16820 - ULLYSES LMC O5-O6 Dwarfs - STIS

Cycle: 29, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
1S	(1) BI13 WAVE	STIS/CCD STIS/FUV-MAMA	3	12-Apr-2022 11:00:41.0	yes
2S	(2) PGMW-3070 WAVE	STIS/CCD STIS/FUV-MAMA	3	12-Apr-2022 11:00:43.0	yes
3S	(3) SK-66D18 WAVE	STIS/CCD STIS/FUV-MAMA	2	12-Apr-2022 11:00:44.0	yes
4S	(4) SK-70D69 WAVE	STIS/CCD STIS/FUV-MAMA	3	12-Apr-2022 11:00:45.0	yes

11 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 16820, BI13-STIS (1S) Tue Apr 12 15:00:46 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 1S; BI13; P/STIS approved for submission; P/DW 06/01/22 ; intrev: complete ; P/AF 29/03/22
vcheck; Enter targ name & Inst. & Resp. Sci.; BI13 ; STIS ; DW
vcheck; ETC numbers entered in APT?; yes
vcheck; Any screening violations?; no
vcheck; S/N ETC calcs done & documented?; yes -- used both new and default seds -- both gave similar results
vcheck; Field images checked & saved?; yes -- DSS, 2MASS, GALEX -- no HST images available
vcheck; Selected ACQ strategy?; yes -- F28x50LP, 1s yields S/N~118
vcheck; Possible ACQ or Sci spoilers?; no -- only 2 other stars within 5" in Gaia EDR3 -- both have G>20
vcheck; Field BOT clear?; yes -- nothing brighter than G=18 within 20" of target (and nothing with Bp-Rp of an M dwarf)
vcheck; Visual BOT check for stars not in catalog?; yes -- using Gaia EDR3
vcheck; Orbit packing finalized?; yes
*vcheck; Buffer times optimized?; yes -- chose smaller of values from using new and default seds -- 0.8*588s=470s*
vcheck; Verify visit grouping correct; n/a
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 4 -- but 3 appear to be sufficient

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	BI13 Alt Name1: M2002-15830 Alt Name2: BI-13	RA: 04 53 6.5059 (73.2771079d) Dec: -68 03 22.80 (-68.05633d) Equinox: J2000	Proper Motion RA: 0 mas/yr Proper Motion Dec: 0 mas/yr Parallax: 0" Epoch of Position: 2015.5	V=13.75 SpT=O6.5 V; E(B-V)=0.18; U=12.58; B=13.66; V=13.75; F1160=6.150e-13	Reference Frame: ICRS

Comments: BI13 : M2002-15830, BI 13
Previous name : BI 13
Input file: ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
SpT = O6.5 V

Coordinate pedigree: Gaia DR2
Calculation performed 2021-10-25T00:59:26, v0.9
---
tstatus; BI13; P/STIS approved for submission; S/ins not started; P/DW 06/01/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; yes -- BI 13, aka LHA 120-S 6, [M2002] LMC 15830
tcheck; Target info verification status?; yes
tcheck; Coordinates & P.M. verified, epoch checked?; yes
tcheck; Adopted SED compared to Observations?; yes (FUSE, UBV only -- IUE obs are of Sk-68 5, FOS obs are bad)
Category=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 (1681849)	(1) BI13	STIS/CCD, ACQ, F28X50LP	MIRROR				1.0 Secs (1 Secs) *[==>]*	 ***[1]***
Comments: Exposure time not yet calculated.									
2	E140M/1425 (1681878)	(1) BI13	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=470.0			2192 Secs (2192 Secs) *[==>]*	 ***[1]***
Comments: rn(PoWR-OB-new(PoWR_38000_4.00_m7.00_Z0.50.fits, lmc-ob-i 38-40, Z=0.500 solar, Teff=38000, log_lum=5.16, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.180), flux1160 +- 2.0A flux=6.2e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6.5 V* *SED = BI13_STIS_E140M_c1425_sed.fits* *For exptime=8440.7 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3411.2 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1344.5 A* *Calculation performed 2021-10-25T00:59:34, v0.9* *changed E(B-V) slightly, to 0.16 -- minor impact on spectrum over range of E140M* *used exptime for 3 orbits -- 7288 sec* *default sed -- brightest pix 0.037 cts/s/pix (1345A), entire detector 3.4k cts/s, buf time=588s, S/N~22/35 in contin near 1200/1250A (ETC 1681880)* *new sed -- brightest pix 0.035 cts/s/pix (1345A), entire detector 3.2k cts/s, buf time=617s, S/N~21/34 in contin near 1200/1250A (ETC 1681878)*								
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (1681878)	(1) BI13	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=470.0			2548 Secs (2548 Secs) *[==>]*	 ***[2]***
Comments: rn(PoWR-OB-new(PoWR_38000_4.00_m7.00_Z0.50.fits, lmc-ob-i 38-40, Z=0.500 solar, Teff=38000, log_lum=5.16, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.180), flux1160 +- 2.0A flux=6.2e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6.5 V* *SED = BI13_STIS_E140M_c1425_sed.fits* *For exptime=8440.7 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3411.2 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1344.5 A* *Calculation performed 2021-10-25T00:59:34, v0.9* *changed E(B-V) slightly, to 0.16 -- minor impact on spectrum over range of E140M* *used exptime for 3 orbits -- 7288 sec* *default sed -- brightest pix 0.037 cts/s/pix (1345A), entire detector 3.4k cts/s, buf time=588s, S/N~22/35 in contin near 1200/1250A (ETC 1681880)* *new sed -- brightest pix 0.035 cts/s/pix (1345A), entire detector 3.2k cts/s, buf time=617s, S/N~21/34 in contin near 1200/1250A (ETC 1681878)*								
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***

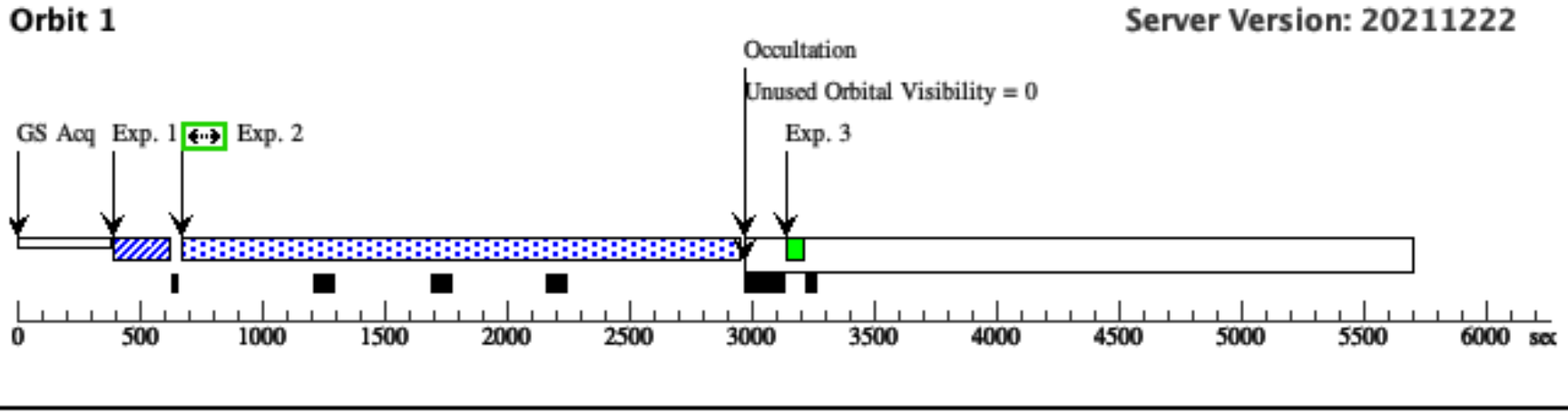
	6	E140M/1425 (1) BI135 (1681878)	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=470.0	2548 Secs (2548 Secs) [==>]	[3]

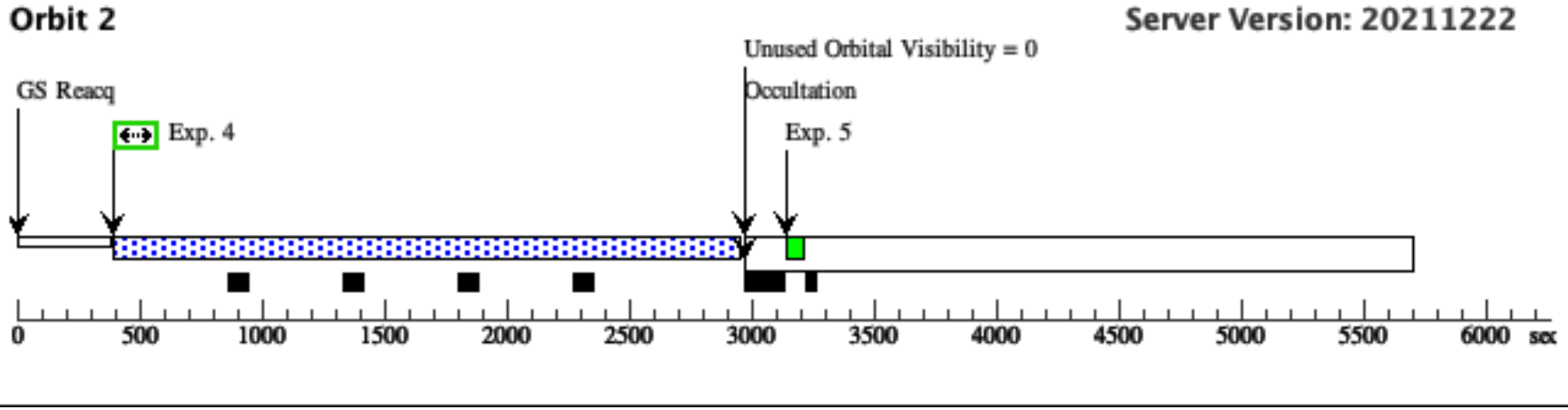
Comments: rn(PoWR-OB-new(PoWR_38000_4.00_m7.00_Z0.50.fits, lmc-ob-i 38-40, Z=0.500 solar, Teff=38000, log_lum=5.16, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.180), flux1160 +- 2.0A flux=6.2e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670
From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
Spectral type: O6.5 V
SED = BI13_STIS_E140M_c1425_sed.fits
For exptime=8440.7 s, spectral region:
1200.0 +- 0.5 A achieves SNR=20.0/resel
global countrate (brightest segment): 3411.2 cts/s/segment
brightest pixel: 0.037 cts/s/pix at 1344.5 A
Calculation performed 2021-10-25T00:59:34, v0.9

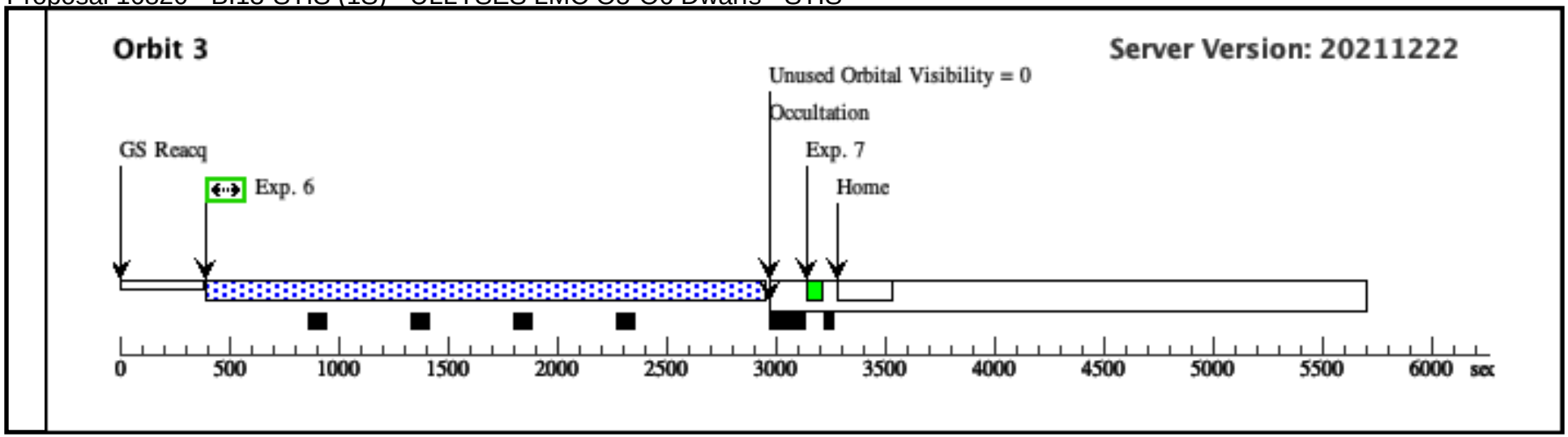
changed E(B-V) slightly, to 0.16 -- minor impact on spectrum over range of E140M
used exptime for 3 orbits -- 7288 sec
default sed -- brightest pix 0.037 cts/s/pix (1345A), entire detector 3.4k cts/s, buf time=588s, S/N~22/35 in contin near 1200/1250A (ETC 1681880)
new sed -- brightest pix 0.035 cts/s/pix (1345A), entire detector 3.2k cts/s, buf time=617s, S/N~21/34 in contin near 1200/1250A (ETC 1681878)

	7	E140M/1425 WAVECAL	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 16820, PGMW-3070-STIS (2S) Tue Apr 12 15:00:46 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%; ORIENT 3D TO 33 D; ORIENT 183D TO 213 D

Comments: vstatus; 2S; PGMW-3070; P/STIS approved for submission; P/DW 07/01/22 ; intrev: complete ; P/AF 29/03/22
vcheck; Enter targ name & Inst. & Resp. Sci.; PGMW-3070 ; STIS ; DW
vcheck; ETC numbers entered in APT?; yes
vcheck; Any screening violations?; no
vcheck; S/N ETC calcs done & documented?; yes
vcheck; Field images checked & saved?; yes -- DSS, 2MASS, GALEX, ACS/WFC (see pptx)
vcheck; Selected ACQ strategy?; F28x50LP, 1 sec should yield S/N~180
vcheck; Possible ACQ or Sci spoilers?; several faint stars within 1", including one that is >3 mag fainter at 0.22" and PA~333 -- may need to use orient constraint (~18+/-15) to minimize any contributions from that
vcheck; Field BOT clear?; target is brightest object within 5" -- but there are several faint stars within 1" in ACS/WFC F550M image (see pptx)
vcheck; Visual BOT check for stars not in catalog?; used Gaia EDR3 list, ACS/WFC images of field
vcheck; Orbit packing finalized?; yes
vcheck; Buffer times optimized?; yes
vcheck; Verify visit grouping correct; n/a
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 3

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PGMW-3070	RA: 04 56 43.2742 (74.1803092d) Dec: -66 25 2.51 (-66.41736d) Equinox: J2000	Proper Motion RA: 0 mas/yr Proper Motion Dec: 0 mas/yr Parallax: 0" Epoch of Position: 2015.5	V=12.75 SpT=O6 V; E(B-V)=0.06; U=11.84; B=12.53; V=12.75; F1160=7.320e-13	Reference Frame: ICRS

Comments: PGMW-3070 : PGMW 3070
Previous name : [PGMW]-3070
Input file: ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
SpT = O6 V

Coordinate pedigree: Gaia DR2
Calculation performed 2021-10-25T00:59:45, v0.9
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tstatus; PGMW-3070; P/STIS approved for submission; S/ins not started; P/DW 07/01/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; PGMW-3070
tcheck; Target info verification status?; yes
tcheck; Coordinates & P.M. verified, epoch checked?; yes
tcheck; Adopted SED compared to Observations?; yes -- higher E(B-V)~0.14 gives better fit -- though still not good below 1000A
Category=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 (1681850)	(2) PGMW-3070	STIS/CCD, ACQ, F28X50LP	MIRROR				1.0 Secs (1 Secs) *[==>]*	***[1]***
Comments: Exposure time not yet calculated.									
2	E140M/1425 (1682755)	(2) PGMW-3070	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=440			2192 Secs (2192 Secs) *[==>]*	***[1]***
Comments: rn(PoWR-OB-new(PoWR_39000_4.00_m7.00_Z0.50.fits, lmc-ob-i 39-40, Z=0.500 solar, Teff=39000, log_lum=5.23, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.060), flux1160 +- 2.0A flux=7.3e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6 V* *SED = PGMW-3070_STIS_E140M_c1425_sed.fits* *For exptime=7485.5 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3010.6 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T00:59:53, v0.9* *calculations performed for default sed (1682754, E(B-V)=0.06) and new sed (1682755, E(B-V)=0.14)* *for 3 orbits -- 7288 sec* *old: brightest pix 0.037 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time 666s, S/N~23/35 at 1200A/1250A* *new: bightest pix 0.041 cts/s/pix (1244A), entire detector 3.6k cts/s, buf time 553s, S/N~22/38 at 1200A/1250A*								
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (1682755)	(2) PGMW-3070	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=440			2548 Secs (2548 Secs) *[==>]*	***[2]***
Comments: rn(PoWR-OB-new(PoWR_39000_4.00_m7.00_Z0.50.fits, lmc-ob-i 39-40, Z=0.500 solar, Teff=39000, log_lum=5.23, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.060), flux1160 +- 2.0A flux=7.3e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6 V* *SED = PGMW-3070_STIS_E140M_c1425_sed.fits* *For exptime=7485.5 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3010.6 cts/s/segment* *brightest pixel: 0.037 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T00:59:53, v0.9* *calculations performed for default sed (with E(B-V)=0.06) and new sed (with E(B-V)=0.14)* *for 3 orbits -- 7288 sec* *old: brightest pix 0.037 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time 666s, S/N~23/35 at 1200A/1250A* *new: bightest pix 0.041 cts/s/pix (1244A), entire detector 3.6k cts/s, buf time 553s, S/N~22/38 at 1200A/1250A*								
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***

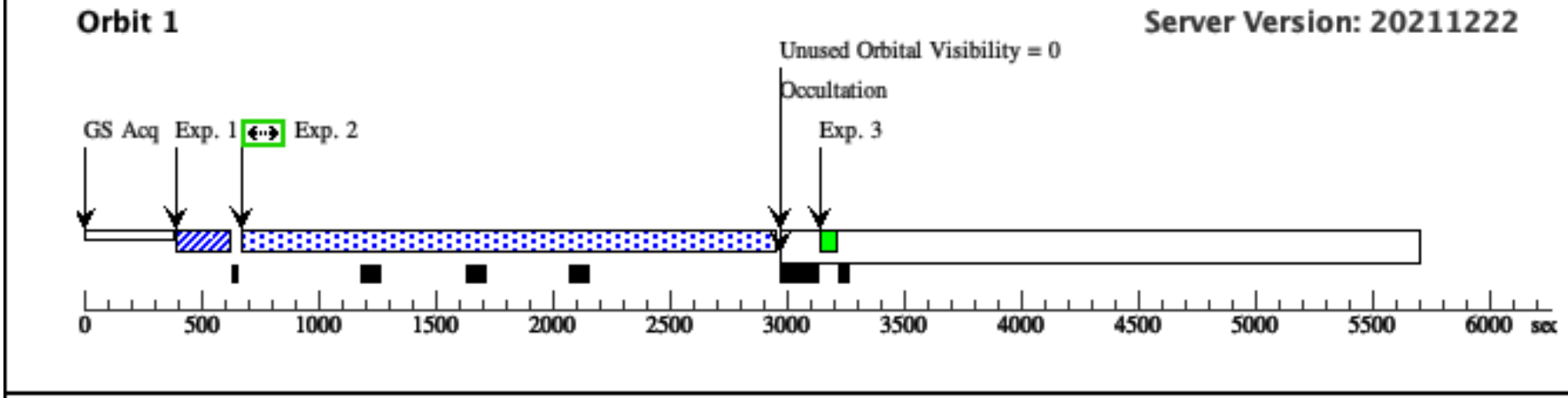
	6	E140M/1425 (1682755)	(2) PGMW-3070	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=440	2548 Secs (2548 Secs) *[==>]*	***[3]***

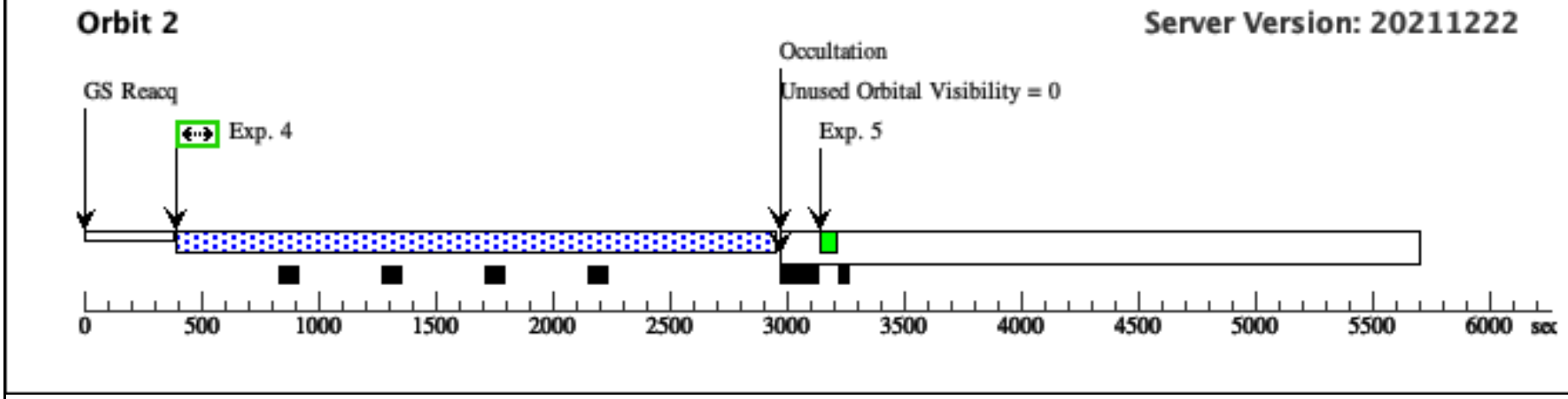
Comments: rn(PoWR-OB-new(PoWR_39000_4.00_m7.00_Z0.50.fits, lmc-ob-i 39-40, Z=0.500 solar, Teff=39000, log_lum=5.23, log_g=4.00, log_mdot=-7.00) (extinction lmcavg=0.060), flux1160 +- 2.0A flux=7.3e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670
From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
Spectral type: O6 V
SED = PGMW-3070_STIS_E140M_c1425_sed.fits
For exptime=7485.5 s, spectral region:
1200.0 +- 0.5 A achieves SNR=20.0/resel
global countrate (brightest segment): 3010.6 cts/s/segment
brightest pixel: 0.037 cts/s/pix at 1243.5 A
Calculation performed 2021-10-25T00:59:53, v0.9

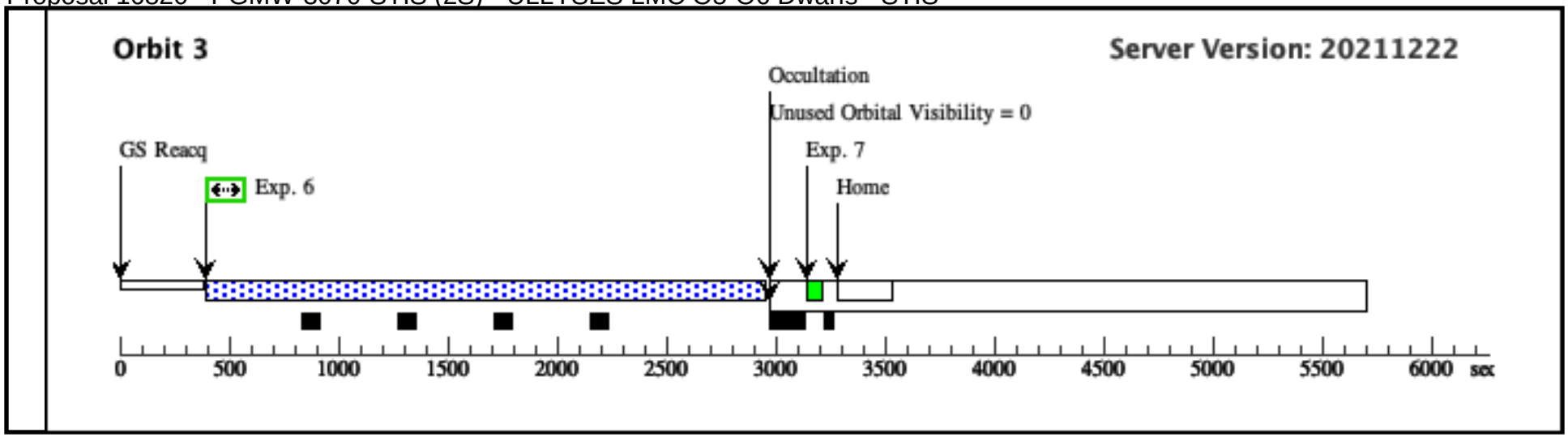
calculations performed for default sed (with E(B-V)=0.06) and new sed (with E(B-V)=0.14)
for 3 orbits -- 7288 sec
old: brightest pix 0.037 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time 666s, S/N~23/35 at 1200A/1250A
new: bightest pix 0.041 cts/s/pix (1244A), entire detector 3.6k cts/s, buf time 553s, S/N~22/38 at 1200A/1250A

	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 16820, SK-66D18-STIS (3S) Tue Apr 12 15:00:46 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 3S; SK-66D18; P/STIS approved for submission; P/DW 08/01/22 ; intrev: complete ; P/AF 29/03/22
vcheck; Enter targ name & Inst. & Resp. Sci.; SK-66D18 ; STIS ; DW
vcheck; ETC numbers entered in APT?; yes
vcheck; Any screening violations?; no
vcheck; S/N ETC calcs done & documented?; yes
vcheck; Field images checked & saved?; yes -- DSS, 2MASS, GALEX
vcheck; Selected ACQ strategy?; yes -- F28x50LP, 1 sec should yield S/N~127
vcheck; Possible ACQ or Sci spoilers?; no -- target appears single, isolated in images
vcheck; Field BOT clear?; yes -- nothing else brighter than G=18 within 30" in Gaia EDR3
vcheck; Visual BOT check for stars not in catalog?; yes -- Gaia EDR3
vcheck; Orbit packing finalized?; yes
*vcheck; Buffer times optimized?; yes -- 0.8*529s=422s (minimum of buf times for orig, new seds)*
vcheck; Verify visit grouping correct; n/a
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 2 (constrained in input CSV)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SK-66D18	RA: 04 55 59.8269 (73.9992788d)	Proper Motion RA: 0 mas/yr	V=13.5	Reference Frame: ICRS
	Alt Name1: SK-66-18	Dec: -65 58 29.74 (-65.97493d)	Proper Motion Dec: 0 mas/yr	SpT=O6 V((f)); E(B-V)=0.08; U=12.23; B=13.30; V=13.50; F1700=4.000e-13; F2200=2.100e-13	
		Equinox: J2000	Parallax: 0"		
			Epoch of Position: 2015.5		

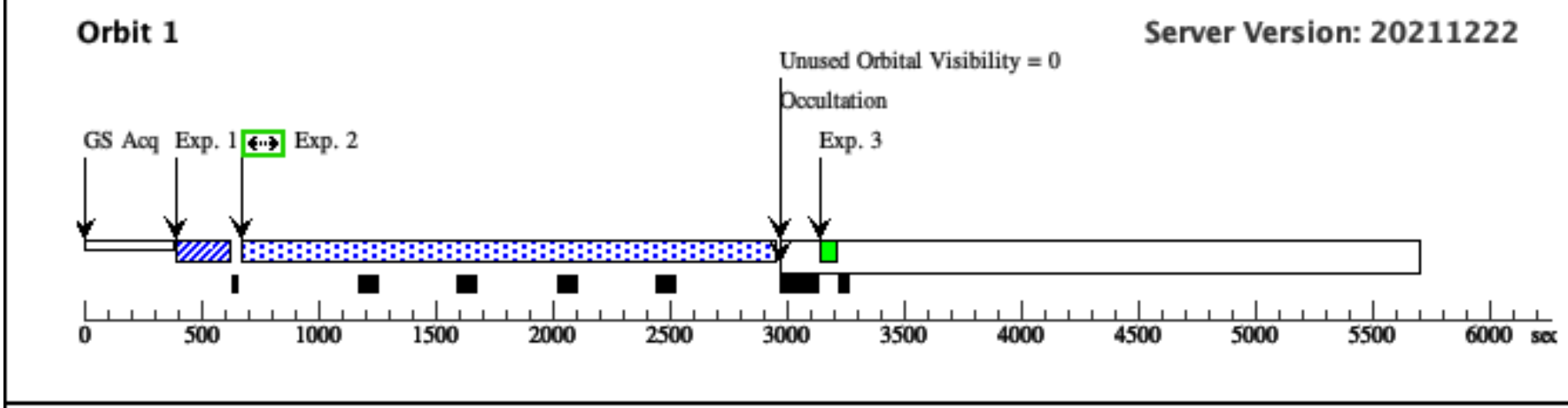
Comments: SK-66D18 : SK -66 18
Previous name : Sk-66 18
Input file: ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
SpT = O6 V((f))

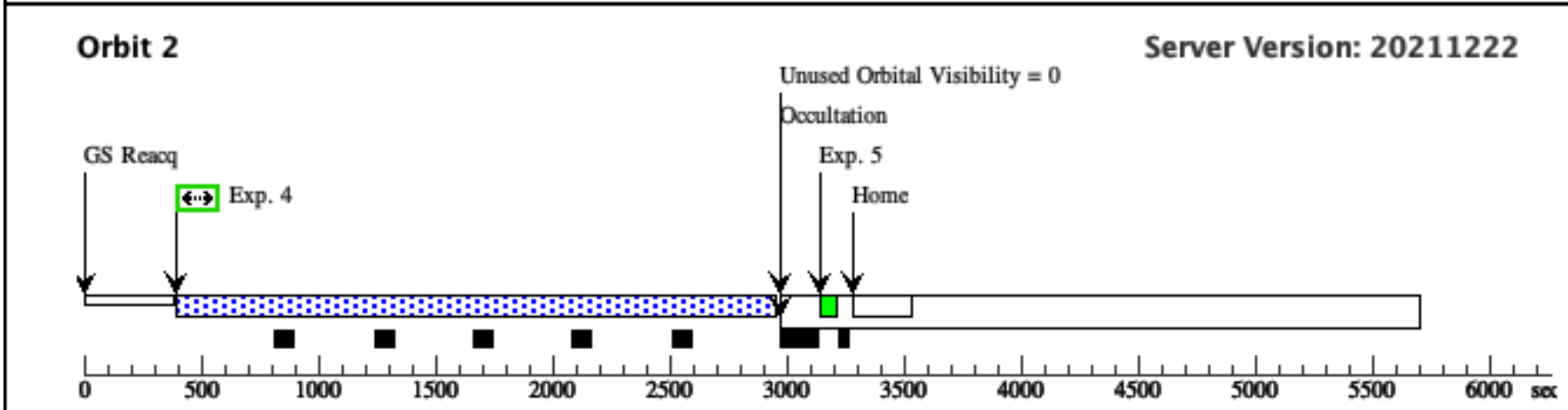
Coordinate pedigree: Gaia DR2
Calculation performed 2021-10-25T00:59:35, v0.9
---
tstatus; SK-66D18; P/STIS approved for submission; S/ins not started; P/DW 08/01/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SK-66D18
tcheck; Target info verification status?; yes
tcheck; Coordinates & P.M. verified, epoch checked?; yes
tcheck; Adopted SED compared to Observations?; yes -- changed normalization and E(B-V) to get better fit (FUSE,STIS,UBV)
Category=STAR
Description=[MAIN SEQUENCE O, OF]
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 (1681851)	(3) SK-66D18	STIS/CCD, ACQ, F28X50LP	MIRROR				1.0 Secs (1 Secs) *[==>]*	***[1]***
	Comments: F28x50LP, 1 sec yields S/N~127, with saturation in 18 sec								
2	E140M/1425 (1682985)	(3) SK-66D18	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=423			2192 Secs (2192 Secs) *[==>]*	***[1]***
	Comments: rn(PoWR-OB-new(PoWR_40000_3.80_m7.00_Z0.50.fits, lmc-ob-i 40-38, Z=0.500 solar, Teff=40000, log_lum=5.64, log_g=3.80, log_mdot=-7.00) (extinction lmcavg=0.080), flux1700 +- 2.0A flux=4e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6 V((f))* *SED = SK-66D18_STIS_E140M_c1425_sed.fits* *For exptime=5715.5 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3789.1 cts/s/segment* *brightest pixel: 0.049 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T00:59:44, v0.9* *adjusted sed to get better match to FUSE, STIS, UBV* *changed normalization to 8.0e-13 at 1160+/-2A, E(B-V)=0.10* *orig sed: brightest pix 0.049 cts/s/pix (1244A), entire detector 3.8k cts/s, buf time=529s, S/N~21/31 at 1200A/1250A (1682984)* *new sed: brightest pix 0.046 cts/s/pix (1244A), entire detector 3.6k cts/s, buf time=552s, S/N~20/31 at 1200A/1250A (1682985)* *NOTE: normalization to GALEX NUV yields S/N lower by factor of 2*								
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (1682985)	(3) SK-66D18	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=423			2548 Secs (2548 Secs) *[==>]*	***[2]***
	Comments: rn(PoWR-OB-new(PoWR_40000_3.80_m7.00_Z0.50.fits, lmc-ob-i 40-38, Z=0.500 solar, Teff=40000, log_lum=5.64, log_g=3.80, log_mdot=-7.00) (extinction lmcavg=0.080), flux1700 +- 2.0A flux=4e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O6 V((f))* *SED = SK-66D18_STIS_E140M_c1425_sed.fits* *For exptime=5715.5 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 3789.1 cts/s/segment* *brightest pixel: 0.049 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T00:59:44, v0.9* *adjusted sed to get better match to FUSE, STIS, UBV* *changed normalization to 8.0e-13 at 1160+/-2A, E(B-V)=0.10* *orig sed: brightest pix 0.049 cts/s/pix (1244A), entire detector 3.8k cts/s, buf time=529s, S/N~21/31 at 1200A/1250A (1682984)* *new sed: brightest pix 0.046 cts/s/pix (1244A), entire detector 3.6k cts/s, buf time=552s, S/N~20/31 at 1200A/1250A (1682985)* *NOTE: normalization to GALEX NUV yields S/N lower by factor of 2*								
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***

Orbit Structure





Visit

Proposal 16820, SK-70D69-STIS (4S) Tue Apr 12 15:00:46 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 100%

Comments: vstatus; 4S; SK-70D69; P/STIS approved for submission; P/DW 08/01/22 ; intrev: complete ; P/AF 29/03/22
vcheck; Enter targ name & Inst. & Resp. Sci.; SK-70D69 ; STIS ; DW
vcheck; ETC numbers entered in APT?; yes
vcheck; Any screening violations?; no
vcheck; S/N ETC calcs done & documented?; yes
vcheck; Field images checked & saved?; yes -- DSS, 2MASS, GALEX, WFPC2
vcheck; Selected ACQ strategy?; yes -- F28x50LP, 1 sec should yield S/N~101
vcheck; Possible ACQ or Sci spoilers?; no -- previous STIS acq indicates no problems, no other objects within 5" in WFPC2
vcheck; Field BOT clear?; yes -- nothing else brighter that G=18 within 15" (Gaia EDR3)
vcheck; Visual BOT check for stars not in catalog?; yes -- Gaia EDR3
vcheck; Orbit packing finalized?; yes
*vcheck; Buffer times optimized?; yes -- use minimum of buf times for old, new seds -- 0.8*672s=538s*
vcheck; Verify visit grouping correct; n/a
vcheck; Is visit ready for int. review?; yes
Allocated STIS orbits = 3

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SK-70D69	RA: 05 05 18.6796 (76.3278317d)	Proper Motion RA: 0 mas/yr	V=13.95	Reference Frame: ICRS
	Alt Name1: M2002-65981	Dec: -70 25 49.88 (-70.43052d)	Proper Motion Dec: 0 mas/yr	SpT=O5.5 V((f)); E(B-V)=0.05; U=12.63; B=13.72; V=13.95; F1160=8.040e-13; F1360=4.780e-13; F1700=3.310e-13; F2200=1.600e-13	
		Equinox: J2000	Parallax: 0"		
			Epoch of Position: 2015.5		

Comments: SK-70D69 : M2002-65981, SK -70 69
Previous name : Sk -70 69
Input file: ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
SpT = O5.5 V((f))

Coordinate pedigree: Gaia DR2
Calculation performed 2021-10-25T00:59:54, v0.9
---
tstatus; SK-70D69; P/STISapproved for submission; S/ins not started; P/DW 08/01/22; S/xx DD/MM/YY
tcheck; APT/SIMBAD target names: ; SK-70D69, aka [M2002]65981
tcheck; Target info verification status?; yes
tcheck; Coordinates & P.M. verified, epoch checked?; yes
tcheck; Adopted SED compared to Observations?; yes -- adjusted normalization and E(B-V) to better match FUSE,STIS,FOS,UBV
Category=STAR
Description=[MAIN SEQUENCE O, OF]
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 (1681852)	(4) SK-70D69	STIS/CCD, ACQ, F28X50LP	MIRROR				1.0 Secs (1 Secs) *[==>]*	***[1]***
Comments: F28x50LP, 1 sec should yield S/N~101, and saturation in 27 sec									
2	E140M/1425 (1682998)	(4) SK-70D69	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=538			2211 Secs (2211 Secs) *[==>]*	***[1]***
Comments: rn(PoWR-OB-new(PoWR_41000_3.80_m7.00_Z0.50.fits, lmc-ob-i 41-38, Z=0.500 solar, Teff=41000, log_lum=5.73, log_g=3.80, log_mdot=-7.00) (extinction lmcavg=0.050), flux1360 +- 2.0A flux=4.8e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O5.5 V((f))* *SED = SK-70D69_STIS_E140M_c1425_sed.fits* *For exptime=6978.6 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 2928.7 cts/s/segment* *brightest pixel: 0.040 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T01:00:03, v0.9* *adjusted normalization and E(B-V) to better fit the data (FUSE, STIS, FOCS, UBV) -- 7.0e-13 at 1160+/-2, E(B-V)=0.07* *old sed: brightest pix 0.040 cts/s/pix (1244A), entire detector 2.9k cts/s, buf time=685s, S/N~22/35 at 1200A/1250A (1682997)* *new sed: brightest pix 0.039 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time=672s, S/N~22/35 at 1200A/1250A (1682998)*								
3	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[1]***
4	E140M/1425 (1682998)	(4) SK-70D69	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=538			2567 Secs (2567 Secs) *[==>]*	***[2]***
Comments: rn(PoWR-OB-new(PoWR_41000_3.80_m7.00_Z0.50.fits, lmc-ob-i 41-38, Z=0.500 solar, Teff=41000, log_lum=5.73, log_g=3.80, log_mdot=-7.00) (extinction lmcavg=0.050), flux1360 +- 2.0A flux=4.8e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670 *From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv* *Spectral type: O5.5 V((f))* *SED = SK-70D69_STIS_E140M_c1425_sed.fits* *For exptime=6978.6 s, spectral region:* *1200.0 +- 0.5 A achieves SNR=20.0/resel* *global countrate (brightest segment): 2928.7 cts/s/segment* *brightest pixel: 0.040 cts/s/pix at 1243.5 A* *Calculation performed 2021-10-25T01:00:03, v0.9* *adjusted normalization and E(B-V) to better fit the data (FUSE, STIS, FOCS, UBV) -- 7.0e-13 at 1160+/-2, E(B-V)=0.07* *old sed: brightest pix 0.040 cts/s/pix (1244A), entire detector 2.9k cts/s, buf time=685s, S/N~22/35 at 1200A/1250A (1682997)* *new sed: brightest pix 0.039 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time=672s, S/N~22/35 at 1200A/1250A (1682998)*								
5	E140M/1425 WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 0.2X0.2	E140M 1425 A				*[==>]*	***[2]***

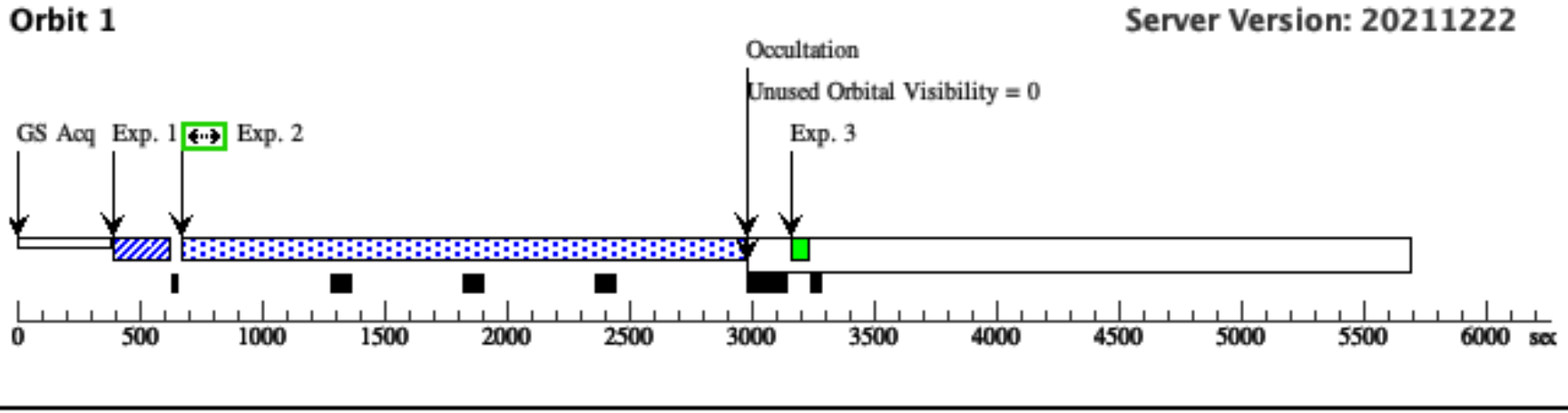
	6	E140M/1425 (1682998)	(4) SK-70D69	STIS/FUV-MAMA, TIME-TAG, 0.2X0.2	E140M 1425 A	WAVECAL=NO; BUFFER-TIME=538	2567 Secs (2567 Secs) *[==>]*	***[3]***

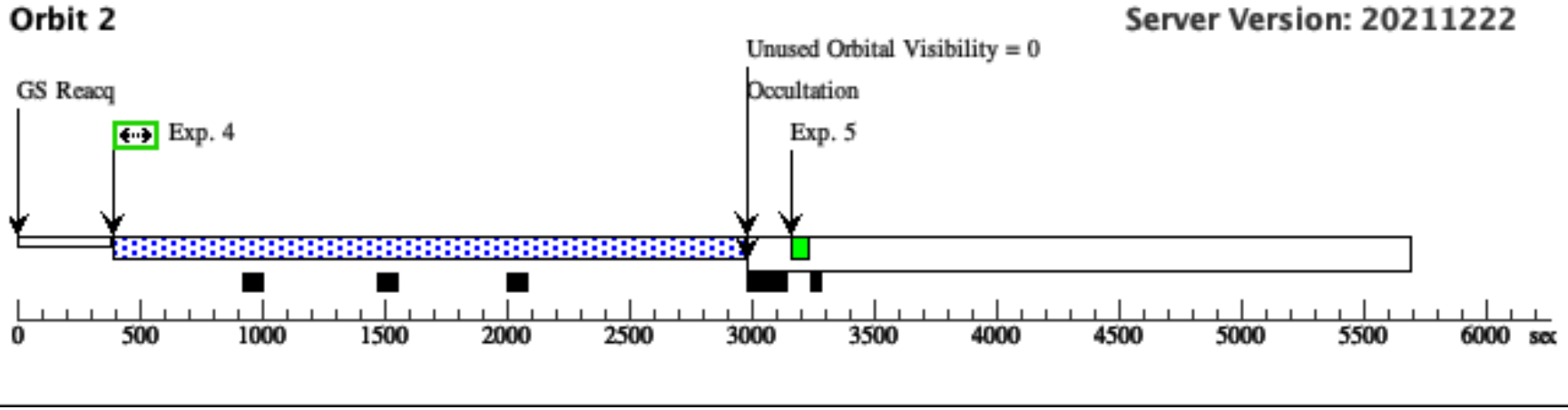
Comments: rn(PoWR-OB-new(PoWR_41000_3.80_m7.00_Z0.50.fits, lmc-ob-i 41-38, Z=0.500 solar, Teff=41000, log_lum=5.73, log_g=3.80, log_mdot=-7.00) (extinction lmcavg=0.050), flux1360 +- 2.0A flux=4.8e-13 Flam); stis,fuvmama,e140m,c1425,0.2x0.2,mjd#59670
From file ULLYSES_Cycle29_MassiveStar_ProgramInput_v5.csv
Spectral type: O5.5 V((f))
SED = SK-70D69_STIS_E140M_c1425_sed.fits
For exptime=6978.6 s, spectral region:
1200.0 +- 0.5 A achieves SNR=20.0/resel
global countrate (brightest segment): 2928.7 cts/s/segment
brightest pixel: 0.040 cts/s/pix at 1243.5 A
Calculation performed 2021-10-25T01:00:03, v0.9

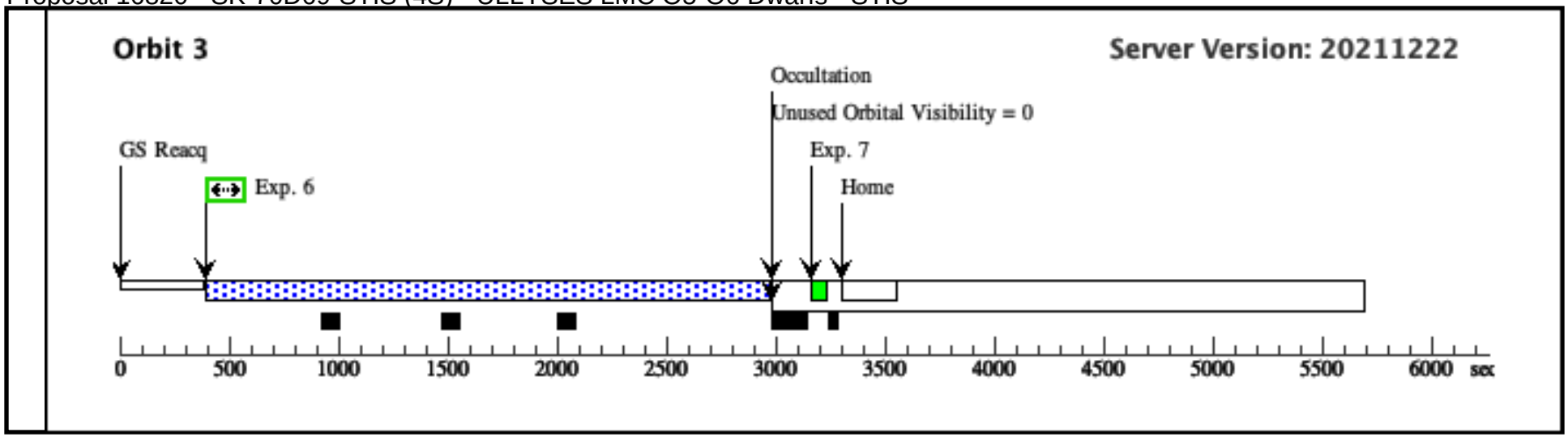
adjusted normalization and E(B-V) to better fit the data (FUSE, STIS, FOCS, UBV) -- 7.0e-13 at 1160+/-2, E(B-V)=0.07
old sed: brightest pix 0.040 cts/s/pix (1244A), entire detector 2.9k cts/s, buf time=685s, S/N~22/35 at 1200A/1250A (1682997)
new sed: brightest pix 0.039 cts/s/pix (1244A), entire detector 3.0k cts/s, buf time=672s, S/N~22/35 at 1200A/1250A (1682998)

	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
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Exp. 6
Exp. 7
Home
0
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2000
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5000
5500
6000
sec