16646 - Exposing the Lyman-alpha Profiles of Low-Mass Stars

Cycle: 29, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) HD-64090	STIS/CCD STIS/FUV-MAMA	1	02-Mar-2022 11:01:32.0	yes
02	(2) HD-134439	STIS/CCD STIS/FUV-MAMA	2	02-Mar-2022 11:01:33.0	yes
03	(3) HD-134440	STIS/CCD STIS/FUV-MAMA	2	02-Mar-2022 11:01:34.0	yes
04	(4) HIP-117795	STIS/CCD STIS/FUV-MAMA	3	02-Mar-2022 11:01:35.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(4) HIP-117795	STIS/CCD STIS/FUV-MAMA	2	02-Mar-2022 11:01:36.0	yes
06	(5) ROSS-451	STIS/CCD STIS/FUV-MAMA	3	02-Mar-2022 11:01:37.0	yes
07	(5) ROSS-451	STIS/CCD STIS/FUV-MAMA	3	02-Mar-2022 11:01:39.0	yes
08	(5) ROSS-451	STIS/CCD STIS/FUV-MAMA	3	02-Mar-2022 11:01:40.0	yes
09	(6) L-802-6	STIS/CCD STIS/FUV-MAMA	3	02-Mar-2022 11:01:41.0	yes

22 Total Orbits Used

ABSTRACT

Characterizing potentially habitable planets around low mass stars is a key focus of current and upcoming missions such as JWST and TESS. This focus stresses the need for a comprehensive understanding of the radiation environments in which such planets reside. Low-mass stars are typically much more active than solar type stars and the proximity of their habitable zones can be one tenth the distance. The far-ultraviolet (FUV) radiation emitted by these stars has the potential to alter an orbiting planet's atmospheric photochemistry, while the extreme-ultraviolet (EUV) radiation can cause the loss of planetary atmospheres and surface volatiles. Ly-a emission at 1216 A is the dominant radiation source for low mass stars at FUV wavelengths and is critical for informing stellar atmosphere models used to predict the EUV spectrum, but directly measuring a low-mass star's Ly-a emission is almost always impossible because of the contaminating effects of interstellar hydrogen. Using Gaia DR2, we have identified a unique sample of six low mass stars for which a complete and accurate measurement of their Ly-a line profile is possible due to their very large radial velocities. Stars with very large radial velocities (>100 km/s) will have their Ly-a emission Doppler shifted away from contaminating sources allowing for the rare opportunity to measure intrinsic Ly-a emission. These proposed observations of this rare sample of stars will triple the number of stars with Ly-a emission measured in this way and will improve the accuracy of computed spectra for all low-mass stars across wavelengths that drive planetary atmospheric evolution.

OBSERVING DESCRIPTION

We will use HST/STIS to observe unobstructed Lyman-alpha emission from six low-mass stars (HD 64090 (K0), HD 134439 (K1), HD 134440 (K2), HIP 117795 (K8), Ross 451 (M0), L 802-6 (M3)) with large radial velocities (> 100 km/s).

For each target we will first perform a STIS target acquisition sequence (ACQ/SEARCH and ACQ/IMAGE), which take seconds. We will then use the STIS/G140M grating to observe the Lyman-alpha wavelength region with the 52"x0".1 slit centered at 1222 Angstroms. These settings have been used successfully in the past for similar observations of high radial velocity M and K dwarfs.

All of our targets are field-age or older dwarf stars, and should thus be considered inactive stars with low probabilities of flaring events that could potentially harm the STIS detector. Our estimated count rates for all targets are well below any overlight limits for STIS. In response to the Bright Object Protection Considerations for M Dwarf Flare Events HST Instrument Science Report (Osten 2017), we evaluated the possibility of a destructive flaring event for our two inactive M dwarfs. Following the steps outlined in the ISR, we find global and local count rates less than the detector limits for a simulated flare for both spectroscopic and target acquisition observations. These targets are thus safe to observe with STIS. Further, because our targets are all field age or older, they are likely to have spun down, with rotation periods of 10s of days, much longer than our proposed observations. Therefore, rotational variability should have little effect on the observed Lya fluxes.

Visit

Proposal 16646, HD 64090 (01), scheduling Wed Mar 02 16:01:42 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

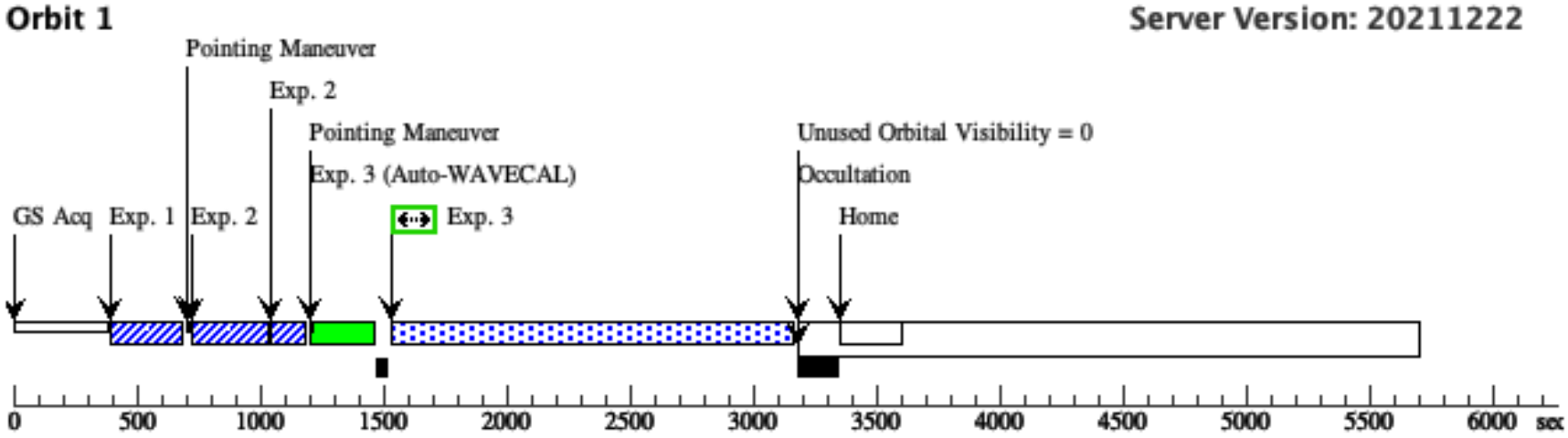
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	HD-64090	RA: 07 53 33.1187 (118.3879946d) Dec: +30 36 18.26 (30.60507d) Equinox: J2000	Proper Motion RA: 708.581 mas/yr Proper Motion Dec: -1.8358779999971375 arcsec/yr Epoch of Position: 2000	V=8.25 NUV=12.79, FUV=21.04	Reference 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=[K III-I]

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.1526940)	(1) HD-64090	STIS/CCD, ACQ, F25ND3	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526985)	(1) HD-64090	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
3	Spec 1 (STIS.sp.1526987)	(1) HD-64090	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=7860			1613 Secs (1613 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 16646, HD 134439 (02), scheduling Wed Mar 02 16:01:42 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

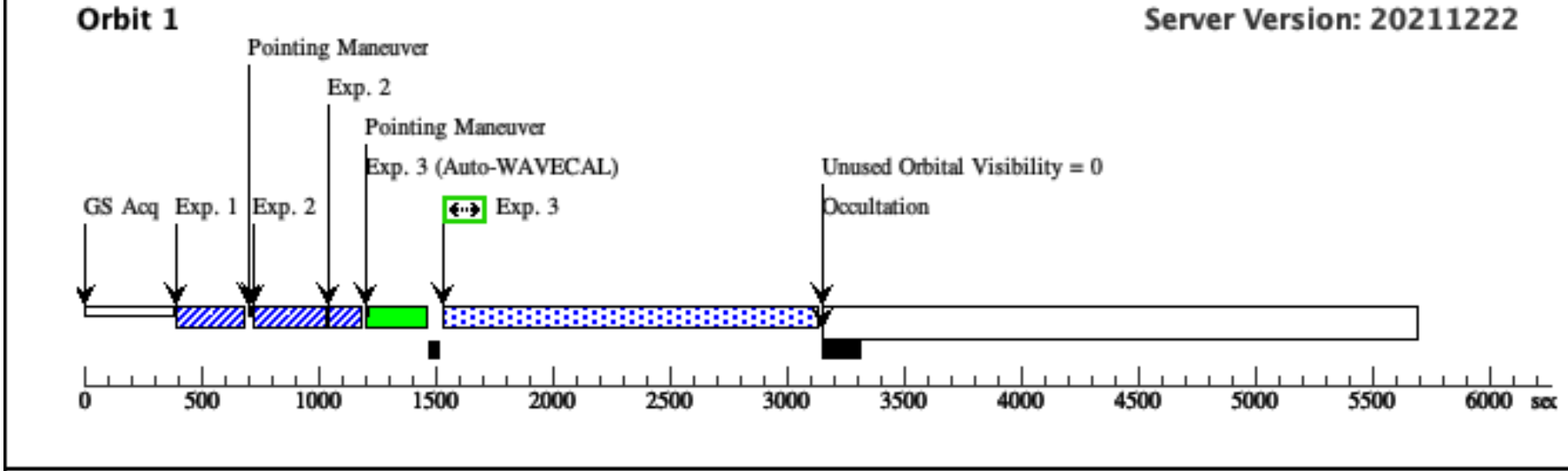
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HD-134439	RA: 15 10 13.0874 (227.5545308d) Dec: -16 22 45.87 (-16.37941d) Equinox: J2000	Proper Motion RA: -0.06935314463013147 sec of time/yr Proper Motion Dec: -3.542376999962471 arcsec/yr Epoch of Position: 2000	V=9.066	Reference Frame: ICRS

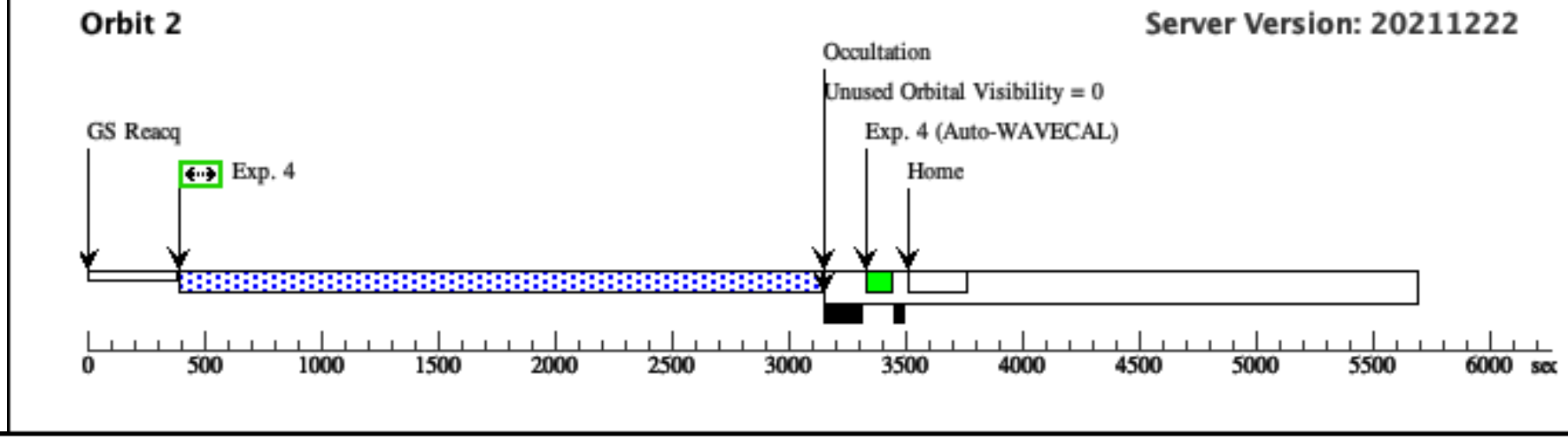
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[K III-I]

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.1526965)	(2) HD-134439	STIS/CCD, ACQ, F25ND3	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526984)	(2) HD-134439	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
3	Spec 1 (STIS.sp.1526988)	(2) HD-134439	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8040			1589 Secs (1589 Secs) *[==>]*	 ***[1]***
4	Spec2 (STIS.sp.1526988)	(2) HD-134439	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8040			2734 Secs (2734 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 16646, HD 134440 (03), scheduling Wed Mar 02 16:01:42 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

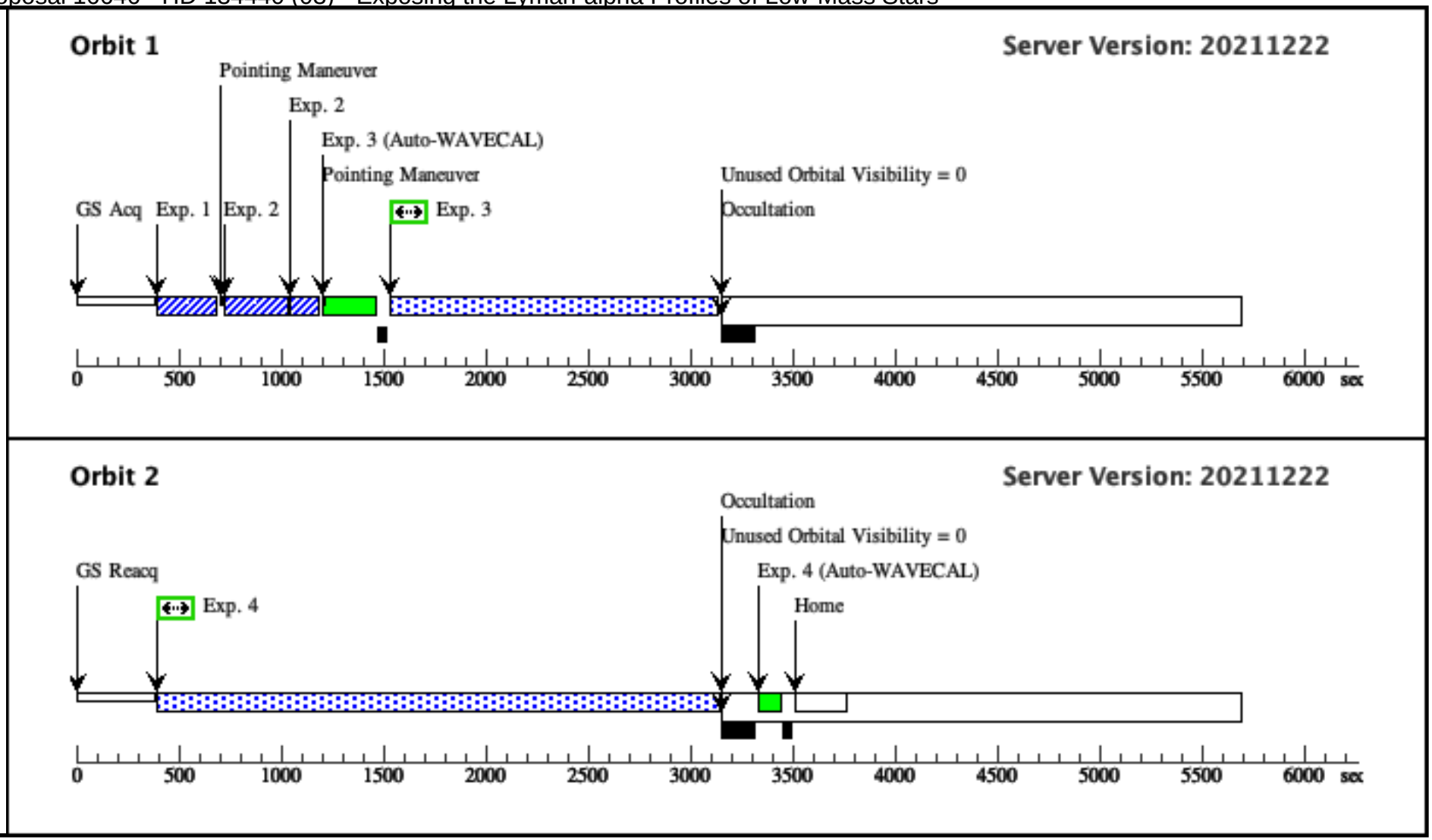
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HD-134440	RA: 15 10 12.9678 (227.5540325d) Dec: -16 27 46.51 (-16.46292d) Equinox: J2000	Proper Motion RA: -0.06956483875874159 sec of time/yr Proper Motion Dec: -3.540223000027254 arcsec/yr Epoch of Position: 2000	V=9.426	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[K III-I]

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.1526967)	(3) HD-134440	STIS/CCD, ACQ, F25ND3	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526982)	(3) HD-134440	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
3	Spec 1 (STIS.sp.1526994)	(3) HD-134440	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8074			1589 Secs (1589 Secs) *[==>]*	 ***[1]***
4	Spec2 (STIS.sp.1526994)	(3) HD-134440	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8074			2734 Secs (2734 Secs) *[==>]*	 ***[2]***

Orbit Structure



Visit

Proposal 16646, HIP 117795 (04), scheduling Wed Mar 02 16:01:42 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 90D TO 225 D; ORIENT 270D TO 45 D

Fixed Targets

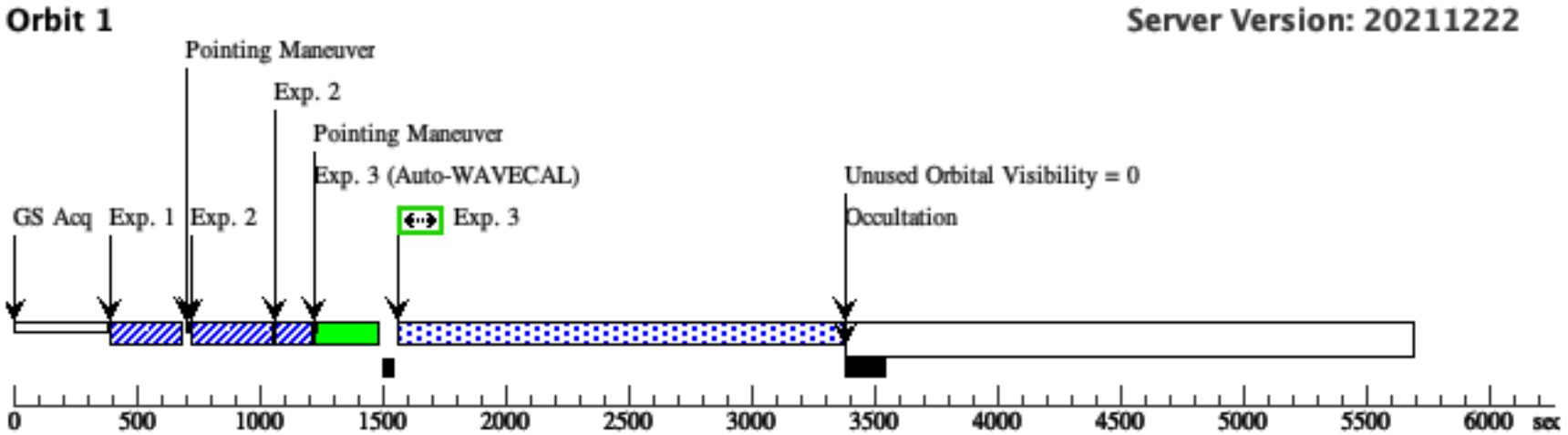
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	HIP-117795	RA: 23 53 19.8461 (358.3326921d) Dec: +59 56 42.42 (59.94512d) Equinox: J2000	Proper Motion RA: 0.01085431159965137 sec of time/yr Proper Motion Dec: 0.034652999999999996 arcsec/yr Epoch of Position: 2000	V=10.58	Reference Frame: ICRS

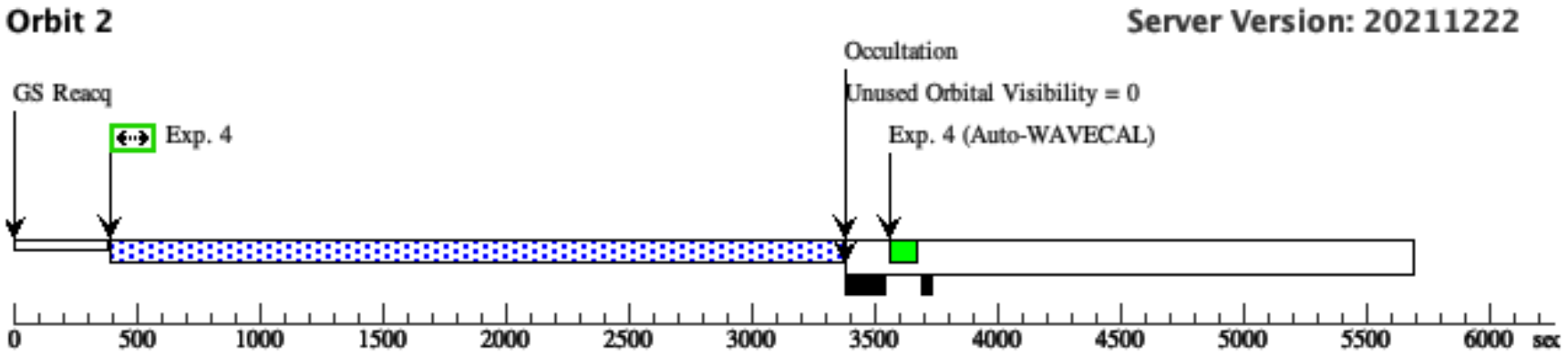
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[K V-IV, M III-I]

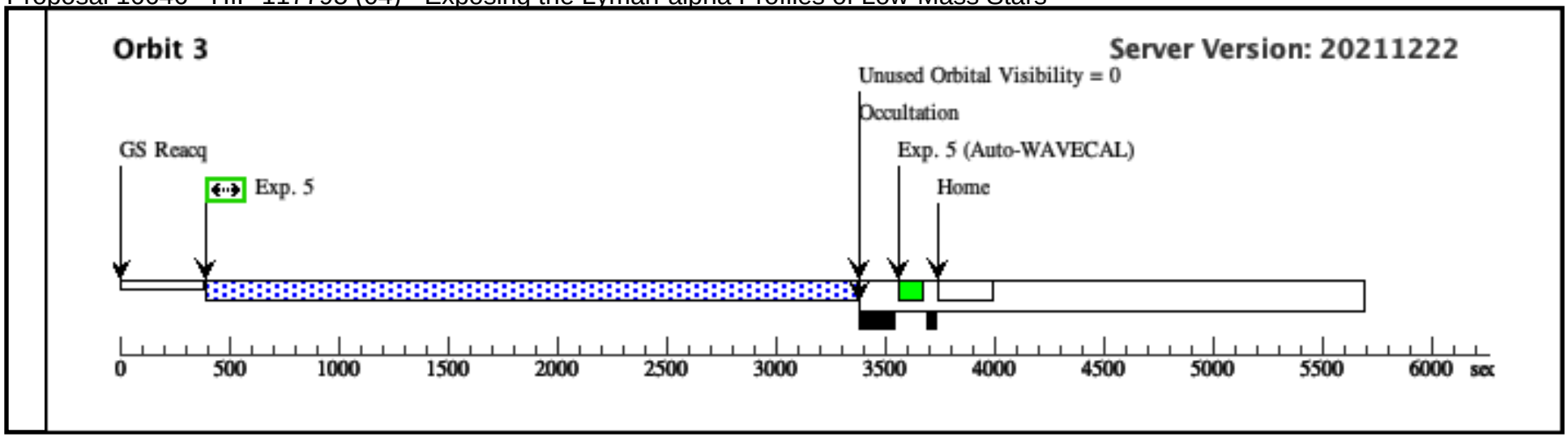
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1526968)	(4) HIP-117795	STIS/CCD, ACQ, F25ND3	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526981)	(4) HIP-117795	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	Spec 1 (STIS.sp.1527019)	(4) HIP-117795	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8150			1798 Secs (1798 Secs) *[==>]*	 ***[1]***
4	Spec2 (STIS.sp.1527019)	(4) HIP-117795	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8150			2200 Secs (2967 Secs) *[==>2967.0 Secs]*	 ***[2]***
5	Spec3 (STIS.sp.1527019)	(4) HIP-117795	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8150			2200 Secs (2967 Secs) *[==>2967.0 Secs]*	 ***[3]***

Orbit Structure






Orbit 3
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Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 5
Exp. 5 (Auto-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16646, HIP 117795 (2) (05), scheduling Wed Mar 02 16:01:43 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 90D TO 225 D; ORIENT 270D TO 45 D

Fixed Targets

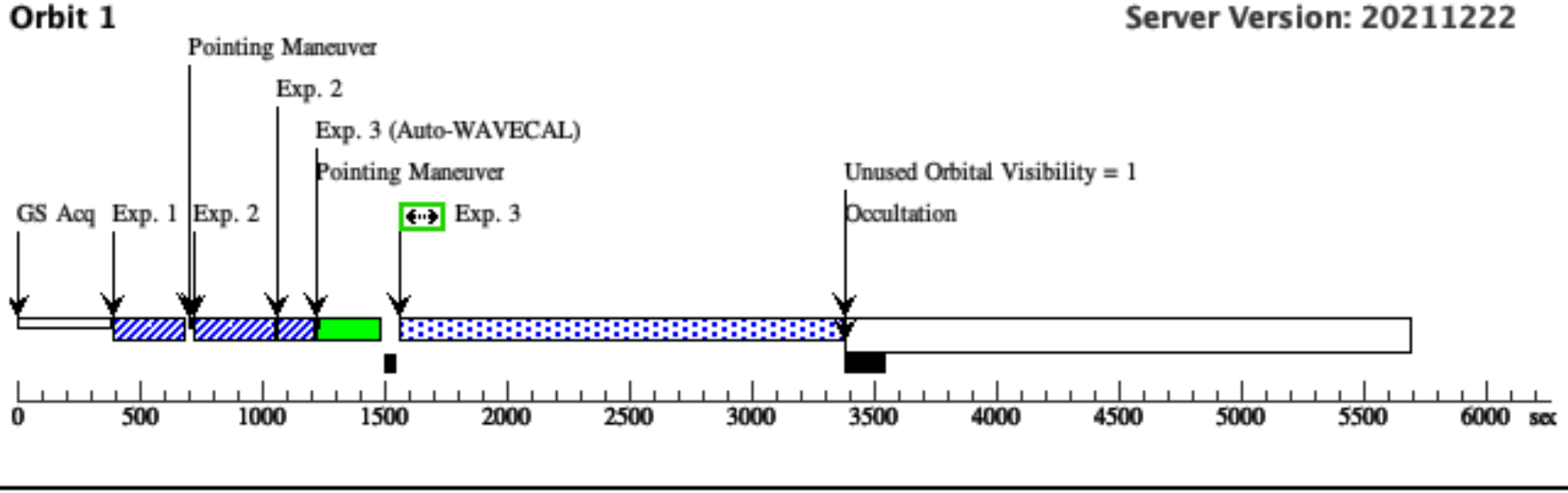
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	HIP-117795	RA: 23 53 19.8461 (358.3326921d) Dec: +59 56 42.42 (59.94512d) Equinox: J2000	Proper Motion RA: 0.01085431159965137 sec of time/yr Proper Motion Dec: 0.034652999999999996 arcsec/yr Epoch of Position: 2000	V=10.58	Reference Frame: ICRS

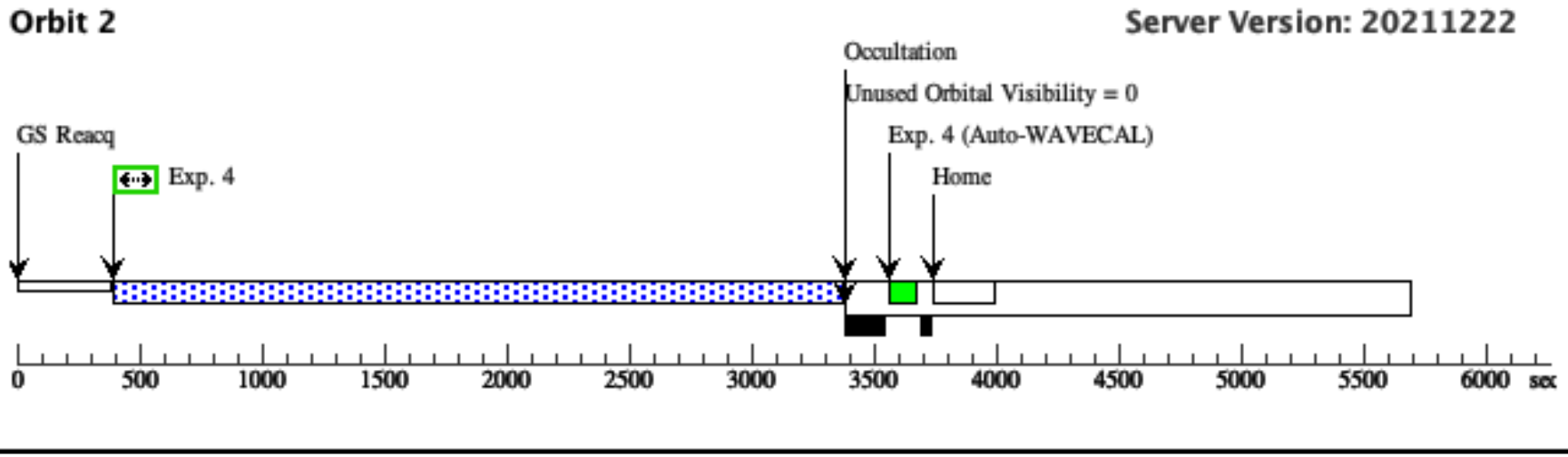
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[K V-IV, M III-I]

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.1526968)	(4) HIP-117795	STIS/CCD, ACQ, F25ND5	MIRROR				1 Secs (1 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526981)	(4) HIP-117795	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				2 Secs (2 Secs) *[==>]*	 ***[1]***
3	Spec4 (STIS.sp.1527019)	(4) HIP-117795	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8150			1798 Secs (1798 Secs) *[==>]*	 ***[1]***
4	Spec5 (STIS.sp.1527019)	(4) HIP-117795	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=8150			2967 Secs (2967 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 16646, Ross 451 (06), scheduling Wed Mar 02 16:01:43 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

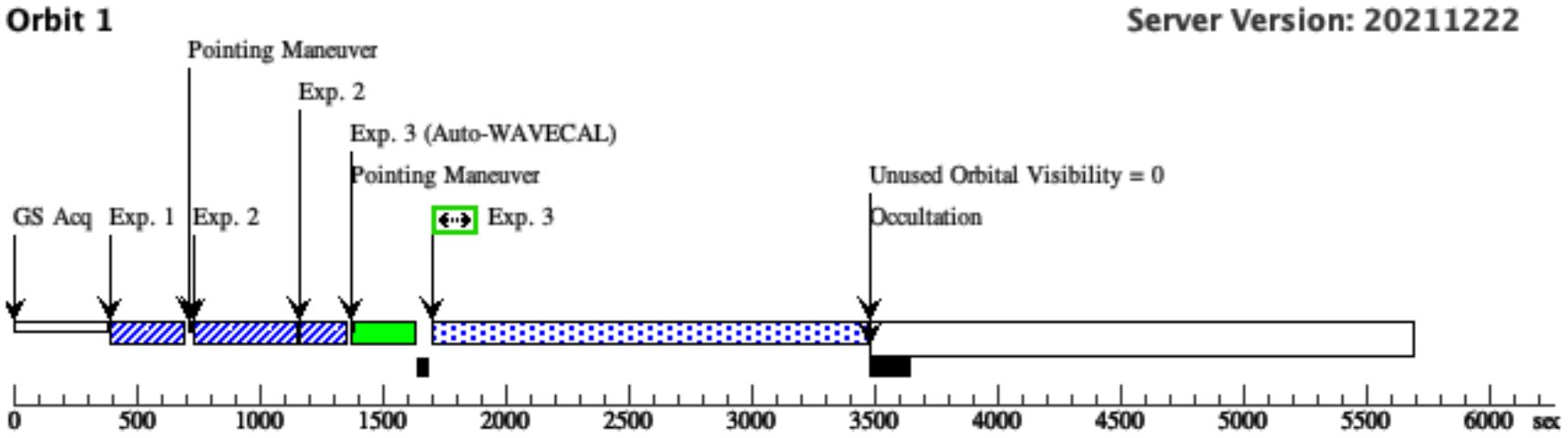
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	ROSS-451	RA: 11 40 20.3055 (175.0846063d) Dec: +67 15 32.36 (67.25899d) Equinox: J2000	Proper Motion RA: 0.04490501708299448 sec of time/yr Proper Motion Dec: -3.160183999898436 arcsec/yr Epoch of Position: 2000	V=12.3 J=9.409, H=8.901, K=8.667	Reference Frame: ICRS

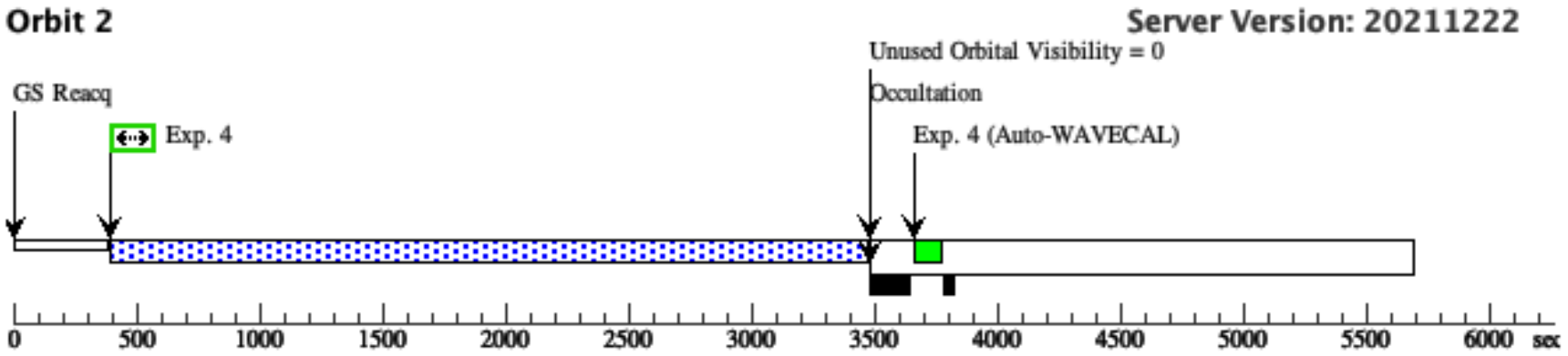
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[M III-I]

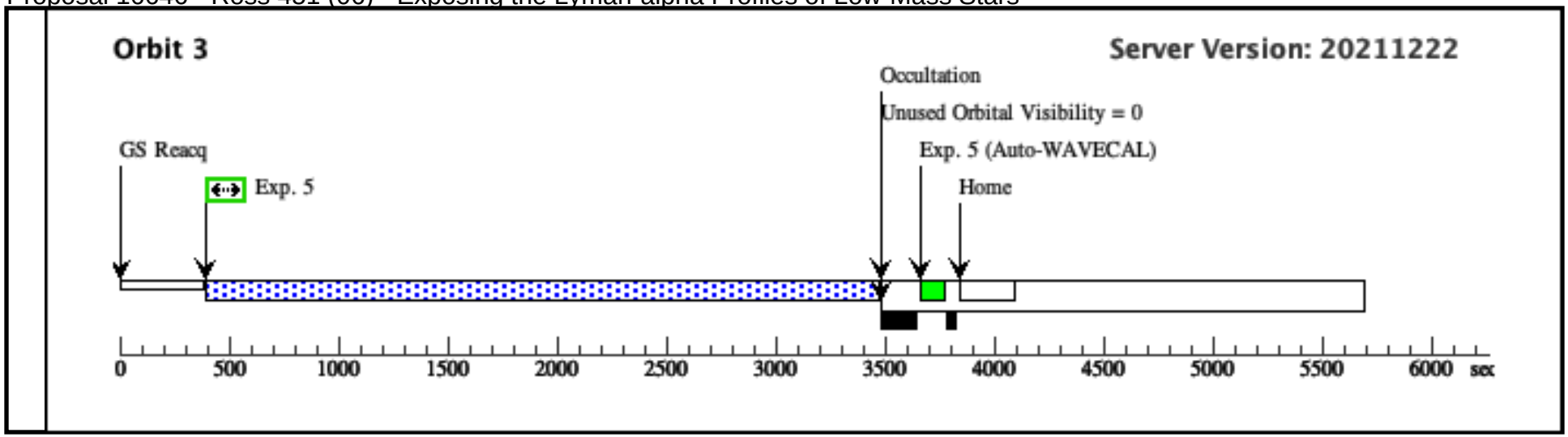
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1526969)	(5) ROSS-451	STIS/CCD, ACQ, F25ND3	MIRROR				3.5 Secs (3.5 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526979)	(5) ROSS-451	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				7.5 Secs (7.5 Secs) *[==>]*	 ***[1]***
3	Spec 1 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			1753 Secs (1753 Secs) *[==>]*	 ***[1]***
4	Spec2 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[2]***
5	Spec3 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20211222
Occultation
Unused Orbital Visibility = 0
Exp. 5 (Auto-WAVECAL)
Home
GS Reacq
Exp. 5
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500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16646, Ross 451 (2) (07), scheduling Wed Mar 02 16:01:43 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

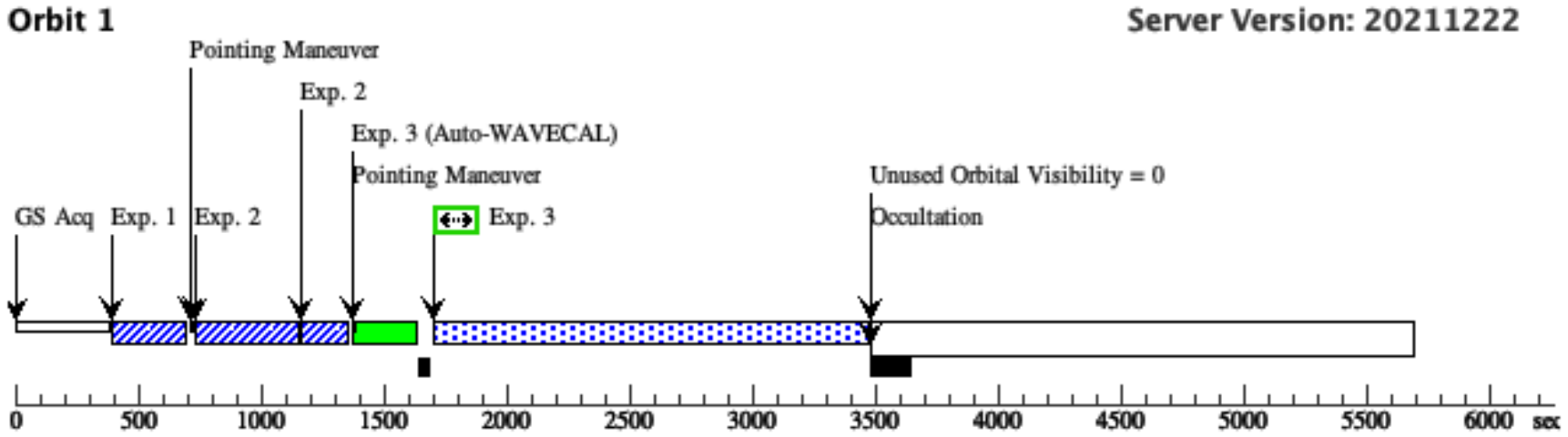
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	ROSS-451	RA: 11 40 20.3055 (175.0846063d) Dec: +67 15 32.36 (67.25899d) Equinox: J2000	Proper Motion RA: 0.04490501708299448 sec of time/yr Proper Motion Dec: -3.160183999898436 arcsec/yr Epoch of Position: 2000	V=12.3 J=9.409, H=8.901, K=8.667	Reference Frame: ICRS

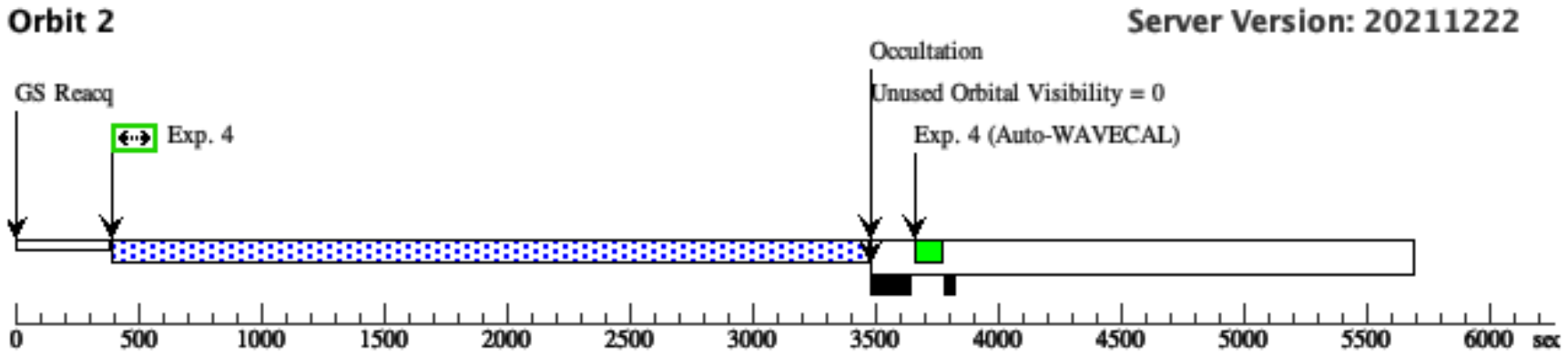
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[M III-I]

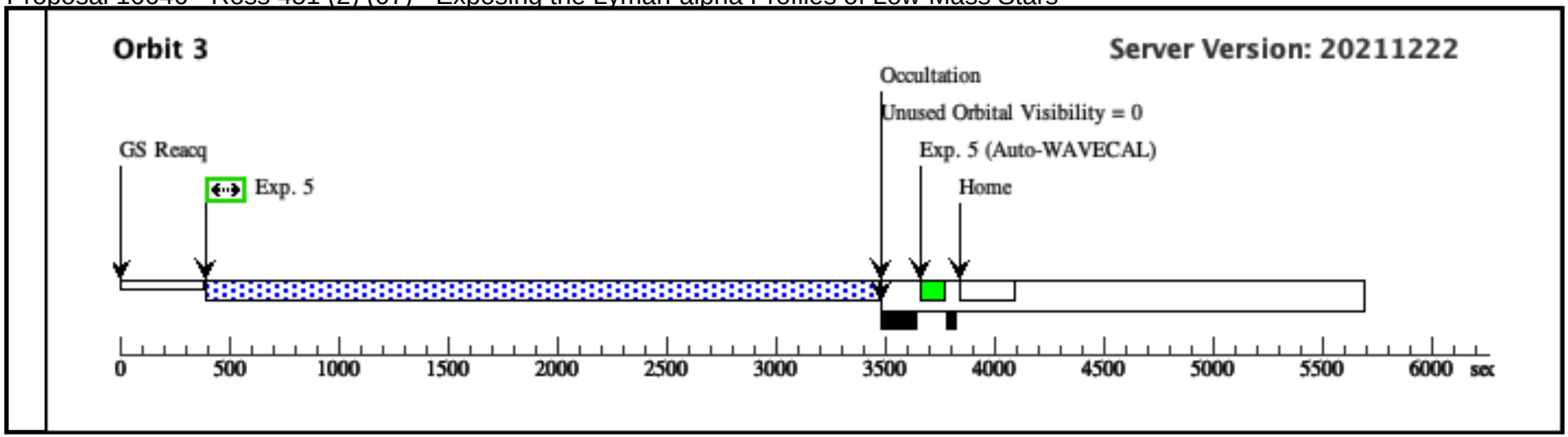
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1526969)	(5) ROSS-451	STIS/CCD, ACQ, F25ND3	MIRROR		GS ACQ SCENARIO BASE1BE		3.5 Secs (3.5 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526979)	(5) ROSS-451	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				7.5 Secs (7.5 Secs) *[==>]*	 ***[1]***
3	Spec4 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			1753 Secs (1753 Secs) *[==>]*	 ***[1]***
4	Spec5 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[2]***
5	Spec6 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20211222
Occultation
Unused Orbital Visibility = 0
Exp. 5 (Auto-WAVECAL)
Home
GS Reacq
Exp. 5
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16646, Ross 451 (3) (08), scheduling Wed Mar 02 16:01:43 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

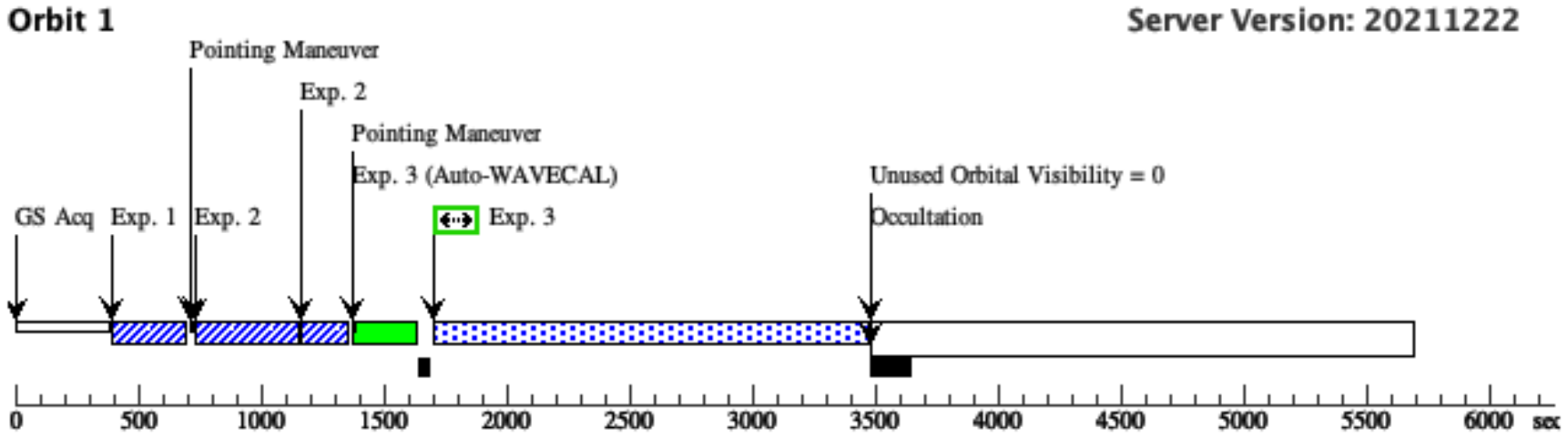
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	ROSS-451	RA: 11 40 20.3055 (175.0846063d) Dec: +67 15 32.36 (67.25899d) Equinox: J2000	Proper Motion RA: 0.04490501708299448 sec of time/yr Proper Motion Dec: -3.160183999898436 arcsec/yr Epoch of Position: 2000	V=12.3 J=9.409, H=8.901, K=8.667	Reference Frame: ICRS

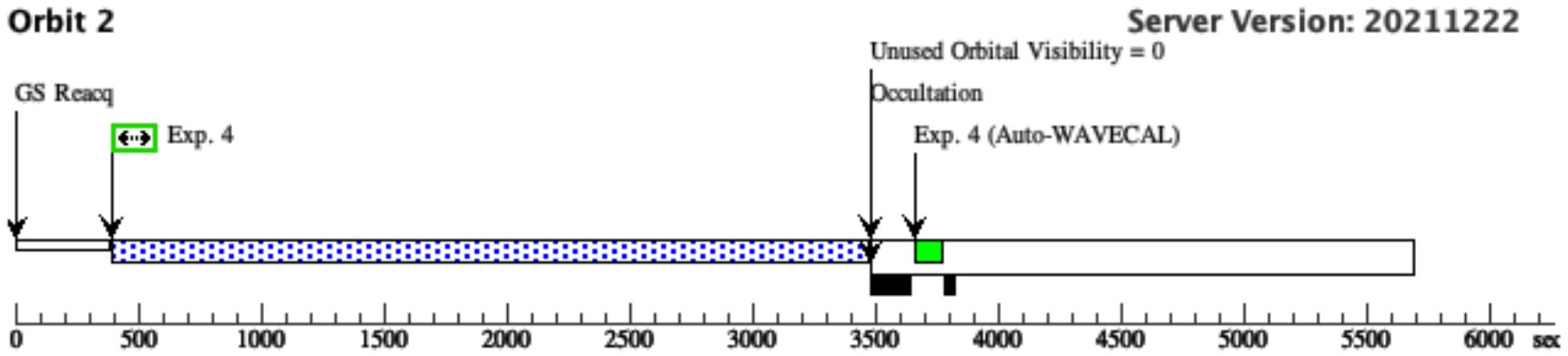
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[M III-I]

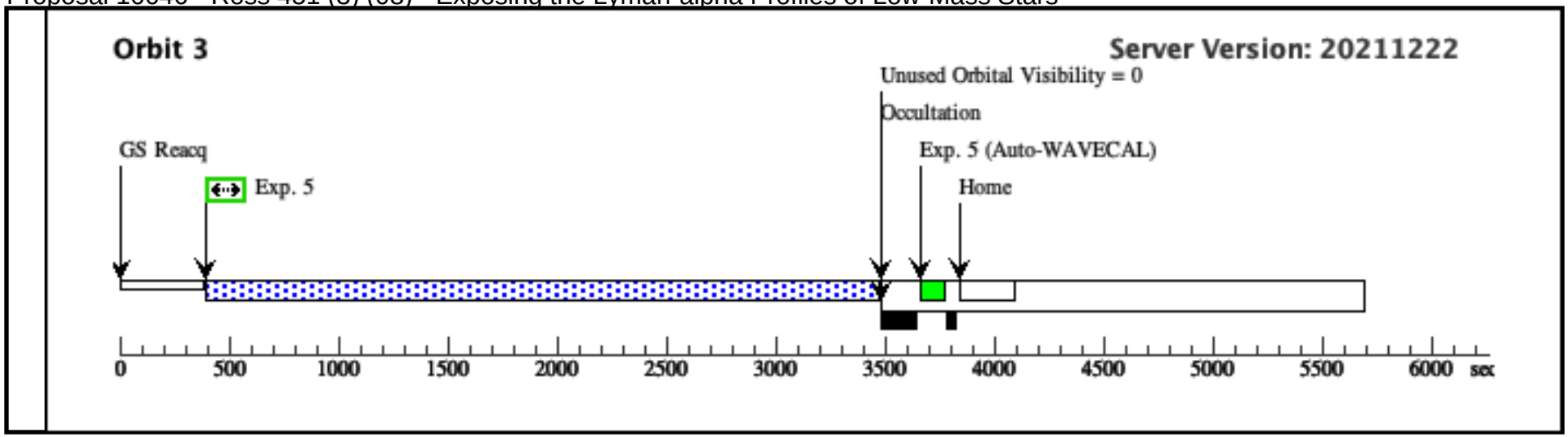
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1526969)	(5) ROSS-451	STIS/CCD, ACQ, F25ND3	MIRROR				3.5 Secs (3.5 Secs) *[==>]*	 ***[1]***
2	ACQ/PEAK (STIS.ta.1526979)	(5) ROSS-451	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				7.5 Secs (7.5 Secs) *[==>]*	 ***[1]***
3	Spec7 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			1753 Secs (1753 Secs) *[==>]*	 ***[1]***
4	Spec8 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[2]***
5	Spec9 (STIS.sp.1527016)	(5) ROSS-451	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			3064 Secs (3064 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20211222
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 5
Exp. 5 (Auto-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16646, L 802-6 (09), scheduling Wed Mar 02 16:01:43 GMT 2022

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

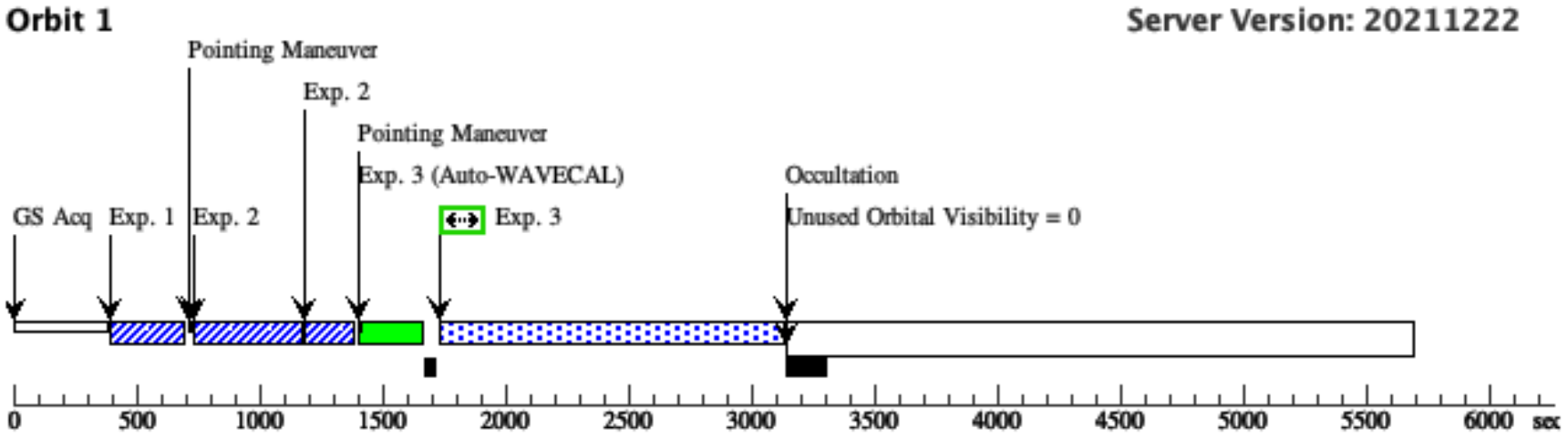
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	L-802-6	RA: 02 58 10.2285 (44.5426188d) Dec: -12 53 6.00 (-12.88500d) Equinox: J2000	Proper Motion RA: 0.01874182379202283 sec of time/yr Proper Motion Dec: 0.53937 arcsec/yr Epoch of Position: 2000	V=12.669	Reference Frame: ICRS

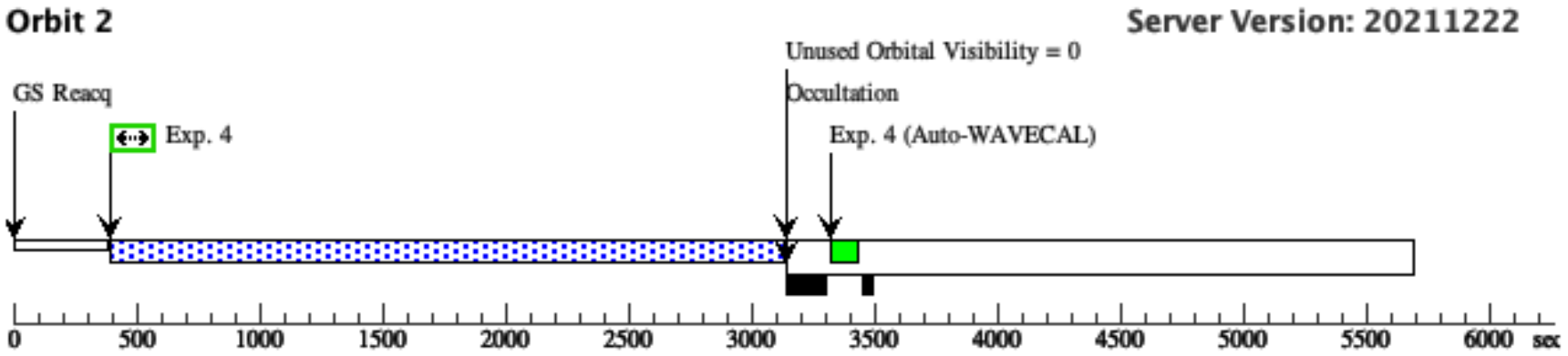
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=STAR
Description=[M III-I]

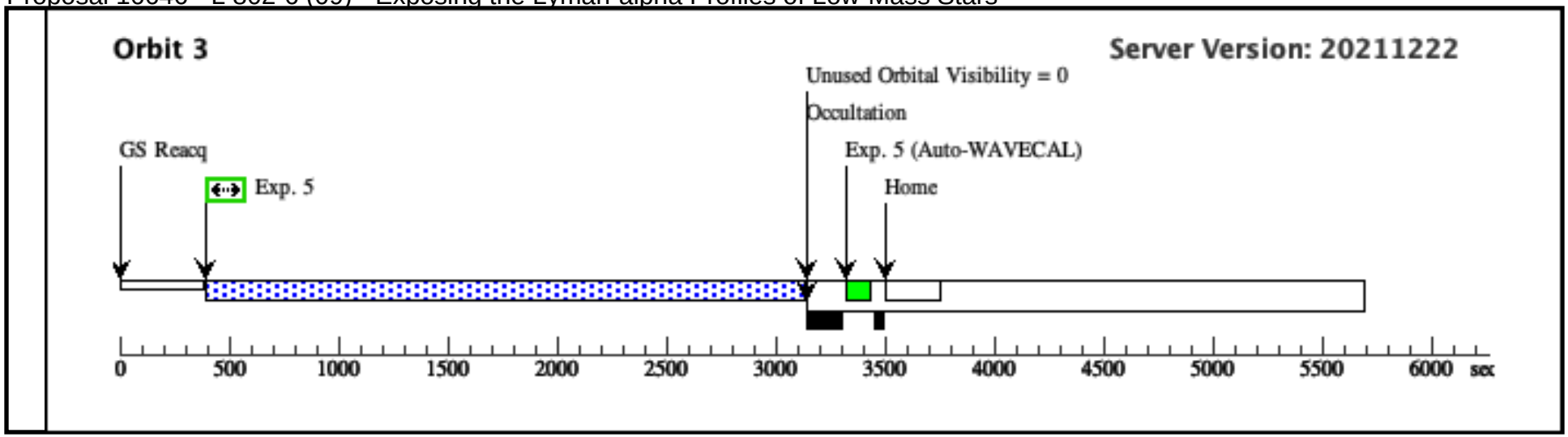
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.1526971)	(6) L-802-6	STIS/CCD, ACQ, F25ND3	MIRROR				3.8 Secs (3.8 Secs) *[==>]*	***[1]***
2	ACQ/PEAK (STIS.ta.1526977)	(6) L-802-6	STIS/CCD, ACQ/PEAK, 0.2X0.05ND	MIRROR				8.8 Secs (8.8 Secs) *[==>]*	***[1]***
3	Spec 1 (STIS.sp.1527010)	(6) L-802-6	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			1385 Secs (1385 Secs) *[==>]*	***[1]***
4	Spec2 (STIS.sp.1527010)	(6) L-802-6	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			2727 Secs (2727 Secs) *[==>]*	***[2]***
5	Spec3 (STIS.sp.1527010)	(6) L-802-6	STIS/FUV-MAMA, TIME-TAG, 52X0.1	G140M 1222 A	BUFFER-TIME=2000			2727 Secs (2727 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20211222
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 5
Exp. 5 (Auto-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec