. = 0.090. Total S/N achieved in G130M exposures ~13.4/resel @1238.9430 A

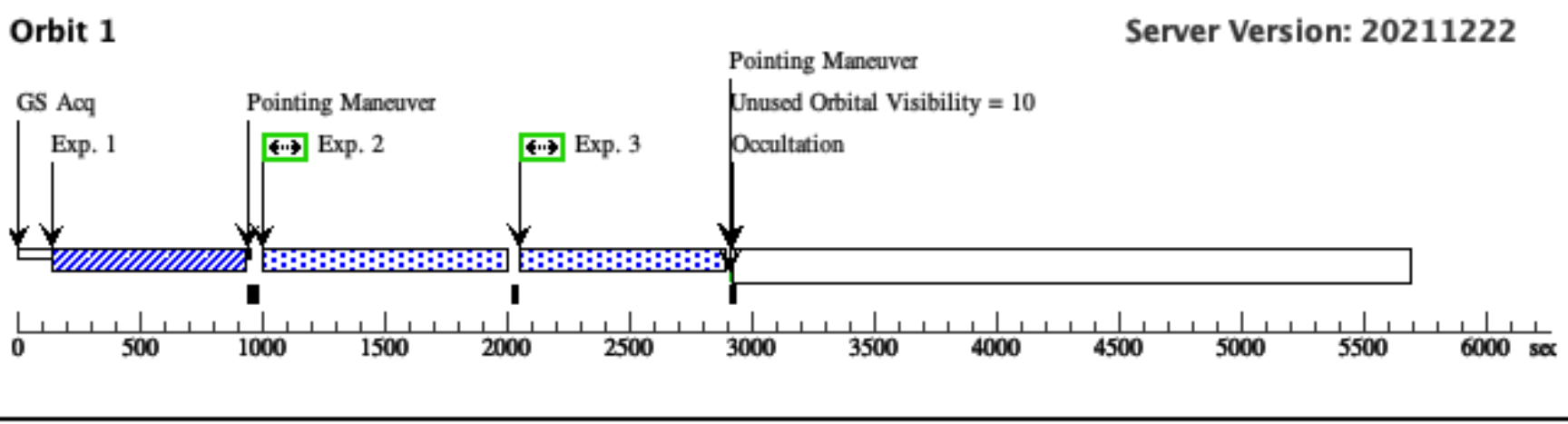
sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=4565.8 s, spectral region:
1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 285.3 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:16, v0.23

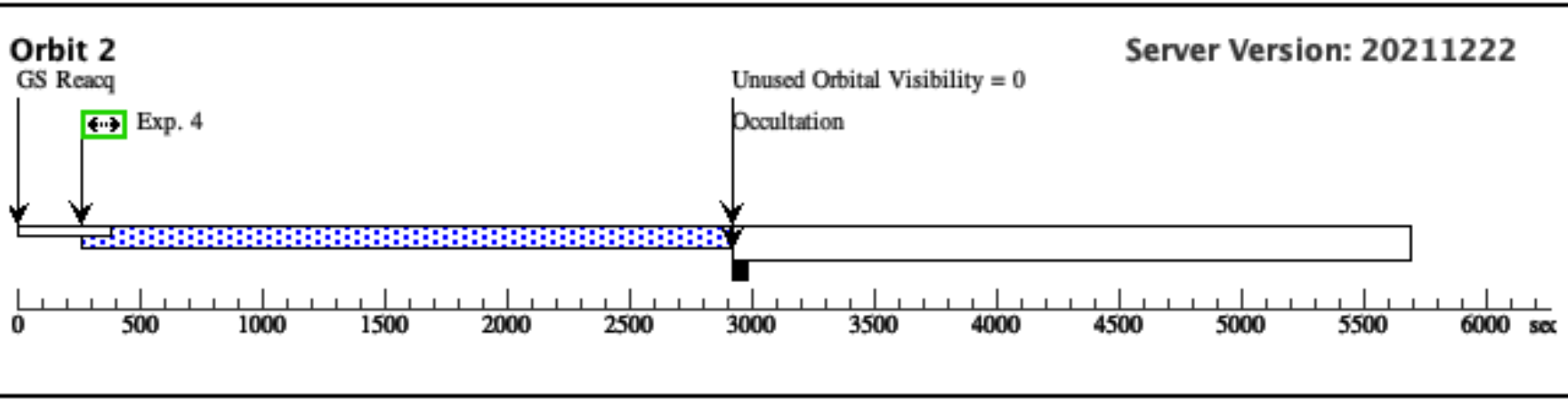
	5	G130M/129 (2) SZ82 1-4 (COS.sp.166 7107)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=45 55; FP-POS=4	2468.8 Secs (2468.8 Secs) *[==>]*	 ***[3]***

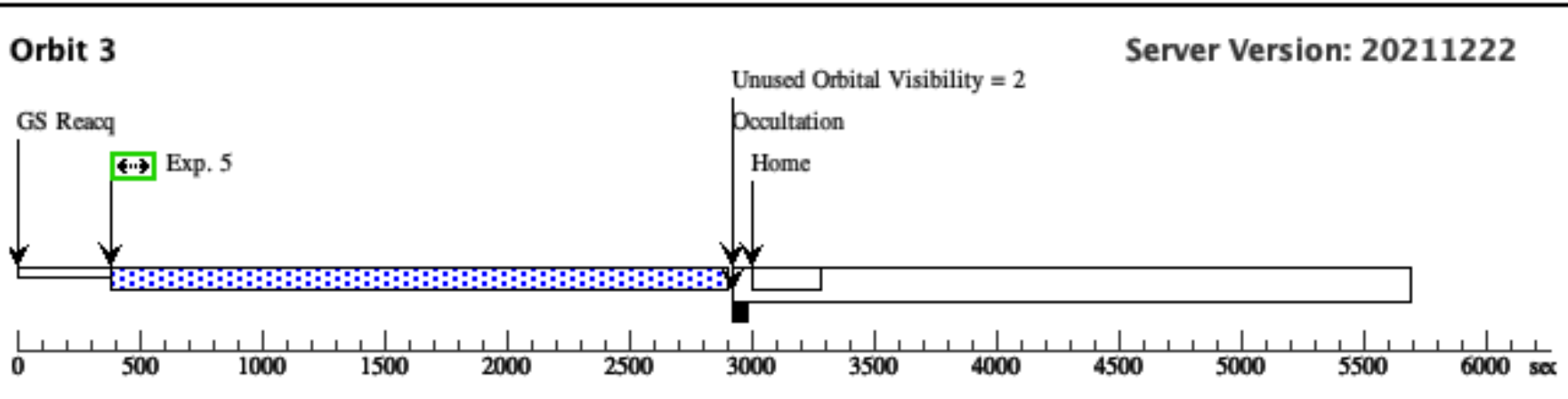
Comments: BOP check with 4x spectrum COS.sp.1667108, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667107, B.P. = 0.090. Total S/N achieved in G130M exposures ~13.4/resel @1238.9430 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=4565.8 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): 285.3 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:16, v0.23

Orbit Structure







Visit

Proposal 16853, SZ82-COS (2D), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 2D,2C,2S WITHIN 2D

Comments: vstatus; 2D; SZ82; P/COS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; SZ82 ; 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/revised-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_c29/16853/images/Sz82
vcheck; Selected ACQ strategy?; PSA, MIRRORB, S/N=40
vcheck; Possible ACQ or Sci spoilers?; No
vcheck; Field BOT clear?; Yes ...
GSC II assumes O5V spectral type; ETC calculations cleared
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 ...
COS visit has GROUP 2D,2C,2S WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 6

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SZ82	RA: 15 56 9.1909 (239.0382954d)	Proper Motion RA: -12.09149731 mas/yr	V=11.633	Reference Frame: ICRS
	Alt Name1: IM-LUP	Dec: -37 56 6.49 (-37.93514d)	Proper Motion Dec: -23.71813335 mas/yr	SpT=K5; A_V=0.90; B=12.99; V=11.63; J=8.783	
		Equinox: J2000	Parallax: 0.006311253988"		
			Epoch of Position: 2015.5		

Comments: SZ82 : IM Lup
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=sz82&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
Input file: lowmass_survey_Input-gaia.csv
sz82_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:16, v0.8
---
tstatus; SZ82; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SZ82 ...
Default SIMBAD name is THA 15-12, aka 2MASS J15560921-3756057
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 3.65e-10 at 4444 Angstroms and Flam(V) = 7.18e-10 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/Sz82/
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.1667098)	(2) SZ82	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				241.0 Secs (241 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.ta.1667099, B.P. = 18.976
Baseline SED with S/N = 40 COS.ta.1667098 requires 120.5142 seconds (x2 = 241.0284 seconds, rounded to 241.0 seconds), B.P. = 1.859

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G160M/1623-1 (COS.sp.1545231)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=10445; FP-POS=1			790.5 Secs (790.5 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.sp.1545232, B.P. = 0.064
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1545231, B.P. = 0.005. Total S/N achieved in G160M exposures ~23.0/resel @1548.5 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=1002.7 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): 69.0 cts/s/segment
brightest pixel: 0.005 cts/s/pix at 1548.4 A
Calculation performed 2021-10-21T02:37:14, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	G160M/1623-2 (COS.sp.1545231)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=10445; FP-POS=2			790.5 Secs (790.5 Secs) *[==>]*	*[1]*

Comments: BOP check with 4x spectrum COS.sp.1545232, B.P. = 0.064
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1545231, B.P. = 0.005. Total S/N achieved in G160M exposures ~23.0/resel @1548.5 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=1002.7 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): 69.0 cts/s/segment
brightest pixel: 0.005 cts/s/pix at 1548.4 A
Calculation performed 2021-10-21T02:37:14, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
4	G130M/1291-3 (COS.sp.1667107)	(2) SZ82	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=4555; FP-POS=3			2468.8 Secs (2468.8 Secs) *[==>]*	*[2]*

Comments: BOP check with 4x spectrum COS.sp.1667108, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667107, B.P. = 0.090. Total S/N achieved in G130M exposures ~13.4/resel @1238.9430 A

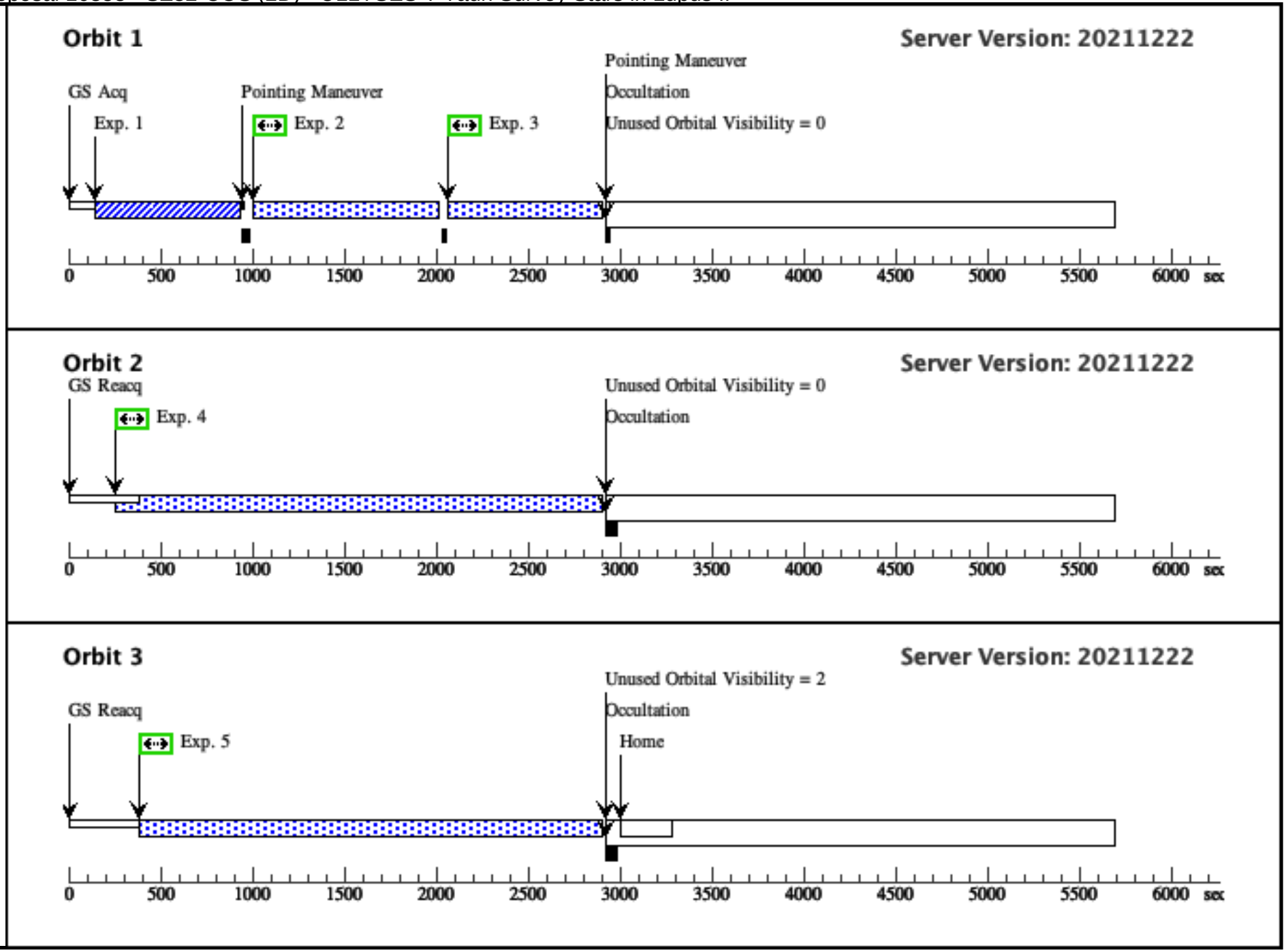
sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=4565.8 s, spectral region:
1239.0 +- 1.0 A achieves SNR=10.0 / 6-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 285.3 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:16, v0.23

	5	G130M/129 (2) SZ82 1-4 (COS.sp.1667107)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=4555; FP-POS=4	2468.8 Secs (2468.8 Secs) *[==>]*	***[3]***

Comments: BOP check with 4x spectrum COS.sp.1667108, B.P. = 0.090
Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.sp.1667107, B.P. = 0.090. Total S/N achieved in G130M exposures ~13.4/resel @1238.9430 A

sz82_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=4565.8 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): 285.3 cts/s/segment
brightest pixel: 0.002 cts/s/pix at 1304.9 A
Calculation performed 2021-10-21T02:37:16, v0.23

Orbit Structure



Visit

Proposal 16853, SZ82-STIS (2S), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 2S,2C,2D WITHIN 2D

Comments: vstatus; 2S; SZ82; S/STIS ready for internal review; S/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; SZ82 ; 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/revised-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_c29/16853/images/Sz82
vcheck; Selected ACQ strategy?; V-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 2S,2C,2D WITHIN 2D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated STIS orbits = 1

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SZ82	RA: 15 56 9.1909 (239.0382954d)	Proper Motion RA: -12.09149731 mas/yr	V=11.633	Reference Frame: ICRS
	Alt Name1: IM-LUP	Dec: -37 56 6.49 (-37.93514d)	Proper Motion Dec: -23.71813335 mas/yr	SpT=K5; A_V=0.90; B=12.99; V=11.63; J=8.783	
		Equinox: J2000	Parallax: 0.006311253988"		
			Epoch of Position: 2015.5		

Comments: SZ82 : IM Lup
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=sz82&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
Input file: lowmass_survey_Input-gaia.csv
sz82_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:37:16, v0.8
---
tstatus; SZ82; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SZ82 ...
Default SIMBAD name is THA 15-12, aka 2MASS J15560921-3756057
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 3.65e-10 at 4444 Angstroms and Flam(V) = 7.18e-10 at 5540 Angstroms from Vizier photometry viewer linked from SIMBAD
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/Sz82/
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.1667110)	(2) SZ82	STIS/CCD, ACQ, F25ND3	MIRROR				12.9 Secs (12.9 Secs) *[==>]*	***[1]***
	Comments: 4x BOP check: STIS.ta.1667111, B.P. = 1,248.150, with F25ND3 filter *Baseline SED (K5V 4250 4.5 spectrum renormalized to Johnson V = 11.63 vegamag) with S/N = 80: STIS.ta.1667110 requires 6.4698 seconds (x2 =12.9396 seconds, rounded to 12.9 seconds) , B.P. = 377.956*								
2	G230L/2376 (STIS.sp.1667115)	(2) SZ82	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=587			666 Secs (666 Secs) *[==>]*	***[1]***
	Comments: BOP check with 4x spectrum: STIS.sp.1667116, B.P. = 0.697 *Baseline ETC calc with spectrum: STIS.sp.1667115, B.P. = 0.093* *sz82_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59670* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150* *M*: 0.95 ; log(dm/dt): -8.04* *For exptime=109.5 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): 2479.6 cts/s/segment* *brightest pixel: 0.749 cts/s/pix at 2788.8 A* *Calculation performed 2021-10-21T02:37:16, v0.23*								
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.1667117)	(2) SZ82	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4			364 Secs (364 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
	Comments: Calculation with Castelli-Kurucz K5V 4250 4.5 stellar model, normalized to Johnson/V = 11.63, for G430L: STIS.sp.1667117, B.P. = 92.412 *BOP calculation with Castelli-Kurucz K5V 4250 4.5 stellar model, normalized to Johnson/V = 11.63 - 1.5 = 10.13: STIS.sp.1667118, B.P. = 382.639.* *sz82_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59670* *WARNING: operating mode = ACCUM* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150* *M*: 0.95 ; log(dm/dt): -8.04* *For exptime=37.2 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): 51189.8 cts/s/segment* *brightest pixel: 32.056 cts/s/pix at 4871.0 A* *Calculation performed 2021-10-21T02:37:16, v0.23*								

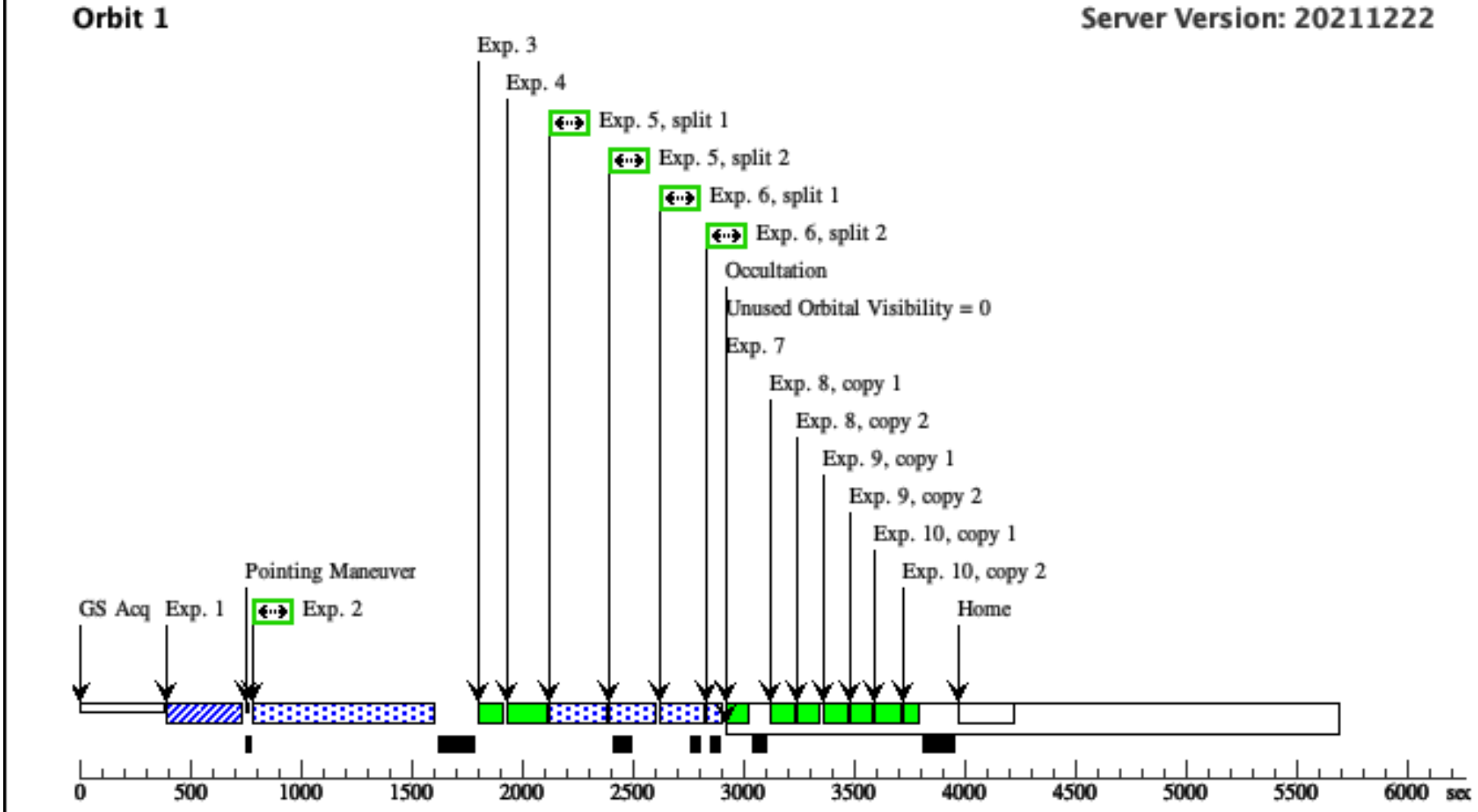
	6	G750L/7751 (2) SZ82 (STIS.sp.16 67119)	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=4	83 Secs (83 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Comments: Calculation with Castelli-Kurucz K5V 4250 4.5 stellar model, normalized to Johnson/V = 11.63, for G750L: STIS.sp.1667119, B.P. = 230.316
BOP calculation with Castelli-Kurucz K5V 4250 4.5 stellar model, normalized to Johnson/V = 11.63 - 1.5 = 10.13: STIS.sp.1667120, B.P. = 783.101.

sz82_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g750l,c7751,52x2,mjd#59670
WARNING: operating mode = ACCUM
Input file: lowmass_survey_Input-gaia.csv
Spectral type: K5 ; A_V: 0.9 ; Distance (pc): 150
M: 0.95 ; log(dm/dt): -8.04*
For exptime=2.8 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): 141994.5 cts/s/segment
brightest pixel: 281.897 cts/s/pix at 6563.9 A
Calculation performed 2021-10-21T02:37:16, v0.23

	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]***

Orbit Structure



Visit

Proposal 16853, SZ84-COS (3C), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 3C,3S WITHIN 1D

Comments: vstatus; 3C; SZ84; P/COS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; SZ84 ; 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/revised-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_c29/16853/images/Sz84
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 ...
COS visit has GROUP 3C,3S WITHIN 1D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated COS orbits = 3

Diagnostics

(SZ84-COS (3C)) Warning (Orbit Planner): REFERENCE-FRAME MUST BE ICRS OR GSC1 FOR SMALL APERTURE

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SZ84	RA: 15 58 2.5040 (239.5104333d) Dec: -37 36 3.09 (-37.60086d) Equinox: J2000	Proper Motion RA: -13.22402897 mas/yr Proper Motion Dec: -22.80413731 mas/yr Parallax: 0.006551169987" Epoch of Position: 2015.5	V=16.121 SpT=M5; A_V=0.00; B=17.56; V=16.12; J=10.93	Reference Frame: ICRS
Comments: SZ84 *Region: Lupus II* *Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=sz84&submit=submit+id* *Target coordinates are from Gaia DR2.* *Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150* *M*: 0.16 ; log(dm/dt): -9.21* *Input file: lowmass_survey_Input-gaia.csv* *sz84_lya2_etc_scaled_pAV0.50.txt* *Calculation performed 2021-10-21T02:39:10, v0.8* --- *tstatus; SZ84; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY* *tcheck; APT/SIMBAD target names: ; SZ84 ...* *Default SIMBAD name is SZ 84, aka 2MASS J15580252-3736026* *tcheck; Target info verification status?; OK ...* *spectral type and magnitudes seem to be consistent* *Flam(B) = 1.98e-11 at 4444 Angstroms and Flam(V) = 1.09e-11 at 5540 Angstroms from Vizier photometry viewer* *tcheck; Coordinates & P.M. verified, epoch checked?; OK ...* *SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here* *tcheck; Adopted SED compared to Observations?; Yes ...* *located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/Sz84/* *Category=STAR* *Description=[T TAURI STAR, PRE-MAIN SEQUENCE STAR]* *Extended=NO*					
(4)	UCAC4-262-089914-OFFSET Alt Name1: GAIA-DR2-6010216430448637824 Alt Name2: 2MASS-J15580075-3737365	RA: 15 58 0.7371 (239.5030713d) Dec: -37 37 36.67 (-37.62685d) Equinox: J2000	Proper Motion RA: -8.604338147561426E-4 sec of time/yr Proper Motion Dec: -0.00714599993898446 arcsec/yr Epoch of Position: 2015.5	V=13.172+/-0.02 SpT=K0; A_V=1.78; B=14.91; V=13.172; R=12.733; G=12.4371; J=9.912; H=9.131; K=8.862	Reference Frame: SIMBAD
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=STAR* *Description=[K III-I]* *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.1679225)	(4) UCAC4-262-089914-OFFSET	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				81 Secs (81 Secs) *[==>]*	***[1]***
	Comments: BOP check with 4x spectrum COS.ta.1679234, B.P. = 39.943 *Baseline SED with S/N = 40 COS.ta.1679225 requires 40.5446 seconds (x2 = 81.0892 seconds, rounded to 81.1 seconds), B.P. = 5.496*								
2	G130M/1291 A (COS.ta.1679235)	(3) SZ84	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1090; FP-POS=3			943 Secs (943 Secs) *[==>]*	***[1]***
	Comments: BOP check with 4x spectrum COS.ta.1679236, B.P. = 0.183 *M dwarf flare spectrum COS.ta.1679237, B.P. = 0.846* *Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.ta.1679235, B.P. = 0.090.* *Total S/N achieved in G130M exposures ~17.5/resel @1238.8743 A* *sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150* *M*: 0.16 ; log(dm/dt): -9.21* *For exptime=613.6 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): 380.5 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1304.8 A* *Calculation performed 2021-10-21T02:39:09, v0.23*								
3	G130M/1291 A (COS.ta.1679235)	(3) SZ84	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1090; FP-POS=4			943 Secs (943 Secs) *[==>]*	***[1]***
	Comments: BOP check with 4x spectrum COS.ta.1679236, B.P. = 0.183 *M dwarf flare spectrum COS.ta.1679237, B.P. = 0.846* *Baseline SED (scaled with additional A_v = 0.50) calculation for G130M/c1291: COS.ta.1679235, B.P. = 0.090.* *Total S/N achieved in G130M exposures ~17.5/resel @1238.8743 A* *sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g130m,c1291,psa,mjd#59670; fp-pos=None, segment=None)* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150* *M*: 0.16 ; log(dm/dt): -9.21* *For exptime=613.6 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): 380.5 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1304.8 A* *Calculation performed 2021-10-21T02:39:09, v0.23*								

4	G160M/158 (3) SZ84 9-3 (COS.sp.166 7166)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=3125; FP-POS=3	1167 Secs (1167 Secs) *[==>]*		***[2]***

Comments: BOP check with 4x spectrum COS.sp.1667167, B.P. = 0.137
M dwarf flare spectrum COS.sp.1667168, B.P. = 1.528
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1667166, B.P. = 0.010.
Total S/N achieved in G160M exposures ~33.2/resel @1548.4366 A

sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=829.6 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): 95.4 cts/s/segment
brightest pixel: 0.010 cts/s/pix at 1446.2 A
Calculation performed 2021-10-21T02:39:05, v0.23

5	G160M/158 (3) SZ84 9-4 (COS.sp.166 7166)	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=3125; FP-POS=4	1167 Secs (1167 Secs) *[==>]*		***[2]***

Comments: BOP check with 4x spectrum COS.sp.1667167, B.P. = 0.137
M dwarf flare spectrum COS.sp.1667168, B.P. = 1.528
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1589: COS.sp.1667166, B.P. = 0.010.
Total S/N achieved in G160M exposures ~33.2/resel @1548.4366 A

sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1589,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=829.6 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): 95.4 cts/s/segment
brightest pixel: 0.010 cts/s/pix at 1446.2 A
Calculation performed 2021-10-21T02:39:05, v0.23

6	G160M/162 (3) SZ84 3-1 (COS.sp.166 7170)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=3691; FP-POS=1	1167 Secs (1167 Secs) *[==>]*		***[3]***

Comments: BOP check with 4x spectrum COS.sp.1667171, B.P. = 0.130
M dwarf flare spectrum COS.sp.1667172, B.P. = 1.539
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1667170, B.P. = 0.009.
Total S/N achieved in G160M exposures ~33.2/resel @1548.4366 A

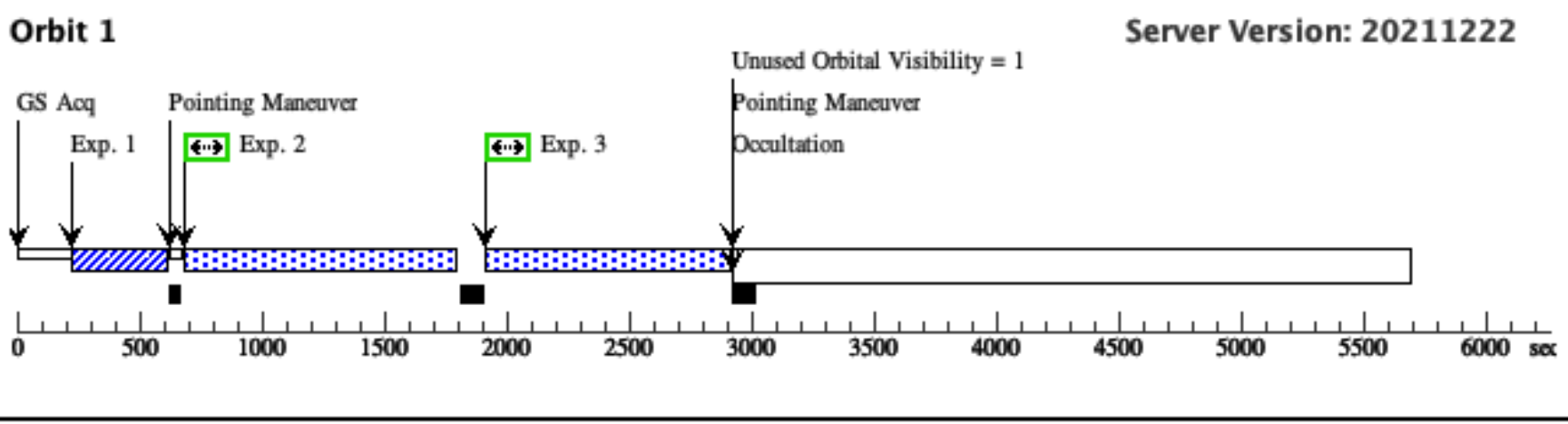
sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=849.0 s, spectral region:
1549.0 +- 1.0 A achieves SNR=20.0 / 6-pix-resel 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): 89.9 cts/s/segment
brightest pixel: 0.009 cts/s/pix at 1446.2 A
Calculation performed 2021-10-21T02:39:07, v0.23

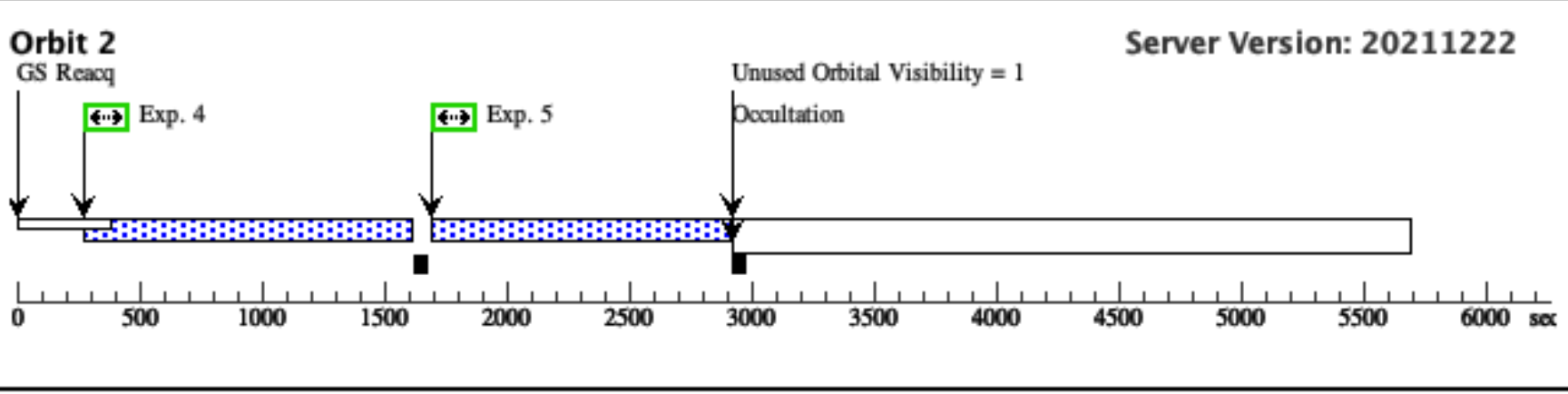
	7	G160M/162 (3) SZ84 3-2 (COS.sp.1667170)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=3691; FP-POS=2	1167 Secs (1167 Secs)	
						[==>]	***[3]***

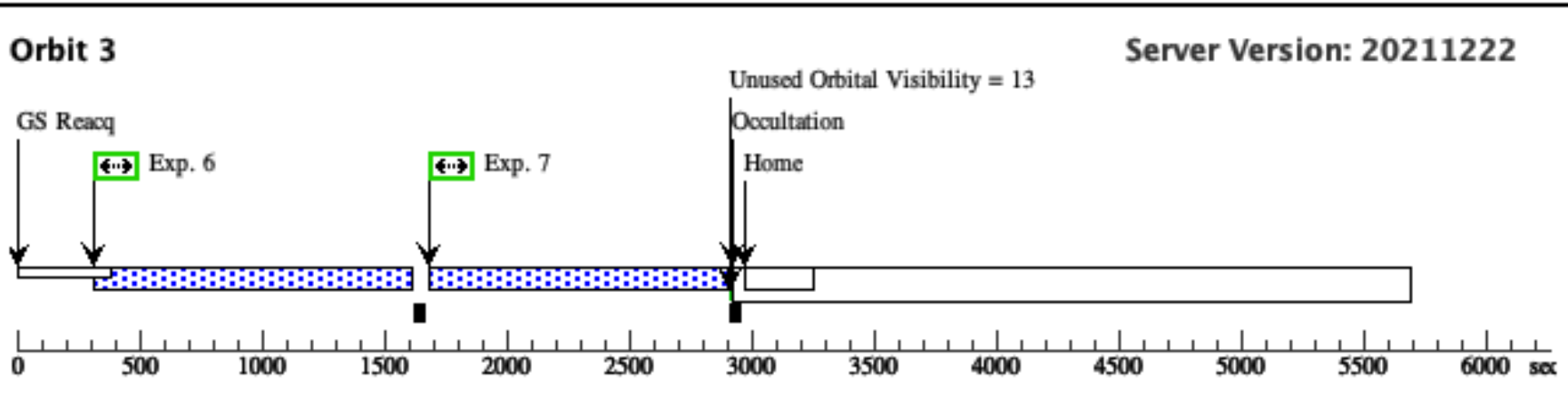
Comments: BOP check with 4x spectrum COS.sp.1667171, B.P. = 0.130
M dwarf flare spectrum COS.sp.1667172, B.P. = 1.539
Baseline SED (scaled with additional A_v = 0.50) calculation for G160M/c1623: COS.sp.1667170, B.P. = 0.009.
Total S/N achieved in G160M exposures ~33.2/resel @1548.4366 A

sz84_lya2_etc_scaled_pAV0.50.txt; cos,fuv,g160m,c1623,psa,mjd#59670; fp-pos=None, segment=None)
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=849.0 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): 89.9 cts/s/segment
brightest pixel: 0.009 cts/s/pix at 1446.2 A
Calculation performed 2021-10-21T02:39:07, v0.23

Orbit Structure







Visit

Proposal 16853, SZ84-STIS (3S), implementation Tue Mar 22 22:00:30 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; BETWEEN 26-MAR-2022:00:00:00 AND 29-JUL-2022:00:00:00; GROUP 3S,3C WITHIN 1D

Comments: vstatus; 3S;SZ84; P/STIS ready for internal review; P/AH 27/10/21 ; intrev: not started ; ?/rr DD/MM/YY
vcheck; Enter targ name & Inst. & Resp. Sci.; SZ84 ; 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/revised-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_c29/16853/images/Sz84
vcheck; Selected ACQ strategy?; V-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 3S,3C WITHIN 1D
vcheck; phase constraint for ground based observations added?; N/A
vcheck; BETWEENS for coordinated observations added?; Yes ...
26 MAR 2022 00:00 to 29 JUL 2023 00:00
vcheck; Is visit ready for int. review?; Yes
Allocated STIS orbits = 2 (constrained in input CSV)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SZ84	RA: 15 58 2.5040 (239.5104333d) Dec: -37 36 3.09 (-37.60086d) Equinox: J2000	Proper Motion RA: -13.22402897 mas/yr Proper Motion Dec: -22.80413731 mas/yr Parallax: 0.006551169987" Epoch of Position: 2015.5	V=16.121 SpT=M5; A_V=0.00; B=17.56; V=16.12; J=10.93	Reference Frame: ICRS

Comments: SZ84
Region: Lupus II
Simbad: http://simbad.u-strasbg.fr/simbad/sim-id?Ident=sz84&submit=submit+id
Target coordinates are from Gaia DR2.
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
Input file: lowmass_survey_Input-gaia.csv
sz84_lya2_etc_scaled_pAV0.50.txt
Calculation performed 2021-10-21T02:39:10, v0.8
---
tstatus; SZ84; P/COS work started; S/STIS work started; P/AH 27/10/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SZ84 ...
Default SIMBAD name is SZ 84, aka 2MASS J15580252-3736026
tcheck; Target info verification status?; OK ...
spectral type and magnitudes seem to be consistent
Flam(B) = 1.98e-11 at 4444 Angstroms and Flam(V) = 1.09e-11 at 5540 Angstroms from Vizier photometry viewer
tcheck; Coordinates & P.M. verified, epoch checked?; OK ...
SIMBAD coordinates check out with what's here, SIMBAD PM values check out with what's here
tcheck; Adopted SED compared to Observations?; Yes ...
located at: box/ullyses_tech/ullyses_proposals/survey_c29/16583/seds/Sz84/
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.1667305)	(3) SZ84	STIS/CCD, ACQ, F28X50LP	MIRROR				2 Secs (2 Secs) *[==>]*	***[1]***

Comments: 4x BOP check: STIS.ta.1667306, B.P. = 9,014.183
Baseline SED (Castelli-Kurucz M6V 3500 5.0 spectrum renormalized to Johnson V = 16.12 vegamag) with S/N = 80: STIS.ta.1667305 requires 1.0219 seconds (x2 = 2.0438 seconds, rounded to 2.0 seconds), B.P. = 2,264.317

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G230L/2376 (STIS.sp.1667315)	(3) SZ84	STIS/NUV-MAMA, TIME-TAG, 52X2	G230L 2376 A	WAVECAL=NO; BUFFER-TIME=444			386 Secs (386 Secs) *[==>]*	***[1]***

Comments: BOP check with 4x spectrum: STIS.sp.1667316, B.P. = 11.593
M dwarf flare spectrum STIS.sp.1667317, B.P. = 7.712
Baseline ETC calc with spectrum: STIS.sp.1667315, B.P. = 1.196

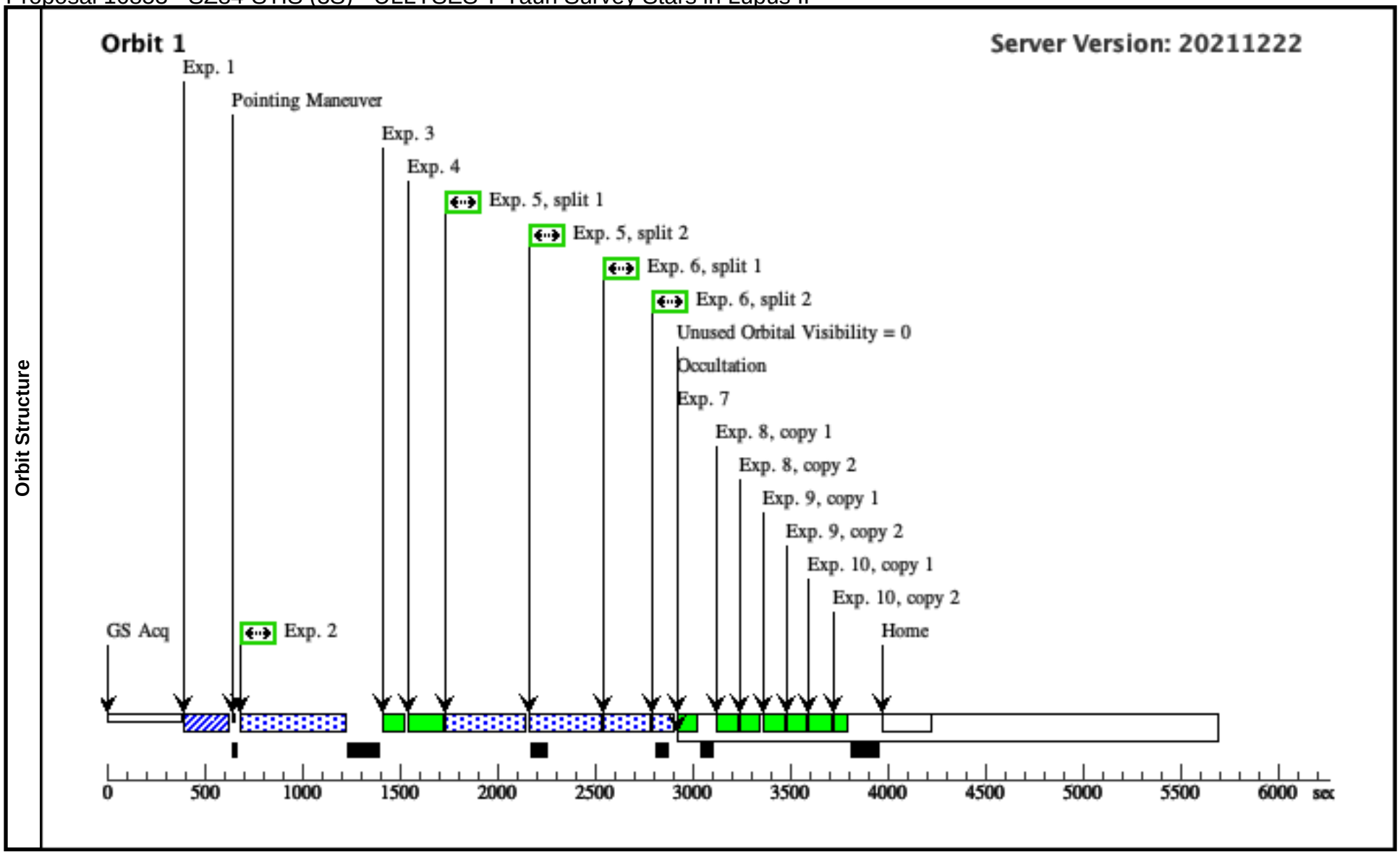
sz84_lya2_etc_scaled_pAV0.50.txt; stis,nuvmama,g230l,c2376,52x2,mjd#59670
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=68.2 s, spectral region:
2800.0 +- 15.0 A achieves SNR=20.0 / 2-pix-resel
A factor of 2.0 has been applied to the exptime in each exposure.
global countrate (brightest segment): 2439.4 cts/s/segment
brightest pixel: 1.196 cts/s/pix at 2796.8 A
Calculation performed 2021-10-21T02:39:09, v0.23

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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.1667318)	(3) SZ84	STIS/CCD, ACCUM, 52X2	G430L 4300 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1			672 Secs (672 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Comments: Calculation with Castelli-Kurucz M6V 3500 5.0 stellar model, normalized to Johnson/V = 16.12, for G430L: STIS.sp.1667318, B.P. = 1.762
BOP calculation with Castelli-Kurucz M6V 3500 5.0 stellar model, normalized to Johnson/V = 16.12 - 1.5 = 14.62: STIS.sp.1667319, B.P. = 6.928.

sz84_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g430l,c4300,52x2,mjd#59670
WARNING: operating mode = ACCUM
Input file: lowmass_survey_Input-gaia.csv
Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150
M: 0.16 ; log(dm/dt): -9.21*
For exptime=29.4 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): 51280.9 cts/s/segment
brightest pixel: 34.619 cts/s/pix at 4560.5 A
Calculation performed 2021-10-21T02:39:10, v0.23

	6	G750L/7751 (3) SZ84 (STIS.sp.16 67320)	STIS/CCD, ACCUM, 52X2	G750L 7751 A	WAVECAL=NO; CR-SPLIT=2; GAIN=1	164 Secs (164 Secs) *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
		Comments: Calculation with Castelli-Kurucz M6V 3500 5.0 stellar model, normalized to Johnson/V = 16.12, for G750L: STIS.sp.1667320, B.P. = 6.855 *BOP calculation with Castelli-Kurucz M6V 3500 5.0 stellar model, normalized to Johnson/V = 16.12 - 1.5 = 14.62: STIS.sp.1667321, B.P. = 27.200.* *sz84_lya2_etc_scaled_pAV0.50.txt; stis,ccd,g750l,c7751,52x2,mjd#59670* *WARNING: operating mode = ACCUM* *Input file: lowmass_survey_Input-gaia.csv* *Spectral type: M5 ; A_V: 0.0 ; Distance (pc): 150* *M*: 0.16 ; log(dm/dt): -9.21* *For exptime=2.9 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): 119645.6 cts/s/segment* *brightest pixel: 251.137 cts/s/pix at 6563.9 A* *Calculation performed 2021-10-21T02:39:10, v0.23*						
	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]***


Orbit Structure
Orbit 1
Server Version: 20211222
Exp. 1
Pointing Maneuver
Exp. 3
Exp. 4
Exp. 5, split 1
Exp. 5, split 2
Exp. 6, split 1
Exp. 6, split 2
Unused Orbital Visibility = 0
Occultation
Exp. 7
Exp. 8, copy 1
Exp. 8, copy 2
Exp. 9, copy 1
Exp. 9, copy 2
Exp. 10, copy 1
Exp. 10, copy 2
GS Acq
Exp. 2
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec