16366 - ULLYSES LMC B0 to O9 Dwarfs STIS

Cycle: 28, 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. Gisella De Rosa (CoI)	Space Telescope Science Institute	gderosa@stsci.edu
Dr. Charles R. Proffitt (CoI)	Space Telescope Science Institute	proffitt@stsci.edu
Dr. TalaWanda R. Monroe (CoI) (Contact)	Space Telescope Science Institute	tmonroe@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. William J. Fischer (CoI)	Space Telescope Science Institute	wfischer@stsci.edu
Elaine M Frazer (CoI)	Space Telescope Science Institute	efrazer@stsci.edu
Dr. Alexander W. Fullerton (CoI) (Contact)	Space Telescope Science Institute	fullerton@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. I. Neill Reid (CoI)	Space Telescope Science Institute	inr@stsci.edu
Dr. Adric R. Riedel (CoI)	Space Telescope Science Institute	riedel@stsci.edu
Dr. W. Van Dyke Dixon (CoI)	Space Telescope Science Institute	dixon@stsci.edu
Dr. David J. Sahnow (CoI)	Space Telescope Science Institute	sahnow@stsci.edu

Name	*Institution*	*E-Mail*
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
Joanna Taylor (CoI)	Space Telescope Science Institute	jotaylor@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
Dr. Svea S Hernandez (CoI)	Space Telescope Science Institute - ESA - JWST	sveash@stsci.edu
Dr. Ravi Sankrit (CoI)	Space Telescope Science Institute	rsankrit@stsci.edu
Dr. Travis C Fischer (CoI) (ESA Member)	Space Telescope Science Institute - ESA	tfischer@stsci.edu
Dr. Debopam Som (CoI)	Space Telescope Science Institute	dsom@stsci.edu
Dr. Alec S. Hirschauer (CoI)	Space Telescope Science Institute	ahirschauer@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
2S	(2) SK-65D2 WAVE	STIS/CCD STIS/FUV-MAMA	3	08-Apr-2022 14:00:19.0	yes
3S	(3) SK-67D216 WAVE	STIS/CCD STIS/FUV-MAMA	3	08-Apr-2022 14:00:21.0	yes
4S	(4) SK-70D13 WAVE	STIS/CCD STIS/FUV-MAMA	2	08-Apr-2022 14:00:22.0	yes

8 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 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 A
COS/G130M/c1291: 30 / six-pixel resel at 1150 A
COS/G160M/c1611: 30 / six-pixel resel at 1590 A
COS/G185M/c1953: 30 / three-pixel resel at 1860 A
COS/G185M/c1986: 30 / three-pixel resel at 1980 A
STIS/E140M/c1425: 20 / two-pixel resel at 1200 A
STIS/E230M/c1978: 20 / two-pixel resel at 1800 A
STIS/E230M/c2707: 20 / two-pixel resel at 2800 A
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.

Visit

Proposal 16366, SK-65D2-STIS (2S) Fri Apr 08 18:00:22 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 2S; SK-65D2; P/STIS approved for submission; P/JRD 04/04/22 ; intrev: complete ; P/AF 08/04/22
vcheck; Enter targ name & Inst. & Resp. Sci.; SK-65D2 'SK -65 2' ; STIS ; TM
vcheck; ETC numbers entered in APT?; completed ...
WM-Basic model (B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00)
vcheck; Any screening violations?; None
vcheck; S/N ETC calcs done & documented?; Yes ...
vcheck; Field images checked & saved?; Yes, sk-65d2_dss.png and sk-65d2_2mass.png
vcheck; Selected ACQ strategy?; STIS F28X50LP minimum time of 0.1s chosen
vcheck; Possible ACQ or Sci spoilers?; None apparent in DSS, Galex, or 2Mass ...
Overlaid Zaritsky catalogs and saw no spoilers and did Simbad coordinate search
vcheck; Field BOT clear?; GSC 1 safe, Galex 2 safe ...
Target was in both GALEX AIS and NGS survey
vcheck; Visual BOT check for stars not in catalog?; OK
vcheck; Orbit packing finalized?; yes
vcheck; Buffer times optimized?; Yes ...
vcheck; Verify visit grouping correct; Not needed
vcheck; Is visit ready for int. review?; Yes ...
Allocated STIS orbits = 3

Fixed Targets

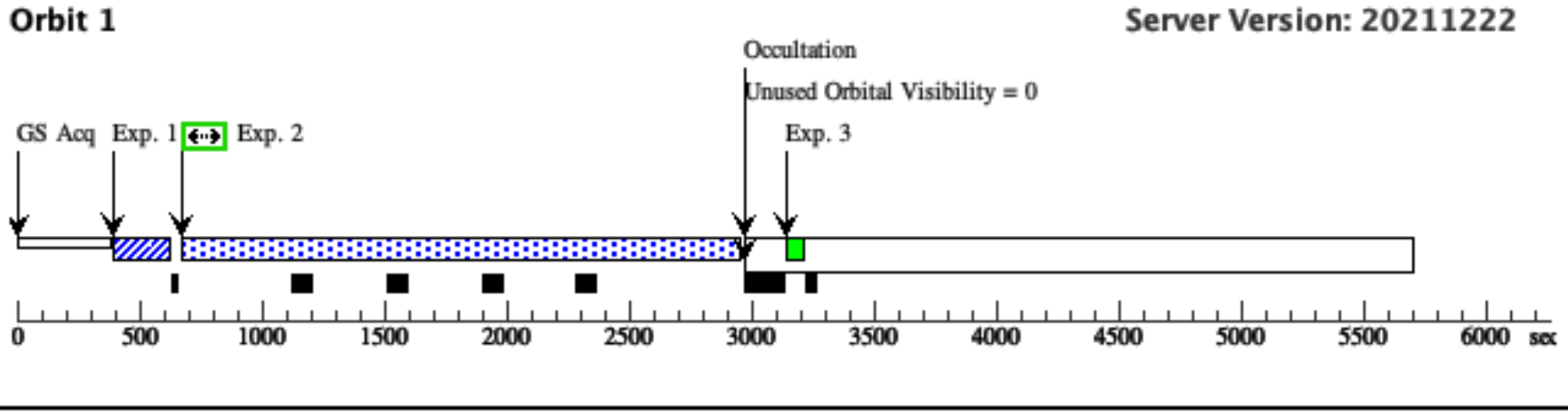
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SK-65D2	RA: 04 56 51.5331 (74.2147212d)		V=12.65	Reference Frame: ICRS
	Alt Name1: SK-65-2	Dec: -65 31 8.41 (-65.51900d)		SpT=B1V; E(B-V)=0.12; (U,	
	Alt Name2: SK-652	Equinox: J2000		B,	
				V) = (11.76,	
				12.68,	
				12.83); F1160=5.49e-13	

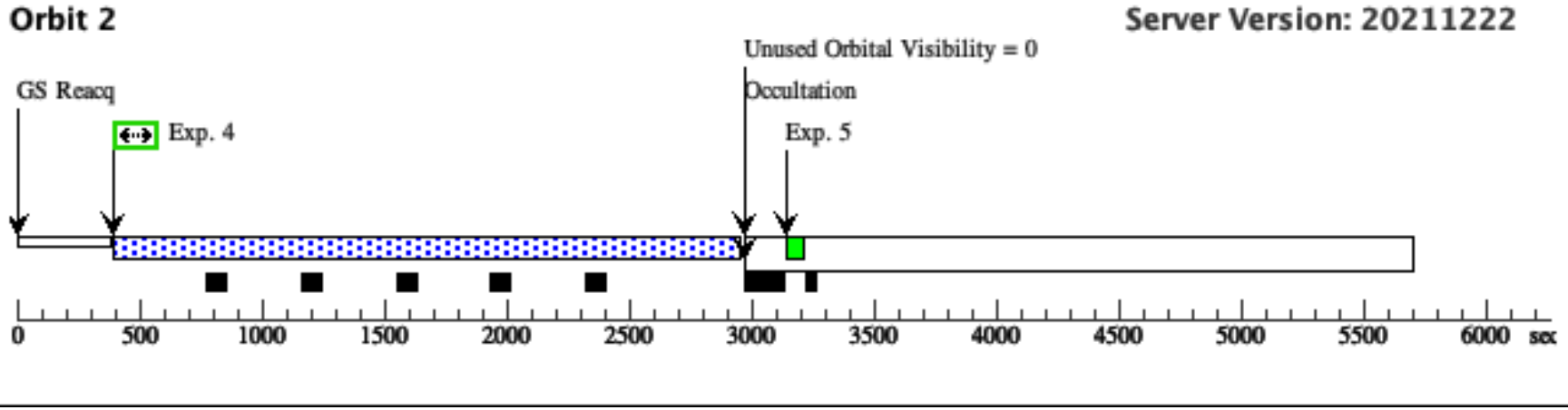
Comments: SK-65D2 : SK-65 2, Sk_-652, SK -65 2
Previous name : SK-65 2
Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv
SIMBAD link (SK -65 2): https://simbad.u-strasbg.fr/simbad/sim-id?Ident=SK+-65+2&submit=submit+id
SpT = B1V
COS/G130M/c1096 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
COS/G130M/c1291 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
COS/G160M/c1611 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
COS/G185M/c1921 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
COS/G185M/c1953 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
COS/G185M/c1986 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
STIS/E140M/c1425 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
STIS/E230M/c1978 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
STIS/E230M/c2707 : rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam)
Coordinate pedigree: Gaia
Calculation performed 2020-02-24T17:50:32, v0.4
---
tstatus; SK-65D2; P/STIS approved for submission; S/ins not started; P/JRD 04/04/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SK-65D2 'SK -65 2'
tcheck; Target info verification status?; OK ...
ULLYSES target list gives B1V, but Simbad says OB
tcheck; Coordinates & P.M. updated?; yes, Gaia DR coords and PM set to zero
tcheck; Adopted SED compared to Observations?; Yes. Compared default SED (SK-65D2_STIS_E140M_c1425_sed.fits) to FUSE spectrum, photometry obtained from Vizier photometry tool (sk-65d2.vot), and optical photometry (note that the Zaritsky photometry is off, so photometry from Isserstedt (1979, A&AS, 38, 239) should be used). Excellent match between FUSE, photometry and SED (see sk-65d2_vs_FUSE_vs_photo_*.png and SK-65D2_adopted_SED_vs_FUSE_UBV.png).
Category=EXT-STAR
Description=[B0-B2 V-IV]
Extended=NO

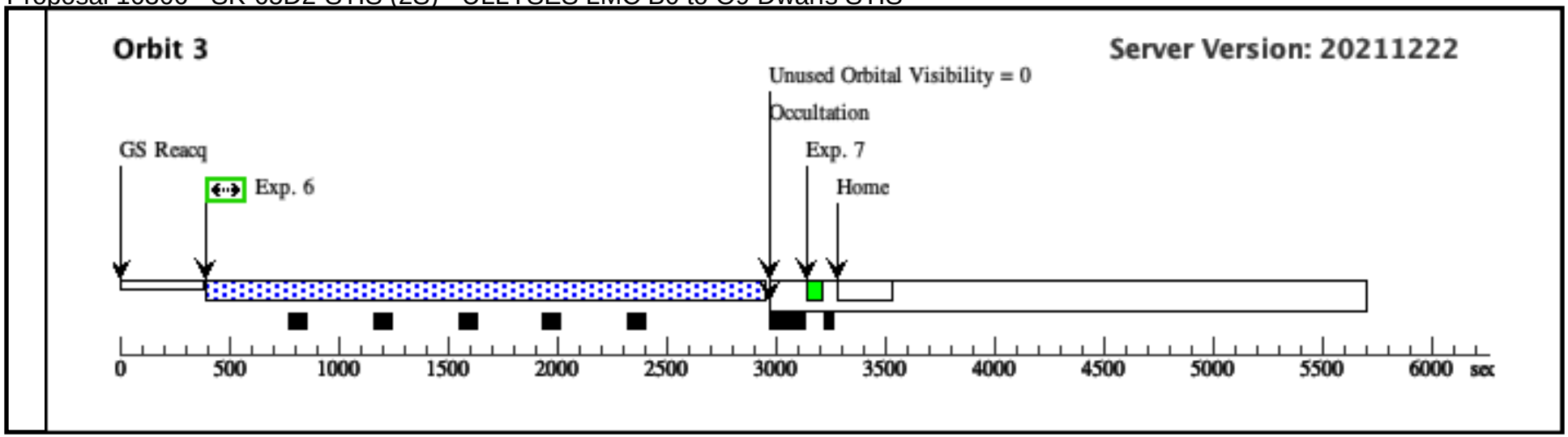
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1743878)	(2) SK-65D2	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs (0.1 Secs) *[==>]*	***[1]***
Comments: Saturation at 9+s									
2	E140M/1425 (STIS.sp.1743879)	(2) SK-65D2	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=385			2195.2 Secs (2195.2 Secs) *[==>]*	***[1]***
Comments: rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B1V --> B1 V* *SED = SK-65D2_STIS_E140M_c1425_sed.fits* *For exptime=5820.6 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3592.7 cts/s/segment* *brightest pixel: 0.038 cts/s/pix at 1333.4 A* *Calculation performed 2020-02-24T17:50:46, v0.4*									
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (STIS.sp.1743879)	(2) SK-65D2	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=385			2547.2 Secs (2547.2 Secs) *[==>]*	***[2]***
Comments: rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B1V --> B1 V* *SED = SK-65D2_STIS_E140M_c1425_sed.fits* *For exptime=5820.6 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3592.7 cts/s/segment* *brightest pixel: 0.038 cts/s/pix at 1333.4 A* *Calculation performed 2020-02-24T17:50:46, v0.4*									
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***
6	E140M/1425 (STIS.sp.1743879)	(2) SK-65D2	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=385			2547.2 Secs (2547.2 Secs) *[==>]*	***[3]***
Comments: rn-max(WM-Basic(B1 V, Z=0.008, Teff=26303, log_lum=4.45, log_g=4.00) (extinction lmcavg=0.120), flux1160 +- 30.0A flux=5.5e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B1V --> B1 V* *SED = SK-65D2_STIS_E140M_c1425_sed.fits* *For exptime=5820.6 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3592.7 cts/s/segment* *brightest pixel: 0.038 cts/s/pix at 1333.4 A* *Calculation performed 2020-02-24T17:50:46, v0.4*									
7	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20211222
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 6
Exp. 7
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16366, SK-67D216-STIS (3S) Fri Apr 08 18:00:23 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 3S; SK-67D216; P/STIS approved for submission; P/JRD 04/03/22 ; intrev: complete ; P/AF 08/04/22
vcheck; Enter targ name & Inst. & Resp. Sci.; SK-67D216 'SK -67 216' ; STIS ; JRD
vcheck; ETC numbers entered in APT?; completed
vcheck; Any screening violations?; None
vcheck; S/N ETC calcs done & documented?; Yes ...
vcheck; Field images checked & saved?; Yes, saved DSS, 2MASS, Galex NUV pngs
vcheck; Selected ACQ strategy?; STIS F28X50LP, 0.4 s
vcheck; Possible ACQ or Sci spoilers?; None
vcheck; Field BOT clear?; GSC 1 safe (target), no BOT Galex coverage
vcheck; Visual BOT check for stars not in catalog?; OK ...
Queried Zaritsky catalog, no sources of concern.
No Simbad objects nearby. No bright GAIA objects nearby.
vcheck; Orbit packing finalized?; done ...
vcheck; Buffer times optimized?; yes ...
vcheck; Verify visit grouping correct; not needed
vcheck; Is visit ready for int. review?; yes ...
Allocated STIS orbits = 3

Fixed Targets

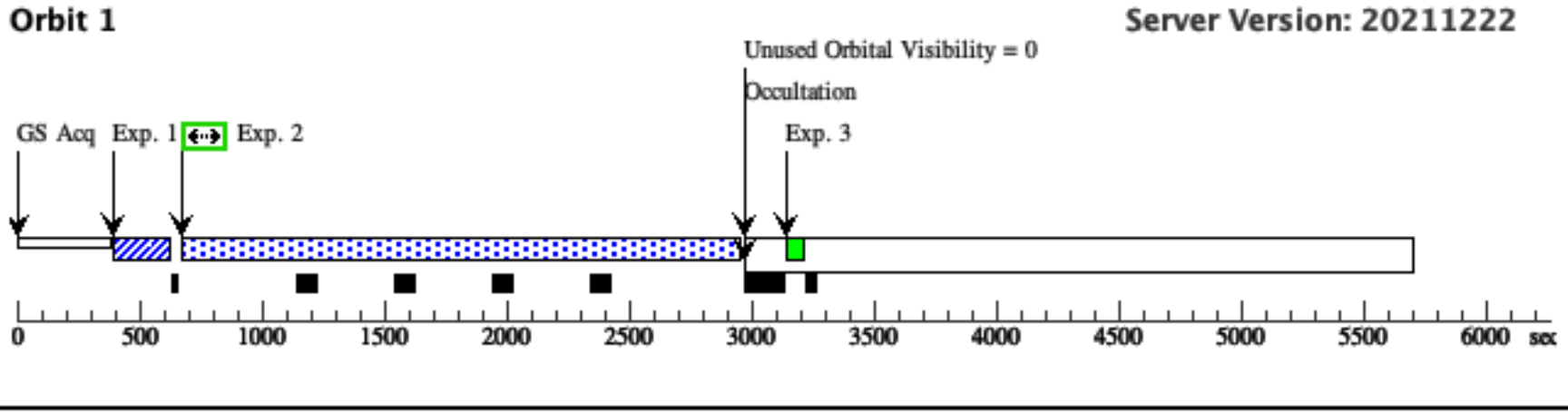
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SK-67D216	RA: 05 35 43.6119 (83.9317162d)		V=12.81	Reference Frame: ICRS
	Alt Name1: SK-67-216	Dec: -66 59 50.48 (-66.99736d)		SpT=B0.5 V0; E(B-V)=0.15; (U	
	Alt Name2: SK-67216	Equinox: J2000		,	
				B,	
				V) = ((11.70,	
				12.68,	
				12.84); F1160=5.94e-13=12	

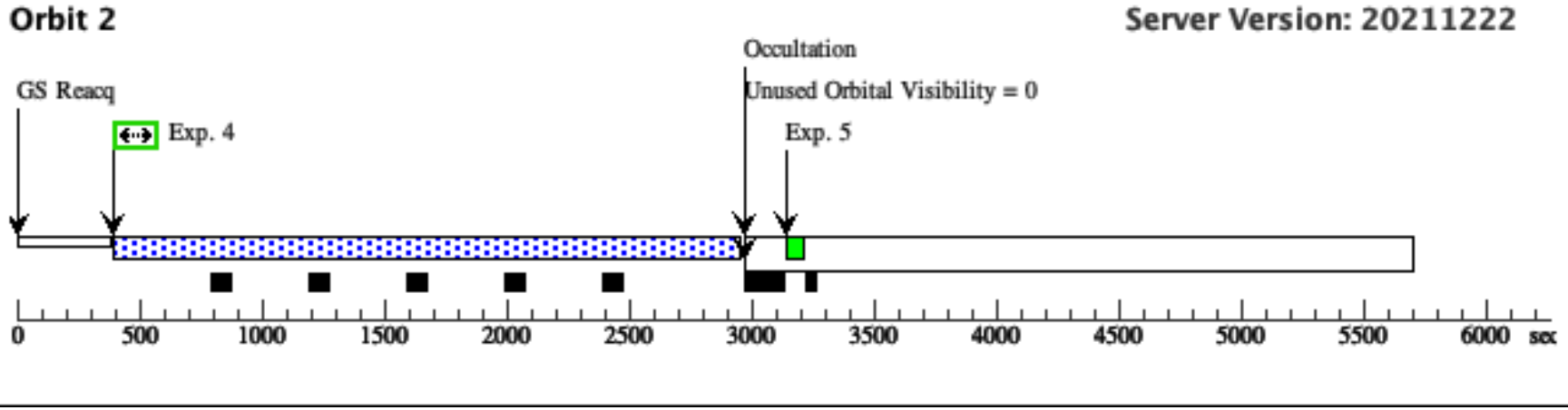
Comments: SK-67D216 : Sk -67 216, Sk_-67216, SK -67 216
Previous name : Sk -67 216
Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv
SIMBAD link (SK -67 216): https://simbad.u-strasbg.fr/simbad/sim-id?Ident=SK+-67+216&submit=submit+id
SpT = B0.5 V0
COS/G130M/c1096 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
COS/G130M/c1291 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
COS/G160M/c1611 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
COS/G185M/c1921 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
COS/G185M/c1953 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
COS/G185M/c1986 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
STIS/E140M/c1425 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
STIS/E230M/c1978 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
STIS/E230M/c2707 : rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam)
Coordinate pedigree: Gaia
Calculation performed 2020-02-24T17:49:09, v0.4
---
tstatus; SK-67D216; P/STIS approved for submission; S/ins not started; P/TM 04/11/21; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SK-67D216 'SK -67 216'
tcheck; Target info verification status?; OK ...
Simbad lists spectral type as OB, target selection team adopted B0.5 V0
tcheck; Coordinates & P.M. updated?; Yes, Gaia DR2 adopted, PM set to zero
tcheck; Adopted SED compared to Observations?; Yes. Modified sed sk-67d216_sed.fits to increase extinction slightly, compared to FUSE spectrum and optical/NIR photometry obtained from Vizier photometry tool (sk-67d216.vot). See plots in sk-67d216_vs_FUSE_vs_photo.png, sk-67d216_vs_FUSE_vs_photo_zoom_UV.png and sk-67d216_vs_FUSE_vs_photo_zoom_optical.png
Category=EXT-STAR
Description=[B0-B2 V-IV]
Extended=NO

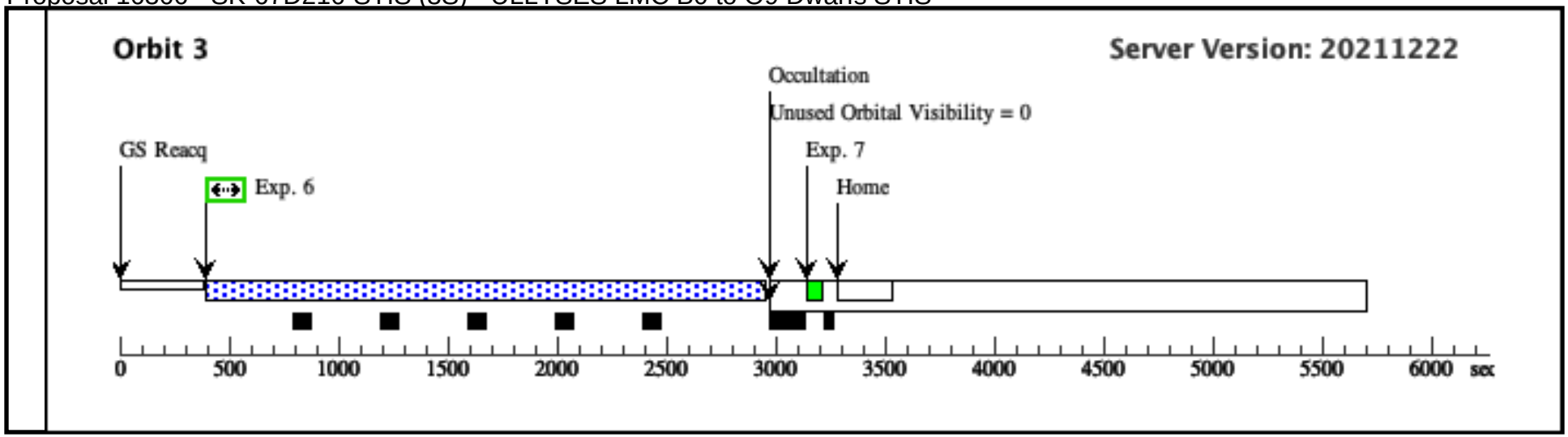
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1743772)	(3) SK-67D216	STIS/CCD, ACQ, F28X50LP	MIRROR				0.4 Secs (0.4 Secs) *[==>]*	*[1]*
2	E140M/1425 (STIS.sp.1743773)	(3) SK-67D216	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=400			2196 Secs (2196 Secs) *[==>]*	*[1]*
	Comments: rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B0.5 V0 --> B0.5 V* *SED = SK-67D216_STIS_E140M_c1425_sed.fits* *For exptime=5857.2 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 2933.0 cts/s/segment* *brightest pixel: 0.033 cts/s/pix at 1275.0 A* *Calculation performed 2020-02-24T17:49:21, v0.4*								
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	*[1]*
4	E140M/1425 (STIS.sp.1743773)	(3) SK-67D216	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=400			2548 Secs (2548 Secs) *[==>]*	*[2]*
	Comments: rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B0.5 V0 --> B0.5 V* *SED = SK-67D216_STIS_E140M_c1425_sed.fits* *For exptime=5857.2 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 2933.0 cts/s/segment* *brightest pixel: 0.033 cts/s/pix at 1275.0 A* *Calculation performed 2020-02-24T17:49:21, v0.4*								
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	*[2]*
6	E140M/1425 (STIS.sp.1743773)	(3) SK-67D216	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=400			2548 Secs (2548 Secs) *[==>]*	*[3]*
	Comments: rn-max(WM-Basic(B0.5 V, Z=0.008, Teff=28184, log_lum=4.60, log_g=4.00) (extinction lmcavg=0.010), flux1160 +- 30.0A flux=5.9e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: B0.5 V0 --> B0.5 V* *SED = SK-67D216_STIS_E140M_c1425_sed.fits* *For exptime=5857.2 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 2933.0 cts/s/segment* *brightest pixel: 0.033 cts/s/pix at 1275.0 A* *Calculation performed 2020-02-24T17:49:21, v0.4*								
7	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20211222
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 6
Exp. 7
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16366, SK-70D13-STIS (4S) Fri Apr 08 18:00:23 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 4S; SK-70D13; P/STIS approved for submission; P/TM 18/03/22 ; intrev: complete ; P/AF 08/04/22
vcheck; Enter targ name & Inst. & Resp. Sci.; SK-70D13 'SK -70 13' ; STIS ; TM
vcheck; ETC numbers entered in APT?; completed
vcheck; Any screening violations?; none
vcheck; S/N ETC calcs done & documented?; Yes
Same SED used for BOP and S/N calculation
STIS.sp.1730088 gives S/N = 20 at 1200A in 5256sec
vcheck; Field images checked & saved?; yes
DSS, 2MASS, and Galex saved. Galex field is strange
2 Simbad objects within 2.5" of the target
vcheck; Selected ACQ strategy?; STIS F28X50LP 0.1s
vcheck; Possible ACQ or Sci spoilers?; should be brightest source ...
Some emission elongation to NE of the target in both DSS and 2MASS images
Simbad shows 2 objects within 5" of the target
KMHK 237 is listed as a cluster of stars at 0.95" from target
[O96] D025NE-2 is another O9V star at 2.38" from target with B=14.517, V=14.689, G = 14.583492
Target is brighter at all optical magnitudes given for [O96] D025NE-2 by over 2mag
Zaritsky catalog only has the target in the macroaperture.
vcheck; Field BOT clear?; 1 unknown in GSC2 ...
No stars returned for GALEX despite emission from source being evident
Searched Galex AIS and MIS catalogs on Vizier, neither returned anything for the target or the field within 30"
vcheck; Visual BOT check for stars not in catalog?; No bright sources in GAIA
vcheck; Orbit packing finalized?; 2 orbits allocated and used ...
STIS.sp.1730088 gives exptime = 5257 sec for SNR = 20 at 1200A
Only 2 orbits allocated, with 4744 sec of science exptime.
STIS.sp.1730392 gives SNR = 18.99 at 1200A for exptime = 4744 sec
vcheck; Buffer times optimized?; ok
*Buffer time = 4/5 * 303.51 = 242.8 sec. Original BT = 239s, which we will use.*
vcheck; Verify visit grouping correct; No grouping specified, only 1 STIS visit is used
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 2

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SK-70D13 Alt Name1: M2002-19062 Alt Name2: SK-70-13	RA: 04 54 1.1652 (73.5048550d) Dec: -69 59 47.52 (-69.99653d) Equinox: J2000		V=12.29 SpT=O9 V; E(B-V)=0.13; U=11.2; B=12.2; V=12.3; F1160=1.19e-12	Reference Frame: ICRS

Comments: SK-70D13 : [M2002]_19062, Sk -70 13, SK -70 13
Previous name : Sk -70 13
Input file: LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv
SIMBAD link (SK -70 13): https://simbad.u-strasbg.fr/simbad/sim-id?Ident=SK+-70+13&submit=submit+id
SpT = O9 V
COS/G130M/c1096 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
COS/G130M/c1291 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
COS/G160M/c1611 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
COS/G185M/c1921 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
COS/G185M/c1953 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
COS/G185M/c1986 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
STIS/E140M/c1425 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
STIS/E230M/c1978 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
STIS/E230M/c2707 : rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam)
Coordinate pedigree: 2MASS
v sin i = 84
Calculation performed 2020-02-24T18:08:27, v0.4
---
tstatus; SK-70D13; P/STIS approved for submission; S/ins not started; P/TM 18/03/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SK-70D13 'SK -70 13'
tcheck; Target info verification status?; OK ...
Simbad lists spectral type as OB D, target selection team adopted O9 V.
tcheck; Coordinates & P.M. updated?; yes, Gaia coordinates, PM set to zero ...
Simbad lists PMs as 2.023, -0.210 mas/yr, but keeping zero for now
tcheck; Adopted SED compared to Observations?; yes ...
IUE NUV flux is about 20% higher than the SED
IUE FUV flux is good match on average, broadbands are too high in the optical.
Category=EXT-STAR
Description=[MAIN SEQUENCE O]
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.1730060)	(4) SK-70D13	STIS/CCD, ACQ, F28X50LP	MIRROR				0.1 Secs (0.1 Secs) *[==>]*	***[1]***
2	E140M/1425 (STIS.sp.1730088)	(4) SK-70D13	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=239.0			2196 Secs (2196 Secs) *[==>]*	***[1]***
	Comments: rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: O9 V --> O9 V* *SED = SK-70D13_STIS_E140M_c1425_sed.fits* *For exptime=3427.7 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 6688.8 cts/s/segment* *brightest pixel: 0.078 cts/s/pix at 1407.0 A* *Calculation performed 2020-02-24T18:08:37, v0.4*									
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (STIS.sp.1730088)	(4) SK-70D13	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=239.0			2548 Secs (2548 Secs) *[==>]*	***[2]***
	Comments: rn-max(WM-Basic(O9 V, Z=0.008, Teff=32359, log_lum=5.00, log_g=4.00) (extinction lmcavg=0.130), flux1160 +- 30.0A flux=1.2e-12 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59305 *From file LMC_2020Feb20/input/LMC_all_do1_fixed_wr_NewCoords_pids.csv* *Spectral type: O9 V --> O9 V* *SED = SK-70D13_STIS_E140M_c1425_sed.fits* *For exptime=3427.7 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 6688.8 cts/s/segment* *brightest pixel: 0.078 cts/s/pix at 1407.0 A* *Calculation performed 2020-02-24T18:08:37, v0.4*									
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***

Orbit Structure