14134 - Spectral Diagnostics for the Reionization Era: Exploring the Semi-Forbidden CIII] Emission in Low Metallicity Green Pea Galaxies

Cycle: 23, Proposal Category: GO

(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) SDSS-J145735.13+223201.8	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:51.0	yes
02	(2) SDSS-J030321.41-075923.2	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:52.0	yes
03	(3) SDSS-J091113.34+183108.1	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:53.0	yes
04	(4) SDSS-J105330.82+523752.8	STIS/CCD STIS/NUV-MAMA	1	29-Jul-2016 13:07:54.0	yes
05	(5) SDSS-J113303.79+651341.3	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:55.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(6) SDSS-J113722.14+352426.6	STIS/CCD STIS/NUV-MAMA	1	29-Jul-2016 13:07:55.0	yes
07	(7) SDSS-J121903.98+152608.5	STIS/CCD STIS/NUV-MAMA	1	29-Jul-2016 13:07:56.0	yes
08	(8) SDSS-J124423.37+021540.4	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:56.0	yes
58	(58) SDSS-J124423.37+021540.4-COPY	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:57.0	yes
09	(9) SDSS-J124834.63+123402.9	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:58.0	yes
59	(59) SDSS-J124834.63+123402.9-COPY	STIS/CCD STIS/NUV-MAMA	2	29-Jul-2016 13:07:59.0	yes
10	(10) SDSS-J081552.00+215623.6	STIS/CCD STIS/NUV-MAMA	3	29-Jul-2016 13:07:59.0	yes

22 Total Orbits Used

ABSTRACT

Identifying the sources of reionization at z>6 is one of the primary science goals of cosmology and the main driver for upcoming large telescopes. The main tools for confirming the redshifts and tracing the earliest stellar population are the UV continuum and Ly-alpha emission. At z>6 and further into the reionization era these UV photons are severly quenched by the largely neutral IGM, making it crucial to seek other diagnostics. The semi- forbidden CIII]1909 emission is emerging as promising tool based on the strength and frequency of its observation in low metallicity galaxies at z>2. We propose to use the HST STIS to observe the local analogs of such a population locally, which are the recently discovered ``Green Pea'' galaxies. We propose to observe the CIII] line and use it with the shorter wavelength observations in the HST archive to (1) establish the ubiquity of this line, (2) calibrate the CIII] emission strength against Ly-alpha to explore its usefulness as a potential redshift indicator, (3) derive C/O ratios from CIII]1909 and OIII]1663 lines, and study their dependence on metallicity, and (4) construct high quality composite rest-UV spectra of these star-forming dwarfs. These new calibrations and templates will serve as important diagnostic tools for high redshift galaxies.

OBSERVING DESCRIPTION

Green Pea (GP) galaxies are the local analogs of the high redshift Lyman-alpha emitters. These galaxies have high [OIII] equivalent widths (> 400 Angstrom), low metallicities (< 0.2 solar metallicities) in most cases (6/10), and are at redshifts z=0.1-0.3. We selected for this study, a sample of 10 GP galaxies that have existing HST spectra in the FUV wavelengths at < 1700 A. In the HST archive, there is HST COS (G130M, G160M) spectra for eight of the objects covering the wavelengths < 1100-1780 A from proposal ID 12928 (PI: Henry) which aims to study gas outflows from low mass galaxies. Two of the remaining galaxies have HST COS G160M spectra from program ID 13293 (PI: Jaskot) which aims to study the neutral ISM optical depth. We examined the COS G160M spectra from both these programs and confirmed that they cover the Ly-alpha emission for all of our 10 targets, and have the required S/N (>10). We propose to observe all the ten GPs using STIS G230L to observe the CIII] 1909, and OIII] 1663 line, providing us with adequate sample size to explore the various correlations between Lyman-alpha emission, C/O,and the (O/H) measured from SDSS optical spectra.

We use STIS rather than COS, based on section 2.7 of the COS instrument handbook which suggest that STIS is better for NUV (1700-3200 A) spectroscopy, in terms of observation setup, wavelength coverage in a single exposure, calibrations, and particularly for extended sources. We used the online exposure time calculator for HST STIS, to compute the exposure times and signal-to-noise (S/N) for the proposed observations. We have opted for acquisition images in the ACQ/IMAGE mode using the long pass F28X50LP aperture with MIRROR and STIS CCD. The acquisition exposure times were calculated for a S/N of 40, using the SDSS-g magnitude with the extended source option. The F28X50LP cuts off in transmission sharply at < 6000 Angstrom. So, we also computed the exposure times using the SDSS-r magnitudes, which yield about 1.5-2.0 less exposure times. We prefer to use the exposures obtained with the the SDSS-g magnitudes, so that the actual S/N would be slightly higher than the minimum requirement of S/N=40. The GP galaxies are barely resolved in SDSS images. So, we calculated the exposure time assuming a uniform surface brightness in a 1 arcsec diameter. From the HST/COS ACQ images in the NUV that we retrieved from the archive, we measured the sizes of the core in these compact galaxies to be less than 0.5 arcseconds. So, we used a checkbox of 9x9 pixels, which corresponds to 0.45"x0.45" on the STIS CCD plate scale.

To obtain the exposure times for the science exposures we performed the ETC calculations for STIS spectroscopy in G230L with the NUV MAMA detector. We used the 52X0.5 slit to optimize the slit loss and spectral resolution for resolving power of R=500. We used a flat continuum with flux estimated from the GALEX NUV magnitude, and then added the CIII] and OIII] lines (with fluxes derived from the CLOUDY models) at their expected wavelengths based on the galaxy redshift (0.1-0.3). We derived the expected CIII] line fluxes from the CLOUDY photoionization models used by Jaskot & Oey (2013) for the optical emission lines. The estimated CIII] line flux ranges from 3x10^{-14} - 8x10^{-16} erg/s/cm2. For the

same models that described the optical spectra of GPs in Jaskot & Oey (2013), the range of expected C III]1909/O III] 1665 ratios is 1.04-2.56. We used this scaling to obtain the OIII]1663 fluxes as inputs to calculations done with the STIS ETC. The exposure times were determined for S/N = 10 per resolution element for the CIII] emission line, and S/N > 4-5 in the continuum to allow accurate EW measurements, and also place strong constraints on the CIII] emission in case of a non-detection. The estimated exposure times range from 2500s to 5000s based on the target brightness and line fluxes. With 1 or 2 orbits per source, the 10 galaxies will be oberved using a total of 18 orbits.

Visit

Proposal 14134, Visit 01, completed

Fri Jul 29 17:08:00 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

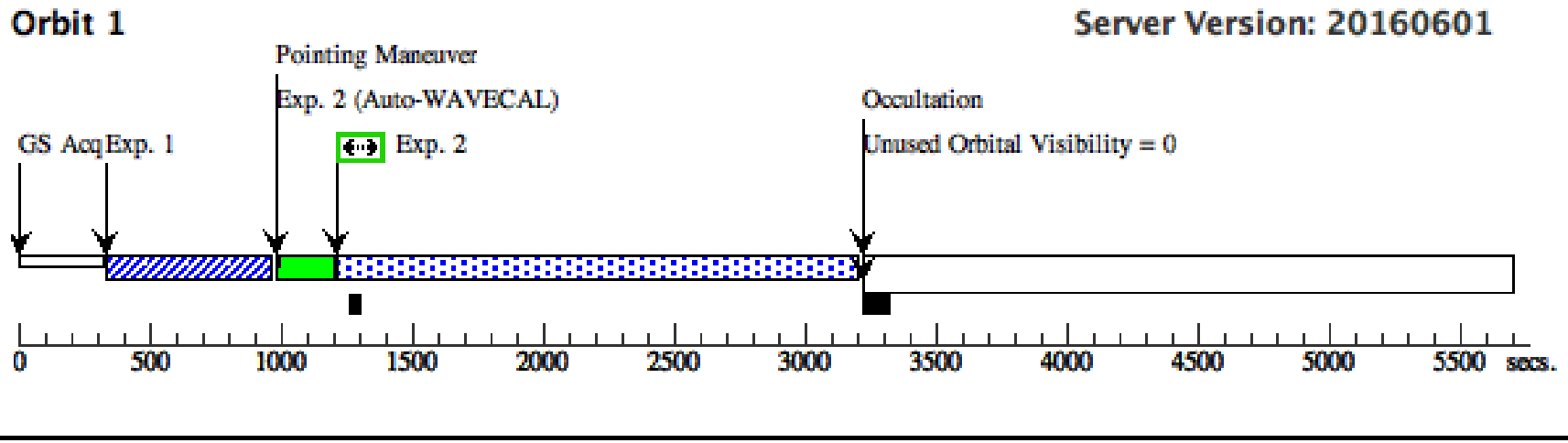
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSS-J145735.13+223201.8	RA: 14 57 35.1370 (224.3964042d) Dec: +22 32 1.77 (22.53383d) Equinox: J2000	Redshift: 0.149	V=18.4 SDSS-g=19.43, SDSS-r=18.51, F(CIII]1909)=3.39e-15 erg/s/cm ^2	Reference Frame: ICRS

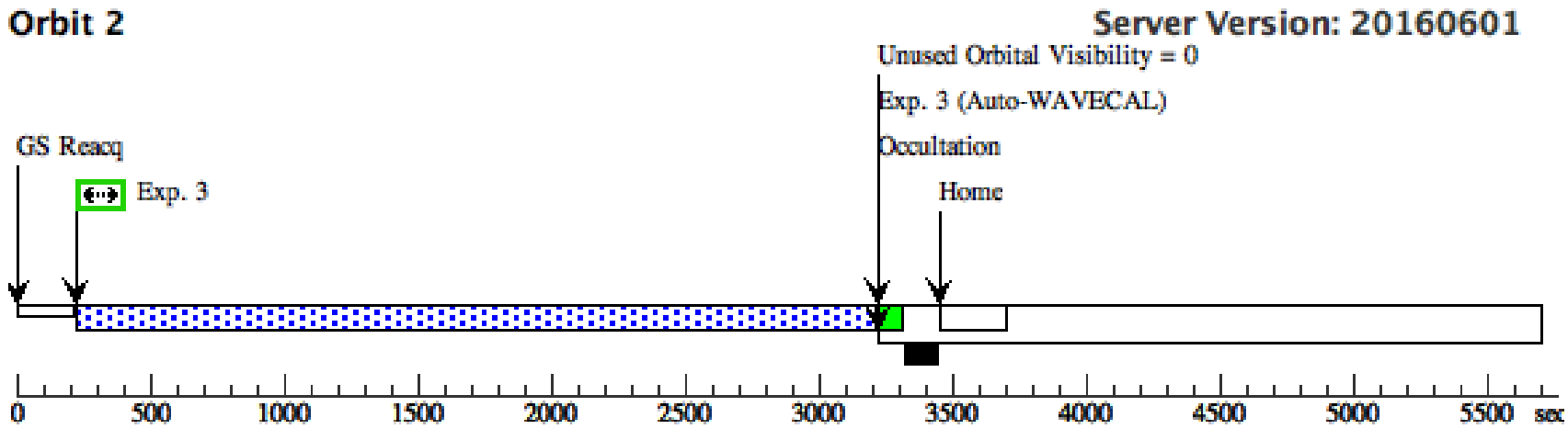
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733181)	(1) SDSS-J145735.13+223201.8	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			97 Secs (97 Secs) *[==>]*	***[1]***
2	(STIS.sp.698437)	(1) SDSS-J145735.13+223201.8	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1970 Secs (1954 Secs) *[==>1954.0 Secs]*	***[1]***
3	(STIS.sp.698437)	(1) SDSS-J145735.13+223201.8	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2960 Secs (2972 Secs) *[==>2972.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 14134, Visit 02, completed Fri Jul 29 17:08:00 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

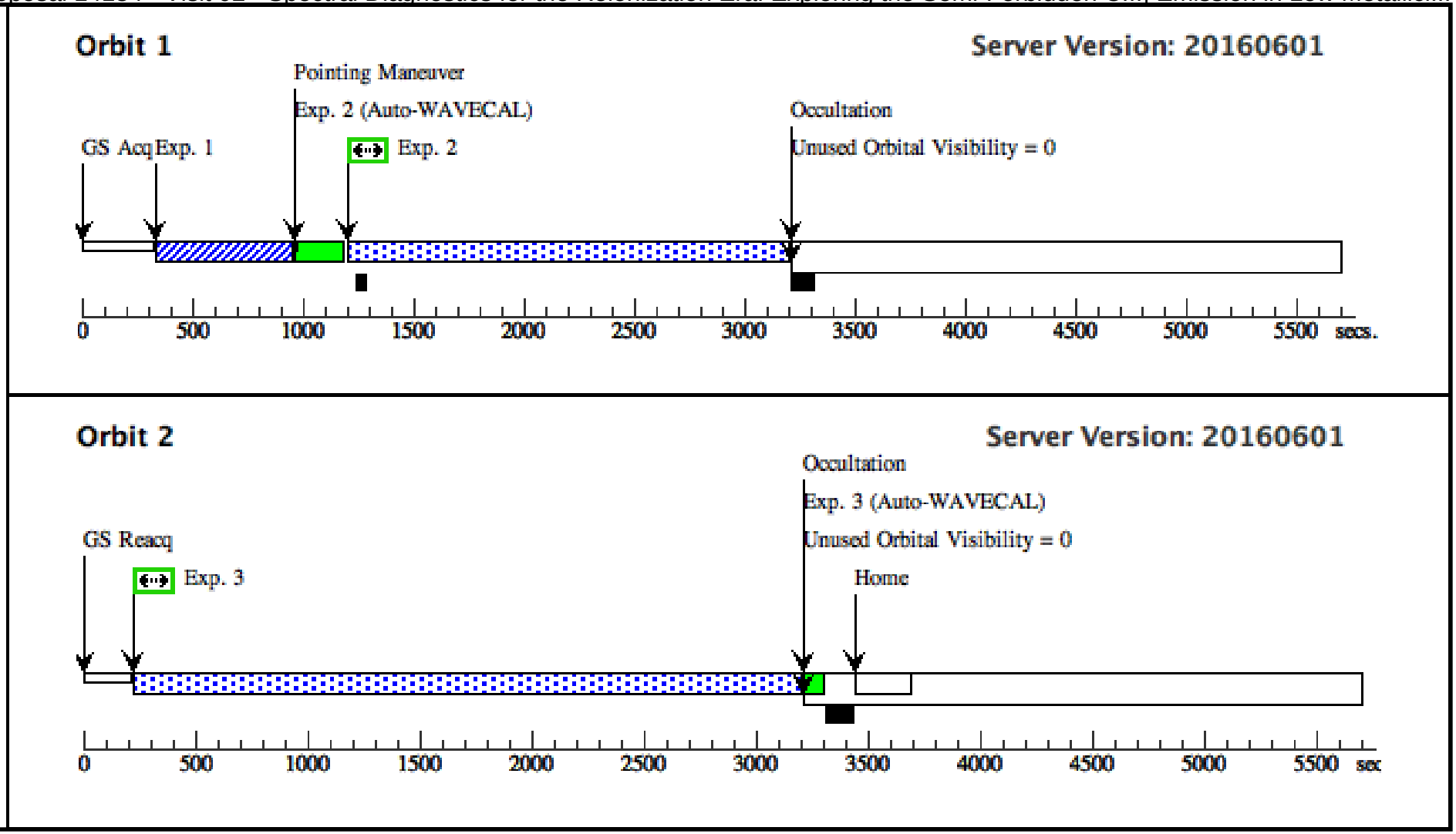
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SDSS-J030321.41-075923.2	RA: 03 03 21.4140 (45.8392250d) Dec: -07 59 23.25 (-7.98979d) Equinox: J2000	Redshift: 0.165	V=19.38 SDSS-g=19.38, SDSS-r=18.72, F(CIII]1909)=4.28e-16 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733202)	(2) SDSS-J030321.41-075923.2	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; DIFFUSE-CENTER=FLUX-CENTROID; ACQTYPE=DIFFUSE			93 Secs (93 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698442)	(2) SDSS-J030321.41-075923.2	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1980 Secs (1961 Secs) *[==>1961.0 Secs]*	 ***[1]***
3	(STIS.sp.698442)	(2) SDSS-J030321.41-075923.2	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2963 Secs) *[==>2963.0 Secs]*	 ***[2]***

Orbit Structure



Visit

Proposal 14134, Visit 03, completed Fri Jul 29 17:08:00 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

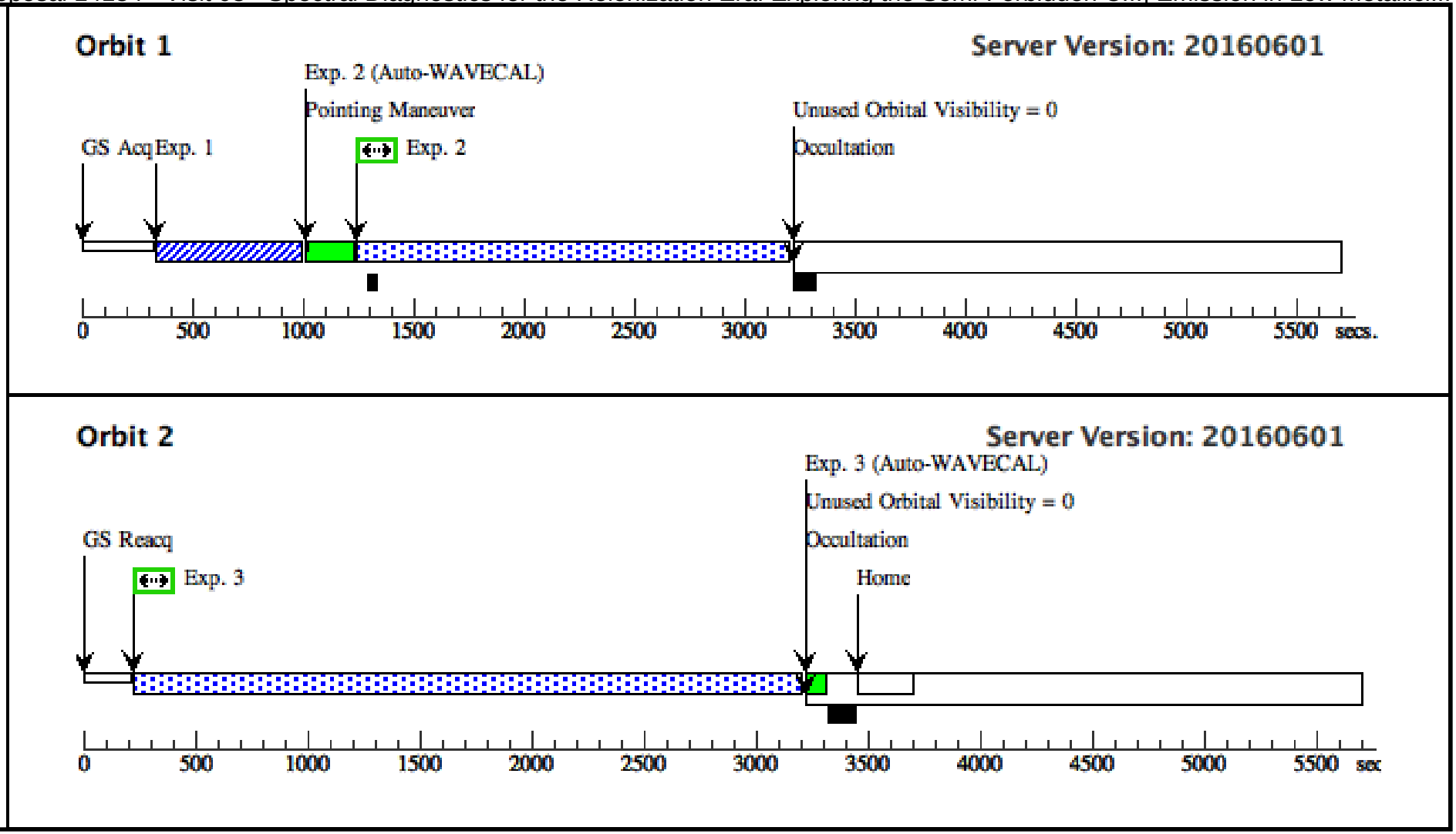
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SDSS-J091113.34+183108.1	RA: 09 11 13.3440 (137.8056000d) Dec: +18 31 8.16 (18.51893d) Equinox: J2000	Redshift: 0.262	V=19.5 SDSS-g=19.50, SDSS-r=19.13, F(CIII]1909)=2.77e-14 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733209)	(3) SDSS-J091113.34+183108.1	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			104 Secs (104 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698454)	(3) SDSS-J091113.34+183108.1	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1940 Secs (1925 Secs) *[==>1925.0 Secs]*	 ***[1]***
3	(STIS.sp.698454)	(3) SDSS-J091113.34+183108.1	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2971 Secs) *[==>2971.0 Secs]*	 ***[2]***

Orbit Structure



Visit

Proposal 14134, Visit 04, completed Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

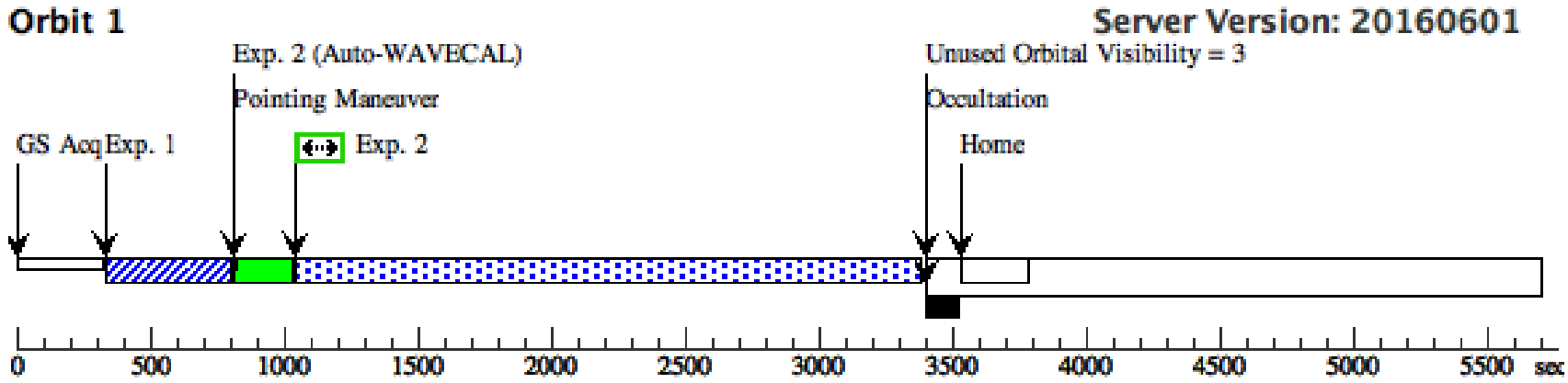
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SDSS-J105330.82+523752.8	RA: 10 53 30.8230 (163.3784292d) Dec: +52 37 52.86 (52.63135d) Equinox: J2000	Redshift: 0.253	V=18.8 SDSS-g=18.83, SDSS-r=18.48, F(CIII]1909)=5.83e-15 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733214)	(4) SDSS-J105330.82+523752.8	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			55 Secs (55 Secs) *[==>]*	*[1]*
2	(STIS.sp.698459)	(4) SDSS-J105330.82+523752.8	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2300 Secs (2300 Secs) *[==>]*	*[1]*

Orbit Structure



Visit

Proposal 14134, Visit 05, completed Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

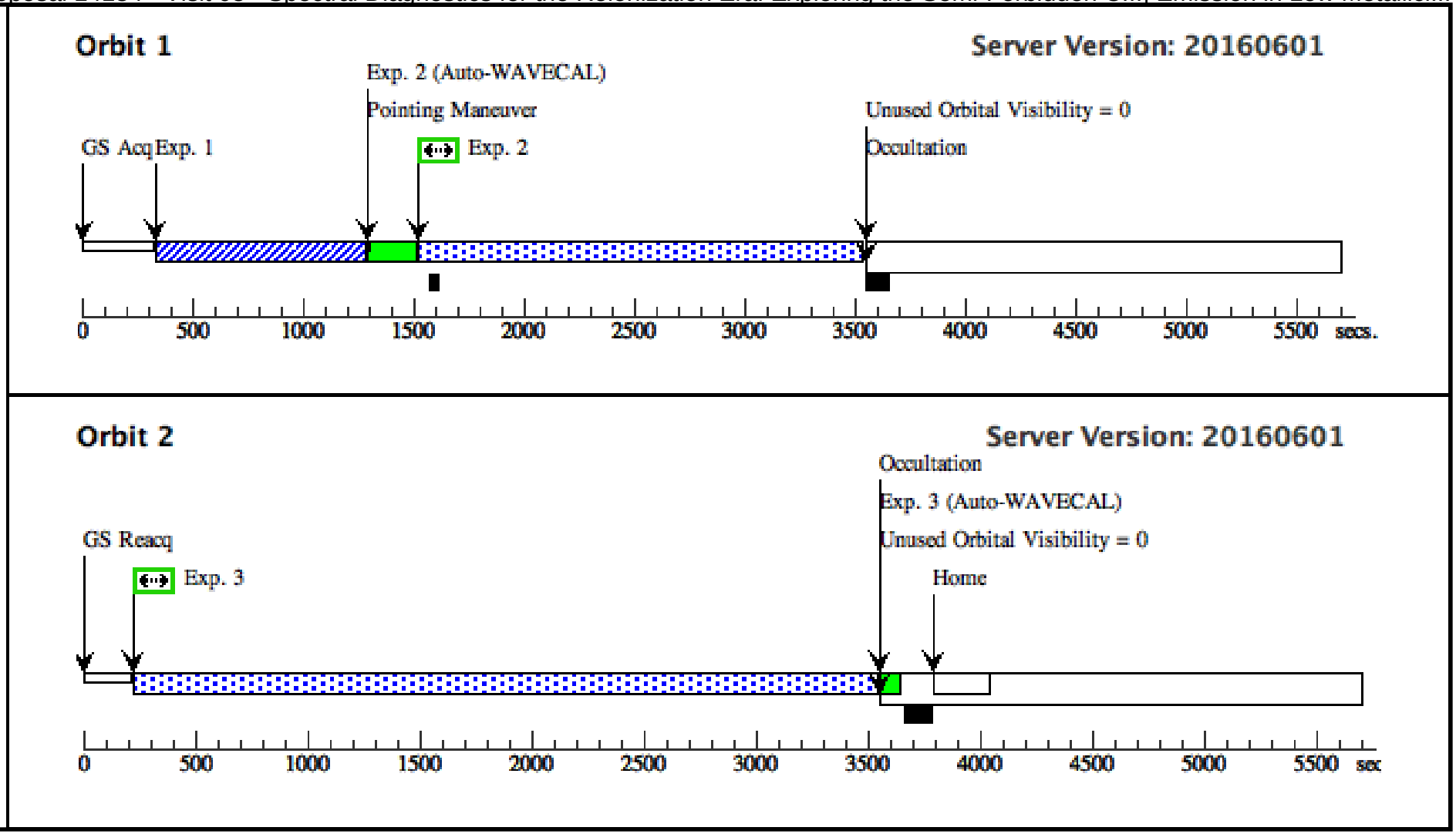
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	SDSS-J113303.79+651341.3	RA: 11 33 3.8030 (173.2658458d) Dec: +65 13 41.38 (65.22816d) Equinox: J2000	Redshift: 0.241	V=20.0 SDSS-g=20.04, SDSS-r=19.60, F(CIII]1909)=6.35e-17 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733221)	(5) SDSS-J113303.79+651341.3	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			175 Secs (175 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698468)	(5) SDSS-J113303.79+651341.3	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1990 Secs (1976 Secs) *[==>1976.0 Secs]*	 ***[1]***
3	(STIS.sp.698468)	(5) SDSS-J113303.79+651341.3	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				3200 Secs (3306 Secs) *[==>3306.0 Secs]*	 ***[2]***

Orbit Structure



Visit

Proposal 14134, Visit 06, completed Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

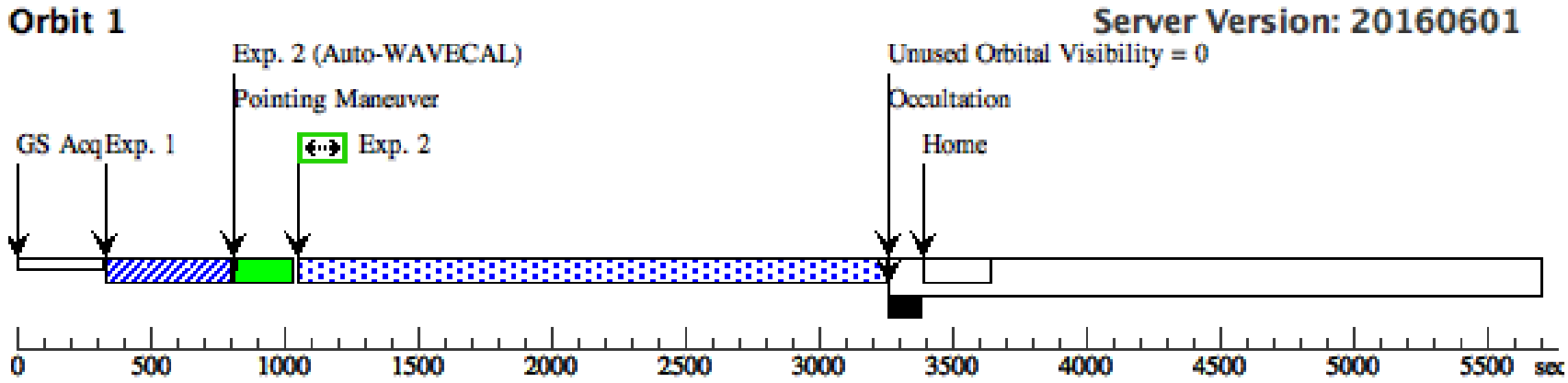
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SDSS-J113722.14+352426.6	RA: 11 37 22.1380 (174.3422417d) Dec: +35 24 26.70 (35.40742d) Equinox: J2000	Redshift: 0.194	V=18.9 SDSS-g=18.85, SDSS-r=18.36, F(CIII]1909)=5.64e-15 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733222)	(6) SDSS-J113722.14+352426.6	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			56 Secs (56 Secs) *[==>]*	*[1]*
2	(STIS.sp.698477)	(6) SDSS-J113722.14+352426.6	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2180 Secs (2163 Secs) *[==>2163.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 14134, Visit 07, completed Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

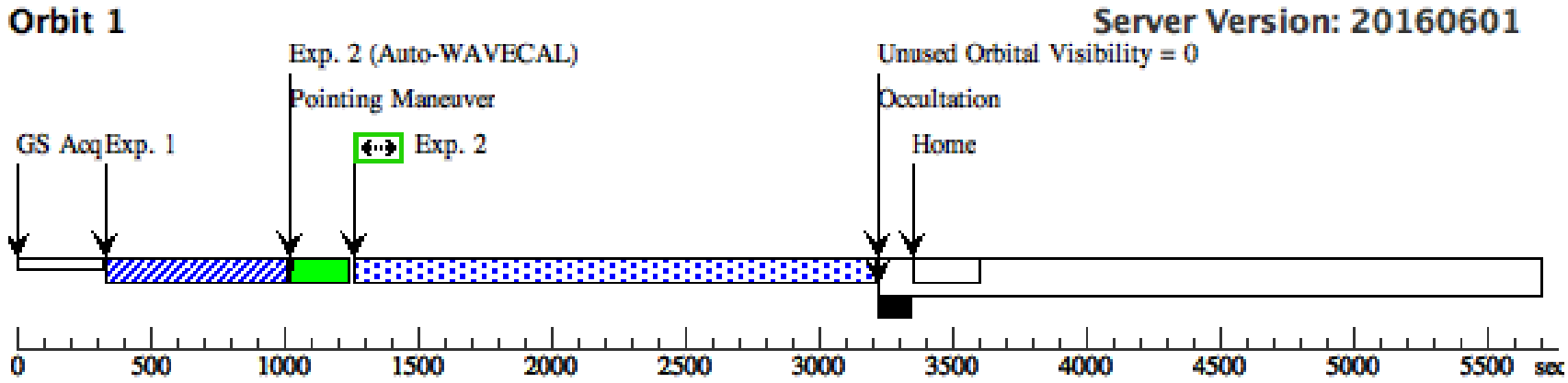
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	SDSS-J121903.98+152608.5	RA: 12 19 3.9830 (184.7665958d) Dec: +15 26 8.52 (15.43570d) Equinox: J2000	Redshift: 0.196	V=19.5 SDSS-g=19.54, SDSS-r=18.68, F(CIII]1909)=2.39e-15 erg/s/cm ^2	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733225)	(7) SDSS-J121903.98+152608.5	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			108 Secs (108 Secs) *[==>]*	*[1]*
2	(STIS.sp.698480)	(7) SDSS-J121903.98+152608.5	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1928 Secs (1909 Secs) *[==>1909.0 Secs]*	*[1]*

Orbit Structure



Visit

Proposal 14134, Visit 08, scheduled Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

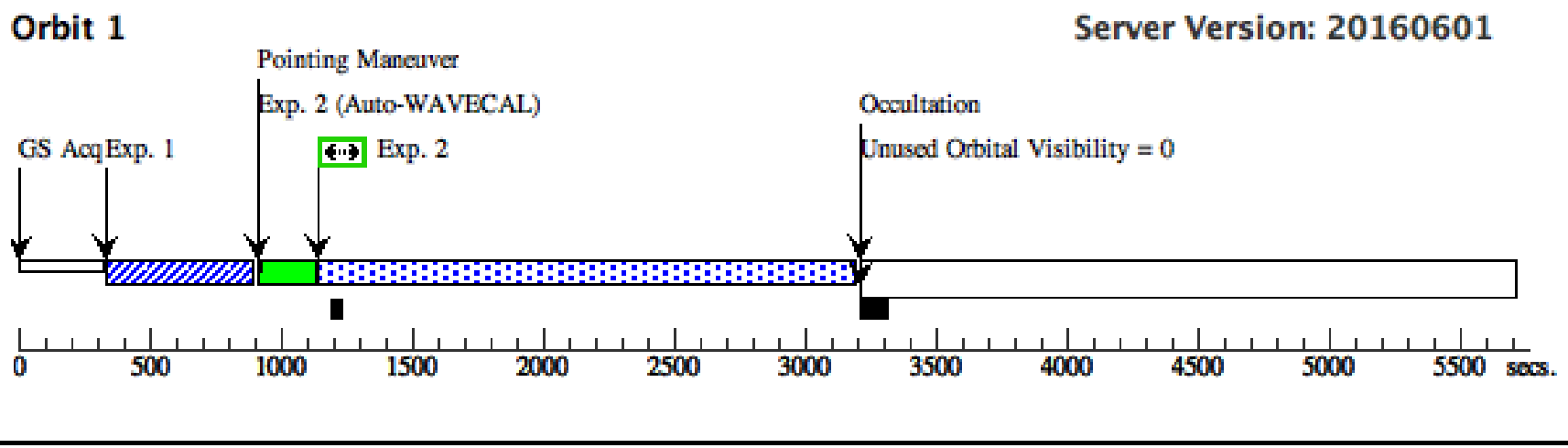
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SDSS-J124423.37+021540.4	RA: 12 44 23.3720 (191.0973833d) Dec: +02 15 40.43 (2.26123d) Equinox: J2000	Redshift: 0.239	V=19.2 SDSS-g=19.21, SDSS-r=18.45, F(CIII]1909)=9.68e-15 erg/s/cm ^2	Reference Frame: ICRS

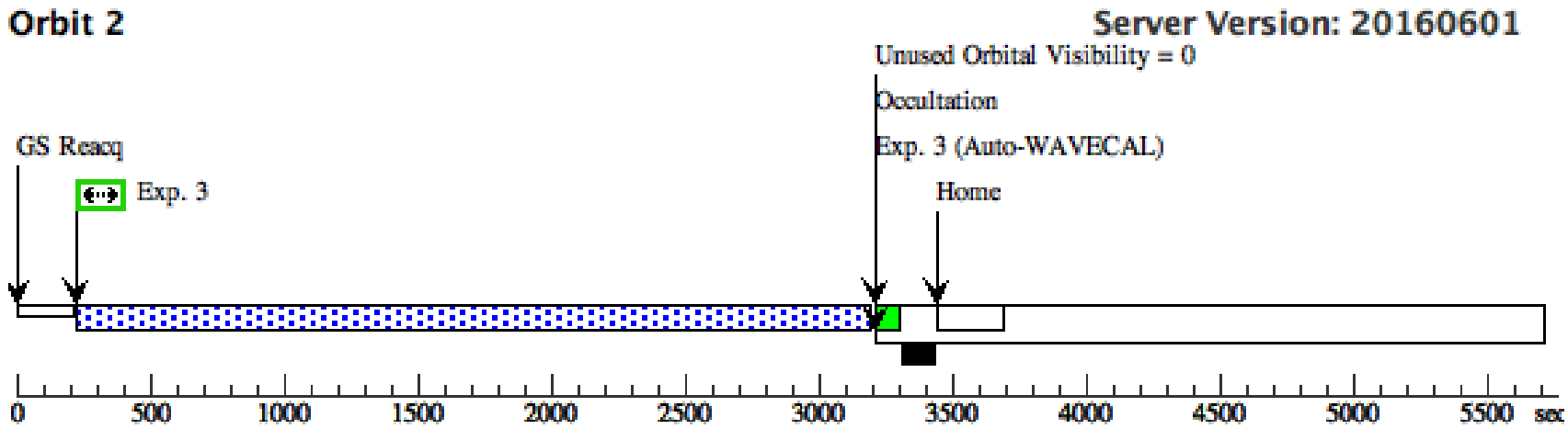
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733228)	(8) SDSS-J124423.37+021540.4	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			79 Secs (79 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698486)	(8) SDSS-J124423.37+021540.4	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2030 Secs (2014 Secs) *[==>2014.0 Secs]*	 ***[1]***
3	(STIS.sp.698486)	(8) SDSS-J124423.37+021540.4	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2960 Secs) *[==>2960.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 14134, Visit 58, implementation Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

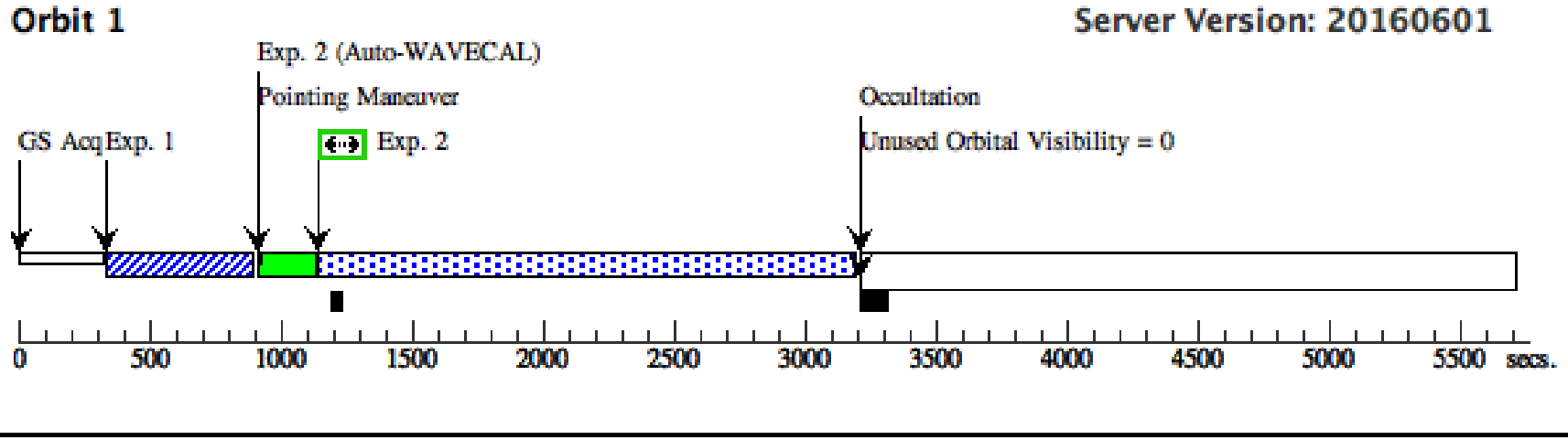
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(58)	SDSS-J124423.37+021540.4-COPY	RA: 12 44 23.3720 (191.0973833d) Dec: +02 15 40.43 (2.26123d) Equinox: J2000	Redshift: 0.239	V=19.2 SDSS-g=19.21, SDSS-r=18.45, F(CIII]1909)=9.68e-15 erg/s/cm^2	Reference Frame: ICRS

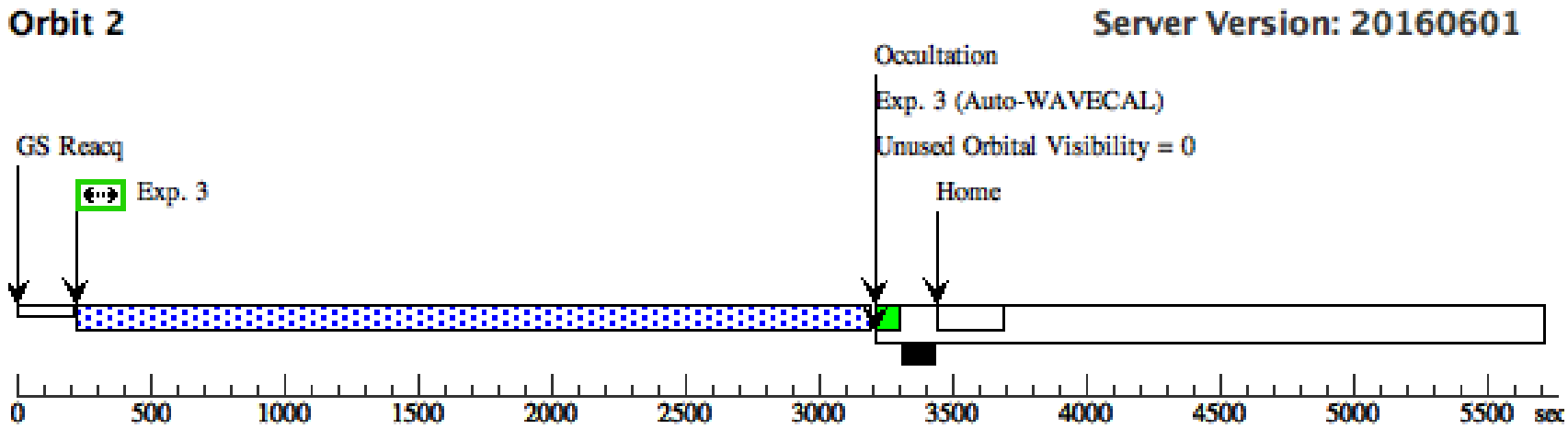
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733228)	(58) SDSS-J124423.37+021540.4-COPY	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			79 Secs (79 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698486)	(58) SDSS-J124423.37+021540.4-COPY	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2030 Secs (2014 Secs) *[==>2014.0 Secs]*	 ***[1]***
3	(STIS.sp.698486)	(58) SDSS-J124423.37+021540.4-COPY	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2960 Secs) *[==>2960.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 14134, Visit 09, scheduled Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

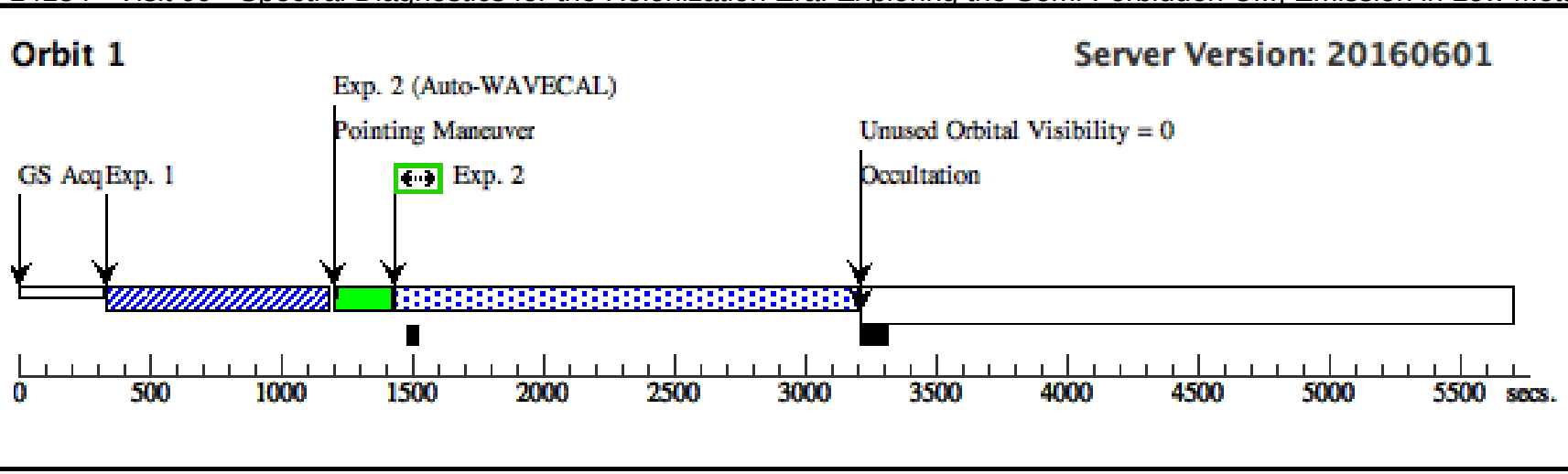
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	SDSS-J124834.63+123402.9	RA: 12 48 34.6340 (192.1443083d) Dec: +12 34 2.93 (12.56748d) Equinox: J2000	Redshift: 0.263	V=19.9 SDSS-g=19.90, SDSS-r=19.29, F(CIII]1909)=1.71e-15 erg/s/cm ^2	Reference Frame: ICRS

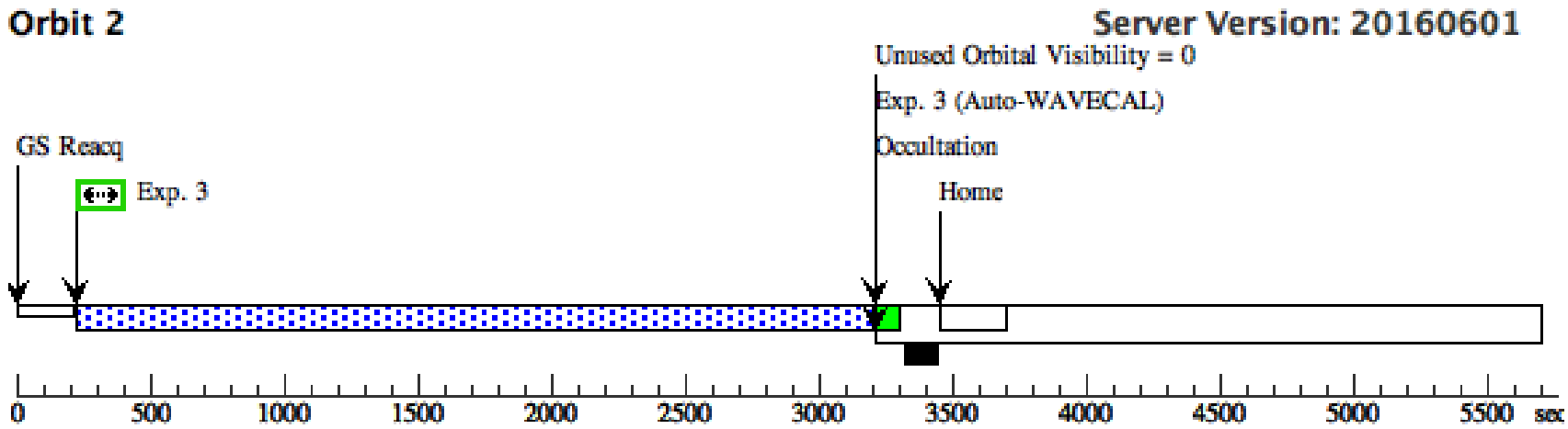
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733230)	(9) SDSS-J124834.63+123402.9	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=DIFFUSE; CHECKBOX=9; DIFFUSE-CENTER=FLUX-CENTROID			152 Secs (152 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698500)	(9) SDSS-J124834.63+123402.9	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1750 Secs (1730 Secs) *[==>1730.0 Secs]*	 ***[1]***
3	(STIS.sp.698500)	(9) SDSS-J124834.63+123402.9	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2968 Secs) *[==>2968.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 14134, Visit 59, implementation Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

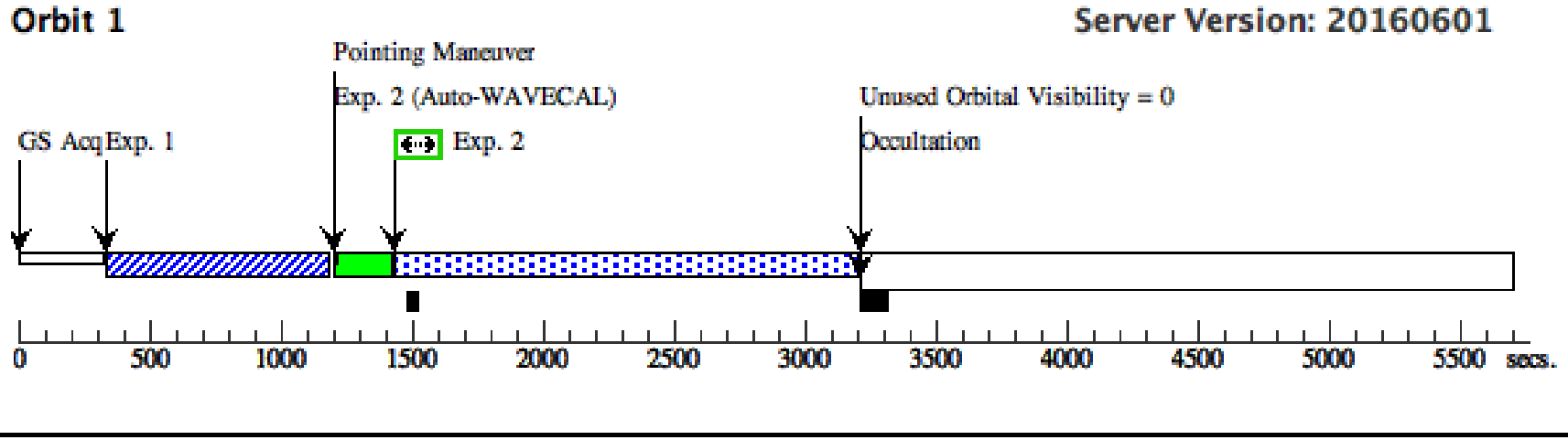
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(59)	SDSS-J124834.63+123402.9-COPY	RA: 12 48 34.6340 (192.1443083d) Dec: +12 34 2.93 (12.56748d) Equinox: J2000	Redshift: 0.263	V=19.9 SDSS-g=19.90, SDSS-r=19.29, F(CIII]1909)=1.71e-15 erg/s/cm ^2	Reference Frame: ICRS

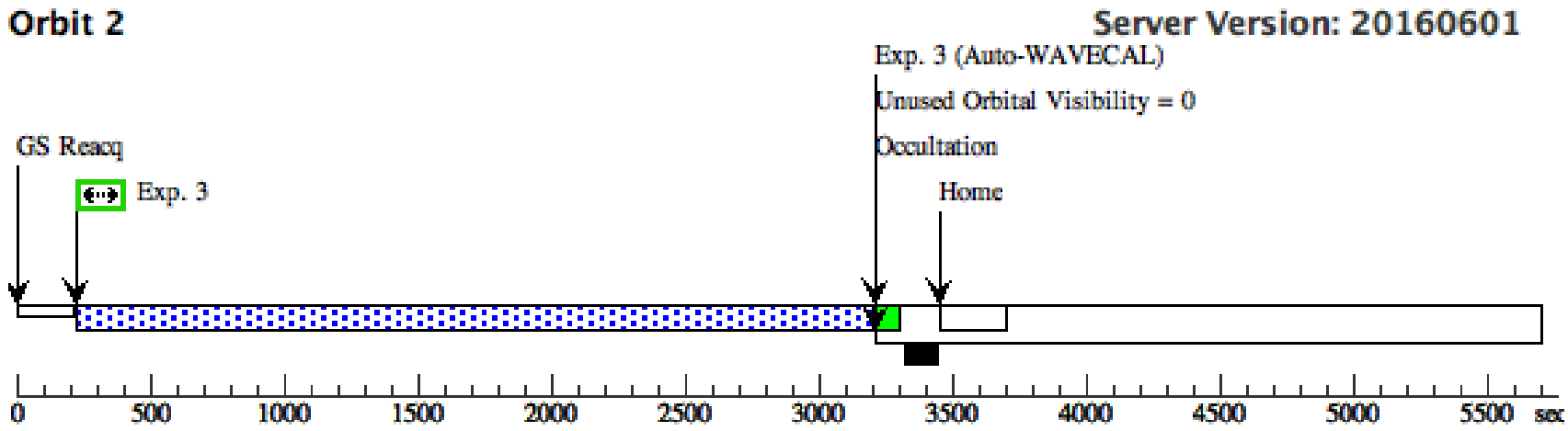
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733230)	(59) SDSS-J124834.63+123402.9-COPY	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=DIFFUSE; CHECKBOX=9; DIFFUSE-CENTER=FLUX-CENTROID			152 Secs (152 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698500)	(59) SDSS-J124834.63+123402.9-COPY	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1750 Secs (1730 Secs) *[==>1730.0 Secs]*	 ***[1]***
3	(STIS.sp.698500)	(59) SDSS-J124834.63+123402.9-COPY	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2900 Secs (2968 Secs) *[==>2968.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 14134, Visit 10, scheduling Fri Jul 29 17:08:01 GMT 2016

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

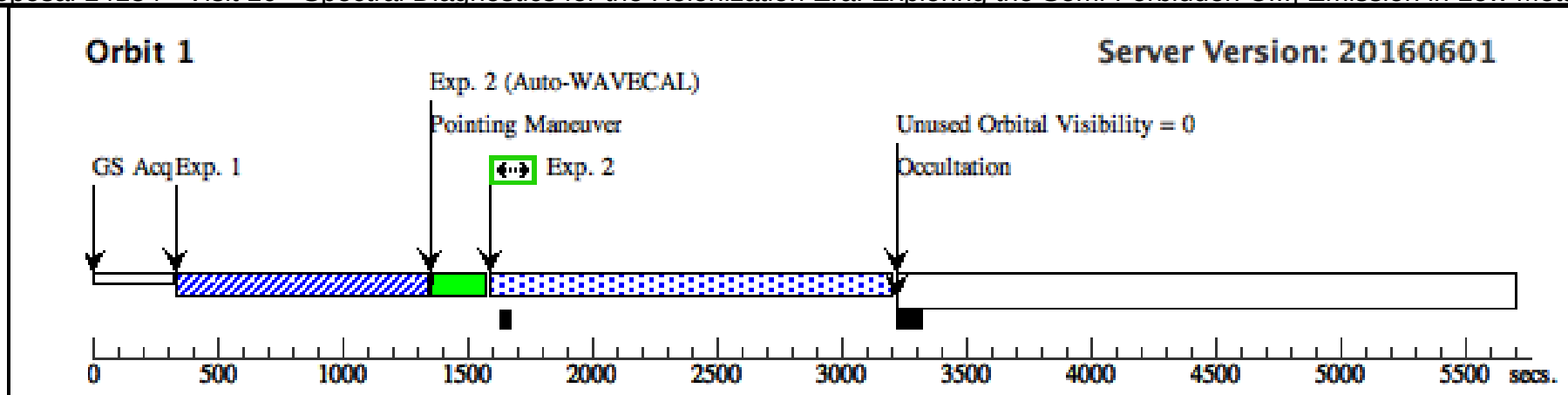
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	SDSS-J081552.00+215623.6	RA: 08 15 52.0010 (123.9666708d) Dec: +21 56 23.66 (21.93991d) Equinox: J2000	Redshift: 0.141	V=19.1 SDSS-g=20.13, SDSS-r=19.34, F(CIII]1909)=3.44e-16 erg/s/cm ^2	Reference Frame: ICRS

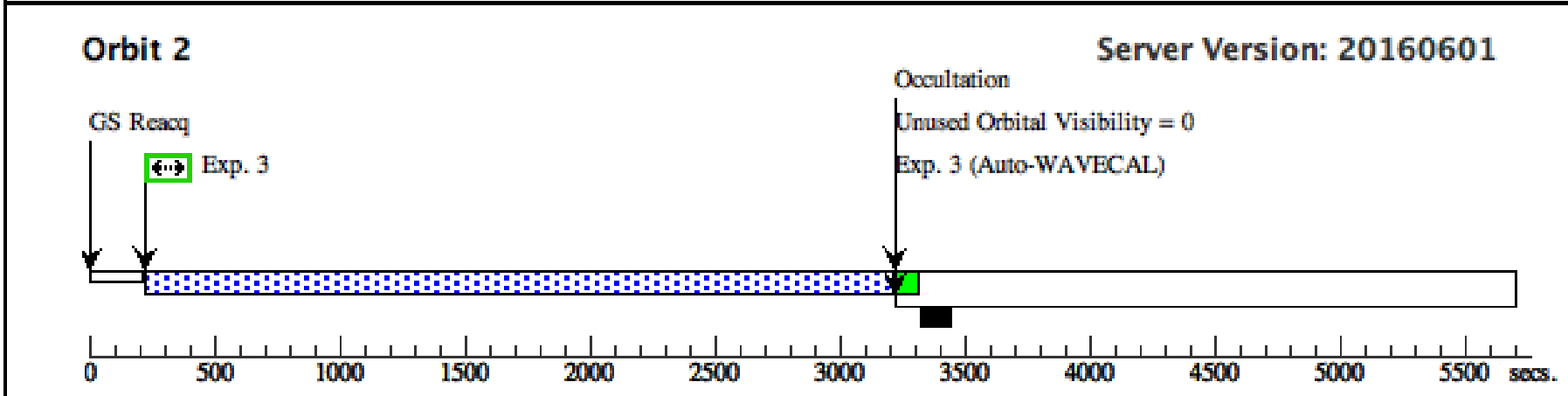
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

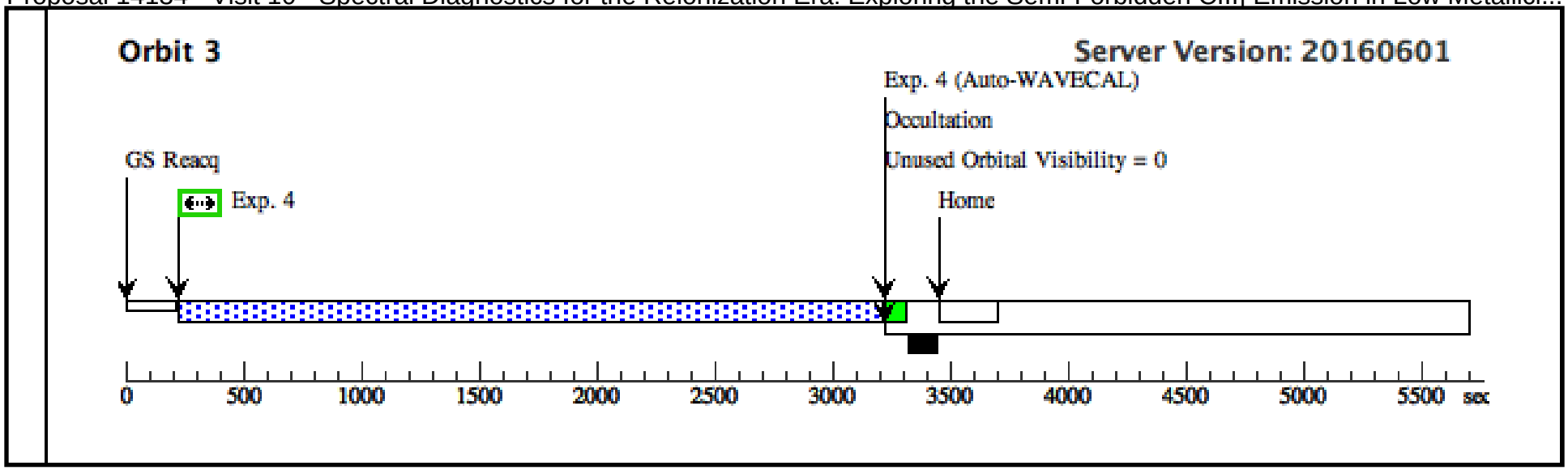
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.733232)	(10) SDSS-J081552.00+215623.6	STIS/CCD, ACQ, F28X50LP	MIRROR	CHECKBOX=9; ACQTYPE=DIFFUSE; DIFFUSE-CENTER=FLUX-CENTROID			191 Secs (191 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.698516)	(10) SDSS-J081552.00+215623.6	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				1590 Secs (1578 Secs) *[==>1578.0 Secs]*	 ***[1]***
3	(STIS.sp.698516)	(10) SDSS-J081552.00+215623.6	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2940 Secs (2972 Secs) *[==>2972.0 Secs]*	 ***[2]***
4	(STIS.sp.698516)	(10) SDSS-J081552.00+215623.6	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A				2920 Secs (2949 Secs) *[==>2949.0 Secs]*	 ***[3]***

Orbit Structure



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