



## 16369 - ULLYSES LMC O3 Stars- COS

Cycle: 28, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

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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) N11-ELS-060	COS/FUV	2	26-Oct-2020 10:00:22.0	yes
2C	(2) ST92-5-27	COS/FUV	2	26-Oct-2020 10:00:23.0	yes
3C	(3) VFTS-267	COS/FUV	1	26-Oct-2020 10:00:24.0	yes
4C	(4) VFTS-404	COS/FUV	2	26-Oct-2020 10:00:25.0	yes
5C	(5) W61-28-23	COS/FUV	3	26-Oct-2020 10:00:27.0	yes

10 Total Orbits Used

**ABSTRACT**

The Space Telescope Science Institute (STScI) Director has decided to devote up to 1000 orbits of Director's Discretionary time in observing Cycles 27-29 to a new Hubble Ultraviolet Legacy program focused on star formation and associated stellar physics. This new program, ULLYSES (UV Legacy Library of Young Stars as Essential Standards), will provide a UV spectroscopic reference sample of young (< 10 Myr) high- and low-mass stars. It will target over ~150 OB stars in the Magellanic Clouds and lower metallicity galaxies in the Local Group, and ~40 T Tauri stars and brown dwarfs in the Milky Way. In addition, ULLYSES will monitor 4 typical T Tauri stars over different rotational phases through at least three rotation periods, and over timescales of months to years. The resulting library will provide template spectra of massive stars at metallicities substantially below the well studied, while the low mass sample will cover a wide range of ages, accretion rates, and masses, including objects down to well below 0.5 M<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

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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 massive ULLYSES stars being observed in the Magellanic clouds.

Depending on target brightness, the main FUV spectral range will generally use either the STIS E140M setting or the combination of the COS c1291 + c1611 settings. Sufficiently bright stars without good FUSE data in the archive will also be observed with the COS c1096 setting to provide coverage at shorter wavelengths. Where time permits, stars of type O9 or later will also be observed with STIS E230M/1978, while for supergiants of spectral type B5 or later E230M/2707 may also be included. Where possible, targets of a given spectral type were selected to span both a range in extinction and in rotation rates to support a variety of stellar and ISM studies.

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

COS/G130M/c1096: 20 / nine-pixel resel at 1080 Å

COS/G130M/c1291: 30 / six-pixel resel at 1150 Å

COS/G160M/c1611: 30 / six-pixel resel at 1590 Å

COS/G185M/c1953: 30 / three-pixel resel at 1860 Å

COS/G185M/c1986: 30 / three-pixel resel at 1980 Å

STIS/E140M/c1425: 20 / two-pixel resel at 1200 Å

STIS/E230M/c1978: 20 / two-pixel resel at 1800 Å

STIS/E230M/c2707: 20 / two-pixel resel at 2800 Å

The actual implemented exposure times may be adjusted to efficiently use HST orbits, but should always provide at least 80% of the desired time as defined by the above requirements.

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 16369, N11-ELS-060-COS (1C)</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: COS/FUV</p> <p>Special Requirements: SCHED 100%</p> <p><i>Comments: vstatus; 1C; N11-ELS-060; P/COS approved for submission; P/AF 18/09/20 ; intrev: complete ; P/RS 22/10/20</i></p> <p><i>vcheck; Enter targ name &amp; Inst. &amp; Resp. Sci.; N11-ELS-060 ; COS ; AF</i></p> <p><i>vcheck; ETC numbers entered in APT?; Completed</i></p> <p><i>vcheck; Any screening violations?; None</i></p> <p><i>vcheck; S/N ETC calcs done &amp; documented?; Not applicable</i></p> <p><i>vcheck; Field images checked &amp; saved?; Yes, see N11-ELS-060_ACS_F550M.png</i></p> <p><i>vcheck; Selected ACQ strategy?; Dispersed G130M/1291</i></p> <p><i>vcheck; Possible ACQ or Sci spoilers?; None - see discussion</i></p> <p><i>vcheck; Field BOT clear?; Yes - required nonstandard procedure, see discussion</i></p> <p><i>vcheck; Visual BOT check for stars not in catalog?; Completed - none</i></p> <p><i>vcheck; Orbit packing finalized?; 2 orbits: could not fit both configurations into a single orbit without compromising SNR requirements, so drastically increased exposure time for G130M/1291</i></p> <p><i>vcheck; Buffer times optimized?; Done</i></p> <p><i>vcheck; Verify visit grouping correct; Not applicable</i></p> <p><i>vcheck; Is visit ready for int. review?; Yes</i></p> <p><i>Allocated COS orbits = 2</i></p>																																	
	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>N11-ELS-060</td> <td>RA: 04 56 42.1464 (74.1756100d)</td> <td></td> <td>V=14.24</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td></td> <td>Alt Name1: N11-060</td> <td>Dec: -66 24 54.61 (-66.41517d)</td> <td></td> <td>SpT=O3 V((f*)); E(B-V)=0.22;</td> <td></td> </tr> <tr> <td></td> <td>Alt Name2: ELS2006-N11-060</td> <td>Equinox: J2000</td> <td></td> <td>U=13.14,</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>B=14.18; V=14.24</td> <td></td> </tr> </tbody> </table> <p><i>Comments: N11-ELS-060 : N11-060, N11_60, [ELS2006] N11 060</i></p> <p><i>Previous name : N11-060</i></p> <p><i>Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv</i></p> <p><i>SIMBAD link ([ELS2006] N11 060): <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=[ELS2006]+N11+060&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=[ELS2006]+N11+060&amp;submit=submit+id</a></i></p> <p><i>SpT = O3 V((f*))</i></p> <p><i>COS/G130M/c1096 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>COS/G130M/c1291 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>COS/G160M/c1611 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>COS/G185M/c1921 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>COS/G185M/c1953 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>COS/G185M/c1986 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>STIS/E140M/c1425 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>STIS/E230M/c1978 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>STIS/E230M/c2707 : rn(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.220), johnson B mag=14.180 vegamag)</i></p> <p><i>Coordinate pedigree: 2MASS</i></p> <p><i>v sin i = 106 68</i></p> <p><i>Calculation performed 2020-02-24T17:56:59, v0.4</i></p> <hr/> <p><i>tstatus; N11-ELS-060; P/COS approved for submission; S/ins not started; P/AF 18/09/20; S/xx DD/MM/YY</i></p> <p><i>tcheck; APT/SIMBAD target names: ; N11-ELS-060 '[ELS2006] N11 060' ...</i></p> <p><i>Default SIMBAD name is PGMW 3058, also 2MASS J04564214-6624546</i></p> <p><i>tcheck; Target info verification status?; OK</i></p> <p><i>tcheck; Coordinates &amp; P.M. updated?; 2MASS Coordinates, Epoch J2000</i></p> <p><i>tcheck; Adopted SED compared to Observations?; Yes ...</i></p> <p><i>Analyses of the spectrum of ELS2006 N11 060 published by Mokiem et al. (2007A&amp;A...465.1003M; FASTWIND) and Rivero Gonzalez et al. (2012A&amp;A...537A..79R; FASTWIND) served as the starting point for selecting a model spectrum. A model with similar parameters to those determined by Mokiem et al. was selected from the PoWR grid for OB stars with LMC metallicity. The model flux was scaled by the distance to the LMC and attenuated by an LMC average extinction law with the photometrically determined reddening of E(B-V)=0.22. An additional scaling factor of 0.62 was applied to achieve a good match between the attenuated model flux and the available UBv photometry. The adopted SED corresponds to the file PoWR_45000_4.00_m7.00_Z0.50_lmcavg_ebm_v_0.22_sed.fits.</i></p> <p><i>Adopted illustrated: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed_vs_UBV.png</i></p> <p><i>Adopted SED: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed.fits</i></p> <p><i>There is residual uncertainty associated with the far-UV flux because the normalization is set solely on the basis of UBv photometry.</i></p> <p><i>Category=EXT-STAR</i></p> <p><i>Description=[MAIN SEQUENCE O, OF]</i></p> <p><i>Extended=NO</i></p>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	N11-ELS-060	RA: 04 56 42.1464 (74.1756100d)		V=14.24	Reference Frame: ICRS		Alt Name1: N11-060	Dec: -66 24 54.61 (-66.41517d)		SpT=O3 V((f*)); E(B-V)=0.22;			Alt Name2: ELS2006-N11-060	Equinox: J2000		U=13.14,						B=14.18; V=14.24
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<b>Fixed Targets</b>																																		

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#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (COS.sa.146 3161)	(1) N11-ELS-060	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	CENTER=FLUX-W T; NUM-POS=3; STEP-SIZE=1.3; SEGMENT=BOTH			0.5 Secs (0.5 Secs)	
								[==>]	[1]
<p>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmavg_ebmv_0.22_sed                      /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed.fits                      ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.4084 s per dwell point.                      No ETC Warnings                      Exposure time per dwell point rounded up to 0.5 s</p> <p>TA in light dispersed by G130M/1291 was selected for efficiency. There do not appear to be any spoiler stars within 8 arcsec of the center of the PSA: see                      /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_ACS_F550M.png</p> <p>The only star of possible concern is labeled #15 in this image. It is located 7.2 arcsec from the center of the PSA, and has the following identifications and properties:                      Star# Gaia DR2 PGMW SpType V (B-V) Reference                      15 4662155942939159808 3073 O6.5 V 14.71 -0.10 1992AJ....103.1205P</p> <p>A PeakXD with StepSize of 1.3 arcsec and NUM_POS=3 could move the target *at most* 3.9 arcsec from its initial position. Consequently, if N11 ELS 060 is initially positioned within the PSA, this potential "spoiler" will not be encountered. Similarly, the PeakD maneuvers with (StepSize, NUM_POS) = (0.9 arcsec, 5) could move the target *at most* 4.5 arcsec (but more likely only 1.8 arcsec in the direction of Star# 15). Consequently, Star #15 will not be encountered in any nominal TA. Star #15 poses no threat to the health &amp; safety of the COS detectors since its V magnitude approximately equal to the "worst-case" limit for an unreddened O5 V star.</p>									
2	ACQ/PEAK D (COS.sa.146 3161)	(1) N11-ELS-060	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9; SEGMENT=BOTH			0.5 Secs (0.5 Secs)	
								[==>]	[1]
<p>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmavg_ebmv_0.22_sed                      /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed.fits                      ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.4084 s per dwell point.                      No ETC Warnings                      Exposure time per dwell point rounded up to 0.5 s</p> <p>TA in light dispersed by G130M/1291 was selected for efficiency. There do not appear to be any spoiler stars within 8 arcsec of the center of the PSA: see                      /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_ACS_F550M.png</p> <p>The only star of possible concern is labeled #15 in this image. It is located 7.2 arcsec from the center of the PSA, and has the following identifications and properties:                      Star# Gaia DR2 PGMW SpType V (B-V) Reference                      15 4662155942939159808 3073 O6.5 V 14.71 -0.10 1992AJ....103.1205P</p> <p>A PeakXD with StepSize of 1.3 arcsec and NUM_POS=3 could move the target *at most* 3.9 arcsec from its initial position. Consequently, if N11 ELS 060 is initially positioned within the PSA, this potential "spoiler" will not be encountered. Similarly, the PeakD maneuvers with (StepSize, NUM_POS) = (0.9 arcsec, 5) could move the target *at most* 4.5 arcsec (but more likely only 1.8 arcsec in the direction of Star# 15). Consequently, Star #15 will not be encountered in any nominal TA. Star #15 poses no threat to the health &amp; safety of the COS detectors since its V magnitude approximately equal to the "worst-case" limit for an unreddened O5 V star.</p>									

Exposures

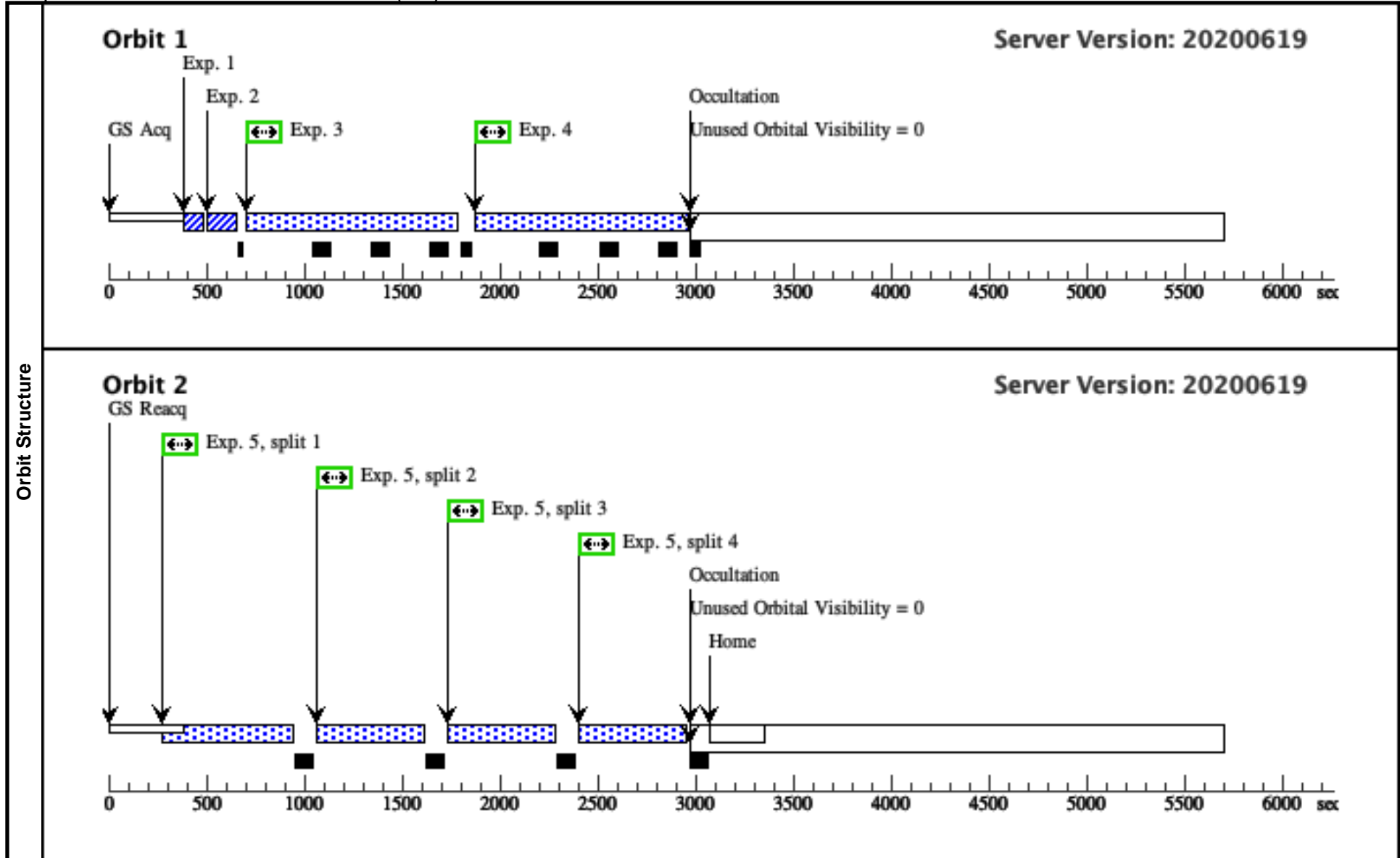
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<p>3 G130M/129 (1) N11-ELS-060 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=30          1-3 1.0;          (COS.sp.146 1291 A          6259) FP-POS=3</p>	<p>1033. Secs (1033 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmavg_ebmv_0.22_sed          /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 1198.1645 s [COS.sp.1463162]          No ETC Warnings          Baseline exposure time rounded to 1200 s (600 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (5218.383, 2340.129, 2878.254) cts/s          Brightest Pixel: 0.126 cts/s at 1216.22 A          BUFFER-TIME = 2/3 * 452 s = 301 s          During orbit packing, the exposure time was increased to 172% of the baseline: 2066 s total, 1033 s per FP-POS. The ETC estimates SNR= 39.4/resel at 1150 A. [COS.sp.1466259]</i></p> <p><i>Bright-Object Checking          The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.</i></p> <p><i>Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:</i></p> <ol style="list-style-type: none"> <li><i>1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of ELS2006 N11 060.</i></li> <li><i>2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes:  <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>.              The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes.              All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M).              For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.</i></li> <li><i>3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in  <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a></i></li> <li><i>4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></li> </ol> <p><i>Results:          PSA: 18 sources identified, all safe          BOA: 127 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/my_bot/Gaia_DR2_N11-ELS-060_bot.csv</i>  <i>The sources are plotted on the ACS F550M image j8dj02011_drz.fits, which exhibits unfortunate placement of the source in the gap between the detectors.          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_ACS_F550M.png</i>  <i>There are no unidentified, bright sources in this image.</i></p>		

Proposal 16369 - N11-ELS-060-COS (1C) - ULLYSES LMC O3 Stars- COS

<p>4 G130M/129 (1) N11-ELS-060 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=30          1-4 1291 A 1.;          (COS.sp.146 FP-POS=4          6259)</p>	<p>1033. Secs (1033 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmavg_ebmv_0.22_sed          /box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 1198.1645 s [COS.sp.1463162]          No ETC Warnings          Baseline exposure time rounded to 1200 s (600 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (5218.383, 2340.129, 2878.254) cts/s          Brightest Pixel: 0.126 cts/s at 1216.22 A          BUFFER-TIME = 2/3 * 452 s = 301 s          During orbit packing, the exposure time was increased to 172% of the baseline: 2066 s total, 1033 s per FP-POS. The ETC estimates SNR= 39.4/resel at 1150 A. [COS.sp.1466259]</i></p> <p><i>Bright-Object Checking          The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.</i></p> <p><i>Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:</i></p> <ol style="list-style-type: none"> <li><i>1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of ELS2006 N11 060.</i></li> <li><i>2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes:  <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>.              The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes.              All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M).              For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.</i></li> <li><i>3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in  <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a></i></li> <li><i>4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></li> </ol> <p><i>Results:          PSA: 18 sources identified, all safe          BOA: 127 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/my_bot/Gaia_DR2_N11-ELS-060_bot.csv          The sources are plotted on the ACS F550M image j8dj02011_drz.fits, which exhibits unfortunate placement of the source in the gap between the detectors.          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/N11-ELS-060/N11-ELS-060_ACS_F550M.png          There are no unidentified, bright sources in this image.</i></p>		





**Proposal 16369, ST92-5-27-COS (2C)**  
**Diagnostic Status: No Diagnostics**  
 Scientific Instruments: COS/FUV  
 Special Requirements: SCHED 100%  
*Comments: vstatus; 2C; ST92-5-27; P/COS approved for submission; P/AF 18/09/20 ; intrev: complete ; P/RS 22/10/20 vcheck; Enter targ name & Inst. & Resp. Sci.; ST92-5-27 ; COS ; AF vcheck; ETC numbers entered in APT?; Completed vcheck; Any screening violations?; None vcheck; S/N ETC calcs done & documented?; Not applicable vcheck; Field images checked & saved?; Yes, see ST92-5-27\_WFPC2\_F656N.png vcheck; Selected ACQ strategy?; Dispersed G130M/1291 vcheck; Possible ACQ or Sci spoilers?; None vcheck; Field BOT clear?; Yes - required nonstandard procedure, see discussion vcheck; Visual BOT check for stars not in catalog?; Completed - none vcheck; Orbit packing finalized?; 2 orbits - significant increase in exposure time for G130M/1291 configuration vcheck; Buffer times optimized?; Done vcheck; Verify visit grouping correct; Not applicable vcheck; Is visit ready for int. review?; Yes Allocated COS orbits = 2*

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	ST92-5-27	RA: 05 39 13.5586 (84.8064942d)		V=14.58	Reference Frame: ICRS
	Alt Name1: W61-3-24	Dec: -69 30 5.01 (-69.50139d)		SpT=O3 V((f)); E(B-V)=0.18; U=13.5; B=14.5; V=14.6; F1160=1.40e-13; F1360=1.10e-13; F1700=9.00e-14	
	Alt Name2: M2002-LMC-172859	Equinox: J2000			
<p><i>Comments: ST92-5-27 : LH101W24, ST 5-27, ST5_27, [ST92] 5-27                      Previous name : ST 5-27                      Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv                      SIMBAD link ([ST92] 5-27): <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=[ST92]+5-27&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=[ST92]+5-27&amp;submit=submit+id</a>                      SpT = O3 V((f))                      COS/G130M/c1096 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1160 +- 30.0A flux=1.4e-13 Flam)                      COS/G130M/c1291 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1360 +- 30.0A flux=1.1e-13 Flam)                      COS/G160M/c1611 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      COS/G185M/c1921 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      COS/G185M/c1953 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      COS/G185M/c1986 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      STIS/E140M/c1425 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1360 +- 30.0A flux=1.1e-13 Flam)                      STIS/E230M/c1978 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      STIS/E230M/c2707 : rn-max(WM-Basic(O3 V, Z=0.008, Teff=48978, log_lum=5.73, log_g=4.00) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=9e-14 Flam)                      Coordinate pedigree: Gaia                      v sin i = 120                      Calculation performed 2020-02-24T17:57:13, v0.4</i></p> <hr/> <p><i>tstatus: ST92-5-27; P/COS approved for submission; S/ins not started; P/AF 18/09/20; S/xx DD/MM/YY                      tcheck; APT/SIMBAD target names: ; ST92-5-27 '[ST92] 5-27...                      Default name in SIMBAD is W61 3-24, also [M2002] LMC 172859 = 2MASS J05391354-6930050                      tcheck; Target info verification status?; OK ....                      SIMBAD lists the spectral type as O3.5V(f+) from 2005ApJ...627..477M, while ULLYSES uses O3 V((f) from 2000AJ....119.2214M.                      tcheck; Coordinates &amp; P.M. updated?; Gaia DR2 coordinates, Epoch 2015.5                      tcheck; Adopted SED compared to Observations?; Yes ...                      The analysis of the spectrum of ST92 5-27 by Massey et al. (2004ApJ...608.1001M; FASTWIND) served as the the starting point for selecting a model spectrum from the PoWR grid for OB stars with LMC metallicity. The model flux was scaled by the distance to the LMC and attenuated by an LMC average extinction law. The reddening was varied by small amounts around the photometrically determined value of E(B-V)=0.23 to achieve a good "by-eye" fit between the STIS/G140L spectra centered at 1425 Angstroms and the STIS/G750M spectra at Halpha, as well as the UVB photometry. The attenuated model flux was additionally scaled by a factor of 0.66 to achieve the best match with the observational material. The adopted SED corresponds to the file PoWR_47000_4.20_m7.00_z0.50_lmcavg_ebm_v0.21_sed.fits, which has E(B-V) = 0.21 (which is well within the uncertainty in the photometrically determined value). The flux observed in the STIS/G140L spectra is systematically smaller than the adopted flux by about 10%.                      Adopted illustrated: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed_vs_STIS.png                      Adopted SED: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits                      Category=EXT-STAR                      Description=[MAIN SEQUENCE O, OF]                      Extended=NO</i></p>					

Proposal 16369 - ST92-5-27-COS (2C) - ULLYSES LMC O3 Stars- COS

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (COS.sa.146 3164)	(2) ST92-5-27	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	CENTER=FLUX-W T; NUM-POS=3; STEP-SIZE=1.3; SEGMENT=BOTH			0.5 Secs (0.5 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_47000_4.20_m7.00_Z0.50_lmavg_ebmv_0.21_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.4988 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.5 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 8 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_WFPC2_F656N.png</i></p>									
2	ACQ/PEAK D (COS.sa.146 3164)	(2) ST92-5-27	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9; SEGMENT=BOTH			0.5 Secs (0.5 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_47000_4.20_m7.00_Z0.50_lmavg_ebmv_0.21_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.4988 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.5 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 8 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_WFPC2_F656N.png</i></p>									

Exposures

Proposal 16369 - ST92-5-27-COS (2C) - ULLYSES LMC O3 Stars- COS

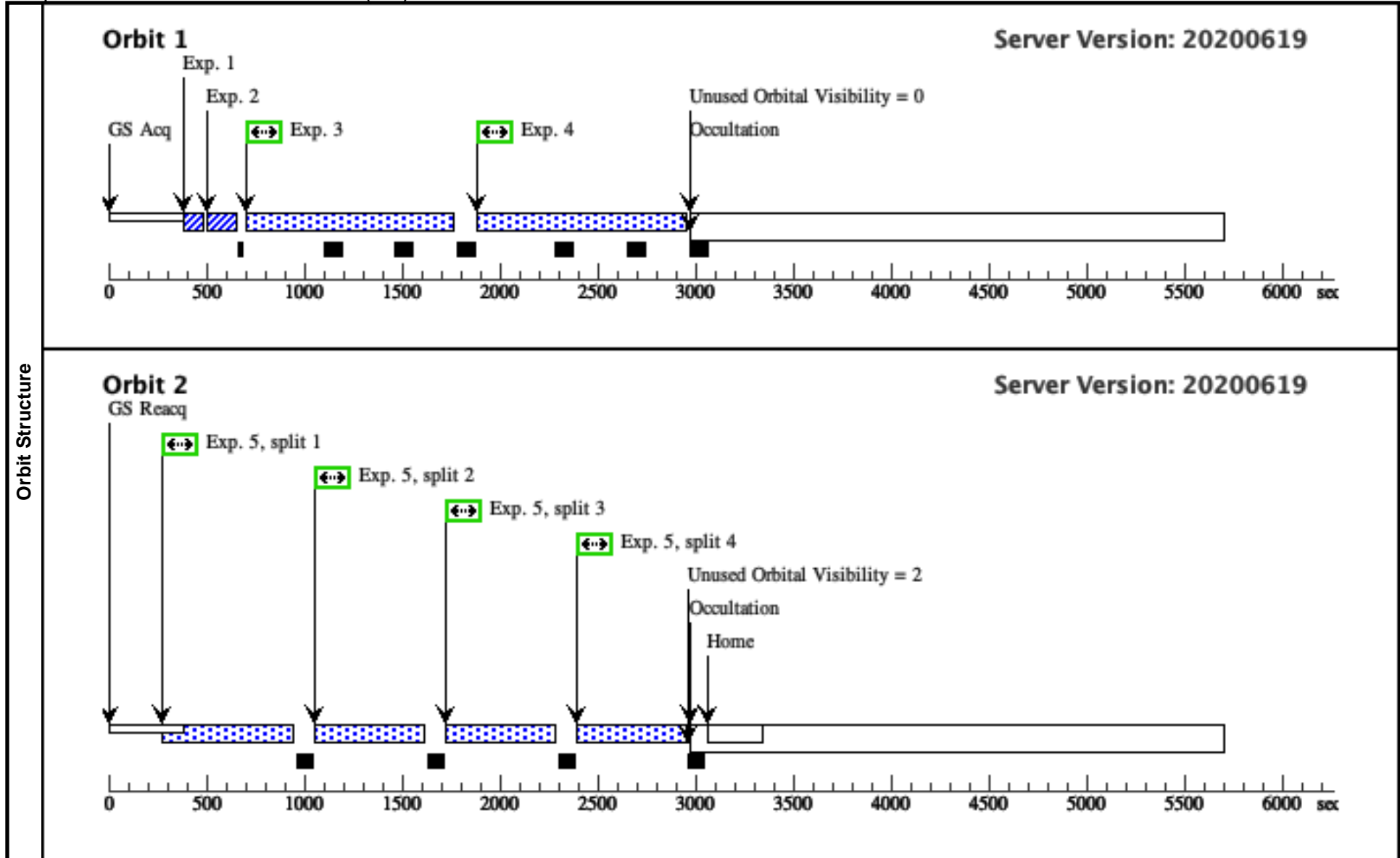
<p>3 G130M/129 (2) ST92-5-27 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=36          1-3 4.0;          (COS.sp.146 1291 A FP-POS=3          6263)</p>	<p>1014. Secs (1014 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_47000_4.20_m7.00_Z0.50_lmavg_ebmV_0.21_sed          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 1421.9798 s [COS.sp.1463166]          No ETC Warnings          Baseline exposure time rounded to 1422 s (711 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (4316.273, 1897.374, 2418.899) cts/s          Brightest Pixel: 0.119 cts/s at 1216.22 A          BUFFER-TIME = 2/3 * 546 s = 364 s          During orbit packing, the exposure time was increased to 143% of the baseline: 2028 s total, 1014 s per FP-POS. The ETC estimates SNR= 35.8/resel at 1590 A. [COS.sp.1466263]          Bright-Object Checking          The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.          Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:          1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of ST92 5-27.          2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes:  <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>.          The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes.          All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M).          For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.          3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in  <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a>          4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.          Results:          PSA: 14 sources identified, all safe          BOA: 91 sources identified, all safe          The catalog of sources used to conduct this bright-object checking is          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/my_bot/Gaia_DR2_ST92-5-27_bot.csv          The sources are plotted on the WFPC2/F656N image hst_11807_01_wfpc2_f656n_wf_drz.fits (with a very narrow "stretch" to suppress the nebular background):          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_WFPC2_F656N.png          There are no unidentified, bright sources or other "spoilors" in this image.</i></p>		

Proposal 16369 - ST92-5-27-COS (2C) - ULLYSES LMC O3 Stars- COS

<p>4 G130M/129 (2) ST92-5-27 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=36          1-4 4.0;          (COS.sp.146 1291 A FP-POS=4          6263)</p>	<p>1014. Secs (1014 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_47000_4.20_m7.00_Z0.50_lmavg_ebmv_0.21_sed          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 1421.9798 s [COS.sp.1463166]          No ETC Warnings          Baseline exposure time rounded to 1422 s (711 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (4316.273, 1897.374, 2418.899) cts/s          Brightest Pixel: 0.119 cts/s at 1216.22 A          BUFFER-TIME = 2/3 * 546 s = 364 s          During orbit packing, the exposure time was increased to 143% of the baseline: 2028 s total, 1014 s per FP-POS. The ETC estimates SNR= 35.8/resel at 1590 A. [COS.sp.1466263]          Bright-Object Checking          The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.          Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:          1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of ST92 5-27.          2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes:  <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>.          The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes.          All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M).          For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.          3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in  <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a>          4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.          Results:          PSA: 14 sources identified, all safe          BOA: 91 sources identified, all safe          The catalog of sources used to conduct this bright-object checking is          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/my_bot/Gaia_DR2_ST92-5-27_bot.csv          The sources are plotted on the WFPC2/F656N image hst_11807_01_wfpc2_f656n_wf_drz.fits (with a very narrow "stretch" to suppress the nebular background):          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_WFPC2_F656N.png          There are no unidentified, bright sources or other "spoilors" in this image.</i></p>		

Proposal 16369 - ST92-5-27-COS (2C) - ULLYSES LMC O3 Stars- COS

5	G160M/161 (2) ST92-5-27 1 (COS.sp.146 6262)	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=72 4.0; FP-POS=ALL	506.0 Secs (2024 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[2]
<p><i>Comments: SED PoWR_47000_4.20_m7.00_Z0.50_lmavg_ebmv_0.21_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1590 +/- 0.5 A in 2073.7917 s [COS.sp.1463167] No ETC Warnings Baseline exposure time rounded to 2076 s (519 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (2168.393, 493.317, 1676.077) cts/s Brightest Pixel: 0.028 cts/s at 1423.50 A BUFFER-TIME = 2/3 * 1087 s = 724 s During orbit packing, the exposure time was decreased to 97% of the baseline: 2024 s total, 506 s per FP-POS. The ETC estimates SNR= 29.6/resel at 1590 A. [COS.sp.1466262] Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX. Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used: 1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of ST92 5-27. 2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>. The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>. 3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a> 4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></p> <p><i>Results: PSA: 14 sources identified, all safe BOA: 91 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/my_bot/Gaia_DR2_ST92-5-27_bot.csv The sources are plotted on the WFPC2/F656N image hst_11807_01_wfpc2_f656n_wf_drz.fits (with a very narrow "stretch" to suppress the nebular background): ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/ST92-5-27/ST92-5-27_WFPC2_F656N.png There are no unidentified, bright sources or other "spoilors" in this image.</i></p>						



**Proposal 16369, VFTS-267-COS (3C)**  
**Diagnostic Status: No Diagnostics**  
 Scientific Instruments: COS/FUV  
 Special Requirements: SCHED 100%  
*Comments: vstatus; 3C; VFTS-267; P/COS approved for submission; P/AF 18/09/20 ; intrev: complete ; P/RS 22/10/20*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; VFTS-267 ; COS ; AF*  
*vcheck; ETC numbers entered in APT?; Completed*  
*vcheck; Any screening violations?; None*  
*vcheck; S/N ETC calcs done & documented?; Not applicable*  
*vcheck; Field images checked & saved?; Yes - VFTS-267\_HTTPS\_ACS\_F555W.png*  
*vcheck; Selected ACQ strategy?; Dispersed G130M/1291*  
*vcheck; Possible ACQ or Sci spoilers?; None*  
*vcheck; Field BOT clear?; Yes - required nonstandard procedure, see discussion*  
*vcheck; Visual BOT check for stars not in catalog?; None*  
*vcheck; Orbit packing finalized?; 1 orbit - required moderate decrease in baseline exposures for both configurations*  
*vcheck; Buffer times optimized?; Done*  
*vcheck; Verify visit grouping correct; Not applicable*  
*vcheck; Is visit ready for int. review?; Yes*  
 Allocated COS orbits = 1

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	VFTS-267 Alt Name1: 2MASS- J05381396-6907477	RA: 05 38 13.9662 (84.5581925d) Dec: -69 07 47.72 (-69.12992d) Equinox: J2000		V=13.49 SpT=O3 III-I(n)f*; ; B=13.44; V=13.49	Reference Frame: ICRS

*Comments: VFTS-267 : VFTS\_267, VFTS 267*  
*Previous name : VFTS-267*  
*Input file: LMC\_2020Feb20/input/LMC\_all\_do1\_fixed\_wr\_NewCoords\_pids.csv*  
*SIMBAD link (VFTS 267): <https://simbad.u-strasbg.fr/simbad/sim-id?Ident=VFTS+267&submit=submit+id>*  
*SpT = O3 III-I(n)f\**  
*COS/G130M/c1096 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*COS/G130M/c1291 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*COS/G160M/c1611 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*COS/G185M/c1921 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*COS/G185M/c1953 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*COS/G185M/c1986 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*STIS/E140M/c1425 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*STIS/E230M/c1978 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
*STIS/E230M/c2707 : rn(WM-Basic(O3 III, Z=0.008, Teff=48978, log\_lum=5.95, log\_g=3.94) (extinction lmc30dor=0.230), johnson B mag=13.440 vegamag)*  
 Coordinate pedigree: Gaia  
*v sin i = 145*  
 Calculation performed 2020-02-24T17:56:01, v0.4

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*tstatus: VFTS-267; P/COS approved for submission; S/ins not started; P/AF 18/09/20; S/xx DD/MM/YY*  
*tcheck; APT/SIMBAD target names: ; VFTS-267 'VFTS 267' ...*  
*Default name in SIMBAD is 2MASS J05381396-6907477*  
*tcheck; Target info verification status?; OK*  
*tcheck; Coordinates & P.M. updated?; Gaia DR2 coords, Epoch 2015.5*  
*tcheck; Adopted SED compared to Observations?; Yes ...*  
*Analyses of the spectrum of VFTS 267 published by Bestenlehner et al. (2014A&A...570A..38B; CMFGEN) and Ramirez-Agudelo (2017A&A...600A..81R; FASTWIND) served as the starting point for selecting a model spectrum from the PoWR grid for OB stars with LMC metallicity. The model flux was scaled by the distance to the LMC and attenuated by an LMC 30 Dor extinction law with the photometrically determined reddening of E(B-V)=0.23. The attenuated flux was additionally scaled by a factor of 1.25 to achieve the best match with the available observational material, which only consists of BV photometry. The adopted SED corresponds to the file PoWR\_44000\_4.00\_m7.00\_Z0.50\_lmc30Dor\_ebmv\_0.23\_sed.fits.*  
*Adopted illustrated: ~/box/ullyses\_tech/ullyses\_proposals/c28\_mc/16369/VFTS-267/VFTS-267\_adopted\_sed\_vs\_BV.png*  
*Adopted SED: ~/box/ullyses\_tech/ullyses\_proposals/c28\_mc/16369/VFTS-267/VFTS-267\_adopted\_sed.fits*  
*There is residual uncertainty associated with the far-UV flux because the normalization is set solely on the basis of BV photometry.*  
 Category=EXT-STAR  
 Description=[GIANT O, OF]  
 Extended=NO

Proposal 16369 - VFVS-267-COS (3C) - ULLYSES LMC O3 Stars- COS

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (COS.sa.146 3168)	(3) VFVS-267	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	CENTER=FLUX-W T; NUM-POS=3; STEP-SIZE=1.3; SEGMENT=BOTH			0.3 Secs (0.3 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_44000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.23_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-267/VFVS-267_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.2299 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.3 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-267/VFVS-267_HTTPS_ACS_F555W.png</i></p>									
2	ACQ/PEAK D (COS.sa.146 3168)	(3) VFVS-267	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9; SEGMENT=BOTH			0.3 Secs (0.3 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_44000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.23_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-267/VFVS-267_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.2299 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.3 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-267/VFVS-267_HTTPS_ACS_F555W.png</i></p>									

Exposures

Proposal 16369 - VF<sub>TS</sub>-267-COS (3C) - ULLYSES LMC O3 Stars- COS

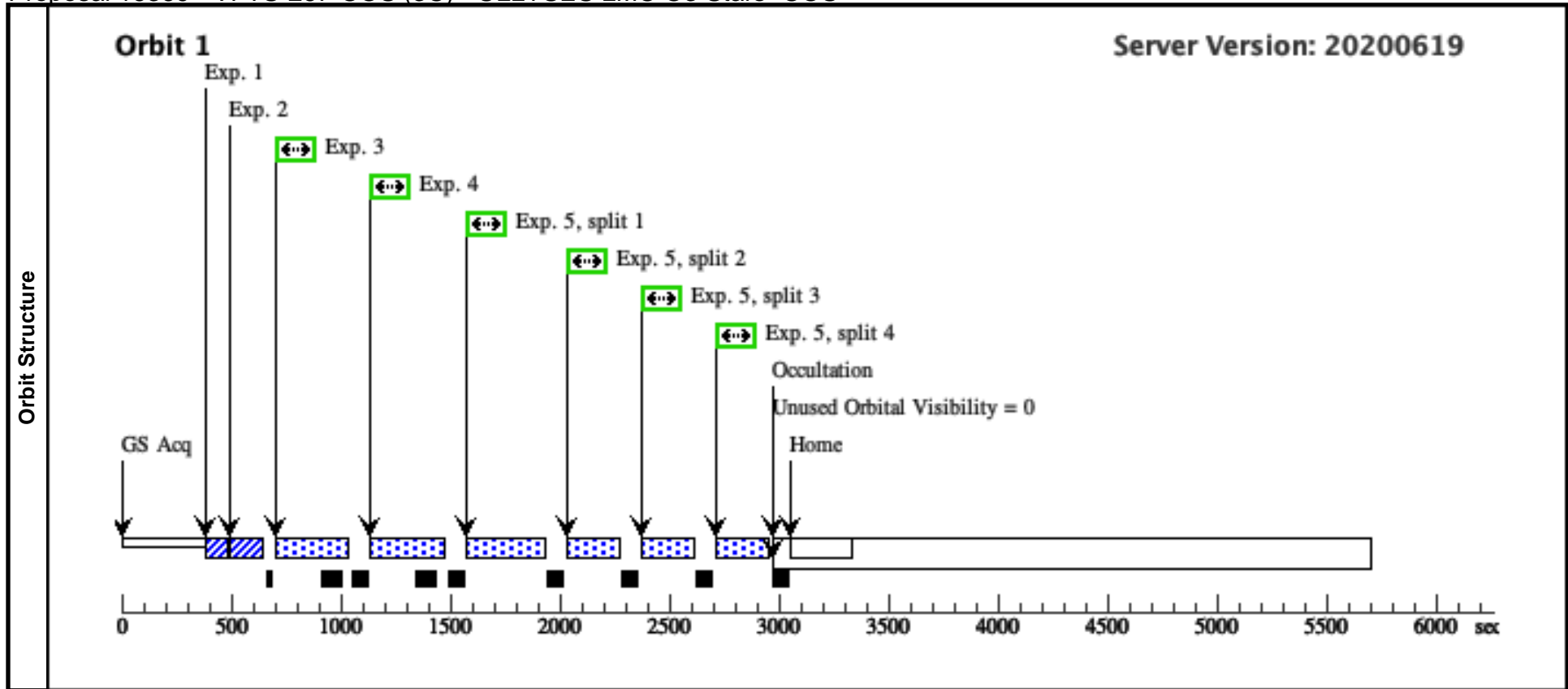
3	G130M/129 (3) VF <sub>TS</sub> -267 1-3 (COS.sp.146 6277)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=17 3.0; FP-POS=3	285. Secs (285 Secs)	[1]
<p><i>Comments: SED PoWR_44000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.23_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/VF<sub>TS</sub>-267_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 660.3292 s [COS.sp.1463169] No ETC Warnings Baseline exposure time rounded to 662 s (331 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (9040.382, 4095.187, 4945.195) cts/s Brightest Pixel: 0.149 cts/s at 1216.22 A BUFFER-TIME = 2/3 * 260 s = 173 s During orbit packing, the exposure time was decreased to 86% of the baseline: 570 s total, 285 s per FP-POS. The ETC estimates SNR= 27.9/resel at 1150 A. [COS.sp.1466277]  Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.  Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used: 1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VF<sub>TS</sub> 267. 2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where [c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]. The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>. 3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a> 4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.  Results: PSA: 7 sources identified, all safe BOA: 48 sources identified, all safe  The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/my_bot/Gaia_DR2_VF<sub>TS</sub>-267_bot.csv The sources are plotted on the F555W image <a href="https://hst-acs-tarantula-go12939-f555w-v2.0-drc.fits">hstsp_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits</a> produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S) ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/VF<sub>TS</sub>-267_HTTPS_ACS_F555W.png There are no unidentified, bright sources or other "spoilers" in this image.</i></p>					[==>]	

Proposal 16369 - VF<sub>TS</sub>-267-COS (3C) - ULLYSES LMC O3 Stars- COS

4	G130M/129 (3) VF <sub>TS</sub> -267 1-4 (COS.sp.146 6277)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=17 3.0; FP-POS=4	285. Secs (285 Secs)	[==>]	[!]
<p><i>Comments: SED PoWR_44000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.23_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/VF<sub>TS</sub>-267_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 660.3292 s [COS.sp.1463169] No ETC Warnings Baseline exposure time rounded to 662 s (331 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (9040.382, 4095.187, 4945.195) cts/s Brightest Pixel: 0.149 cts/s at 1216.22 A BUFFER-TIME = 2/3 * 260 s = 173 s During orbit packing, the exposure time was decreased to 86% of the baseline: 570 s total, 285 s per FP-POS. The ETC estimates SNR= 27.9/resel at 1150 A. [COS.sp.1466277]  Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX.  Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used: 1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VF<sub>TS</sub> 267. 2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where [c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]. The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>. 3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a> 4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.  Results: PSA: 7 sources identified, all safe BOA: 48 sources identified, all safe  The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/my_bot/Gaia_DR2_VF<sub>TS</sub>-267_bot.csv The sources are plotted on the F555W image <a href="https://hst-acs-tarantula-go12939-f555w-v2.0-drc.fits">hlspl_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits</a> produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S) ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VF<sub>TS</sub>-267/VF<sub>TS</sub>-267_HTTPS_ACS_F555W.png There are no unidentified, bright sources or other "spoilers" in this image.</i></p>							

Proposal 16369 - VFTS-267-COS (3C) - ULLYSES LMC O3 Stars- COS

5	G160M/161 (3) VFTS-267 1 (COS.sp.146 6278)	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=32 4.0; FP-POS=ALL	188. Secs (752 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[1]
<p><i>Comments: SED PoWR_44000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.23_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFTS-267/VFTS-267_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1590 +/- 0.5 A in 899.9185 s [COS.sp.1463170] No ETC Warnings Baseline exposure time rounded to 900 s (225 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (4842.036, 1126.634, 3715.402) cts/s Brightest Pixel: 0.062 cts/s at 1423.50 A BUFFER-TIME = 2/3 * 487 s = 324 s During orbit packing, the exposure time was decreased to 84% of the baseline: 752 s total, 188 s per FP-POS. The ETC estimates SNR=27.4/resel at 1590 A. [COS.sp.1466278] Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebulosity in the DSS image and lack of coverage by GALEX. Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used: 1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VFTS 267. 2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>. The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>. 3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a> 4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></p> <p><i>Results: PSA: 7 sources identified, all safe BOA: 48 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFTS-267/my_bot/Gaia_DR2_VFTS-267_bot.csv The sources are plotted on the F555W image <a href="https://hst-acs-tarantula-go12939-f555w-v2.0-drc.fits">hlsfp_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits</a> produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S) ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFTS-267/VFTS-267_HTTPS_ACS_F555W.png There are no unidentified, bright sources or other "spoilors" in this image.</i></p>						



**Proposal 16369, VFTS-404-COS (4C)**  
**Diagnostic Status: No Diagnostics**  
 Scientific Instruments: COS/FUV  
 Special Requirements: SCHED 100%  
*Comments: vstatus; 4C; VFTS-404; P/COS approved for submission; P/AF 18/09/20 ; intrev: complete ; P/RS 22/10/20*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; VFTS-404 ; COS ; AF*  
*vcheck; ETC numbers entered in APT?; Completed*  
*vcheck; Any screening violations?; None*  
*vcheck; S/N ETC calcs done & documented?; Not applicable*  
*vcheck; Field images checked & saved?; Yes - see VFTS-404\_HTTPS\_ACS\_F555W.png*  
*vcheck; Selected ACQ strategy?; Dispersed G130M/1291*  
*vcheck; Possible ACQ or Sci spoilers?; None*  
*vcheck; Field BOT clear?; Yes - required nonstandard procedure, see discussion*  
*vcheck; Visual BOT check for stars not in catalog?; None*  
*vcheck; Orbit packing finalized?; 2 orbits - required reducing baseline exposure time by (73%, 79%) for (G130M/1291, G160M/1611) to fit into allocation; should still be OK scientifically.*  
*vcheck; Buffer times optimized?; Done*  
*vcheck; Verify visit grouping correct; Not applicable*  
*vcheck; Is visit ready for int. review?; Yes*  
 Allocated COS orbits = 2

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	VFTS-404 Alt Name1: 2MASS- J05383381-6909569	RA: 05 38 33.8340 (84.6409750d) Dec: -69 09 57.06 (-69.16585d) Equinox: J2000		V=14.14 SpT=O3.5 V(n)((fc)); E(B-V)= .30; B=14.16; V=14.14	Reference Frame: ICRS
<p><i>Comments: VFTS-404 : VFTS_404, VFTS 404</i>  <i>Previous name : VFTS-404</i>  <i>Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv</i>  <i>SIMBAD link (VFTS 404): <a href="https://simbad.u-strasbg.fr/simbad/sim-id?Ident=VFTS+404&amp;submit=submit+id">https://simbad.u-strasbg.fr/simbad/sim-id?Ident=VFTS+404&amp;submit=submit+id</a></i>  <i>SpT = O3.5 V(n)((fc))</i>  <i>COS/G130M/c1096 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>COS/G130M/c1291 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>COS/G160M/c1611 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>COS/G185M/c1921 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>COS/G185M/c1953 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>COS/G185M/c1986 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>STIS/E140M/c1425 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>STIS/E230M/c1978 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>  <i>STIS/E230M/c2707 : rn(WM-Basic(O4 V, Z=0.008, Teff=45709, log_lum=5.60, log_g=4.00) (extinction lmc30dor=0.300), johnson B mag=14.160 vegamag)</i>                      Coordinate pedigree: Gaia                      Calculation performed 2020-02-24T17:57:27, v0.4</p> <hr/> <p><i>tstatus; VFTS-404; P/COS approved for submission; S/ins not started; P/AF 18/09/20; S/xx DD/MM/YY</i>  <i>tcheck; APT/SIMBAD target names: ; VFTS-404 'VFTS-404' ...</i>  <i>Default name in SIMBAD is 2MASS J05383381-6909569</i>  <i>tcheck; Target info verification status?; OK</i>  <i>tcheck; Coordinates &amp; P.M. updated?; Gaia DR2 coords, Epoch 2015.5</i>  <i>tcheck; Adopted SED compared to Observations?; Yes ...</i>                      The spectroscopic analysis of VFTS 404 by Bestenlehner et al. (2014A&amp;A...570A..38B; CMFGEN) served as the starting point for selecting a model spectrum from the PoWR grid for OB stars with LMC metallicity. The model flux was scaled by the distance to the LMC and attenuated by an LMC 30 Dor extinction law with a reddening of E(B-V)=0.32, which is within the uncertainties of the photometrically determined value of E(B-V)=0.30. The attenuated flux was additionally scaled by a factor of 0.76 to achieve the best match with the available observational material, which only consists of BV photometry. The adopted SED corresponds to the file PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.32_sed.fits.                      Adopted illustrated: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFTS-404/VFTS-404_adopted_sed_vs_BV.png                      Adopted SED: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFTS-404/VFTS-404_adopted_sed.fits                      There is residual uncertainty associated with the far-UV flux because the normalization is set solely on the basis of BV photometry.                      Category=EXT-STAR                      Description=[MAIN SEQUENCE O, OF]                      Extended=NO</p>					

Proposal 16369 - VFVS-404-COS (4C) - ULLYSES LMC O3 Stars- COS

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (COS.sa.146 3171)	(4) VFVS-404	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	CENTER=FLUX-W T; NUM-POS=3; STEP-SIZE=1.3; SEGMENT=BOTH			0.9 Secs (0.9 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.32_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.8280 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.9 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_HTTPS_ACS_F555W.png</i></p>									
2	ACQ/PEAK D (COS.sa.146 3171)	(4) VFVS-404	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9; SEGMENT=BOTH			0.9 Secs (0.9 Secs) [==>]	[1]
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.32_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.8280 s per dwell point. No ETC Warnings Exposure time per dwell point rounded up to 0.9 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_HTTPS_ACS_F555W.png</i></p>									

Exposures

Proposal 16369 - VFVS-404-COS (4C) - ULLYSES LMC O3 Stars- COS

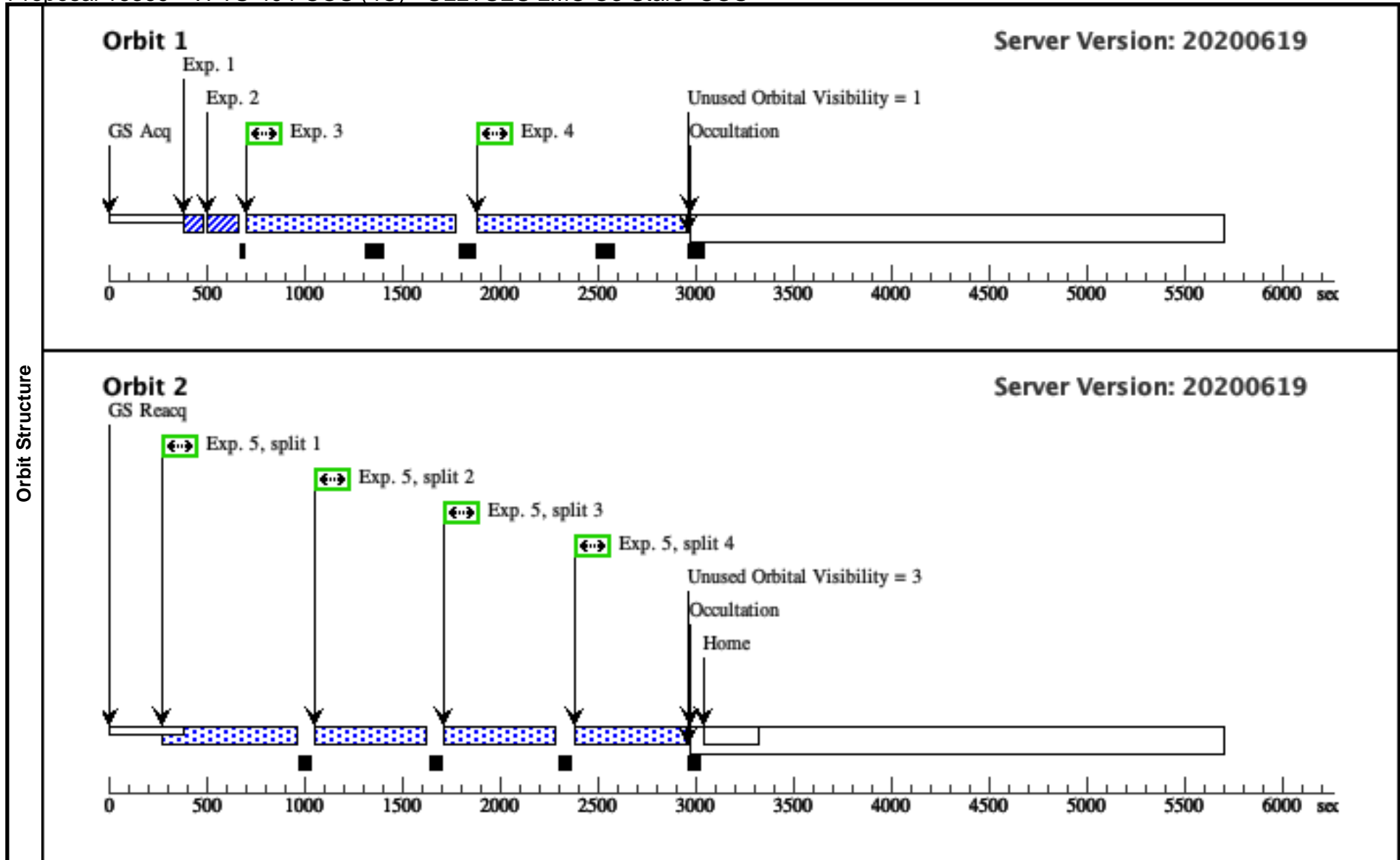
3	G130M/129 (4) VFVS-404 1-3 (COS.sp.146 6284)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=57 6.0; FP-POS=3	1017. Secs (1017 Secs)	[1]
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.32_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 2762.5398 s [COS.sp.1463172] No ETC Warnings Baseline exposure time rounded to 2764 s (1382 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (2729.427, 1262.568, 1466.858) cts/s Brightest Pixel: 0.054 cts/s at 1216.21 A BUFFER-TIME = 2/3 * 864 s = 576 s During orbit packing, the exposure time was decreased to 73% of the baseline: 2034 s total, 1017 s per FP-POS. The ETC estimates SNR= 25.7/resel at 1150 A. [COS.sp.1466284] Although this SNR does not meet the baseline requirements of ULLYSES, the data should still be adequate.</i></p> <p><i>Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebosity in the DSS image and lack of coverage by GALEX.</i></p> <p><i>Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:</i></p> <ol style="list-style-type: none"> <li><i>1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VFVS 404.</i></li> <li><i>2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>. The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.</i></li> <li><i>3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a></i></li> <li><i>4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></li> </ol> <p><i>Results: PSA: 4 sources identified, all safe BOA: 36 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/my_bot/Gaia_DR2_VFVS-404_bot.csv The sources are plotted on the F555W image <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">hlspl_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits</a> produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S) ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_HTTPS_ACS_F555W.png There are no unidentified, bright sources or other "spoilers" in this image.</i></p>						

Proposal 16369 - VFVS-404-COS (4C) - ULLYSES LMC O3 Stars- COS

4	G130M/129 (4) VFVS-404 1-4 (COS.sp.146 6284)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=57 6.0; FP-POS=4	1017. Secs (1017 Secs)	[1]
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmv_0.32_sed          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 2762.5398 s [COS.sp.1463172]          No ETC Warnings          Baseline exposure time rounded to 2764 s (1382 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (2729.427, 1262.568, 1466.858) cts/s          Brightest Pixel: 0.054 cts/s at 1216.21 A          BUFFER-TIME = 2/3 * 864 s = 576 s          During orbit packing, the exposure time was decreased to 73% of the baseline: 2034 s total, 1017 s per FP-POS. The ETC estimates SNR= 25.7/resel at 1150 A. [COS.sp.1466284]          Although this SNR does not meet the baseline requirements of ULLYSES, the data should still be adequate.</i></p> <p><i>Bright-Object Checking</i>          The BOT is unable to identify any targets in its search area due to nebosity in the DSS image and lack of coverage by GALEX.</p> <p><i>Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:</i></p> <ol style="list-style-type: none"> <li>1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VFVS 404.</li> <li>2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes:  <math>G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0</math> where <math>[c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]</math>.              The conversion is valid over the range <math>-0.3 &lt; B-V &lt; 2.4</math> and has an rms uncertainty of 0.063 magnitudes.              All sources were assumed to be unreddened O5 V stars, which have <math>(B-V)_0 = -0.28</math> according to Martins &amp; Plez (2006A&amp;A...457..637M).              For these stars, the formula gives <math>G-V = -0.04036</math>, so <math>V = G + 0.04036</math>.</li> <li>3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a></li> <li>4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</li> </ol> <p><i>Results:</i>          PSA: 4 sources identified, all safe          BOA: 36 sources identified, all safe</p> <p><i>The catalog of sources used to conduct this bright-object checking is          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/my_bot/Gaia_DR2_VFVS-404_bot.csv          The sources are plotted on the F555W image <a href="https://innerspace.stsci.edu/hlspl_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits">hlspl_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits</a> produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S)          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_HTTPS_ACS_F555W.png          There are no unidentified, bright sources or other "spoilers" in this image.</i></p>						

Proposal 16369 - VFVS-404-COS (4C) - ULLYSES LMC O3 Stars- COS

5	G160M/161 (4) VFVS-404 1 (COS.sp.146 6285)	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=94 8.0; FP-POS=ALL	520.0 Secs (2080 Secs) [==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[2]
<p><i>Comments: SED PoWR_45000_4.00_m7.00_Z0.50_lmc30Dor_ebmV_0.32_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/VFVS-404_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1590 +/- 0.5 A in 2622.1081 s [COS.sp.1463173] No ETC Warnings Baseline exposure time rounded to 2624 s (656 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (1656.932, 417.962, 1238.970) cts/s Brightest Pixel: 0.019 cts/s at 1423.50 A BUFFER-TIME = 2/3 * 1423 s = 948 s During orbit packing, the exposure time was decreased to 79% of the baseline: 2080 s total, 520 s per FP-POS. The ETC estimates SNR= 26.7/resel at 1590 A. [COS.sp.1466285] Although this SNR does not meet the baseline requirements of ULLYSES, the data should still be adequate.</i></p> <p><i>Bright-Object Checking The BOT is unable to identify any targets in its search area due to nebosity in the DSS image and lack of coverage by GALEX.</i></p> <p><i>Instead, the Gaia DR2 catalog served as the basis for bright-object checking. The following procedure was used:</i></p> <ol style="list-style-type: none"> <li><i>1. The Gaia DR2 catalog was queried to return a list of all targets within 22 arcsec of VFVS 404.</i></li> <li><i>2. The transformation published by Evans et al. (2018A&amp;A...616A...4E) was used to convert Gaia G magnitudes to Johnson V magnitudes: G - V = ((c3*(B-V) + c2)*(B-V) + c1)*(B-V) + c0 where [c0, c1, c2, c3] = [-0.02907, -0.02385, -0.2297, -0.001768]. The conversion is valid over the range -0.3 &lt; B-V &lt; 2.4 and has an rms uncertainty of 0.063 magnitudes. All sources were assumed to be unreddened O5 V stars, which have (B-V)_0 = -0.28 according to Martins &amp; Plez (2006A&amp;A...457..637M). For these stars, the formula gives G-V = -0.04036, so V = G + 0.04036.</i></li> <li><i>3. The derived V-band magnitudes were compared against the "worst-case" configuration-specific V-band limits listed in <a href="https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes">https://innerspace.stsci.edu/display/ULLYSES/Approximate+un-reddened+O+star+limits+for+common+ULLYSES+modes</a></i></li> <li><i>4. For the PSA, a circular region of radius 8 arcsec was screened. For the BOA, an annular region centered on the PSA with an (inner, outer) radius of (5, 22) arcsec was screened.</i></li> </ol> <p><i>Results: PSA: 4 sources identified, all safe BOA: 36 sources identified, all safe</i></p> <p><i>The catalog of sources used to conduct this bright-object checking is ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404/my_bot/Gaia_DR2_VFVS-404_bot.csv The sources are plotted on the F555W image hlsP_30dor_hst_acs_tarantula-go12939_f555w_v2.0_drc.fits produced by the Hubble Tarantula Treasury Project (HTTP; see Sabbi et al. 2016ApJS..222...11S) ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/VFVS-404_HTTPS_ACS_F555W.png There are no unidentified, bright sources or other "spoilors" in this image.</i></p>						



**Proposal 16369, W61-28-23-COS (5C)**  
**Diagnostic Status: No Diagnostics**  
 Scientific Instruments: COS/FUV  
 Special Requirements: SCHED 100%  
*Comments: vstatus; 5C; W61-28-23; P/COS approved for submission; P/AF 03/09/20 ; intrev: complete ; P/RS 22/10/20*  
*vcheck; Enter targ name & Inst. & Resp. Sci.; W61-28-23 ; COS ; AF*  
*vcheck; ETC numbers entered in APT?; Completed*  
*vcheck; Any screening violations?; Benign ETC warning issued for G130M/1291 configuration*  
*vcheck; S/N ETC calcs done & documented?; N/A*  
*vcheck; Field images checked & saved?; Yes - W61-28-23\_DSS.png and W61-28-23\_2MASS.png*  
*vcheck; Selected ACQ strategy?; Dispersed G130M/1291*  
*vcheck; Possible ACQ or Sci spoilers?; None*  
*vcheck; Field BOT clear?; Yes - 13 safe, 1 unknown*  
*vcheck; Visual BOT check for stars not in catalog?; Completed - none*  
*vcheck; Orbit packing finalized?; 3 orbits*  
*vcheck; Buffer times optimized?; Done*  
*vcheck; Verify visit grouping correct; Not applicable*  
*vcheck; Is visit ready for int. review?; Yes*  
 Allocated COS orbits = 3

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
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(5)	W61-28-23 Alt Name1: AAOMEGA-159	RA: 05 34 50.1597 (83.7089987d) Dec: -69 46 32.54 (-69.77571d) Equinox: J2000		V=13.81 SpT=O3.5 III(f *); E(B-V)=0.12 ; U=12.52; B=13.65; V=13.81; F 1160=4.54e-13; F1360=3.20e-13 ; F1700=2.80e-13	Reference Frame: ICRS
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*Comments: W61-28-23 : [AAOmega]\_159, W61 28-23*  
*Previous name : W61 28-23*  
*Input file: LMC\_2020Feb20/input/LMC\_all\_do1\_fixed\_wr\_NewCoords\_pids.csv*  
*SIMBAD link (W61 28-23): <https://simbad.u-strasbg.fr/simbad/sim-id?ident=W61+28-23&submit=submit+id>*  
*SpT = O3.5 III(f\*)*  
*COS/G130M/c1096 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1160 +- 30.0A flux=4.5e-13 Flam)*  
*COS/G130M/c1291 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1360 +- 30.0A flux=3.2e-13 Flam)*  
*COS/G160M/c1611 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
*COS/G185M/c1921 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
*COS/G185M/c1953 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
*COS/G185M/c1986 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
*STIS/E140M/c1425 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1360 +- 30.0A flux=3.2e-13 Flam)*  
*STIS/E230M/c1978 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
*STIS/E230M/c2707 : rn-max(WM-Basic(O4 III, Z=0.008, Teff=45709, log\_lum=5.87, log\_g=3.89) (extinction lmcavg=0.180), flux1700 +- 5.0A flux=2.8e-13 Flam)*  
 Coordinate pedigree: Gaia  
 v sin i = 146  
 Calculation performed 2020-02-24T17:56:29, v0.4

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*tstatus; W61-28-23; P/COS approved for submission; S/ins not started; P/AF 18/09/20; S/xx DD/MM/YY*  
*tcheck; APT/SIMBAD target names: ; W61-28-23 'W61 28-23'*  
*tcheck; Target info verification status?; OK ...*  
*SIMBAD lists spectral type as O3.5V(f+) from 2005ApJ...627..477M, while ULLYSES uses O3.5 III(f\*) from 2015A&A...584A...5E.*  
*tcheck; Coordinates & P.M. updated?; Gaia DR2 coords, Epoch 2015.5*  
*tcheck; Adopted SED compared to Observations?; Yes ...*  
*The spectroscopic analyses of W61 28-23 published by Massey et al. (2005ApJ...627..477M; FASTWIND) and Rivero Gonzalez et al. (2012A&A...543A..95R; FASTWIND) served as the starting point for selecting a model spectrum from the PoWR grid for OB stars with LMC metallicity. The model flux was scaled by the distance to the LMC and attenuated by an LMC average extinction law. The reddening was varied by small amounts around the photometrically determined value of E(B-V)=0.12 to achieve a good "by-eye" fit between the STIS/G140L spectra centered at 1425 Angstroms and the STIS/G750M spectra at Halpha, as well as the UVB photometry. The attenuated model flux was additionally scaled by a factor of 1.14 to achieve the best match with the observational material. The adopted SED corresponds to the file PoWR\_48000\_4.20\_m7.00\_Z0.50\_lmcavg\_ebm\_v\_0.17\_sed.fits, which has E(B-V)=0.17 (which is within the uncertainty in the photometrically determined value). The are systematic variations at 10% level in both senses between the available data and the adopted model.*  
*Adopted illustrated: ~/box/ullyses\_tech/ullyses\_proposals/c28\_mc/16369/W61-28-23/W61-28-23\_adopted\_sed\_vs\_STIS.png*  
*Adopted SED: ~/box/ullyses\_tech/ullyses\_proposals/c28\_mc/16369/W61-28-23/W61-28-23\_adopted\_sed.fits*  
 Category=EXT-STAR  
 Description=[GIANT O, OF]  
 Extended=NO

Proposal 16369 - W61-28-23-COS (5C) - ULLYSES LMC O3 Stars- COS

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/PEAK XD (COS.sa.146 3174)	(5) W61-28-23	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	CENTER=FLUX-W T; NUM-POS=3; STEP-SIZE=1.3; SEGMENT=BOTH			0.2 Secs (0.2 Secs)	
								[==>]	[1]
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmcavg_ebmv_0.17_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.1622 s per dwell point. The ETC issued a WARNING: Segment B count rate (7142.583 cts/s) exceeds the segment limit for irregularly variable sources. This warning can be ignored because W61 28-23 is not an irregularly variable source. Exposure time per dwell point rounded up to 0.2 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no UV-bright spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png</i></p> <p><i>Bright-Object Checking For the ACQ/PEAKXD exposure, the BOT identified 13 targets as safe and 1 target as unknown in the DSS image of its search area. See ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_PEAKD_DSS.png</i></p> <p><i>The unknown target is identified with sources in the Gaia DR2 catalog as follows:</i></p> <p><i>Unknown BOA S0U9205477 05:34:48.0908 -69:46:27.04 Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83 Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type.</i></p> <p><i>Neither of these "unknown" sources pose a threat to the health and safety of the COS detectors.</i></p>									
2	ACQ/PEAK D (COS.sa.146 3174)	(5) W61-28-23	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	CENTER=FLUX-W T-FLR; NUM-POS=5; STEP-SIZE=0.9; SEGMENT=BOTH			0.2 Secs (0.2 Secs)	
								[==>]	[1]
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmcavg_ebmv_0.17_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits ETC estimates that SNR=40 is obtained for Segments A and B combined in 0.1622 s per dwell point. The ETC issued a WARNING: Segment B count rate (7142.583 cts/s) exceeds the segment limit for irregularly variable sources. This warning can be ignored because W61 28-23 is not an irregularly variable source. Exposure time per dwell point rounded up to 0.2 s</i></p> <p><i>TA in light dispersed by G130M/1291 was selected for efficiency. There are no UV-bright spoiler stars within 43 arcsec of the center of the PSA: see ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png</i></p> <p><i>Bright-Object Checking For the ACQ/PEAKD exposure, the BOT identified 16 targets as "safe" and 2 targets as "unknown" in the DSS image of its search area. See ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_PEAKD_DSS.png</i></p> <p><i>The unknown targets are identified with sources in the Gaia DR2 catalog as follows:</i></p> <p><i>Unknown BOA S0U9205477 05:34:48.0908 -69:46:27.04 Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83 Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type.</i></p> <p><i>Unknown BOA S0U9205503 05:34:51.7639 -69:46:10.86 Gaia DR2 4657272835739446400 05:34:51.55 -69:46:11.2 G = 18.77 (BP-RP) = 1.03 Gaia DR2 4657272835673094784 05:34:51.81 -69:46:10.9 G = 19.37 (BP-RP) = unknown The (BP-RP) color of the brighter source suggests that it is a K1 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type.</i></p> <p><i>Neither of these "unknown" sources pose a threat to the health and safety of the COS detectors.</i></p>									

Exposures

Proposal 16369 - W61-28-23-COS (5C) - ULLYSES LMC O3 Stars- COS

<p>3 G130M/129 (5) W61-28-23 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=12          1-3 4.0;          (COS.sp.146 1291 A          3921) FP-POS=3</p>	<p>231.0 Secs (231 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmavg_ebmv_0.17_sed          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 434.4842 s [COS.sp.1463175]          The ETC issued a WARNING: Segment B count rate (7142.583 cts/s) exceeds the segment limit for irregularly variable sources. This warning can be ignored because W61 28-23 is not an irregularly variable source.          Baseline exposure time rounded to 436 s (218 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (12635.327, 5511.535, 7123.793) cts/s          Brightest Pixel: 0.180 cts/s at 1243.50 A          BUFFER-TIME = 2/3 * 186 s = 124 s          During orbit packing, the exposure time was increased to 106% of the baseline: 432 s total, 216 s per FP-POS. The ETC estimates SNR= 30.9/resel at 1150 A. [COS.sp.1463921]</i></p> <p><i>Bright-Object Checking          The BOT identified 13 targets as "safe" and 1 target as "unknown" in the DSS image of its search area. See:          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_DSS.png          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png          The "unknown" target in the BOA region appears to correspond to one of the following Gaia DR2 sources:          Unknown BOA S0U9205477 05:34:48.0908 -69:46:27.04          Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83          Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown          The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type. Neither star poses a threat to the health and safety of the COS detectors.</i></p>		
<p>4 G130M/129 (5) W61-28-23 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=12          1-4 4.0;          (COS.sp.146 1291 A          3921) FP-POS=4</p>	<p>231.0 Secs (231 Secs)          [==&gt;]</p>	<p>[1]</p>
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmavg_ebmv_0.17_sed          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits          ETC estimates that SNR=30/resel is obtained at 1150 +/- 0.5 A in 434.4842 s [COS.sp.1463175]          The ETC issued a WARNING: Segment B count rate (7142.583 cts/s) exceeds the segment limit for irregularly variable sources. This warning can be ignored because W61 28-23 is not an irregularly variable source.          Baseline exposure time rounded to 436 s (218 s per FP-POS)          Count Rate (Total, Segment A, Segment B) = (12635.327, 5511.535, 7123.793) cts/s          Brightest Pixel: 0.180 cts/s at 1243.50 A          BUFFER-TIME = 2/3 * 186 s = 124 s          During orbit packing, the exposure time was increased to 106% of the baseline: 432 s total, 216 s per FP-POS. The ETC estimates SNR= 30.9/resel at 1150 A. [COS.sp.1463921]</i></p> <p><i>Bright-Object Checking          The BOT identified 13 targets as "safe" and 1 target as "unknown" in the DSS image of its search area. See:          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_DSS.png          ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png          The "unknown" target in the BOA region appears to correspond to one of the following Gaia DR2 sources:          Unknown BOA S0U9205477 05:34:48.0908 -69:46:27.04          Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83          Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown          The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type. Neither star poses a threat to the health and safety of the COS detectors.</i></p>		

Proposal 16369 - W61-28-23-COS (5C) - ULLYSES LMC O3 Stars- COS

5	G160M/161 (5) W61-28-23 1 (COS.sp.146 3923)	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=26 0; FP-POS=ALL	199.0 Secs (796 Secs)	[1]
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmavg_ebmv_0.17_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits ETC estimates that SNR=30/resel is obtained at 1590 +/- 0.5 A in 737.8680 s [COS.sp.1463176] No ETC Warnings Baseline exposure time rounded to 740 s (185 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (6020.243, 1303.678, 4716.565) cts/s Brightest Pixel: 0.079 cts/s at 1423.50 A BUFFER-TIME = 2/3 * 391 s = 260 s During orbit packing, the exposure time was increased to 108% of the baseline: 796 s total, 199 s per FP-POS. The ETC estimates SNR= 31.2/resel at 1590 A. [COS.sp.1463923] Bright-Object Checking The BOT identified 13 targets as "safe" and 1 target as "unknown" in the DSS image of its search area. See: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_DSS.png ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png The "unknown" target in the BOA region appears to correspond to one of the following Gaia DR2 sources: Unknown BOA SOU9205477 05:34:48.0908 -69:46:27.04 Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83 Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type. Neither star poses a threat to the health and safety of the COS detectors.</i></p>					[==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	
6	G130M/109 (5) W61-28-23 6 (COS.sp.146 3916)	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=48 1.0; FP-POS=ALL	1184.0 Secs (4736 Secs)	[2]
<p><i>Comments: SED PoWR_48000_4.20_m7.00_Z0.50_lmavg_ebmv_0.17_sed ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_adopted_sed.fits ETC estimates that SNR=20/resel is obtained at 1080 +/- 0.5 A in 4954.9021 s [COS.sp.1463177] No ETC Warnings Baseline exposure time rounded to 4956 s (1239 s per FP-POS) Count Rate (Total, Segment A, Segment B) = (3266.077, 3184.114, 81.963) cts/s Brightest Pixel: 0.072 cts/s at 1216.21 A BUFFER-TIME = 2/3 * 722 s = 481 s During orbit packing, the exposure time was decreased to 96% of the baseline: 4736 s total, 1184 s per FP-POS. The ETC estimates SNR=19.6/resel at 1080 A. [COS.sp.1463916] Bright-Object Checking The BOT identified 13 targets as "safe" and 1 target as "unknown" in the DSS image of its search area. See: ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_DSS.png ~/box/ullyses_tech/ullyses_proposals/c28_mc/16369/W61-28-23/W61-28-23_2MASS.png The "unknown" target in the BOA region appears to correspond to one of the following Gaia DR2 sources: Unknown BOA SOU9205477 05:34:48.0908 -69:46:27.04 Gaia DR2 4657272801313355136 05:34:48.16 -69:46:27.0 G = 18.63 (BP-RP) = 0.83 Gaia DR2 4657272805682596608 05:34:47.98 -69:46:26.5 G = 19.56 (BP-RP) = unknown The (BP-RP) color of the brighter source suggests that it is a G8 dwarf, which is insufficiently bright in the UV to be a concern. The fainter source is not a concern irrespective of its spectral type. Neither star poses a threat to the health and safety of the COS detectors.</i></p>					[==>(Split 1)] [==>(Split 2)] [==>(Split 3)] [==>(Split 4)]	[3]

