16689 - Using STIS ultraviolet spectroscopy to understand the physical properties, evolution, and structure of white dwarfs in sixteen newly discovered ultracompact binaries.

Cycle: 29, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
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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) ZTFJ0546+3842	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:01:41.0	yes
02	(2) ZTFJ2243+5442 (17) ZTFJ2243OFFSET	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:01:43.0	yes
03	(3) ZTFJ0538+1953	STIS/CCD STIS/FUV-MAMA	4	14-Mar-2023 11:01:45.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(4) ZTFJ0526+5934	STIS/CCD STIS/FUV-MAMA	3	14-Mar-2023 11:01:47.0	yes
05	(5) PTFJ0533+0209	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:01:49.0	yes
06	(6) ZTFJ2029+1534	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:01:51.0	yes
07	(7) ZTFJ0722-1839	STIS/CCD STIS/FUV-MAMA	3	14-Mar-2023 11:01:53.0	yes
08	(8) ZTFJ1749+0924	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:01:54.0	yes
09	(9) ZTFJ2228+4949	STIS/CCD STIS/FUV-MAMA	2	14-Mar-2023 11:01:55.0	yes
16	(10) ZTFJ1946+3203 (18) ZTFJ1946+3203OFFSET	STIS/CCD STIS/FUV-MAMA	3	14-Mar-2023 11:01:57.0	yes
10	(11) ZTFJ0640+1738	STIS/CCD STIS/FUV-MAMA	3	14-Mar-2023 11:01:58.0	yes
11	(12) ZTFJ2130+4420	STIS/CCD STIS/FUV-MAMA	1	14-Mar-2023 11:01:58.0	yes
12	(13) ZTFJ1901+5309	STIS/CCD STIS/FUV-MAMA	1	14-Mar-2023 11:01:59.0	yes
13	(14) ZTFJ2049+3351	STIS/CCD STIS/FUV-MAMA	3	14-Mar-2023 11:02:00.0	yes
14	(15) ZTFJ2055+4651	STIS/CCD STIS/FUV-MAMA	2	14-Mar-2023 11:02:01.0	yes
15	(16) ZTFJ1813+4251	STIS/CCD STIS/FUV-MAMA	5	14-Mar-2023 11:02:03.0	yes

55 Total Orbits Used

ABSTRACT

Here, we propose to conduct a campaign to obtain HST STIS ultraviolet spectroscopy of 15 confirmed ultracompact binary systems discovered using the Zwicky Transient Facility. These observations will be used as a sensitive tool to measure the temperature and other physical properties in these systems, and will serve as a sensitive probe of accretion.

OBSERVING DESCRIPTION

The objective of this program is to obtain STIS spectroscopy and lightcurves of 16 ultracompact binary systems. Our main objective is to obtain a good continuum measurement, as well as measurements of the Lyman series of Hydrogen lines (which are very broad in these white dwarfs). There are a few notes about observing here:

1. ZTF J2243 and ZTF J1946 will both require offset acquisitions since there are brighter stars within 5".

2. ZTF J1901 has an orbital period of 40.5 minutes, and we are observing it for 38.5 minutes in the first exposure. Since this target is only observed for one orbit, it would be valuable to get both the primary and secondary eclipses in the system (they happen 20.25 minutes apart). There are two ways we could do this (1. just do a CVZ orbit, which would get way more SNR), or 2. (try and schedule the observation to start within a window such that the 2 minute gap in coverage doesn't fall on one of the eclipses).

Visit

Proposal 16689, 7.94min (01), completed Tue Mar 14 15:02:04 GMT 2023

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)	ZTFJ0546+3842	RA: 05 46 27.4280 (86.6142833d) Dec: +38 43 13.40 (38.72039d) Equinox: J2000	Proper Motion RA: 1.123 mas/yr Proper Motion Dec: -2.310 mas/yr Epoch of Position: 2016	V=19.3	Reference Frame: ICRS

Comments:
Category=STAR
Description=[DA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529292)	(1) ZTFJ0546+3842	STIS/CCD, ACQ, 50CCD	MIRROR				46 Secs (46 Secs) *[==>]*	***[1]***
2	(STIS.sp.1528618)	(1) ZTFJ0546+3842	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2041 Secs (2041 Secs) *[==>]*	***[1]***
3	(STIS.sp.1528619)	(1) ZTFJ0546+3842	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2780 Secs (2780 Secs) *[==>]*	***[2]***
4	(STIS.sp.1528623)	(1) ZTFJ0546+3842	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2740 Secs (2740 Secs) *[==>]*	***[3]***
5	(STIS.sp.1528623)	(1) ZTFJ0546+3842	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2740 Secs (2740 Secs) *[==>]*	***[4]***
6	(STIS.sp.1528623)	(1) ZTFJ0546+3842	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2740 Secs (2740 Secs) *[==>]*	***[5]***

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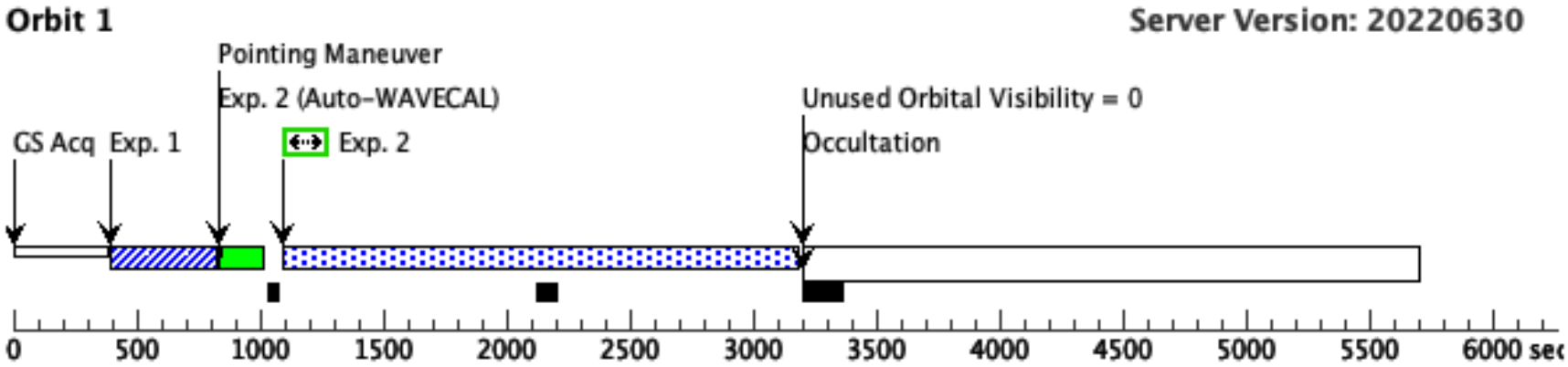

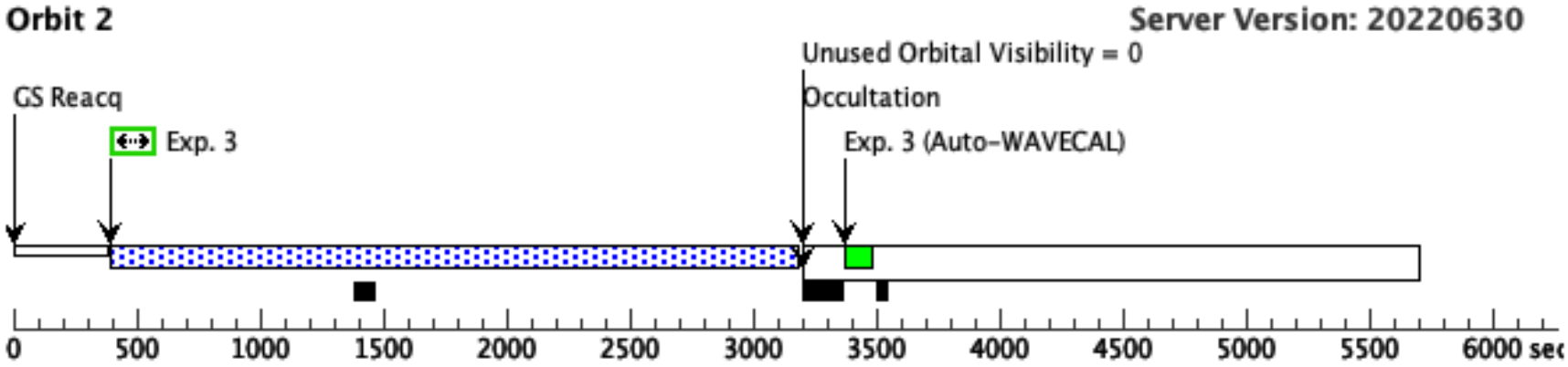

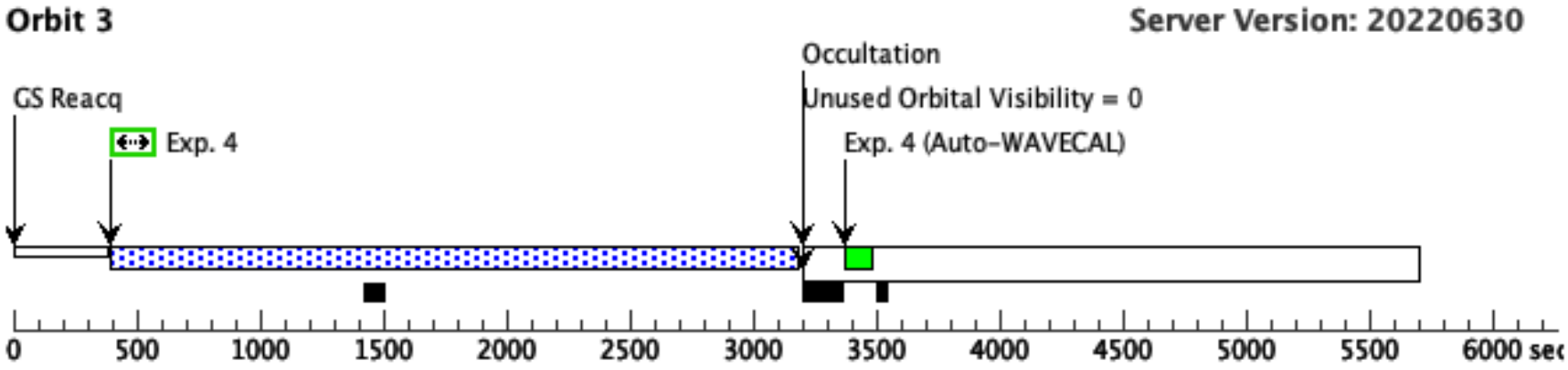
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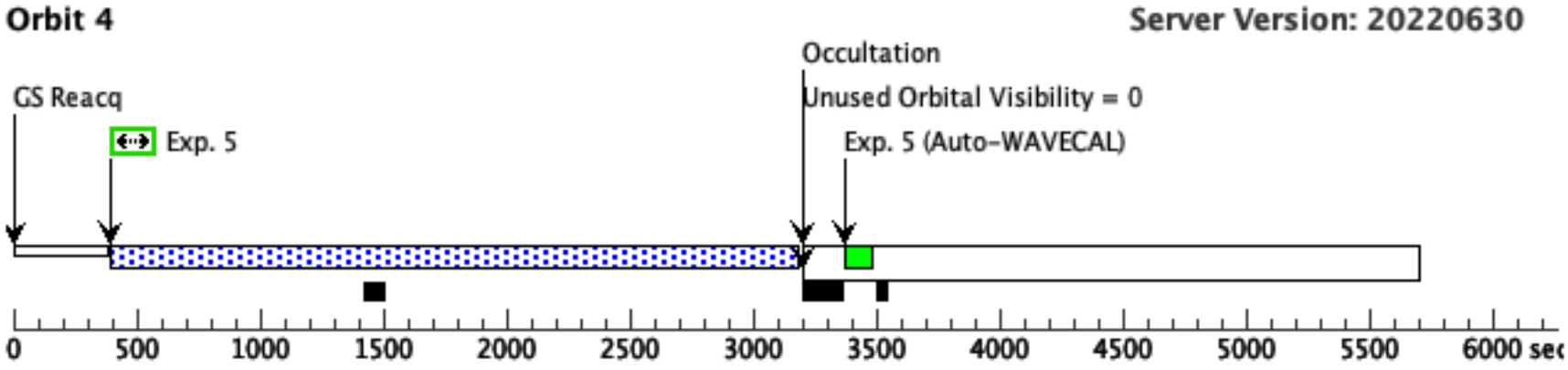
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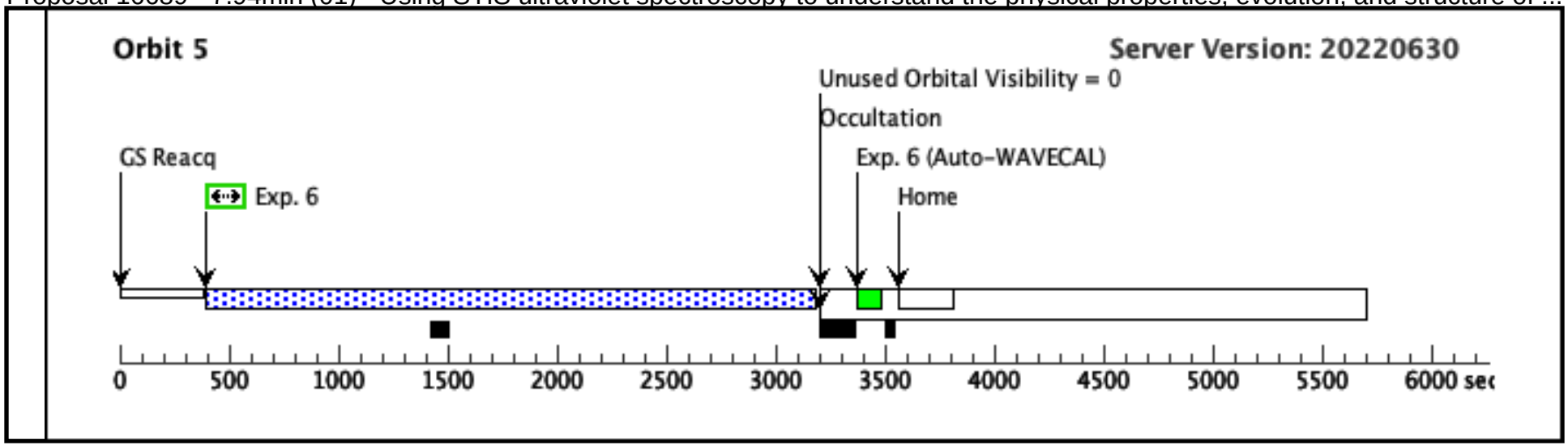
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Visit

Proposal 16689, 8.8min (02), pi Tue Mar 14 15:02:04 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

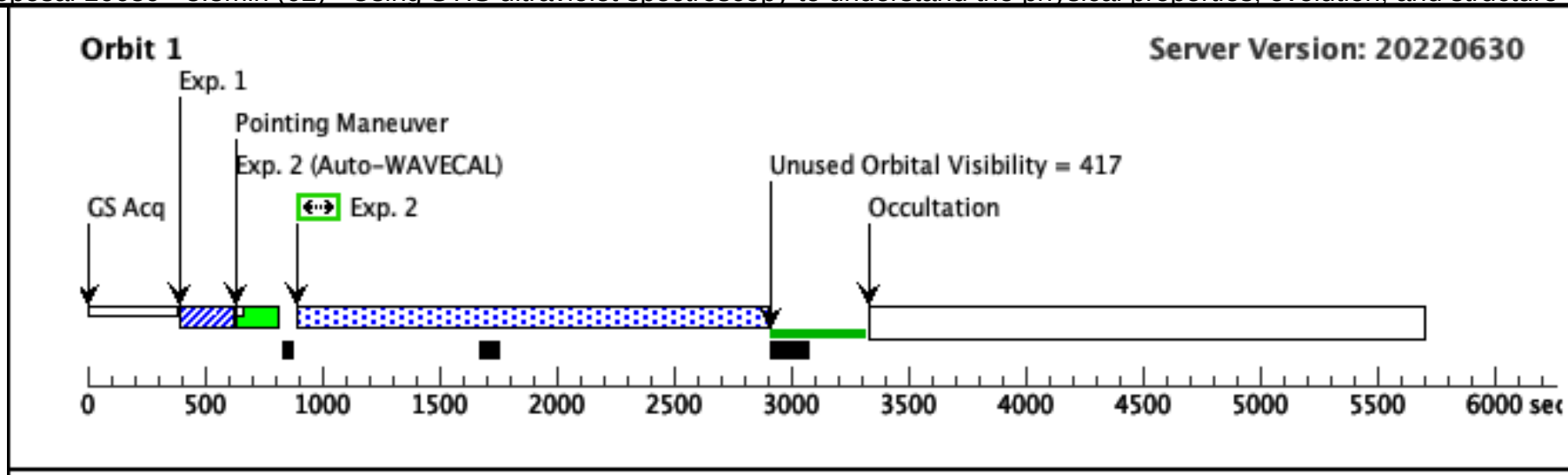
Fixed Targets

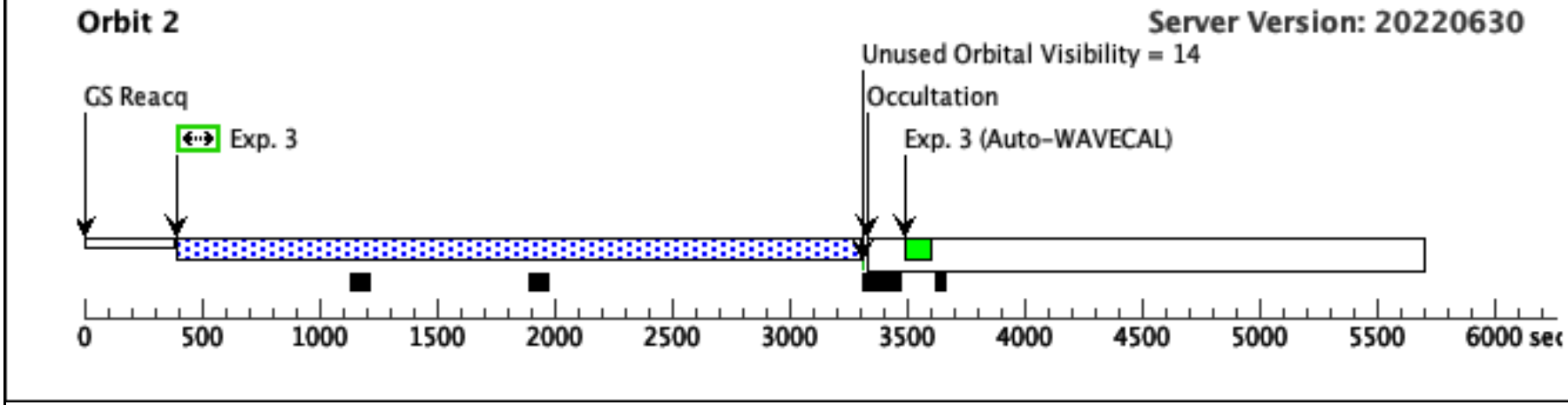
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	ZTFJ2243+5442	RA: 22 43 42.9704 (340.9290433d) Dec: +52 42 5.98 (52.70166d) Equinox: J2000	Proper Motion RA: -1.042 mas/yr Proper Motion Dec: -1.583 mas/yr Epoch of Position: 2016.0	V=20.55	Reference Frame: ICRS
Comments: There is a nearby star within 5" which is brighter in the red bands, so we will want to do an offset acquisition. *Category=STAR* *Description=[DA]* *Extended=NO*					
(17)	ZTFJ2243OFFSET	RA: 22 43 43.9264 (340.9330267d) Dec: +52 42 41.09 (52.71141d) Equinox: J2000	Proper Motion RA: 1.508 mas/yr Proper Motion Dec: -4.999 mas/yr Epoch of Position: 2016.0	V=12.688	Reference Frame: ICRS
Comments: This is an offset star for ZTFJ2243+5442 *Category=STAR* *Description=[M V-IV]*					

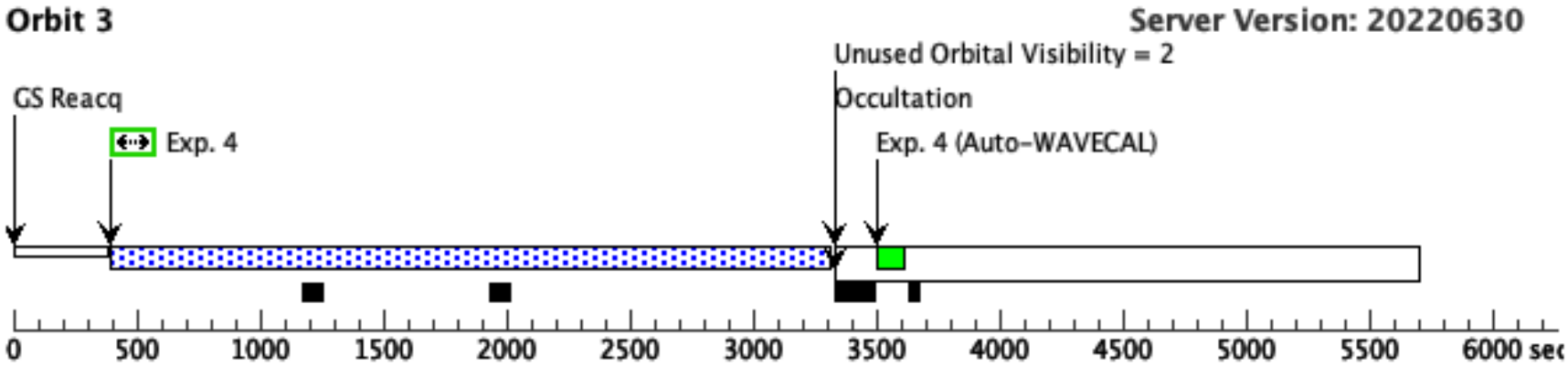
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.im.18 16977)	(17) ZTFJ2243OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs (0.2 Secs) *[==>]*	***[1]***
Comments: Need to change this to offset acquistion.									
2	(STIS.sp.15 29157)	(2) ZTFJ2243+5442	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=75 0			1958 Secs (1958 Secs) *[==>]*	***[1]***
3	(STIS.sp.15 29157)	(2) ZTFJ2243+5442	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=75 0			2899 Secs (2899 Secs) *[==>]*	***[2]***
4	(STIS.sp.15 29157)	(2) ZTFJ2243+5442	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=75 0			2871 Secs (2871 Secs) *[==>]*	***[3]***
5	(STIS.sp.15 29157)	(2) ZTFJ2243+5442	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=75 0			2871 Secs (2871 Secs) *[==>]*	***[4]***
6	(STIS.sp.15 29157)	(2) ZTFJ2243+5442	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=75 0			2871 Secs (2871 Secs) *[==>]*	***[5]***

Orbit Structure



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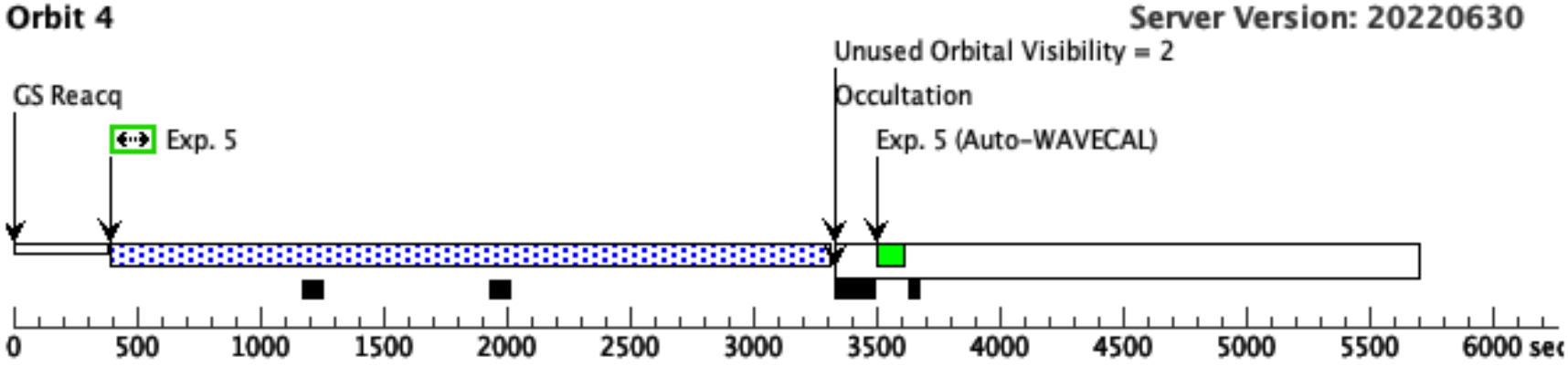
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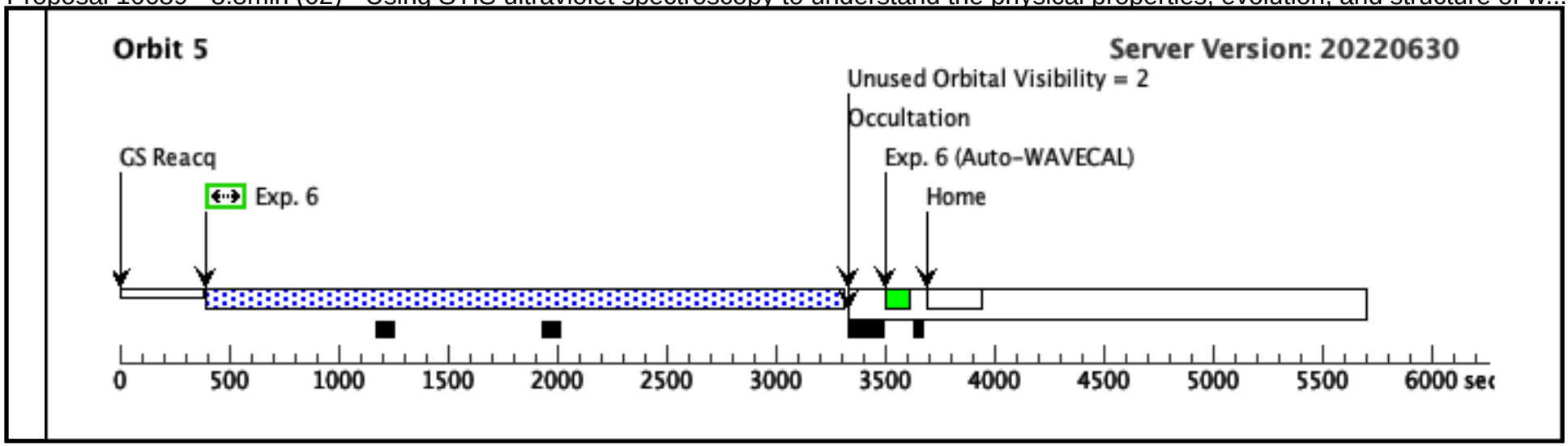
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Visit

Proposal 16689, 14min (03), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

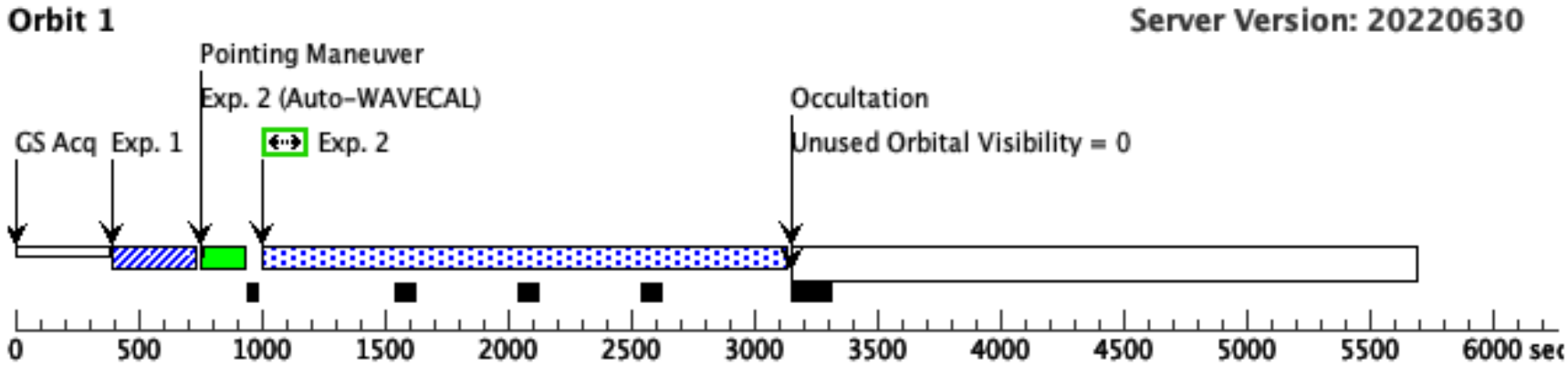
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	ZTFJ0538+1953	RA: 05 38 2.7235 (84.5113479d) Dec: +19 53 2.98 (19.88416d) Equinox: J2000	Proper Motion RA: -2.292 mas/yr Proper Motion Dec: -5.688 mas/yr Epoch of Position: 2000	V=18.79	Reference Frame: ICRS

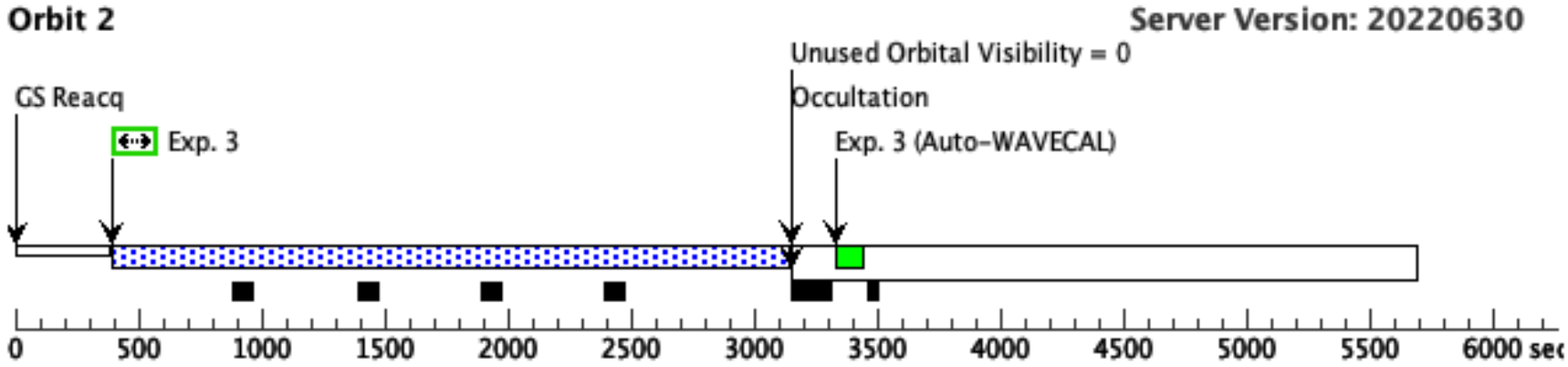
Comments:
Category=STAR
Description=[DA]
Extended=NO

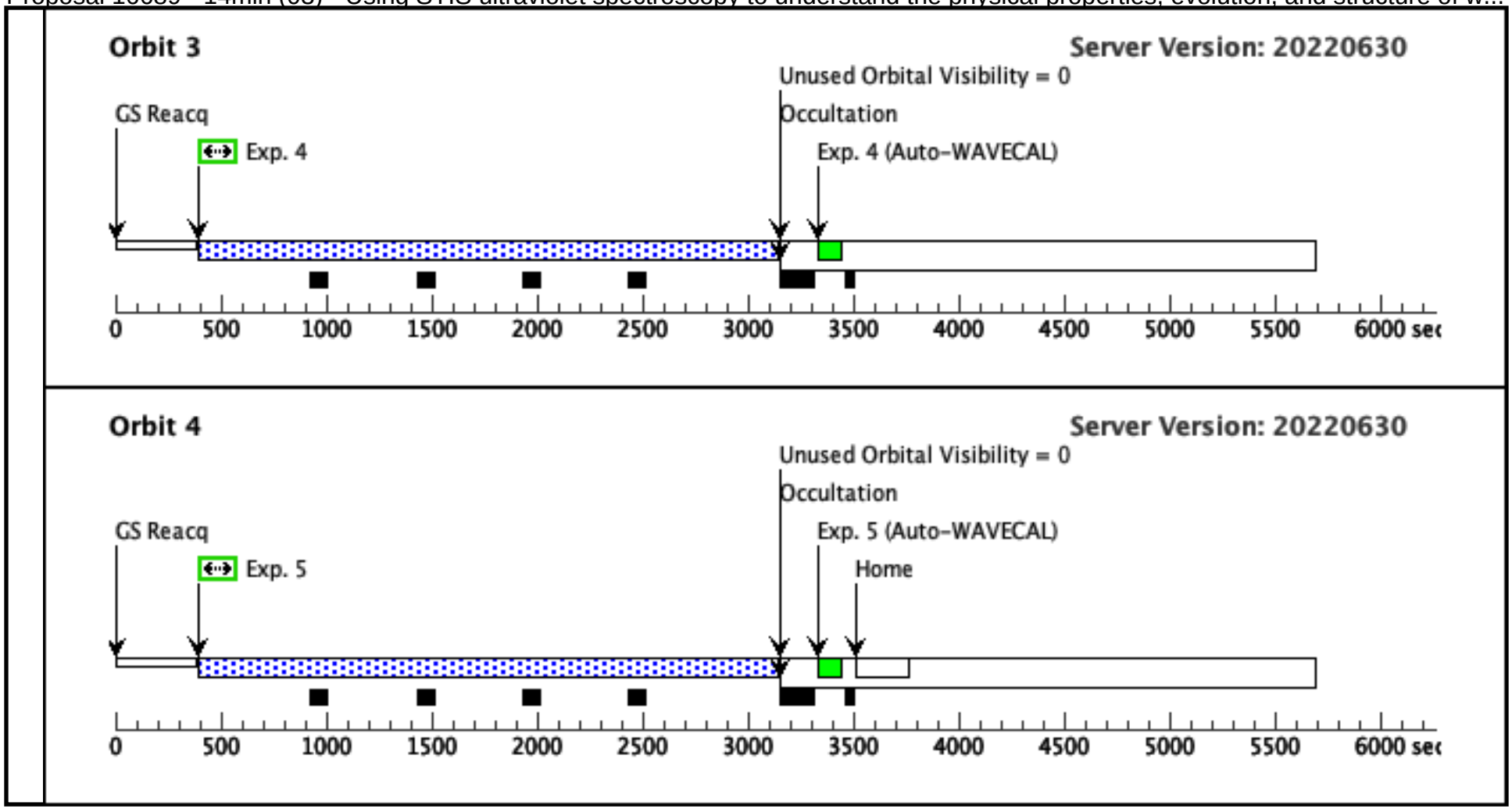
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529295)	(3) ZTFJ0538+1953	STIS/CCD, ACQ, 50CCD	MIRROR				25 Secs (25 Secs) *[==>]*	***[1]***
2	(STIS.sp.1528673)	(3) ZTFJ0538+1953	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2081 Secs (2081 Secs) *[==>]*	***[1]***
3	(STIS.sp.1528678)	(3) ZTFJ0538+1953	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2736 Secs (2736 Secs) *[==>]*	***[2]***
4	(STIS.sp.1528681)	(3) ZTFJ0538+1953	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2696 Secs (2696 Secs) *[==>]*	***[3]***
5	(STIS.sp.1528681)	(3) ZTFJ0538+1953	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2696 Secs (2696 Secs) *[==>]*	***[4]***

Orbit Structure



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Visit

Proposal 16689, 20min_1 (04), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

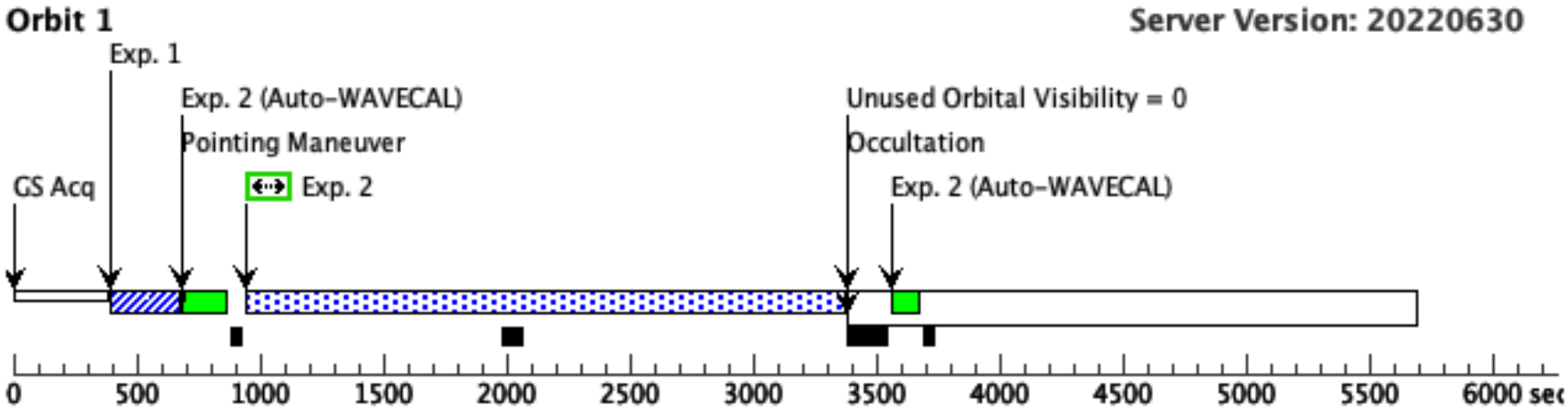
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	ZTFJ0526+5934	RA: 05 26 10.4168 (81.5434033d) Dec: +59 34 45.31 (59.57925d) Equinox: J2000	Proper Motion RA: 1.418 mas/yr Proper Motion Dec: 0.781 mas/yr Epoch of Position: 2000	V=17.56	Reference Frame: ICRS

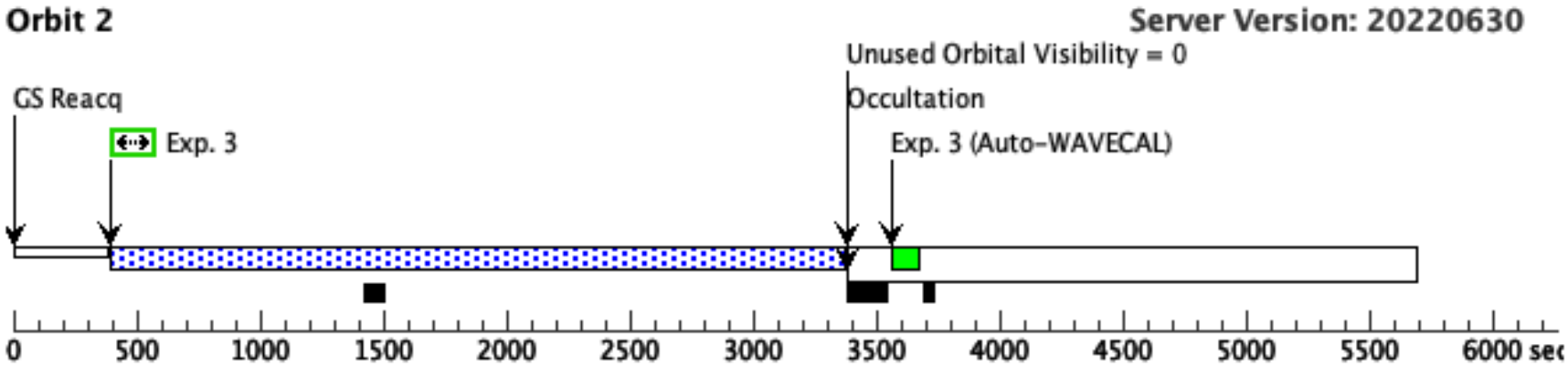
Comments:
Category=STAR
Description=[DA]
Extended=NO

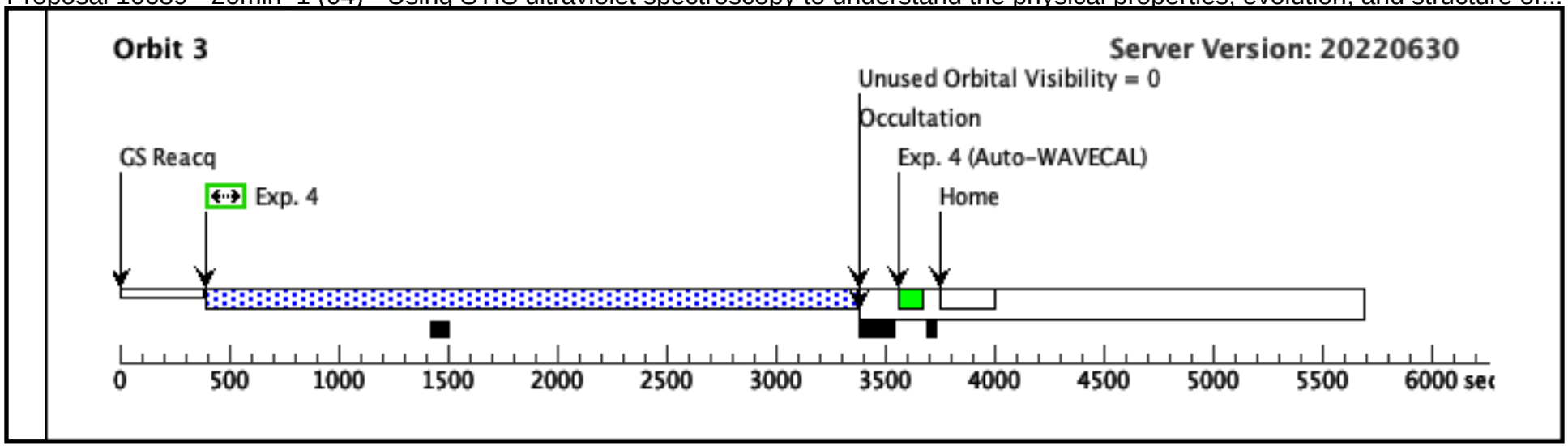
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529301)	(4) ZTFJ0526+5934	STIS/CCD, ACQ, 50CCD	MIRROR				9 Secs (9 Secs) *[==>]*	***[1]***
2	(STIS.sp.1528707)	(4) ZTFJ0526+5934	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2378 Secs (2378 Secs) *[==>]*	***[1]***
3	(STIS.sp.1528710)	(4) ZTFJ0526+5934	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2929 Secs (2929 Secs) *[==>]*	***[2]***
4	(STIS.sp.1528710)	(4) ZTFJ0526+5934	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2929 Secs (2929 Secs) *[==>]*	***[3]***

Orbit Structure



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Visit

Proposal 16689, 20min_2 (05), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

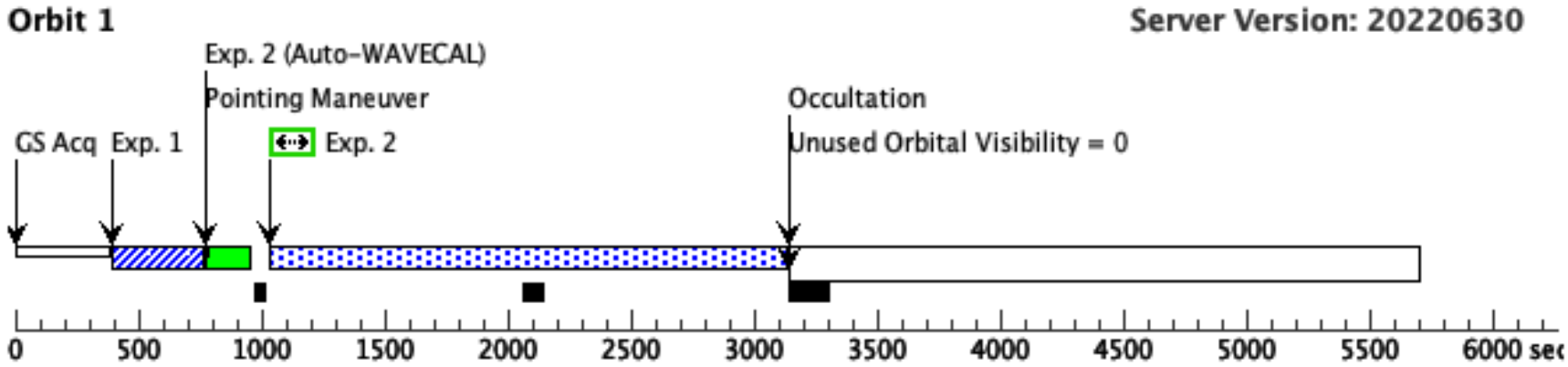
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PTFJ0533+0209	RA: 05 33 32.0599 (83.3835829d) Dec: +02 09 11.49 (2.15319d) Equinox: J2000	Proper Motion RA: 1.151 mas/yr Proper Motion Dec: 3.717 mas/yr Epoch of Position: 2000	V=19.05	Reference Frame: ICRS

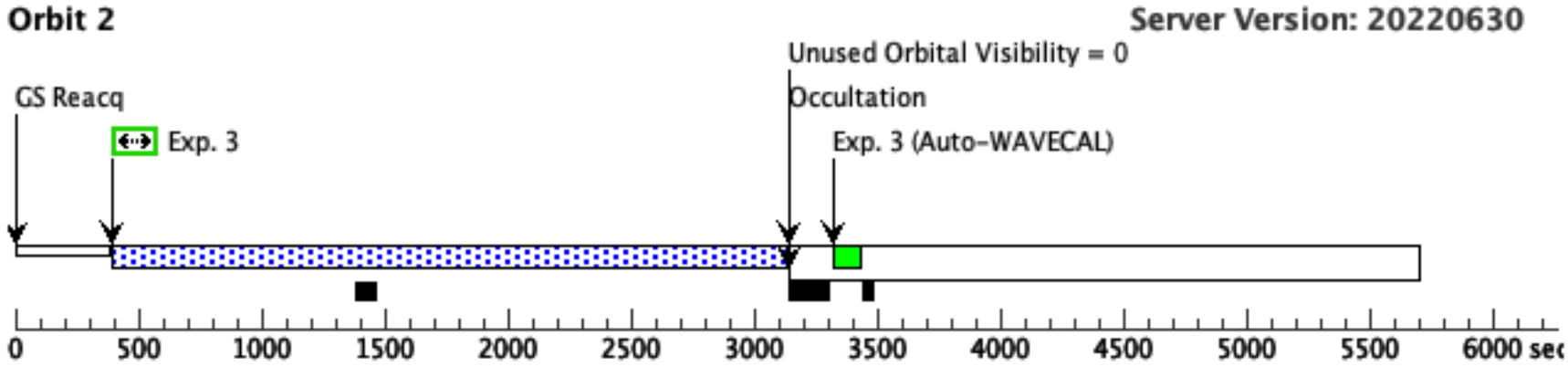
Comments:
Category=STAR
Description=[DA]
Extended=NO

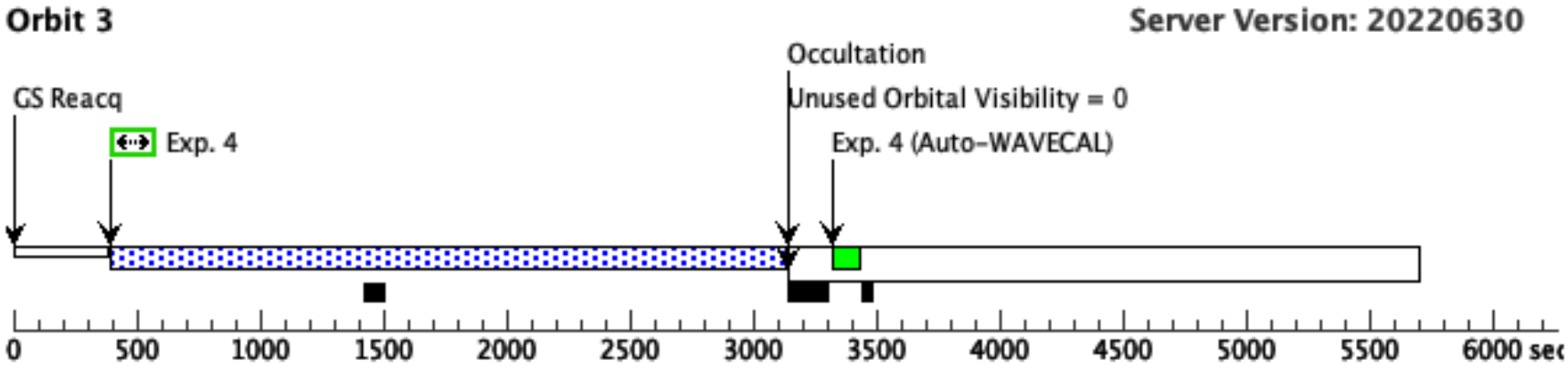
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529302)	(5) PTFJ0533+0209	STIS/CCD, ACQ, 50CCD	MIRROR				31 Secs (31 Secs) *[==>]*	***[1]***
2	(STIS.sp.1528733)	(5) PTFJ0533+0209	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2043 Secs (2043 Secs) *[==>]*	***[1]***
3	(STIS.sp.1528734)	(5) PTFJ0533+0209	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2722 Secs (2722 Secs) *[==>]*	***[2]***
4	(STIS.sp.1528735)	(5) PTFJ0533+0209	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2682 Secs (2682 Secs) *[==>]*	***[3]***
5	(STIS.sp.1528735)	(5) PTFJ0533+0209	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2682 Secs (2682 Secs) *[==>]*	***[4]***
6	(STIS.sp.1528735)	(5) PTFJ0533+0209	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2682 Secs (2682 Secs) *[==>]*	***[5]***

Orbit Structure






Orbit 3
Server Version: 20220630
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 4
Exp. 4 (Auto-WAVECAL)
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3500
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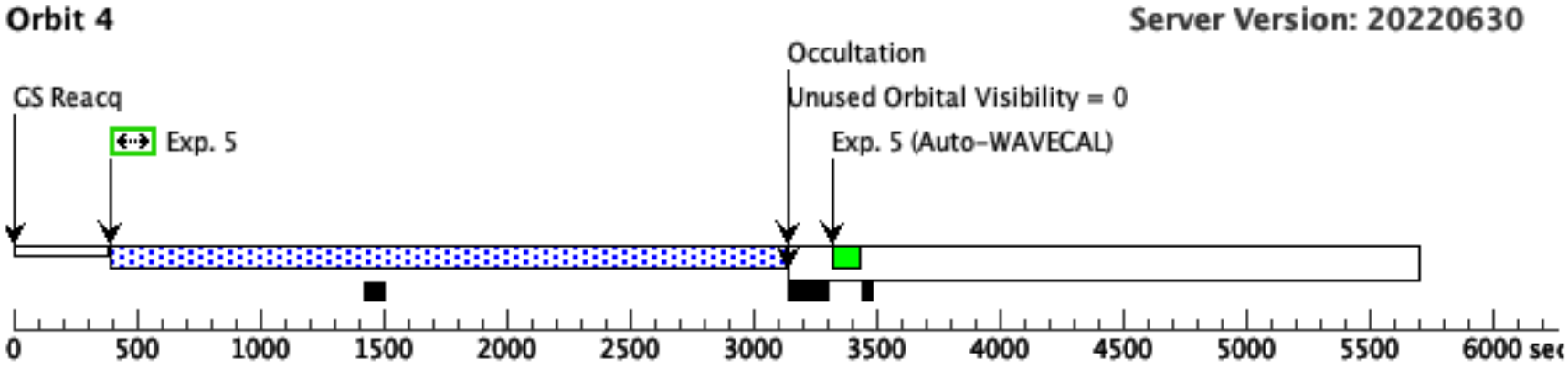
4500
5000
5500
6000 sec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Occultation
GS Reacq
Unused Orbital Visibility = 0
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Exp. 5 (Auto-WAVECAL)
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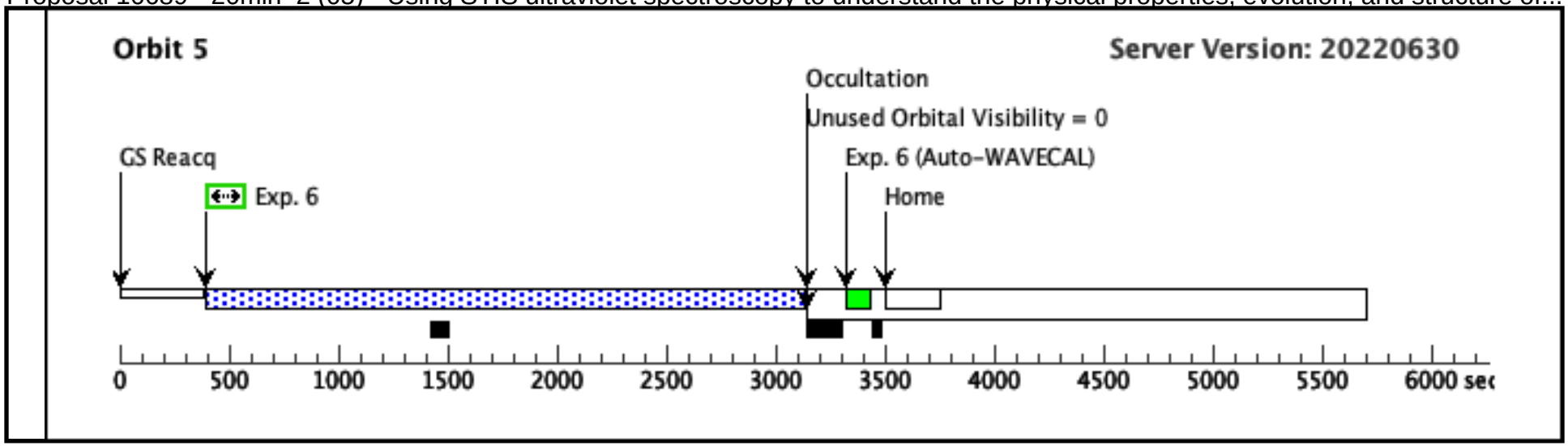
Orbit 5
Server Version: 20220630
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 6
Exp. 6 (Auto-WAVECAL)
Home
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6000 sec

Visit

Proposal 16689, 20min_3 (06), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

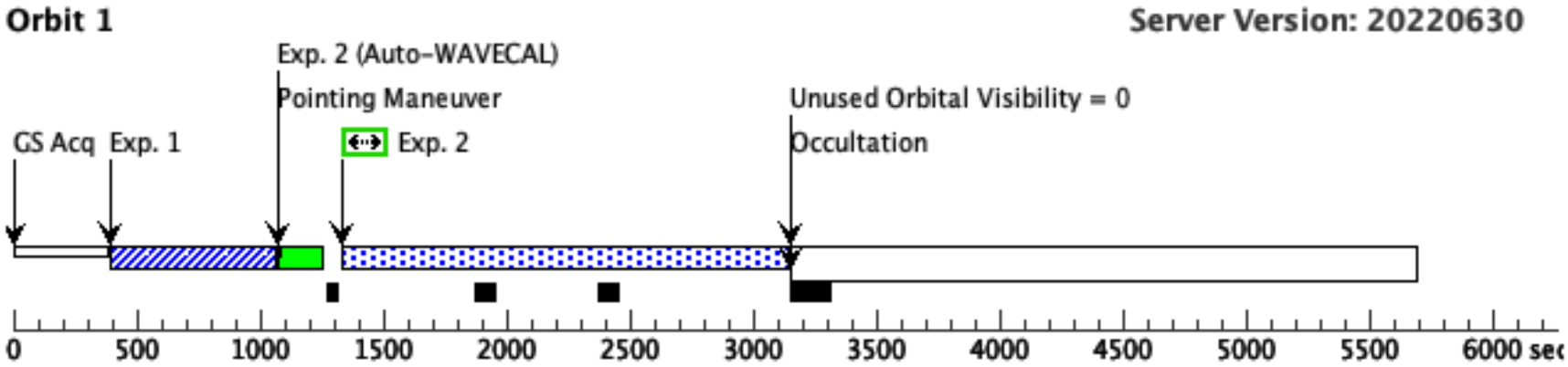
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	ZTFJ2029+1534	RA: 20 29 22.3078 (307.3429492d) Dec: +15 34 31.03 (15.57529d) Equinox: J2000	Proper Motion RA: -7.497 mas/yr Proper Motion Dec: -13.789 mas/yr Epoch of Position: 2000	V=20.47	Reference Frame: ICRS

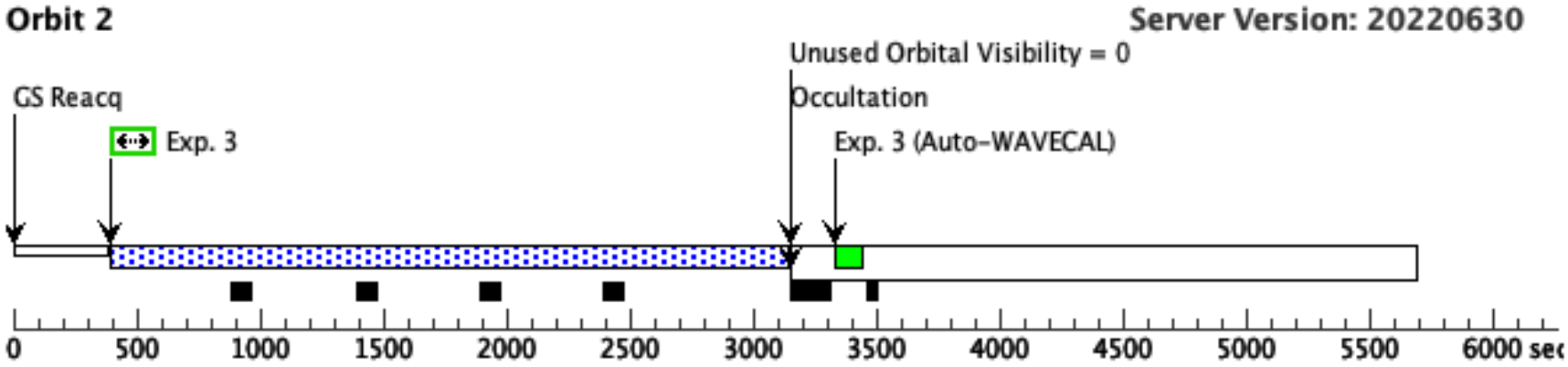
Comments:
Category=STAR
Description=[DA]
Extended=NO

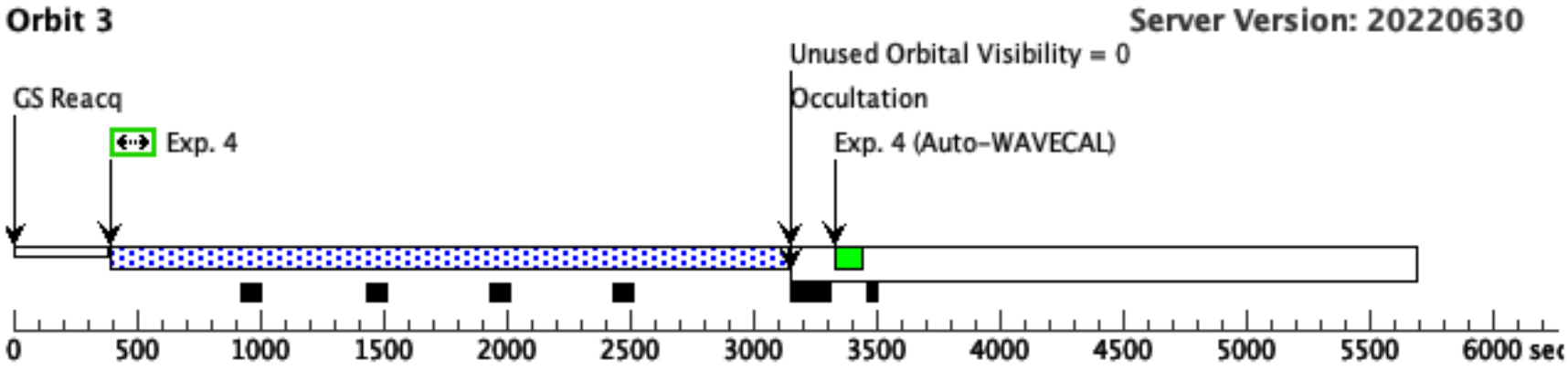
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529304)	(6) ZTFJ2029+1534	STIS/CCD, ACQ, 50CCD	MIRROR				107 Secs (107 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1528756)	(6) ZTFJ2029+1534	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			1753 Secs (1753 Secs)	
								[==>]	***[1]***
3	(STIS.sp.1528760)	(6) ZTFJ2029+1534	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2736 Secs (2736 Secs)	
								[==>]	***[2]***
4	(STIS.sp.1528763)	(6) ZTFJ2029+1534	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2696 Secs (2696 Secs)	
								[==>]	***[3]***
5	(STIS.sp.1528763)	(6) ZTFJ2029+1534	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2696 Secs (2696 Secs)	
								[==>]	***[4]***
6	(STIS.sp.1528763)	(6) ZTFJ2029+1534	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2696 Secs (2696 Secs)	
								[==>]	***[5]***

Orbit Structure






Orbit 3
Server Version: 20220630
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 4
Exp. 4 (Auto-WAVECAL)
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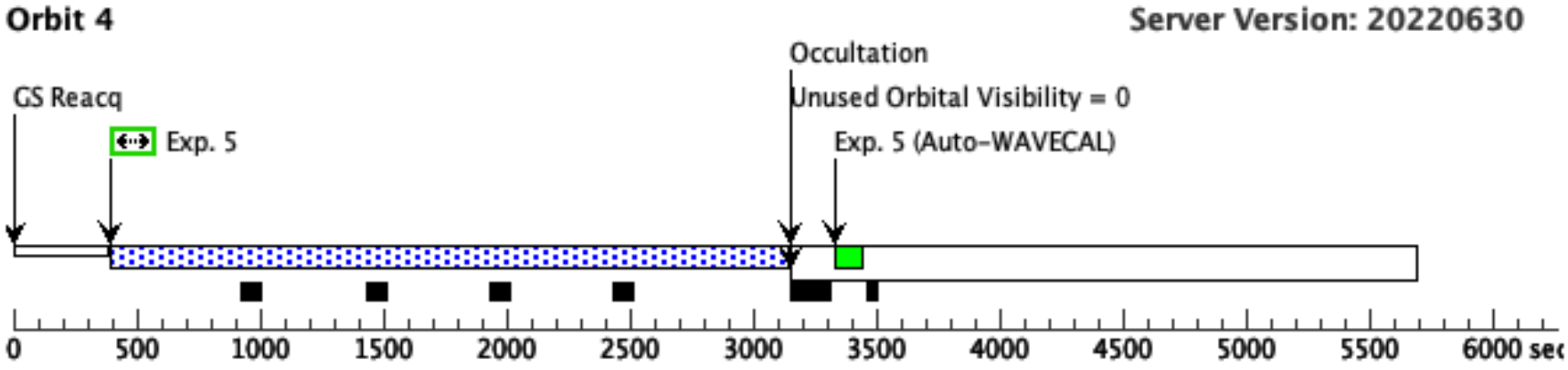
Orbit 4
Server Version: 20220630
Occultation
GS Reacq
Unused Orbital Visibility = 0
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Exp. 5 (Auto-WAVECAL)
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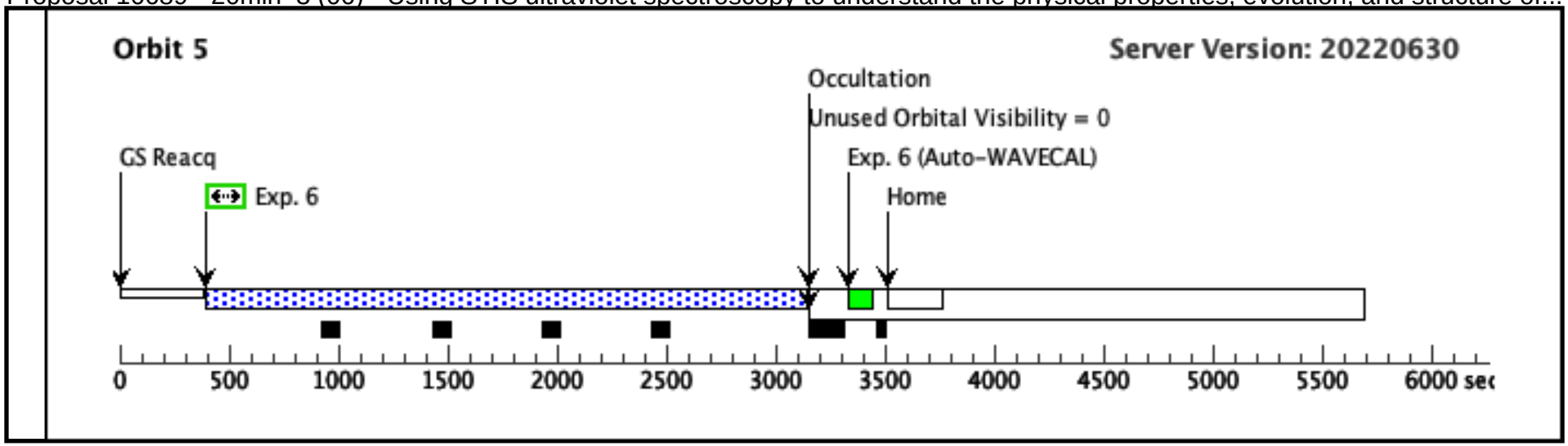
6000 sec


Orbit 5
Server Version: 20220630
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 6
Exp. 6 (Auto-WAVECAL)
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4500
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5500
6000 sec

Visit

Proposal 16689, 24min (07), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

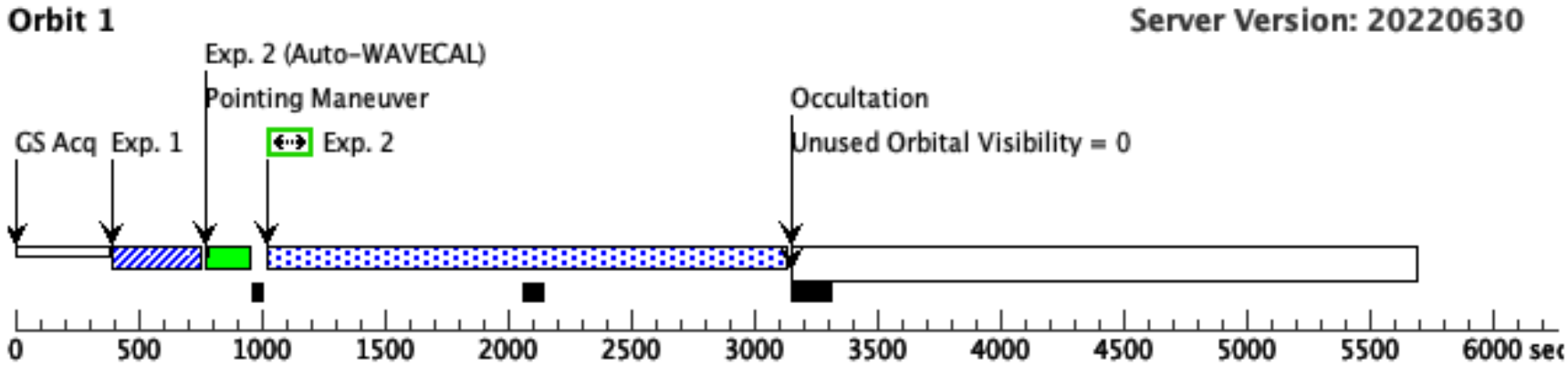
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	ZTFJ0722-1839	RA: 07 22 21.4861 (110.5895254d) Dec: -18 39 30.58 (-18.65849d) Equinox: J2000	Proper Motion RA: -5.736 mas/yr Proper Motion Dec: 4.434 mas/yr Epoch of Position: 2000	V=19.05	Reference Frame: ICRS

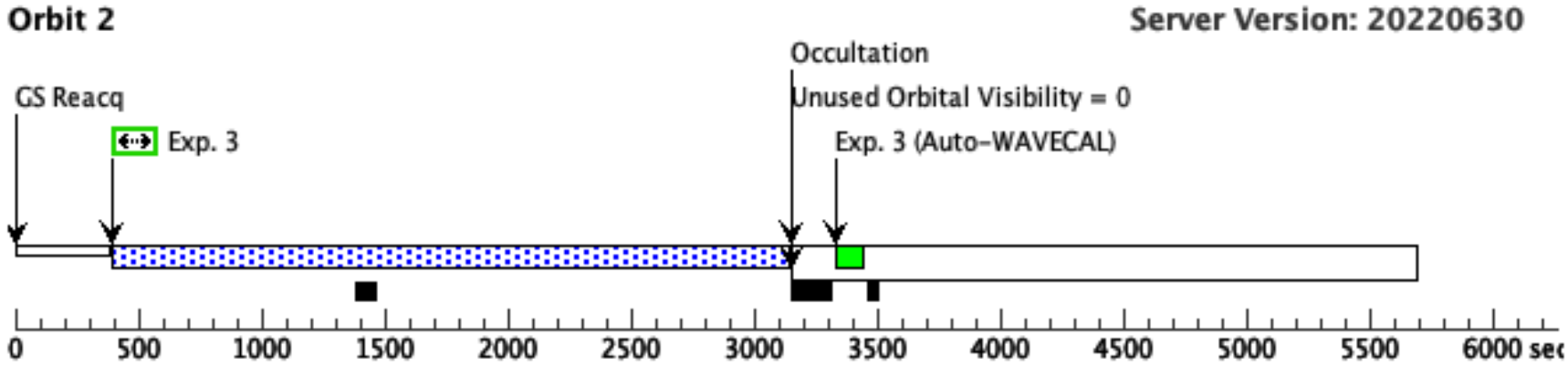
Comments:
Category=STAR
Description=[DA]
Extended=NO

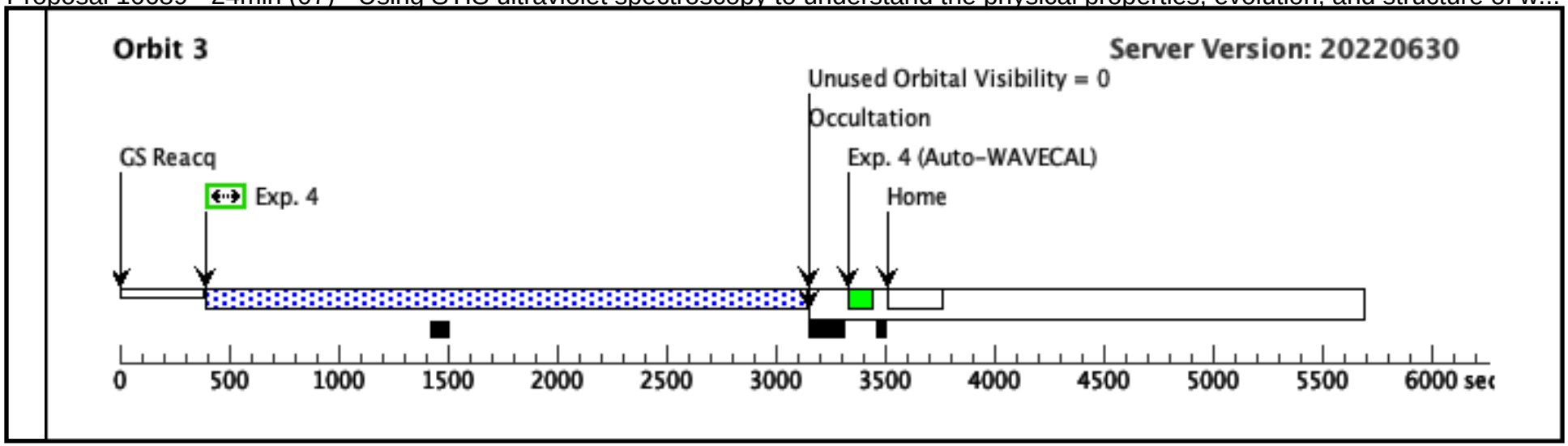
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529308)	(7) ZTFJ0722-1839	STIS/CCD, ACQ, 50CCD	MIRROR				30 Secs (30 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1528795)	(7) ZTFJ0722-1839	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2061 Secs (2061 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1528798)	(7) ZTFJ0722-1839	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2736 Secs (2736 Secs) *[==>]*	 ***[2]***
4	(STIS.sp.1528799)	(7) ZTFJ0722-1839	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2696 Secs (2696 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 4
Exp. 4 (Auto-WAVECAL)
Home
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Visit

Proposal 16689, 26min (08), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

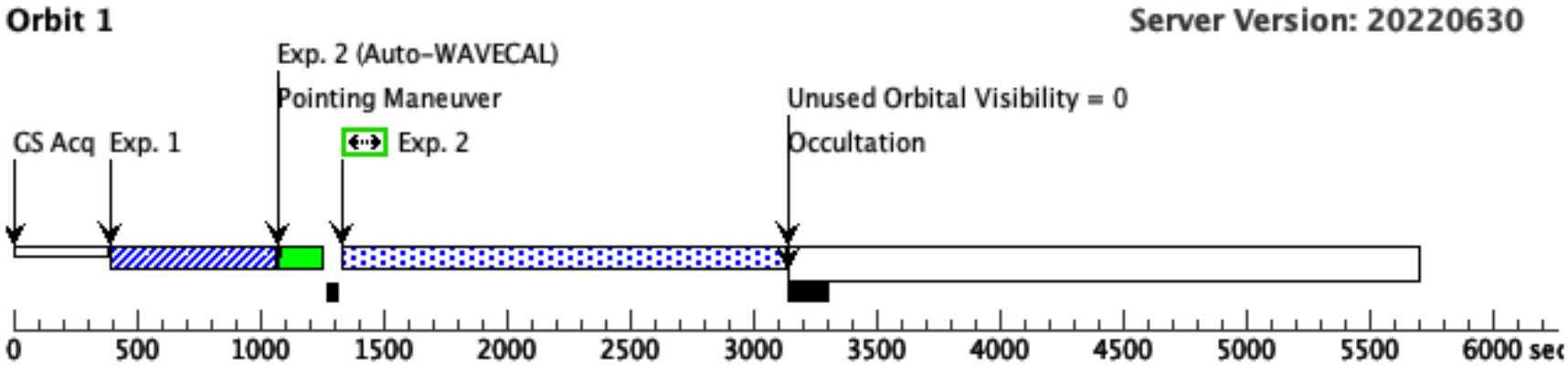
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	ZTFJ1749+0924	RA: 17 49 55.3014 (267.4804225d) Dec: +09 24 32.50 (9.40903d) Equinox: J2000	Proper Motion RA: -12.053 mas/yr Proper Motion Dec: 0.692 mas/yr Epoch of Position: 2000	V=20.47	Reference Frame: ICRS

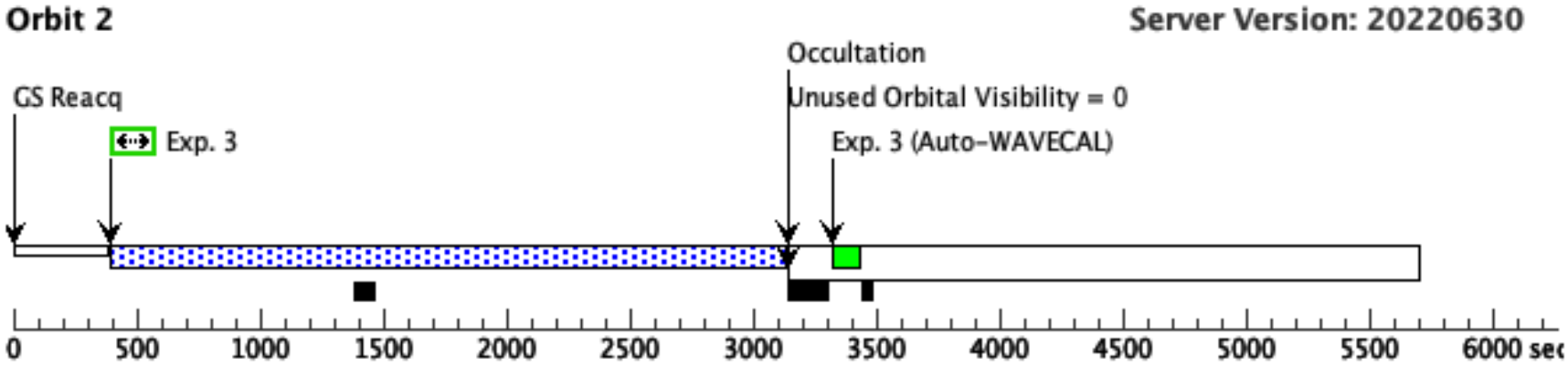
Comments:
Category=STAR
Description=[DA]
Extended=NO

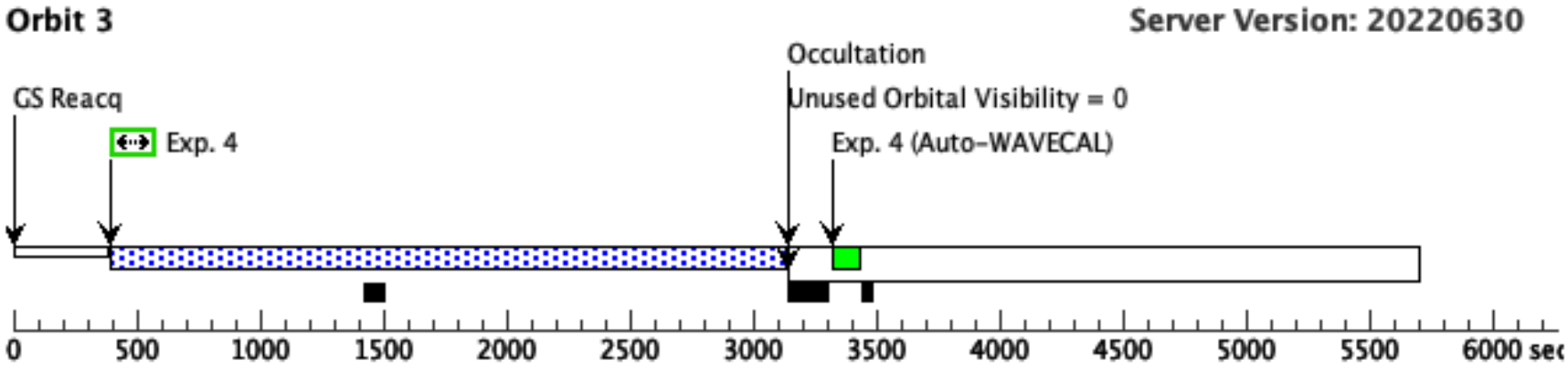
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529573)	(8) ZTFJ1749+0924	STIS/CCD, ACQ, 50CCD	MIRROR				107 Secs (107 Secs) *[==>]*	***[1]***
2	(STIS.sp.1528804)	(8) ZTFJ1749+0924	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			1742 Secs (1742 Secs) *[==>]*	***[1]***
3	(STIS.sp.1528815)	(8) ZTFJ1749+0924	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2725 Secs (2725 Secs) *[==>]*	***[2]***
4	(STIS.sp.1528816)	(8) ZTFJ1749+0924	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2685 Secs (2685 Secs) *[==>]*	***[3]***
5	(STIS.sp.1528816)	(8) ZTFJ1749+0924	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2685 Secs (2685 Secs) *[==>]*	***[4]***
6	(STIS.sp.1528816)	(8) ZTFJ1749+0924	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=1000			2685 Secs (2685 Secs) *[==>]*	***[5]***

Orbit Structure






Orbit 3
Server Version: 20220630
Occultation
GS Reacq
Unused Orbital Visibility = 0
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Exp. 4 (Auto-WAVECAL)
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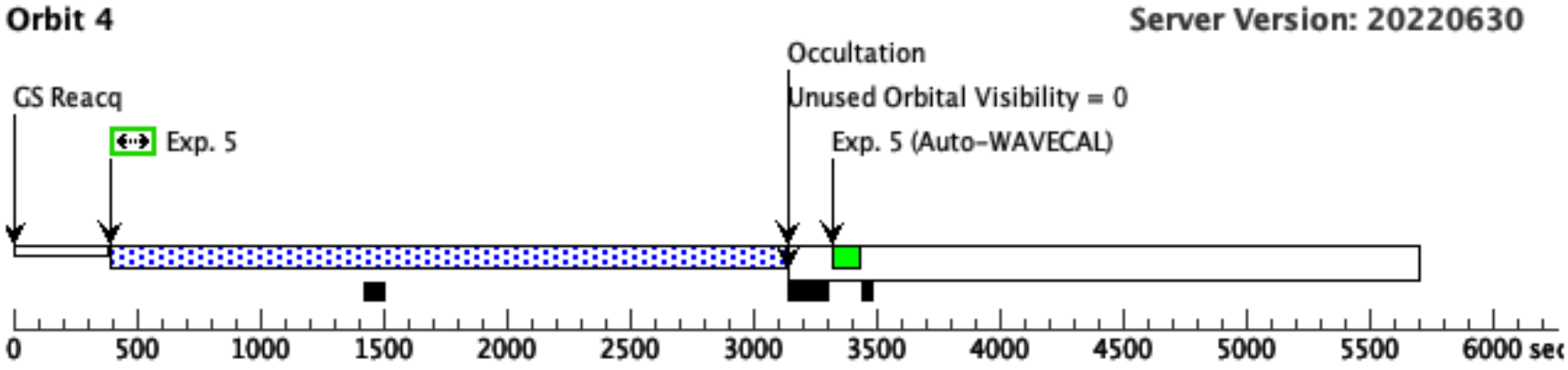
6000 sec


Orbit 4
Server Version: 20220630
Occultation
GS Reacq
Unused Orbital Visibility = 0
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Exp. 5 (Auto-WAVECAL)
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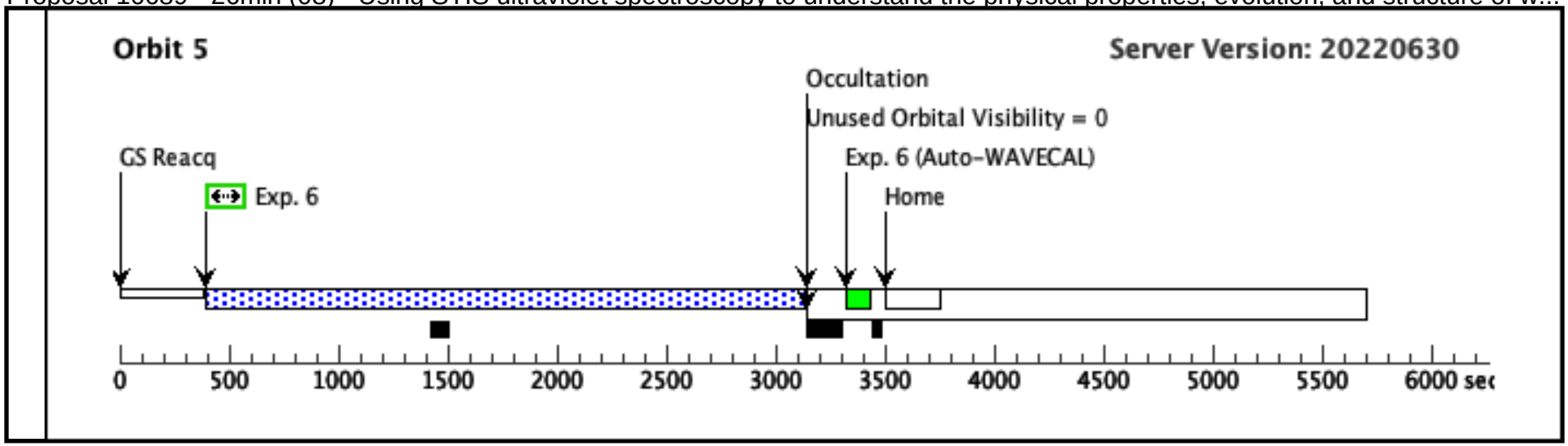
6000 sec


Orbit 5
Server Version: 20220630
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 6
Exp. 6 (Auto-WAVECAL)
Home
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Visit

Proposal 16689, 28min (09), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

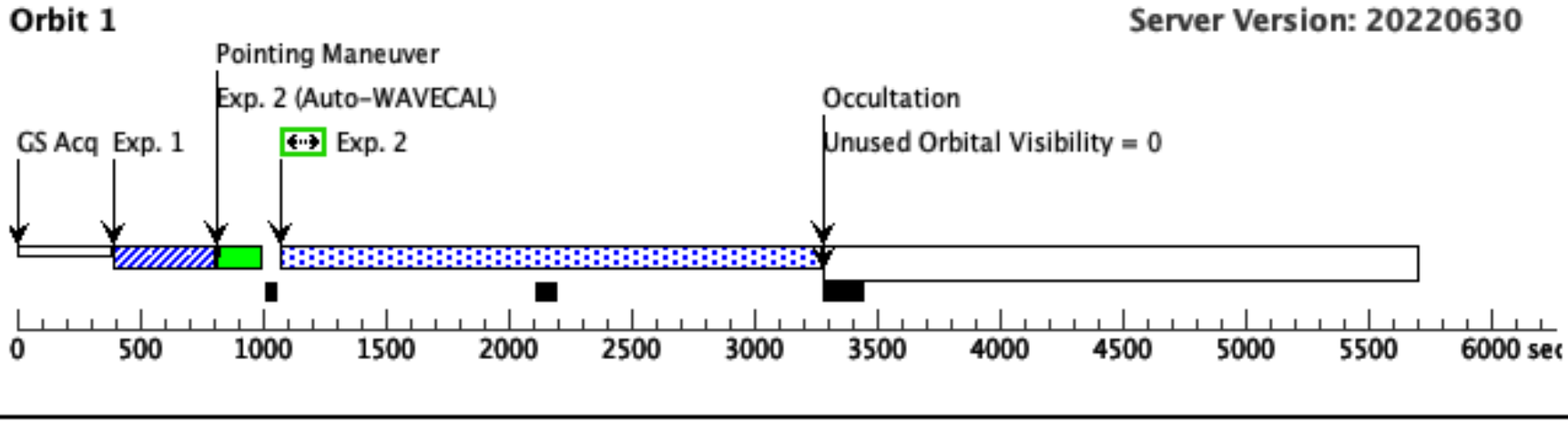
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	ZTFJ2228+4949	RA: 22 28 27.0672 (337.1127800d) Dec: +49 49 16.50 (49.82125d) Equinox: J2000	Proper Motion RA: -4.303 mas/yr Proper Motion Dec: -1.921 mas/yr Epoch of Position: 2000	V=19.24	Reference Frame: ICRS

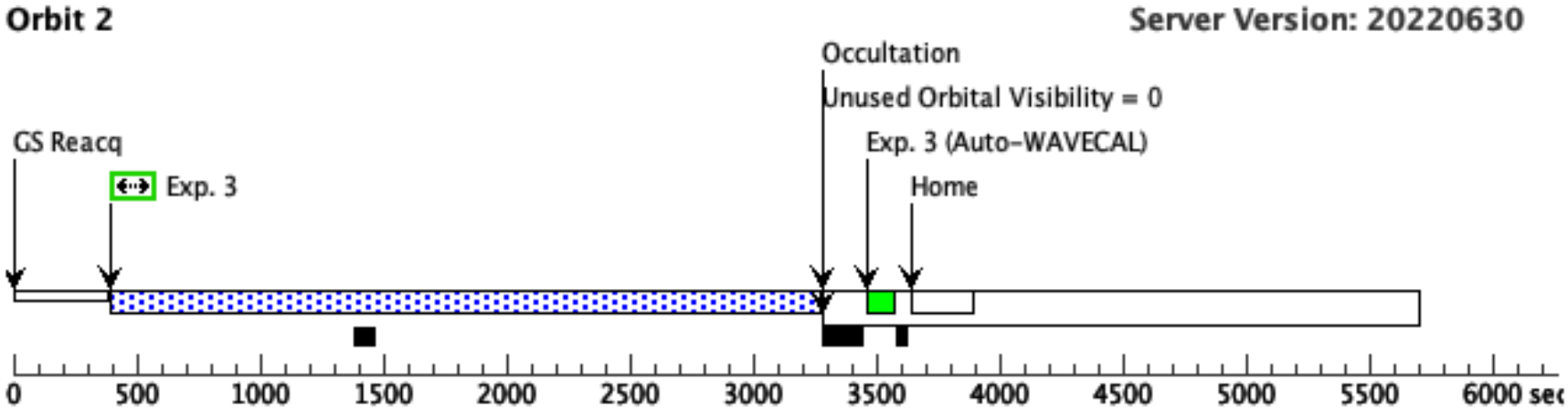
Comments:
Category=STAR
Description=[DA]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529586)	(9) ZTFJ2228+4949	STIS/CCD, ACQ, 50CCD	MIRROR				42 Secs (42 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1528842)	(9) ZTFJ2228+4949	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2142 Secs (2142 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1528844)	(9) ZTFJ2228+4949	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2865 Secs (2865 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 16689, 33min (16), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

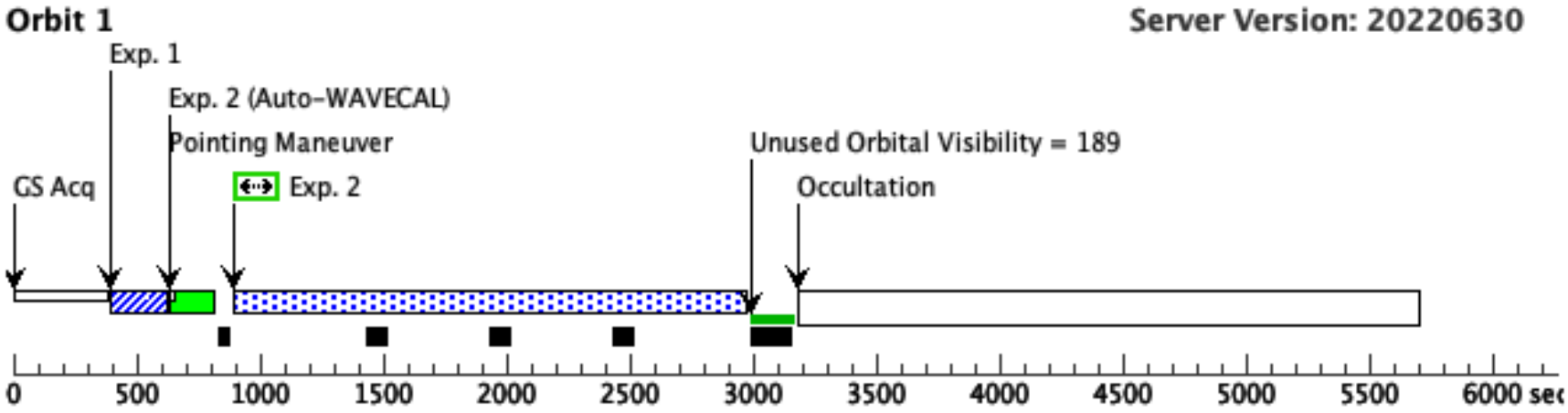
Fixed Targets

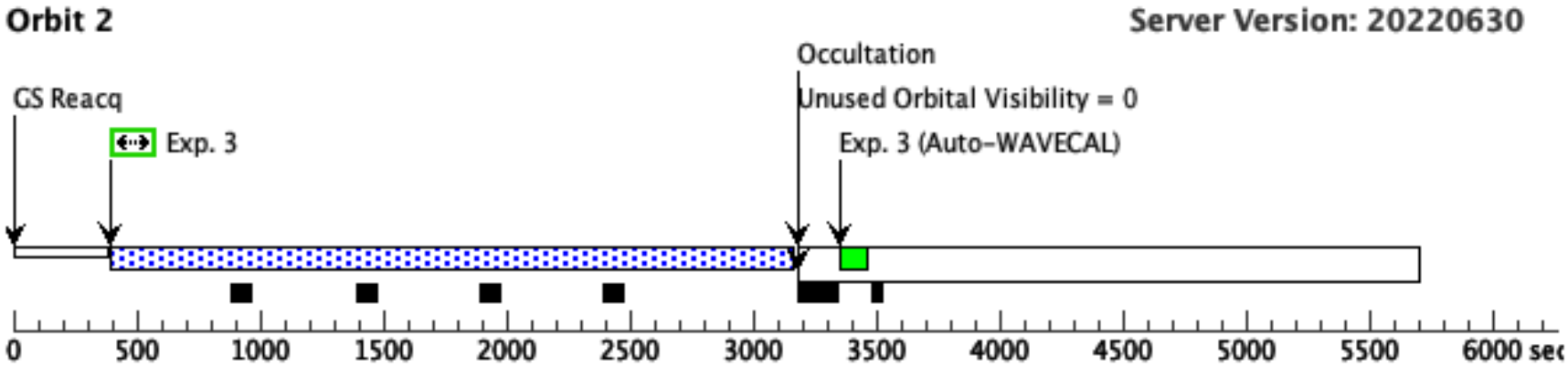
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	ZTFJ1946+3203	RA: 19 46 3.8898 (296.5162075d) Dec: +32 03 13.13 (32.05365d) Equinox: J2000	Proper Motion RA: -1.911 mas/yr Proper Motion Dec: -4.77 mas/yr Epoch of Position: 2000	V=19.15	Reference Frame: ICRS
Comments: There is a nearby star within 5" which is brighter in the red bands, so we will want to do an offset acquisition. *Category=STAR* *Description=[DA]* *Extended=NO*					
(18)	ZTFJ1946+3203OFFSET	RA: 19 46 3.8175 (296.5159063d) Dec: +32 03 36.50 (32.06014d) Equinox: J2000	Proper Motion RA: -0.202 mas/yr Proper Motion Dec: -6.769 mas/yr Epoch of Position: 2016	V=15.22	Reference Frame: ICRS
Comments: *Category=CALIBRATION* *Description=[UNDESIGNATED]*					

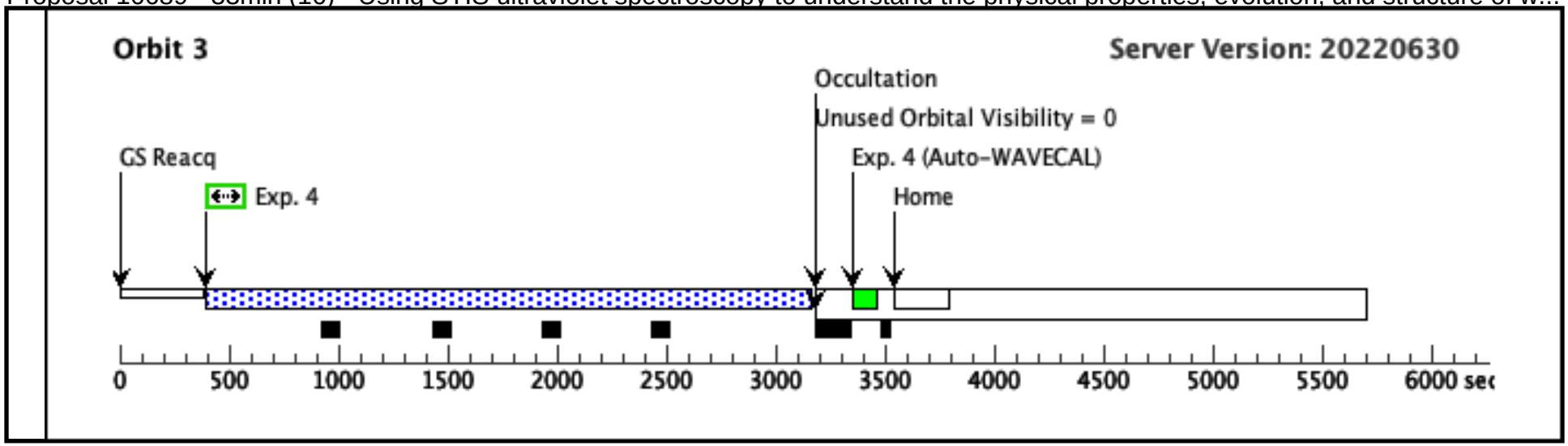
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.im.18 16978)	(18) ZTFJ1946+320 3OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				1 Secs (1 Secs) *[==>]*	***[1]***
2	(STIS.sp.15 29244)	(10) ZTFJ1946+320 3	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=50 0			2029 Secs (2029 Secs) *[==>]*	***[1]***
3	(STIS.sp.15 29245)	(10) ZTFJ1946+320 3	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=50 0			2760 Secs (2760 Secs) *[==>]*	***[2]***
4	(STIS.sp.15 29245)	(10) ZTFJ1946+320 3	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=50 0			2720 Secs (2720 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 4 (Auto-WAVECAL)
Exp. 4
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Visit

Proposal 16689, 37min (10), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

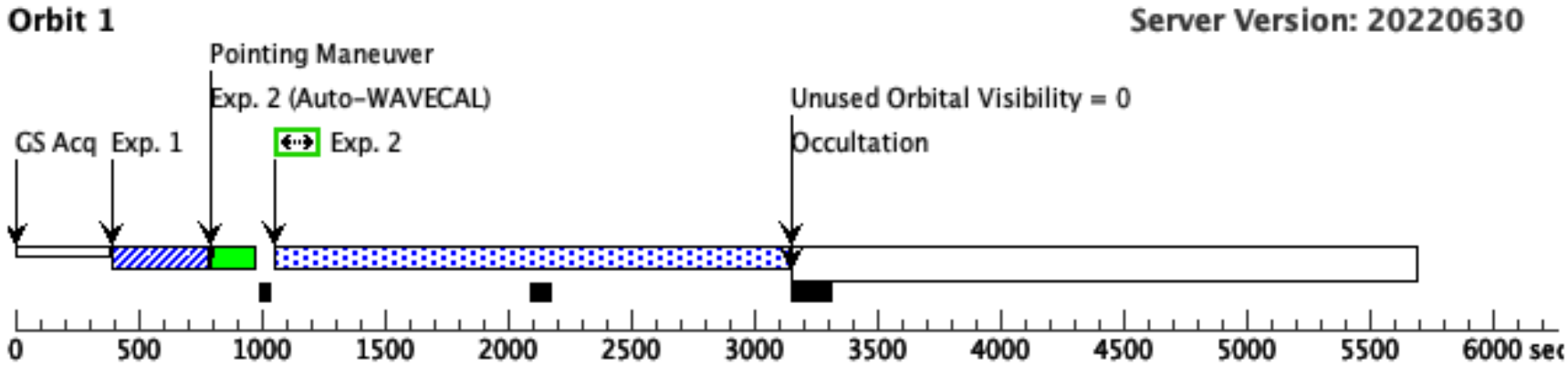
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	ZTFJ0640+1738	RA: 06 40 18.6902 (100.0778758d) Dec: +17 38 45.04 (17.64584d) Equinox: J2000	Proper Motion RA: 0.825 mas/yr Proper Motion Dec: -0.601 mas/yr Epoch of Position: 2000	V=19.20	Reference Frame: ICRS

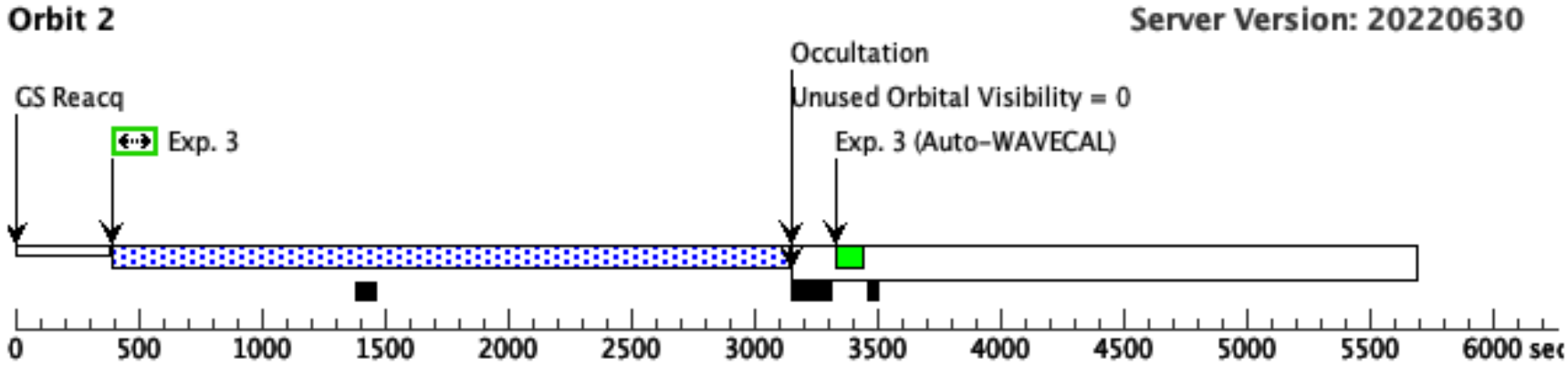
Comments:
Category=STAR
Description=[DA]
Extended=NO

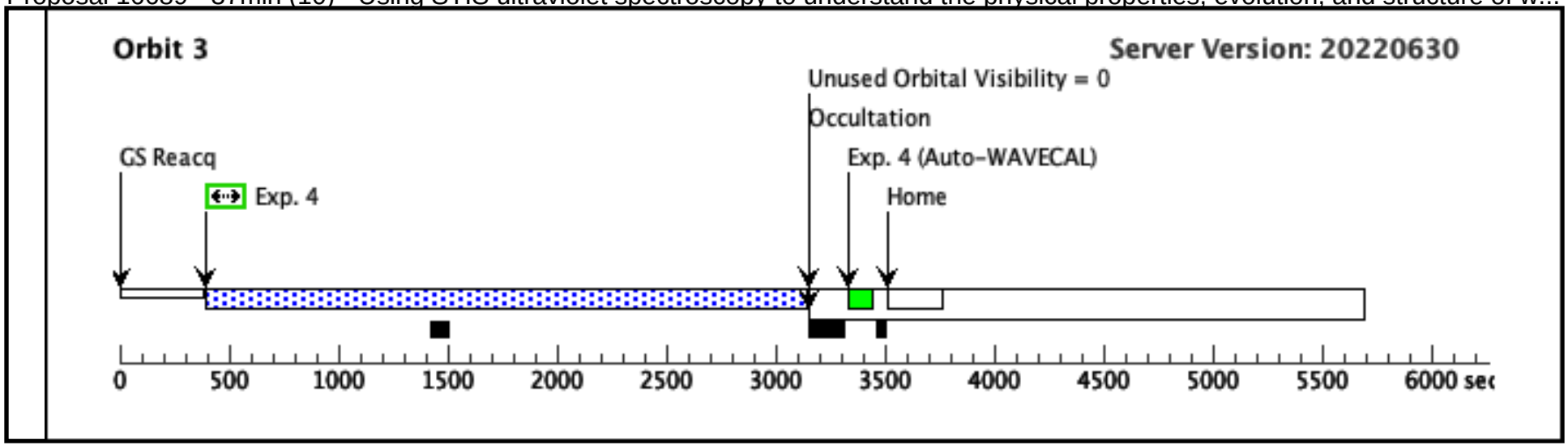
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529829)	(11) ZTFJ0640+1738	STIS/CCD, ACQ, 50CCD	MIRROR				37 Secs (37 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1528842)	(11) ZTFJ0640+1738	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2033 Secs (2033 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1528844)	(11) ZTFJ0640+1738	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2736 Secs (2736 Secs) *[==>]*	 ***[2]***
4	(STIS.sp.1528844)	(11) ZTFJ0640+1738	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=1000			2696 Secs (2696 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 4
Exp. 4 (Auto-WAVECAL)
Home
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5500
6000 sec

Visit

Proposal 16689, 39min (11), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

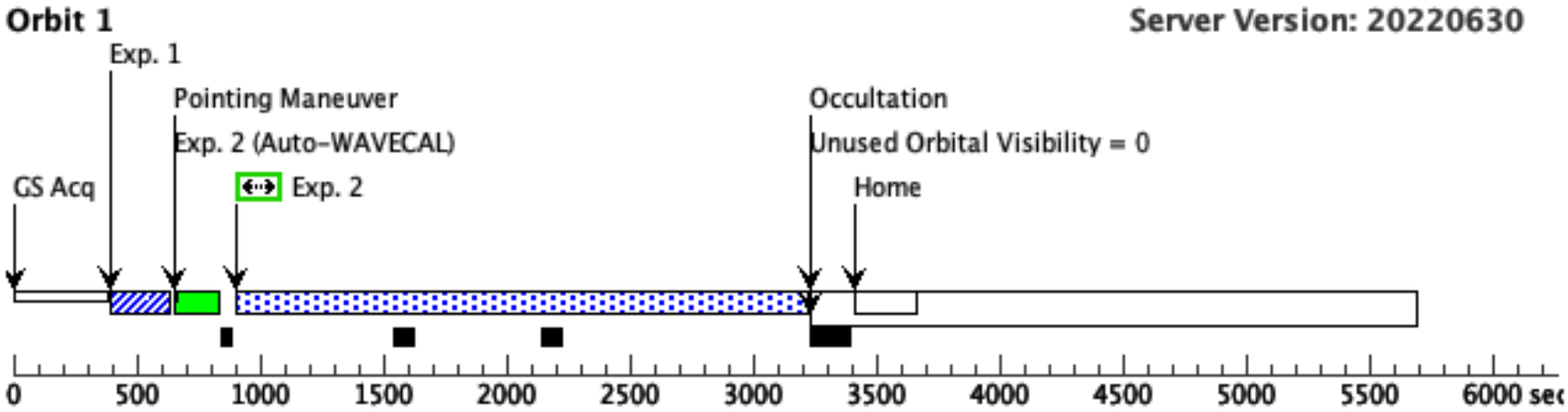
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	ZTFJ2130+4420	RA: 21 30 56.7085 (322.7362854d) Dec: +44 20 46.45 (44.34624d) Equinox: J2000	Proper Motion RA: 0.048 mas/yr Proper Motion Dec: -1.572 mas/yr Epoch of Position: 2000	V=15.43	Reference Frame: ICRS

Comments:
Category=STAR
Description=[DA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1528978)	(12) ZTFJ2130+4420	STIS/CCD, ACQ, F28X50LP	MIRROR				4 Secs (4 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1528985)	(12) ZTFJ2130+4420	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=600			2264 Secs (2264 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 16689, 40min (12), completed Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

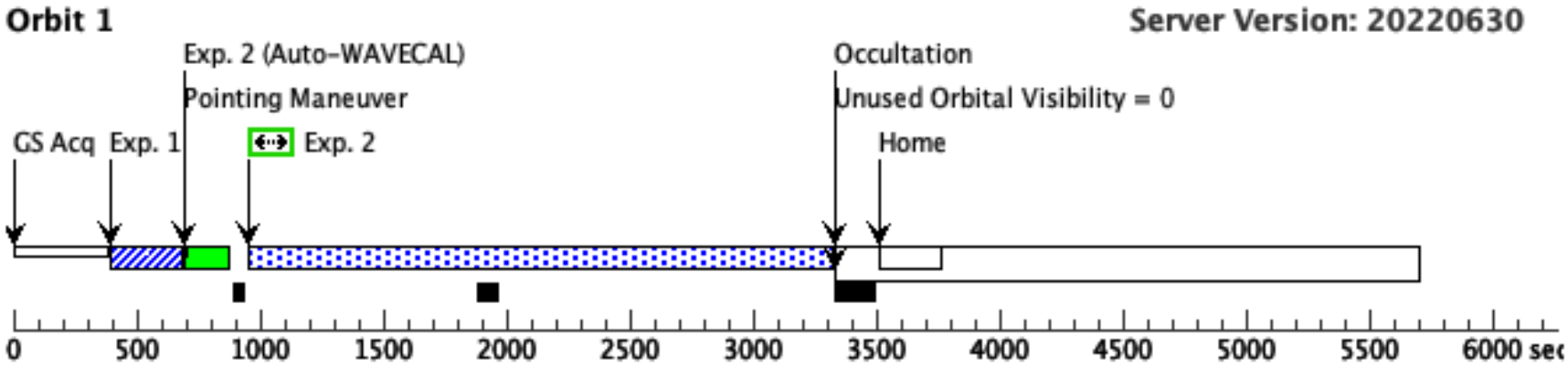
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	ZTFJ1901+5309	RA: 19 01 25.4164 (285.3559017d) Dec: +53 09 29.27 (53.15813d) Equinox: J2000	Proper Motion RA: 3.126 mas/yr Proper Motion Dec: 4.899 mas/yr Epoch of Position: 2000	V=18.04	Reference Frame: ICRS

Comments:
Category=STAR
Description=[DA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529830)	(13) ZTFJ1901+5309	STIS/CCD, ACQ, 50CCD	MIRROR				11 Secs (11 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1529022)	(13) ZTFJ1901+5309	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=900			2314 Secs (2314 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 16689, 43min (13), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

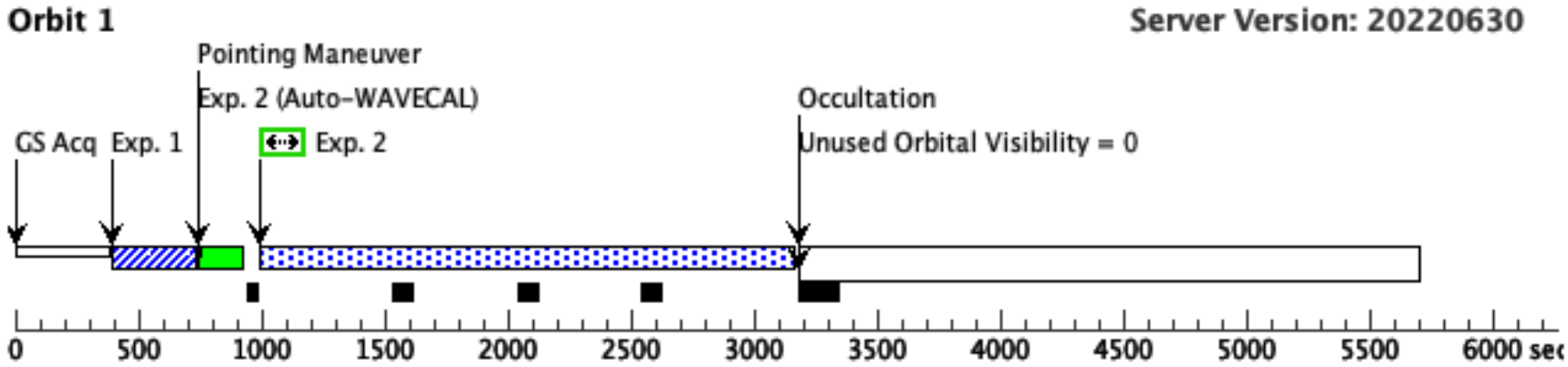
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	ZTFJ2049+3351	RA: 20 49 51.2750 (312.4636458d) Dec: +33 51 53.16 (33.86477d) Equinox: J2000	Proper Motion RA: -0.446 mas/yr Proper Motion Dec: -2.176 mas/yr Epoch of Position: 2000	V=18.70	Reference Frame: ICRS

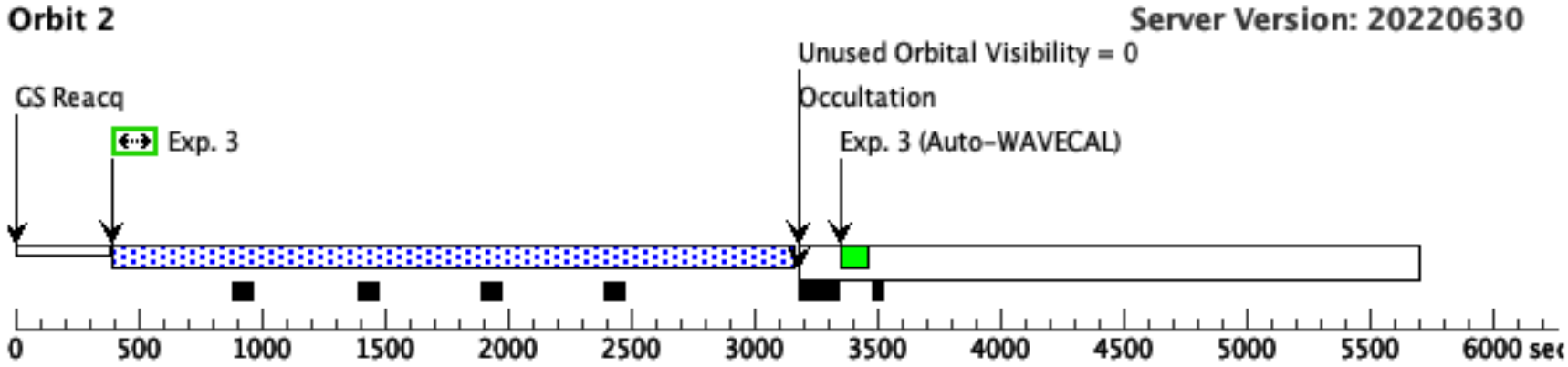
Comments:
Category=STAR
Description=[DA]
Extended=NO

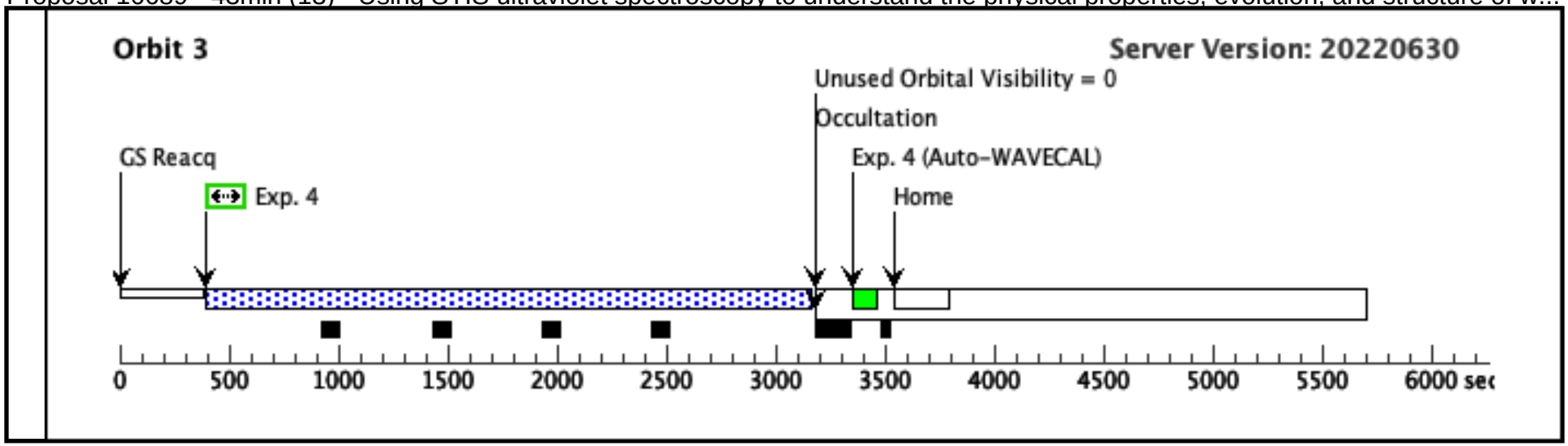
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529831)	(14) ZTFJ2049+3351	STIS/CCD, ACQ, 50CCD	MIRROR				23 Secs (23 Secs) *[==>]*	***[1]***
2	(STIS.sp.1529069)	(14) ZTFJ2049+3351	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2113 Secs (2113 Secs) *[==>]*	***[1]***
3	(STIS.sp.1529071)	(14) ZTFJ2049+3351	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2760 Secs (2760 Secs) *[==>]*	***[2]***
4	(STIS.sp.1529071)	(14) ZTFJ2049+3351	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2720 Secs (2720 Secs) *[==>]*	***[3]***

Orbit Structure



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Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 4
Exp. 4 (Auto-WAVECAL)
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1500
2000
2500
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3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 16689, 56min (14), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

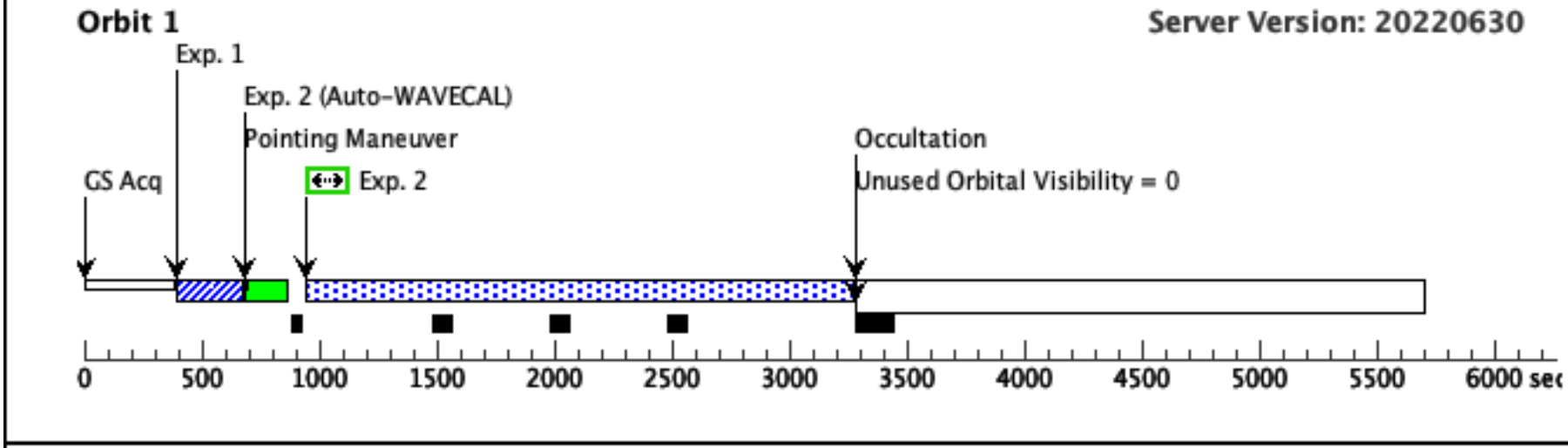
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	ZTFJ2055+4651	RA: 20 55 15.9821 (313.8165921d) Dec: +46 51 6.46 (46.85179d) Equinox: J2000	Proper Motion RA: -3.424 mas/yr Proper Motion Dec: -5.366 mas/yr Epoch of Position: 2000	V=17.6	Reference Frame: ICRS

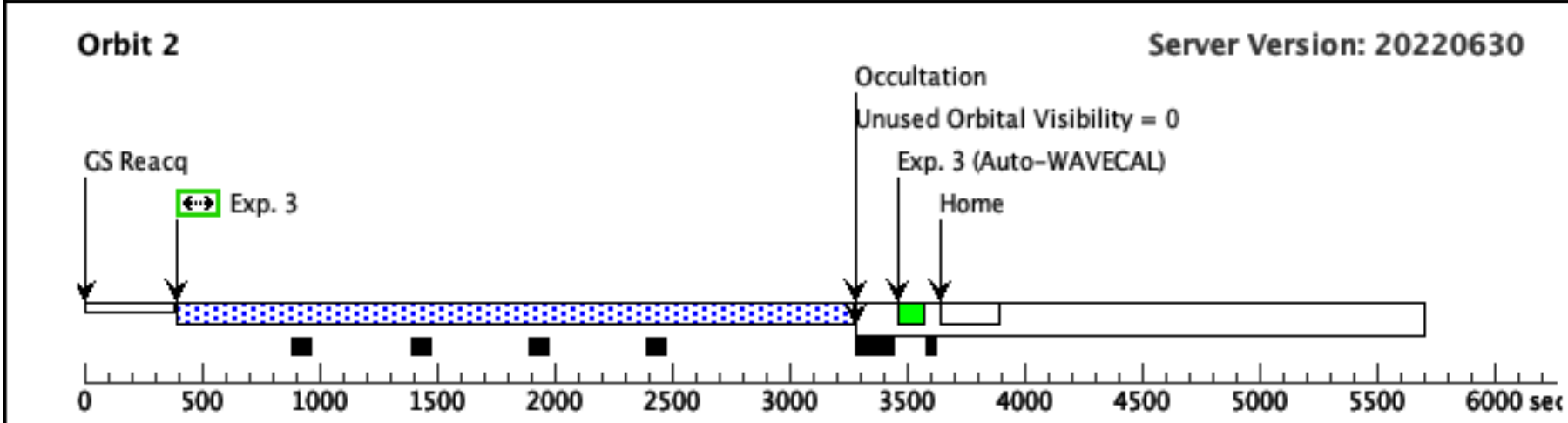
Comments:
Category=STAR
Description=[DA]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529832)	(15) ZTFJ2055+4651	STIS/CCD, ACQ, 50CCD	MIRROR				9 Secs (9 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1529117)	(15) ZTFJ2055+4651	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2274 Secs (2274 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1529118)	(15) ZTFJ2055+4651	STIS/FUV-MAMA, TIME-TAG, 52X2	G140L 1425 A	BUFFER-TIME=500			2865 Secs (2865 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 16689, 51min (15), pi Tue Mar 14 15:02:05 GMT 2023

Diagnostic Status: No Diagnostics

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

Special Requirements: (none)

Fixed Targets

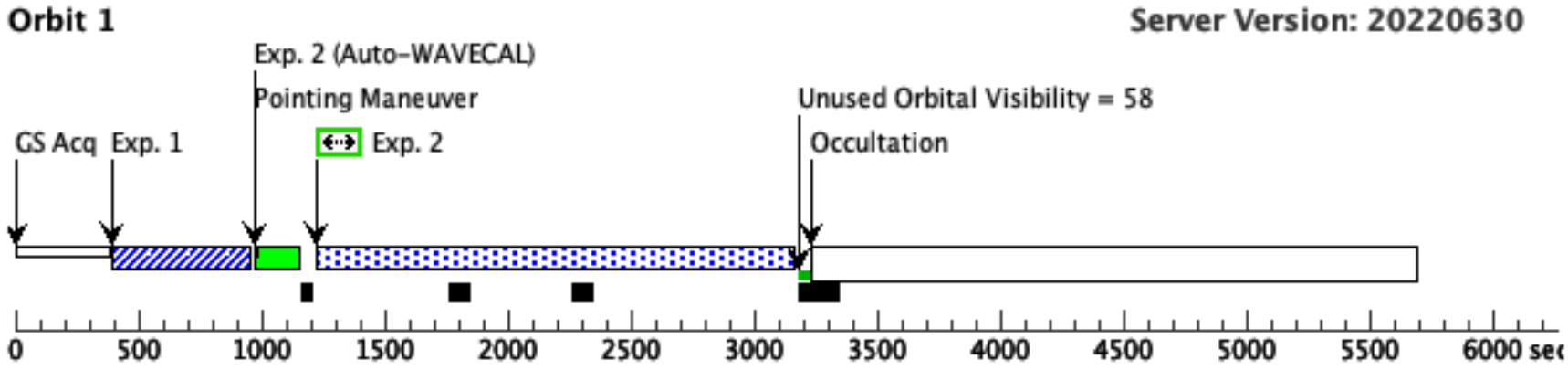
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	ZTFJ1813+4251	RA: 18 13 11.1300 (273.2963750d) Dec: +42 51 50.49 (42.86402d) Equinox: J2000	Proper Motion RA: 12.6 mas/yr Proper Motion Dec: -2.66 mas/yr Epoch of Position: 2000	V=18.7	Reference Frame: ICRS

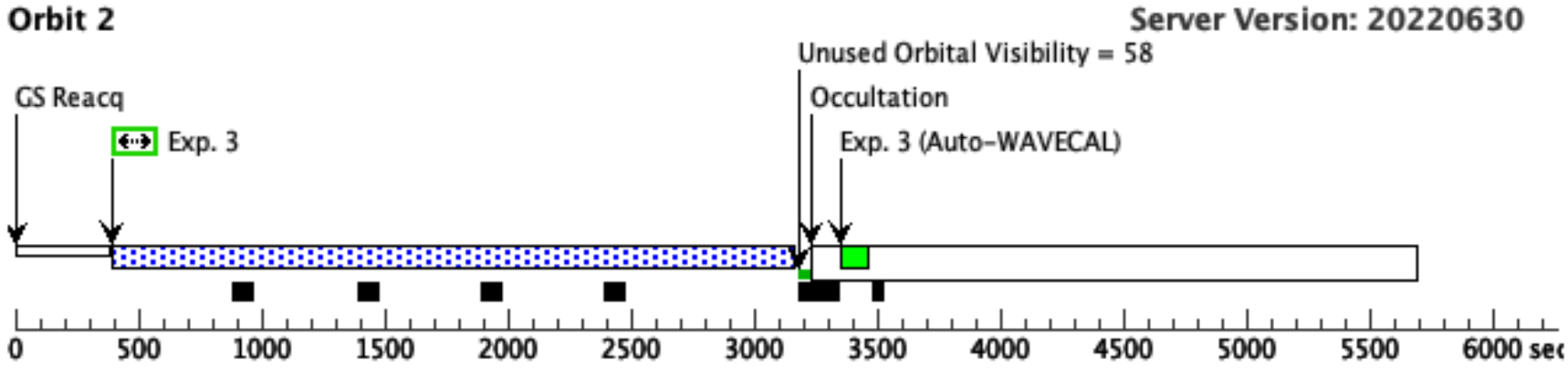
Comments:
Category=STAR
Description=[DA]
Extended=NO

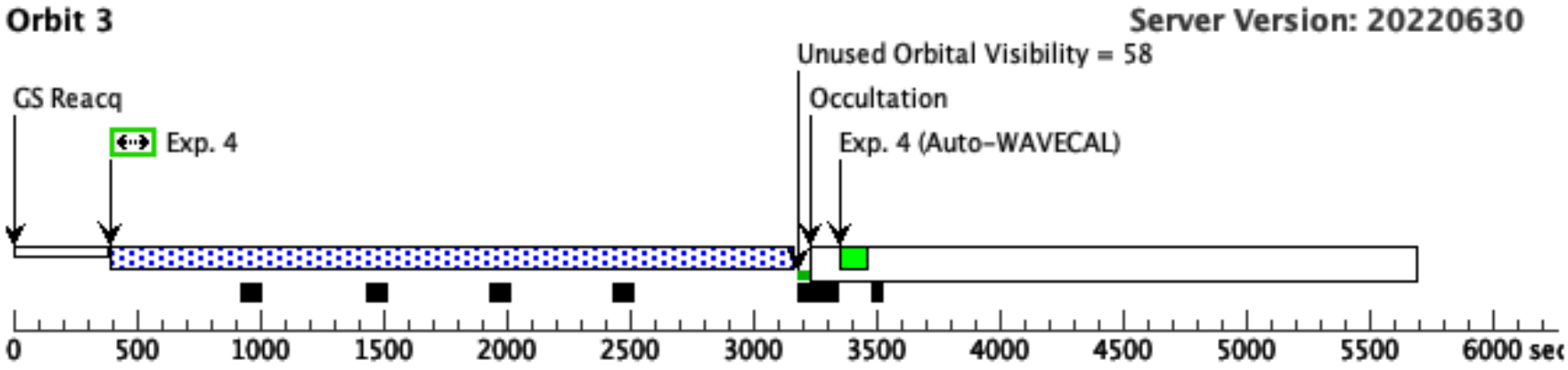
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1529833)	(16) ZTFJ1813+4251	STIS/CCD, ACQ, 50CCD	MIRROR				80 Secs (80 Secs) *[==>]*	 ***[1]***
2	(STIS.sp.1529137)	(16) ZTFJ1813+4251	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			1885 Secs (1885 Secs) *[==>]*	 ***[1]***
3	(STIS.sp.1529138)	(16) ZTFJ1813+4251	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2760 Secs (2760 Secs) *[==>]*	 ***[2]***
4	(STIS.sp.1529138)	(16) ZTFJ1813+4251	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2720 Secs (2720 Secs) *[==>]*	 ***[3]***
5	(STIS.sp.1529138)	(16) ZTFJ1813+4251	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2720 Secs (2720 Secs) *[==>]*	 ***[4]***
6	(STIS.sp.1529138)	(16) ZTFJ1813+4251	STIS/FUV-MAMA, TIME-TAG, 52X2D1	G140L 1425 A	BUFFER-TIME=500			2720 Secs (2720 Secs) *[==>]*	 ***[5]***

Orbit Structure



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Occultation
Exp. 4
Exp. 4 (Auto-WAVECAL)
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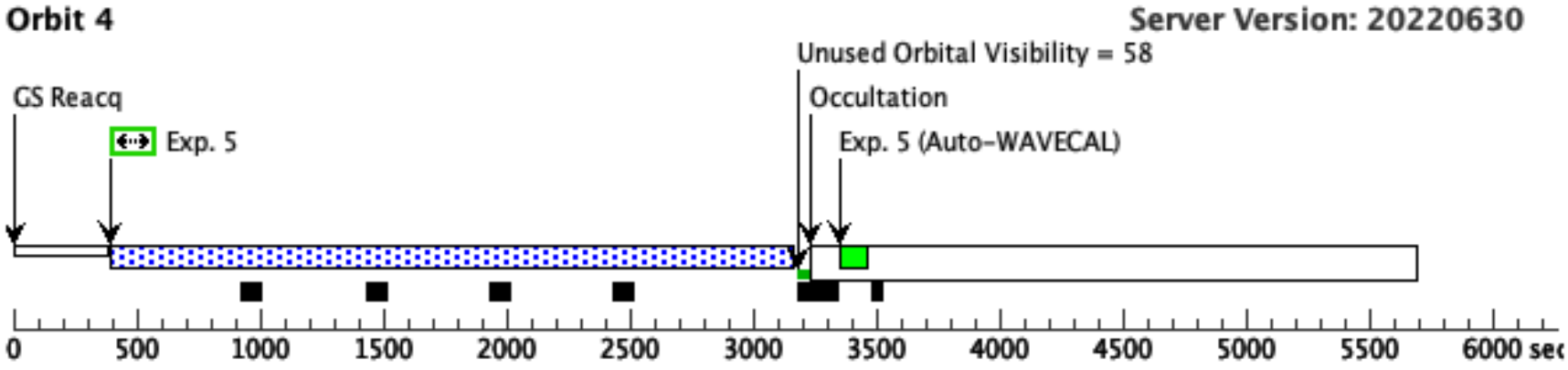
6000 sec


Orbit 4
Server Version: 20220630
Unused Orbital Visibility = 58
GS Reacq
Occultation
Exp. 5
Exp. 5 (Auto-WAVECAL)
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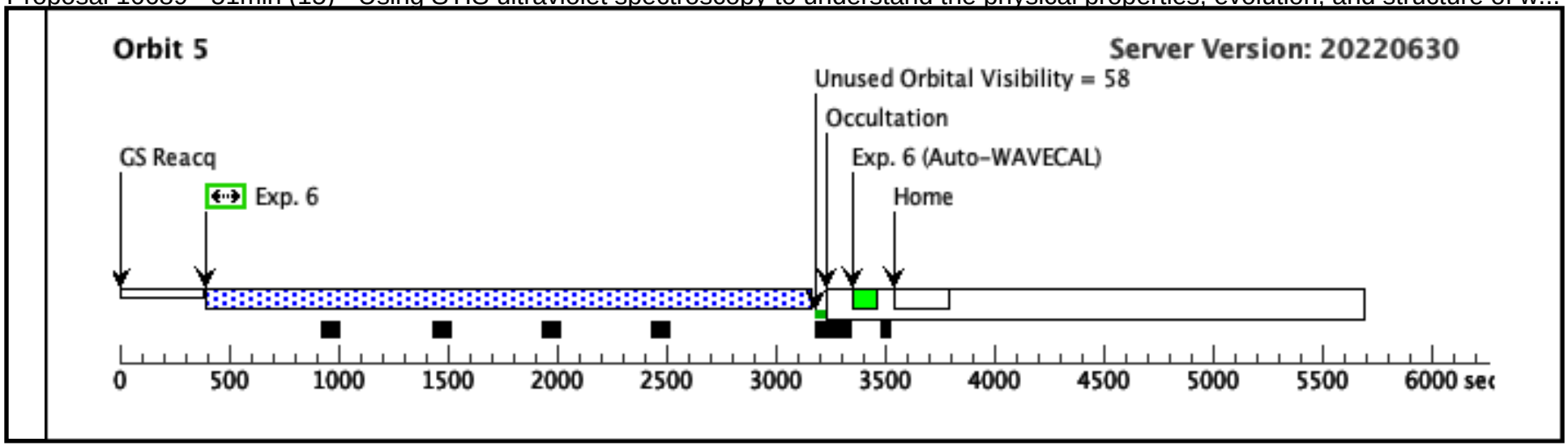
Orbit 5
Server Version: 20220630
Unused Orbital Visibility = 58
Occultation
Exp. 6 (Auto-WAVECAL)
Home
GS Reacq
Exp. 6
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6000 sec