15861 - Cepheid Masses: STIS and Gaia Discovery Space

Cycle: 27, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Nancy Remage Evans (PI) (Contact)	**Smithsonian Institution Astrophysical Observatory**	**nevans@cfa.harvard.edu**
Dr. Charles R. Proffitt (CoI) (Contact)	Space Telescope Science Institute	proffitt@stsci.edu
Dr. Antoine Merand (CoI) (ESA Member)	European Southern Observatory - Chile	amerand@eso.org
Dr. Alexandre Gallenne (CoI) (ESA Member)	European Southern Observatory - Chile	agallenn@eso.org
Prof. Pierre Kervella (CoI) (ESA Member)	Observatoire de Paris	pierre.kervella@obspm.fr
Dr. Richard I Anderson (CoI) (ESA Member)	European Southern Observatory - Germany	randerso@eso.org
Dr. Simon Borgniet (CoI) (ESA Member)	Observatoire de Paris	simon.borgniet@obspm.fr
Mr. Boris Trahin (CoI) (ESA Member)	Observatoire de Paris	boris.trahin@obspm.fr
Dr. Hans Moritz Guenther (CoI)	Massachusetts Institute of Technology	hgunther@mit.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) V-GX-CAR WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:44.0	yes
02	(2) V-MW-CYG WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:45.0	yes
03	(3) V-FN-VEL WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:46.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(4) V-MU-CEP WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:47.0	yes
05	(5) V-VZ-CYG WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:47.0	yes
06	(6) V-BY-CAS WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:48.0	yes
07	(7) V-YZ-CAR WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:49.0	yes
08	(8) V-TX-MON WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:50.0	yes
09	(9) V-NT-PUP WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:50.0	yes
10	(10) V-V659-CEN WAVE	STIS/CCD STIS/FUV-MAMA	1	24-Jul-2019 10:03:51.0	yes

10 Total Orbits Used

ABSTRACT

An important HST UV legacy is the measurement of the masses of Cepheids. This proposal adds to this legacy using the combination of inclinations from Gaia, ground-based mass functions and a mass of the companion from STIS G140L spectra. The low resolution ultraviolet STIS spectra target a wavelength region which is particularly temperature sensitive for typical Cepheid companions of spectral types B and A. From the STIS spectra we will accurately infer a temperature and hence a mass for the main sequence companions. The program target list contains ALL the Cepheids with known orbits but without UV spectra. From this exploration, some Cepheid masses will be determined with an accuracy of approximately 10 percent. They can be used to probe the effects of metallicity, core convective overshoot and rotation (internal mixing), some of the most pressing questions in evolutionary calculations. Furthermore, only these STIS spectra will provide the flux of the companions which is crucial to plan further high resolution UV observations and ground-based interferometry.

OBSERVING DESCRIPTION

We are looking at Cepheid stars in spectroscopic binaries with the STIS G140L to see if the companion is hot enough to detect in the FUV where the Cepheid itself is essentially invisible. Because many Cepheids are in hiearchical binaries with components at different distances, we are using the 52X2 for all but the brightest target to allow us to also pick up companions up to an arc-second away from the primary.

For visit 1-9, we need to go as deep as possible to look for faint A stars that may be barely visible. For this reason we REQUEST THAT VISITS 1-9 EACH BE SCHEDULED AS THE 1ST FUV MAMA OBSERVATION IN THAT DAY'S SAA FREE BLOCK, as soon as possible after the MAMA HV is ramped up, so as to minimize the FUV detector background.

For V659 Cen we have a good IUE spectrum, but it is not clear if the UV bright source is the close radial velocity companion or a more distant one known at 0.6" distance. Since this source is too bright for G140L + 52X2, we use G140L + FD5NDQ1 with the orient fixed to displace the 0.6" companion in the dispersion direction. This should reveal any UV bright companions. We then also take a short G140L + 52X0.05 spectrm. The flux through the narrow aperture may be somewhat uncertain, but it has better response at short wavelengths and it should be possible to normalize it using the NDQ1 slitless spectrum.

For YZ Car and V659 Cyg, IUE SWP large aperture, low dispersion spectra are available and are used in the FUV ETC calcuations.
To prove that the companions of our other targets are faint enough not to violate bright object limits for the G140L, we are normalizing a Kurucz O5V spectrum to the bluest available flux measurement for each Cepheid. We also include the E(B-V), with most of these values being taken from Ngeow (2012, ApJ, 747, 50), although the E(B-V) for V659 Cen is from Evans et al 2013, AJ, 146, 93.

Target	E(B-V)	Flux type	Flux value	ETC#	source of flux
GX Car	0.384	FLAM(3729)	1.9e-14	STIS.sp.1370857	ESO archive XSHOOTER spectrum
MW Cyg	0.659	GALEX NUV	19.273	STIS.sp.1364498	Galex
FN Vel	0.558	B	11.84	STIS.sp.1364661	Faint value from light curve at Vizier table J/PAZh/41/27/table2
MU Cep	0.792	U	15.08	STIS.sp.1364701	Faint value from light curve at Vizier table J/AJ/106/2429
VZ Cyg	0.295	GALEX NUV	16.801	STIS.sp.1364505	Galex
BY Cas	0.769	GALEX NUV	18.34	STIS.sp.1364507	Galex
YZ Car	0.372	IUE	Spectrum	STIS.sp.1364784	swp32514
TX Mon	0.478	sdss u	12.67	STIS.sp.1364762	Vizier table II/341/vphasp

NT Pup 0.570 GALEX NUV 20.52 STIS.ta.1364766 Galex
V659 Cen 0.210 IUE Spectrum STIS.sp.1364946/45 SWP39458

Field BOT info

GX Car
BOT lists target as unsafe. See details above for our worst case ETC estimate.
Also lists S48P070347 at about 3" distance as "unknown". Looking up in GSC2 gives Nplate mag=11.37 (N plate close to Cousin's I band). But the GSC2 slso shows that the N plate magnitude is missing for the Cepheid itself, so this 2nd GSC2 entry may be just the misregistered N plate detection of the Cepheid. The higher resolution 2MASS image shows no evidence for a star at this position and any such should clearly be visible. 2MASS does find a star in this direction at 7" from target with J=13.241, H=12.722, and K=12.651.

MW Cyg - clear when using GALEX

FN Vel
BOT lists target as unsafe. See details above for our worst case ETC estimate. No other safety issues or unknowns

MU Cep
BOT lists target itself as "unknown". See details above for our worst case ETC estimate. No other safety issues or unknowns

VZ Cyg - clear when using GALEX

BY Cas - clear when using GALEX

YZ Car - Target is listed as unsafe. See details above for our worst case ETC estimate.
"Unsafe" fieldobject found at distance of 24". Will need orient constraint to avoid.
This field object is also TYC 8613 1235 1 with BTmag=11.87, and VTmag=11.220
Gaia DR2 5255253233892613760 Gmag=11.66, teff est =5872K
Allowing orients 0-180 and 225-359.9 appears to keep slit awy from object of concern, but BOT doesn't seem to recognize this.

It may not realize that use of D1 position results in a very one-sided aperture footprint.

TX Mon

BOT lists target as unsafe. See details above for our worst case ETC estimate. No other safety issues or unknowns

NT Pup - clear when using GALEX

V659 Cen - clear when using GALEX

Visit

Proposal 15861, GX Car (01), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

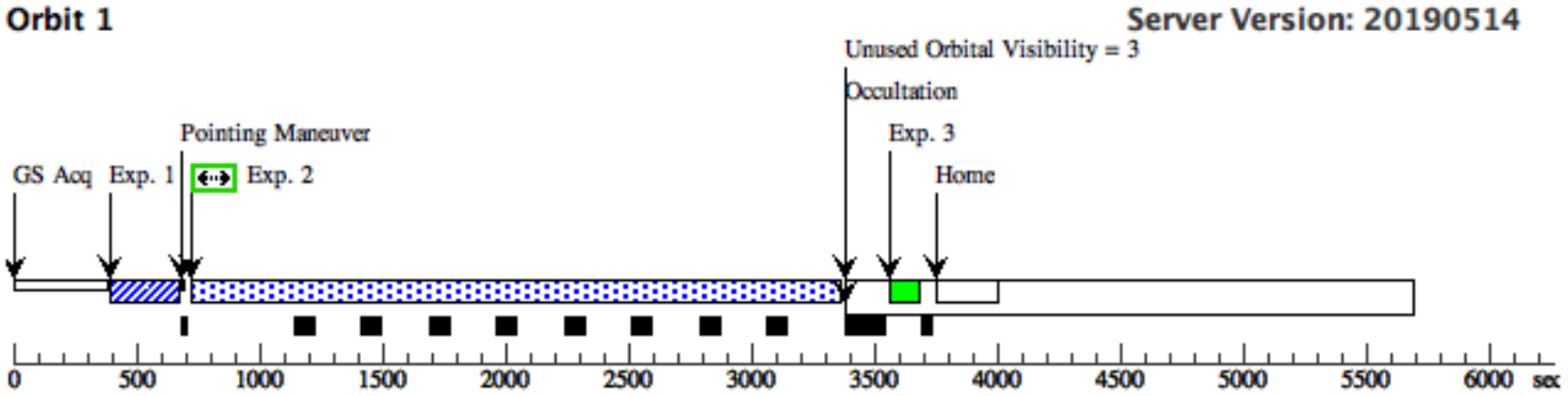
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	V-GX-CAR	RA: 09 55 26.1600 (148.8590000d) Dec: -58 25 46.92 (-58.42970d) Equinox: J2000	Proper Motion RA: -5.501 mas/yr Proper Motion Dec: 2.669 mas/yr Epoch of Position: 2000	V=9.42 B=10.46; F8II, V(range)=8.895-9.686, B(range)=9.762-10.932	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364640)	(1) V-GX-CAR	STIS/CCD, ACQ, F28X50OIII	MIRROR				2.5 Secs (2.5 Secs) *[==>]*	*[1]*
	Comments: ACQ, OIII, V=9.36, E(B-V)=0.384								
2	(STIS.sp.1370857)	(1) V-GX-CAR	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	WAVECAL=NO; BUFFER-TIME=275			2490 Secs (2490 Secs) *[==>]*	*[1]*
	Comments: Normalize O5 star using using FLAM(3729)=1.90e-14+E(B-V)=0.659 from XSHOOTER spectrum to prove hottest possible companion is safe								
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, MW Cyg (02), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

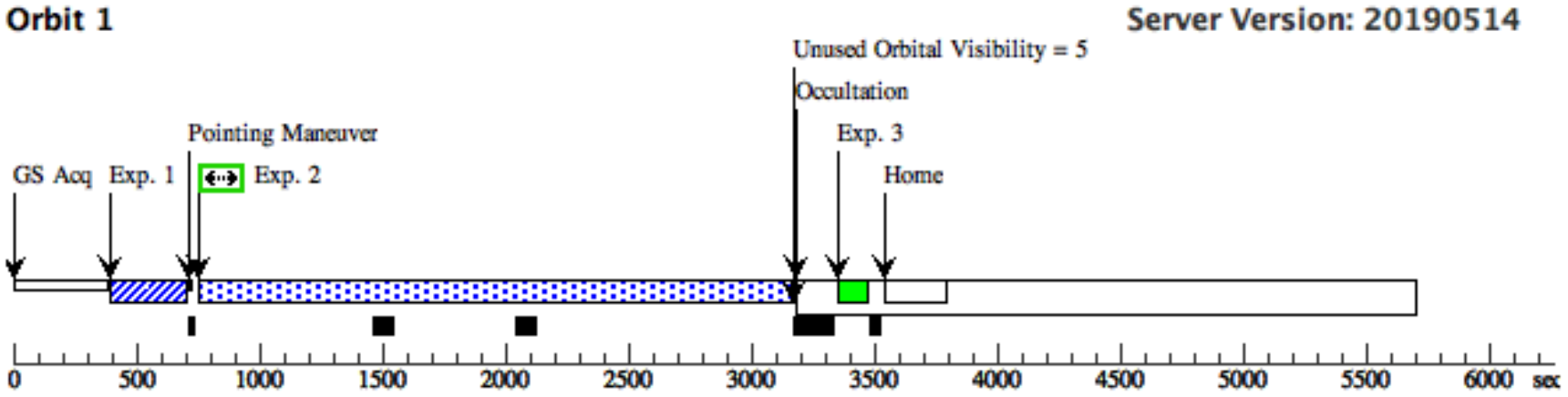
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	V-MW-CYG	RA: 20 12 22.8298 (303.0951242d) Dec: +32 52 17.84 (32.87162d) Equinox: J2000	Proper Motion RA: -3.514 mas/yr Proper Motion Dec: -5.101 mas/yr Epoch of Position: 2000	V=9.45 B=10.71; F8.5-G2Ib; Galex(NUV) = 19.27 abmag, V(Bright)=9.13, AmpV=0.71	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database, and then updated manually in July 2019
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364693)	(2) V-MW-CYG	STIS/CCD, ACQ, F28X50OII	MIRROR				12 Secs (12 Secs) *[==>]*	*[1]*
Comments: TA, G0I, U=12.773, E(B-V)=0.659									
2	(STIS.sp.1364498)	(2) V-MW-CYG	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=575; WAVECAL=NO			2255 Secs (2255 Secs) *[==>]*	*[1]*
Comments: Normalize O5 star using using U mag at Cepheid minimum + E(B-V)=0.659 to prove hottest possible companion is safe									
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, FN Vel (03), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

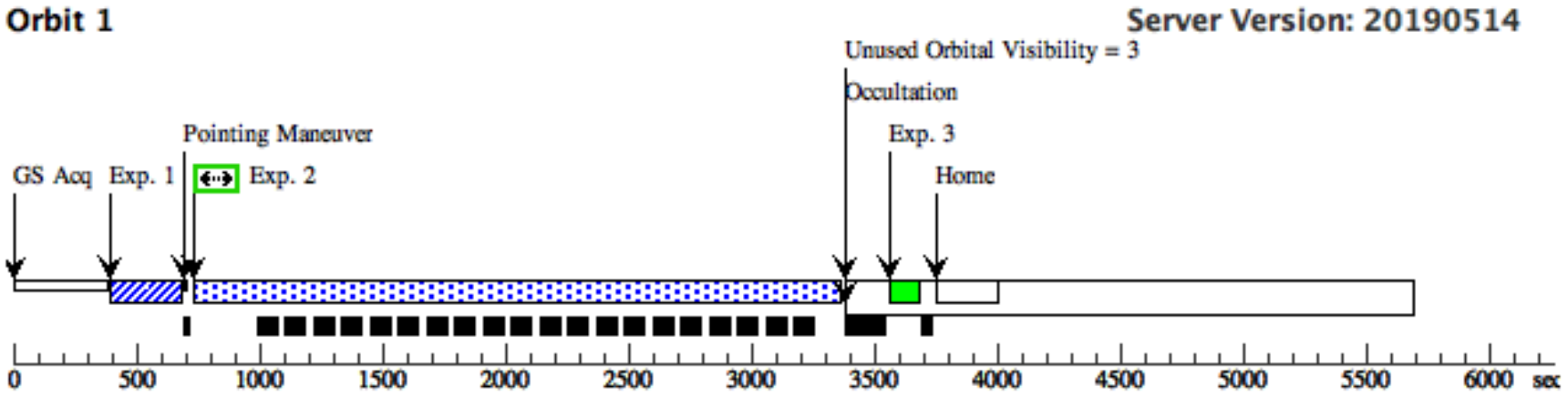
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	V-FN-VEL	RA: 09 48 41.4896 (147.1728733d) Dec: -55 31 10.35 (-55.51954d) Equinox: J2000	Proper Motion RA: -5.962 mas/yr Proper Motion Dec: 3.369 mas/yr Epoch of Position: 2000	V=10.25 B=11.24; F9II+?, V(range)=9.944-10.553	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364699)	(3) V-FN-VEL	STIS/CCD, ACQ, F28X50OIII	MIRROR				5 Secs (5 Secs) *[==>]*	*[1]*
Comments: For ACQ normalize OIII filter to minimum V magnitude									
2	(STIS.sp.1364661)	(3) V-FN-VEL	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=115; WAVECAL=NO			2480 Secs (2480 Secs) *[==>]*	*[1]*
Comments: To allow for hottest possible companion, normalize O5 star to minimum B mag = 11.849, with observed E(B-V)=0.558									
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, MU Cep (04), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

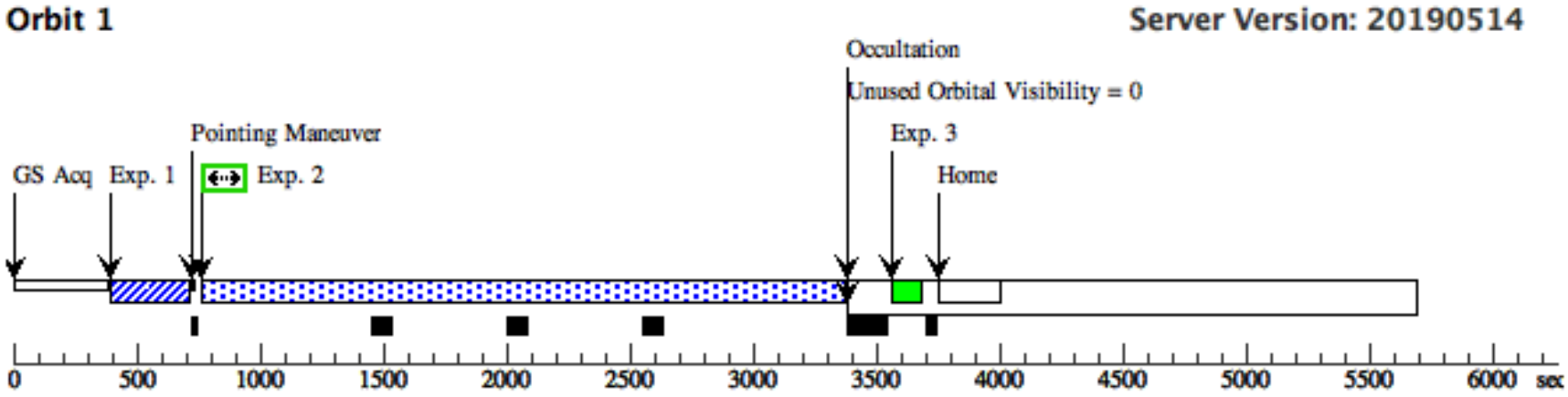
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	V-MU-CEP	RA: 22 23 38.6260 (335.9109417d)	Proper Motion RA: -2.815 mas/yr	V=12.24	Reference Frame: ICRS
		Dec: +57 40 50.84 (57.68079d)	Proper Motion Dec: -1.471 mas/yr	B=13.5,	
		Equinox: J2000	Epoch of Position: 2000	V(range)=11.879-12.552	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Updated in July, 2019
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364702)	(4) V-MU-CEP	STIS/CCD, ACQ, F28X50OIII	MIRROR				12 Secs (12 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1364701)	(4) V-MU-CEP	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=550; WAVECAL=NO			2455 Secs (2455 Secs)	
								[==>]	***[1]***
Comments: To allow for hottest possible companion, normalize Kurucz O5 to U=15.08 with E(B-V)=0.792									
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	***[1]***

Orbit Structure



Visit

Proposal 15861, VZ Cyg (05), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

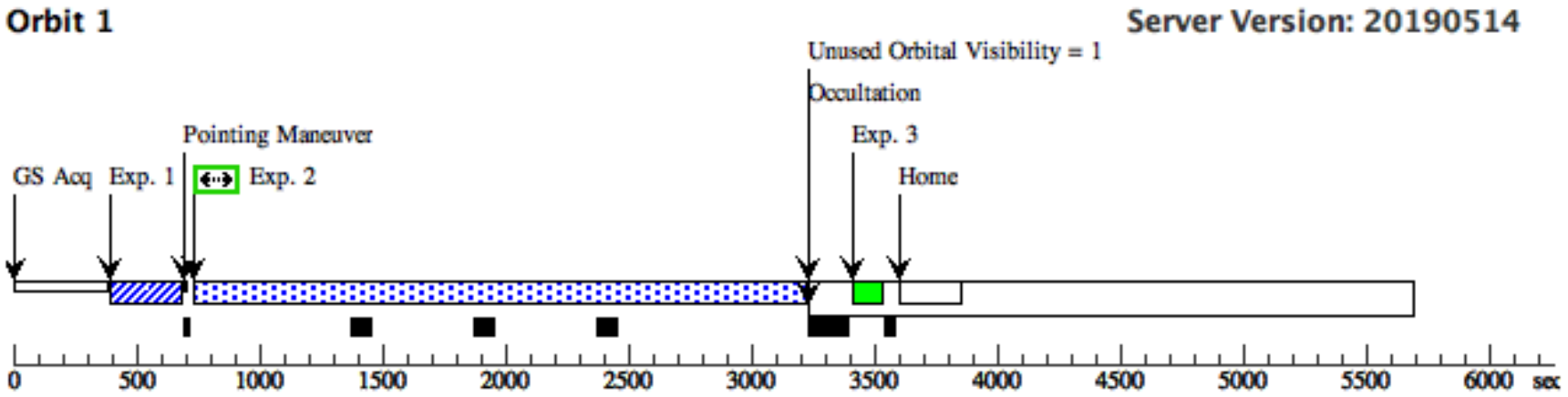
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	V-VZ-CYG	RA: 21 51 41.4415 (327.9226729d) Dec: +43 08 2.54 (43.13404d) Equinox: J2000	Proper Motion RA: -3.583 mas/yr Proper Motion Dec: -3.822 mas/yr Epoch of Position: 2000	V=8.6 B=10.2, Sp=G0, Galex(NUV) = 16.80 abmag, V(bright)=8.60, ampV=0.67	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364715)	(5) V-VZ-CYG	STIS/CCD, ACQ, F28X50OII	MIRROR				7.5 Secs (7.5 Secs) *[==>]*	*[1]*
	Comments: Normalize OII TA to mean U=9.764, and E(B-V)=0.295 with Castelli-Kurucz G0I spectrum. This probably isn't the minimun U value in the light curve, so we'll include a generous extra factor for this OII ACQ.								
2	(STIS.sp.1364505)	(5) V-VZ-CYG	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500; WAVECAL=NO			2335 Secs (2335 Secs) *[==>]*	*[1]*
	Comments: To allow for hottest possible companion, normalize Kurucz O5 to Galex(NUV) = 16.801 with E(B-V) = 0.295								
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, BY CAS (06), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

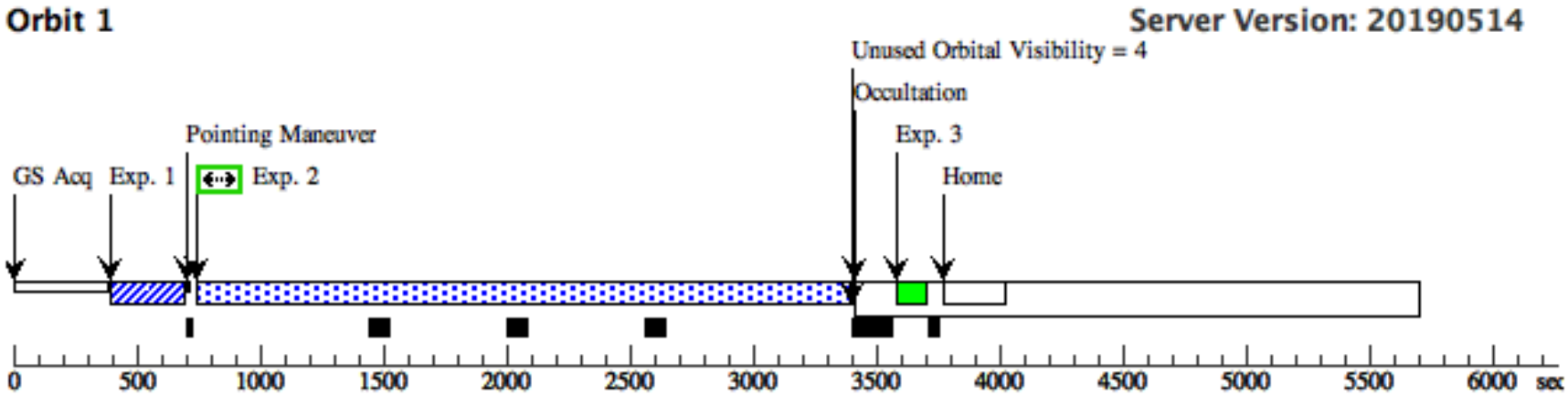
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	V-BY-CAS	RA: 01 47 11.9193 (26.7996638d) Dec: +61 25 20.95 (61.42249d) Equinox: J2000	Proper Motion RA: -1.213 mas/yr Proper Motion Dec: 0.424 mas/yr Epoch of Position: 2000	V=10.41 B=11.5, Sp=F5, Galex(NUV)=18.34 abmag, V(bright)=10.19, AmpV=0.37	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364725)	(6) V-BY-CAS	STIS/CCD, ACQ, F28X50OIII	MIRROR				6.5 Secs (6.5 Secs) *[==>]*	*[1]*
Comments: Normalize OIII to min V = 10.56									
2	(STIS.sp.1364507)	(6) V-BY-CAS	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=560; WAVECAL=NO			2495 Secs (2495 Secs) *[==>]*	*[1]*
Comments: To allow for hottest possible companion, normalize O5 star Galex(NUV)=18.34 with E(B-V)=0.769									
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, YZ Car (07), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

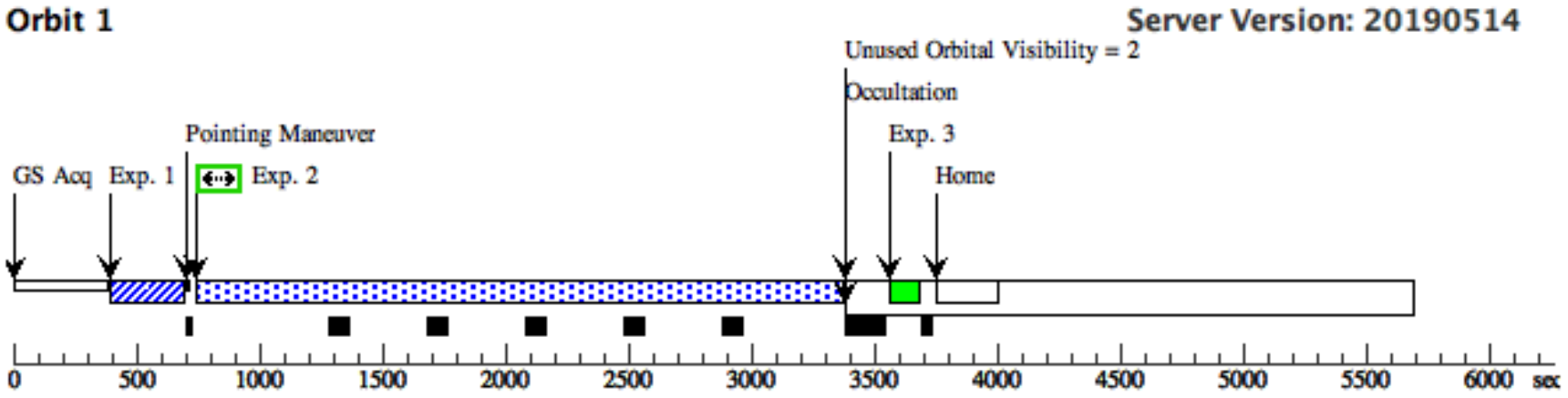
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	V-YZ-CAR	RA: 10 28 16.8469 (157.0701954d) Dec: -59 21 0.68 (-59.35019d) Equinox: J2000	Proper Motion RA: -6.626 mas/yr Proper Motion Dec: 2.239 mas/yr Epoch of Position: 2000	V=8.24 B=9.11, Sp=G5, V(range)=8.234-9.044	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364540)	(7) V-YZ-CAR	STIS/CCD, ACQ, F28X50OII	MIRROR				10 Secs (10 Secs) *[==>]*	*[1]*
2	(STIS.sp.1364784)	(7) V-YZ-CAR	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=400; WAVECAL=NO			2475 Secs (2475 Secs) *[==>]*	*[1]*
	Comments: Use IUE SWP + LWP to estimate count rate *Note that SWP is probably mostly scattered light and geocoronal emission*								
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, TX Mon (08), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

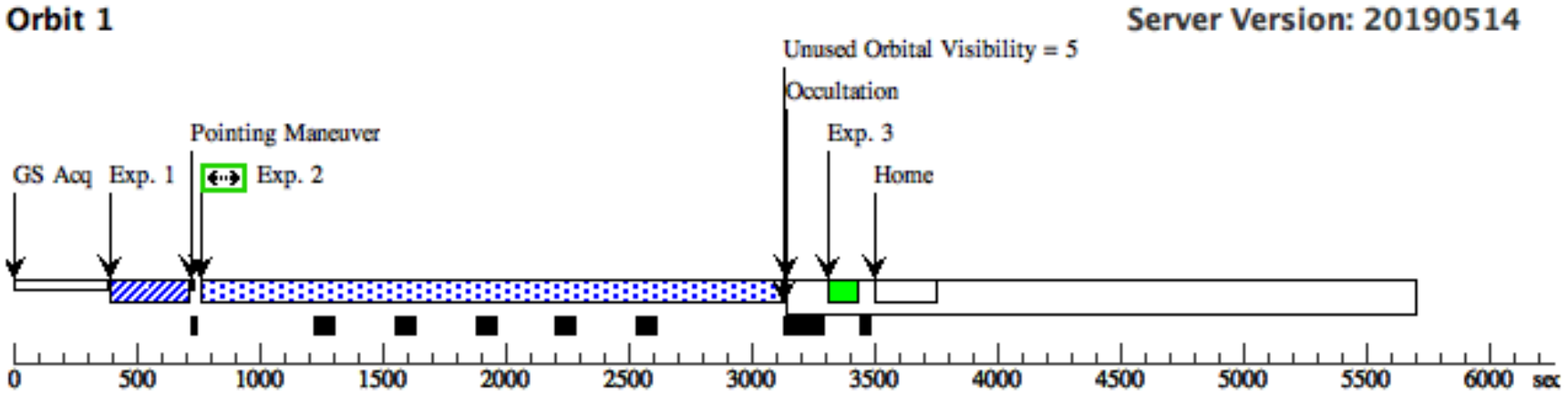
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	V-TX-MON	RA: 06 50 52.2687 (102.7177862d) Dec: -01 25 45.22 (-1.42923d) Equinox: J2000	Proper Motion RA: -1.135 mas/yr Proper Motion Dec: -0.266 mas/yr Epoch of Position: 2000	V=10.67 B=11.76, Sp=F6, V(range)=10.652-11.256	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364758)	(8) V-TX-MON	STIS/CCD, ACQ, F28X50OII	MIRROR				15 Secs (15 Secs) *[==>]*	*[1]*
	Comments: TA normalize OII to sdss u = 12.67								
2	(STIS.sp.1364762)	(8) V-TX-MON	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=325; WAVECAL=NO			2205 Secs (2205 Secs) *[==>]*	*[1]*
	Comments: To allow for hottest possible companion, normalize O5 star sdss u=12.67 with E(B-V)=0.478								
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, NT Pup (09), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Comments: Please schedule as the first FUV MAMA visit in an SAA free block, as soon as possible as the STIS FUV MAMA voltage has been ramped up, in order to minimize detector background.

Fixed Targets

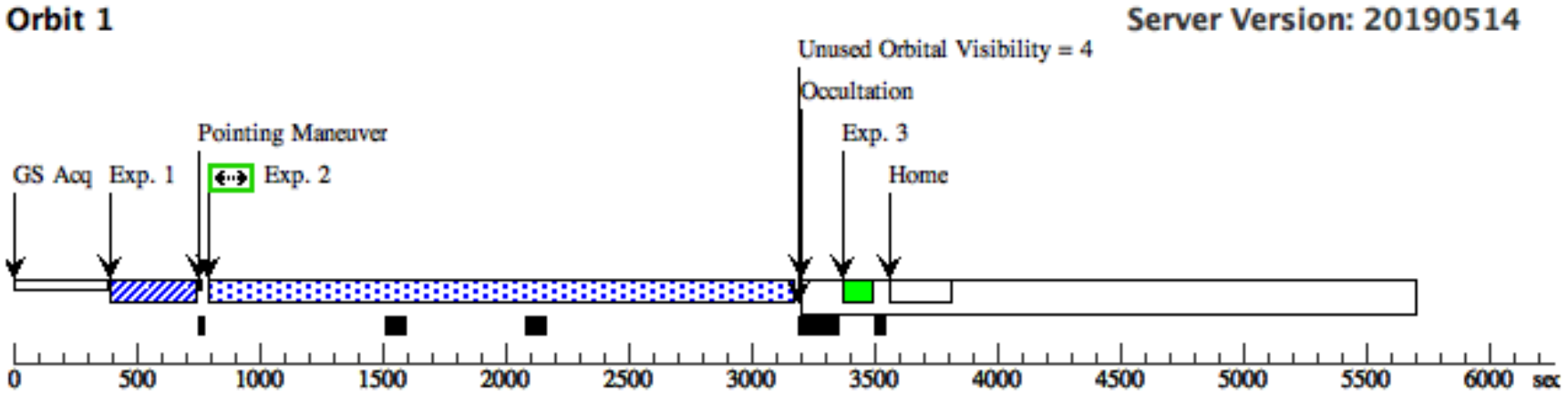
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	V-NT-PUP	RA: 07 58 46.3396 (119.6930817d) Dec: -38 59 39.66 (-38.99435d) Equinox: J2000	Proper Motion RA: -1.504 mas/yr Proper Motion Dec: 3.324 mas/yr Epoch of Position: 2000	V=12.41 B=11.0, Galex(NUV)=20.52, V(range)=11.572-12.631	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1364766)	(9) V-NT-PUP	STIS/CCD, ACQ, F28X50OIII	MIRROR				20 Secs (20 Secs) *[==>]*	*[1]*
Comments: TA OIII V=12.631, E(B-V)=0.57, G0I, STIS.ta.1364766, 7.8s									
2	(STIS.sp.1364511)	(9) V-NT-PUP	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=575; WAVECAL=NO			2230 Secs (2230 Secs) *[==>]*	*[1]*
Comments: To allow for hottest possible companion, normalize O5 star Galex(NUV)=20.52 with E(B-V)=0.57									
3		WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure



Visit

Proposal 15861, V659 Cen (10), implementation Wed Jul 24 14:03:52 GMT 2019

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 98D TO 98 D; ORIENT 278D TO 278 D

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	V-V659-CEN	RA: 13 31 33.4104 (202.8892100d) Dec: -61 34 56.51 (-61.58236d) Equinox: J2000	Proper Motion RA: -5.908 mas/yr Proper Motion Dec: -1.834 mas/yr Epoch of Position: 2000	V=6.49 Sp=F6/7Ib+B6V, Galex(NUV)=13.63 abmag, V(bright)=6.47, AmpV=0.27	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[CEPHEID, COMPOSITE SPECTRAL TYPE]

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.1364779)	(10) V-V659-CEN	STIS/CCD, ACQ, F28X50OII	MIRROR				1 Secs (1 Secs) *[==>]*	*[1]*
Comments: OII ACQ, U(mean)=7.57, adopt 7.7 with E(B-V)=0.21, SpType=G0I, STIS.ta.1364779, 0.04s, saturation 4.5 s									
2	ACQ/PEAK G230LB 52X0.05 (STIS.sp.1364943)	(10) V-V659-CEN	STIS/CCD, ACQ/PEAK, 52X0.05	G230LB 2375 A				5 Secs (5 Secs) *[==>]*	*[1]*
3	G140L F25NDQ1 (STIS.sp.1364946)	(10) V-V659-CEN	STIS/FUV-MAMA, TIME-TAG, F25NDQ1	G140L 1425 A	BUFFER-TIME=275; WAVECAL=NO			1500 Secs (1500 Secs) *[==>]*	*[1]*
Comments: Use IUE SWP39458 + LWP18574 to directly calculate count rate									
4	G140L 52X0.05 (STIS.sp.1364945)	(10) V-V659-CEN	STIS/FUV-MAMA, ACCUM, 52X0.05	G140L 1425 A				330 Secs (330 Secs) *[==>]*	*[1]*
Comments: Use IUE SWP39458 + LWP18574 to directly calculate count rate									
5	WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.05	G140L 1425 A				*[==>]*	*[1]*

Orbit Structure