



16213 - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizing sources in the reionization epoch

Cycle: 28, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) J0159+0751	COS/FUV COS/NUV	3	28-Sep-2021 11:00:19.0	yes
51	(1) J0159+0751	COS/FUV COS/NUV	3	28-Sep-2021 11:00:20.0	yes
02	(2) J1032+4919	COS/FUV COS/NUV	2	28-Sep-2021 11:00:21.0	yes
03	(3) J1205+4551	COS/FUV COS/NUV	2	28-Sep-2021 11:00:22.0	yes
53	(3) J1205+4551	COS/FUV COS/NUV	2	28-Sep-2021 11:00:22.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
04	(4) J1355+4651	COS/FUV COS/NUV	3	28-Sep-2021 11:00:23.0	yes
05	(5) J1608+3528	COS/FUV COS/NUV	2	28-Sep-2021 11:00:24.0	yes
06	(1) J0159+0751	STIS/CCD STIS/NUV-MAMA	2	28-Sep-2021 11:00:25.0	yes
07	(2) J1032+4919	STIS/CCD STIS/NUV-MAMA	1	28-Sep-2021 11:00:25.0	yes
08	(3) J1205+4551	STIS/CCD STIS/NUV-MAMA	2	28-Sep-2021 11:00:26.0	yes
09	(4) J1355+4651	STIS/CCD STIS/NUV-MAMA	2	28-Sep-2021 11:00:27.0	yes
10	(5) J1608+3528	STIS/CCD STIS/NUV-MAMA	1	28-Sep-2021 11:00:28.0	yes
50	(5) J1608+3528	STIS/CCD STIS/NUV-MAMA	1	28-Sep-2021 11:00:28.0	yes

26 Total Orbits Used

ABSTRACT

The rest-UV emission line spectra of star-forming galaxies (SFGs) at $z > 6$ serves as a primary tool to reveal the nature of ionizing sources that are responsible for the cosmic reionization. Low-metallicity star-forming dwarf galaxies at $z < 0.3$, show similar strong UV emission lines (eg; C IV, He II, O III], and C III]), and are being used to calibrate the UV diagnostics that can be applied to study galaxies in the reionization epoch. However, the high equivalent widths ($EW > 20$ Angstrom) seen for UV emission lines in $z > 6$ galaxies, have not been observed in any of the local analogs. Such high EWs pose a challenge to the photoionization models, requiring the lowest metallicities, youngest stellar ages, and highest ionization parameters as model inputs to produce the required hard ionizing spectrum, and extreme emission lines. We propose to obtain HST COS (G140L) and STIS (G230L) spectra of a unique sample of 5 SFGs, recently identified as having extreme [OIII]/[OII] ratios (> 22) with evidence for hard ionizing radiation from young, massive stars with ages < 3 Myrs. The photoionization models predict high nebular C IV and C III] EWs (> 15 Angstrom), comparable to galaxies in the reionization epoch. Our goal is to (1) compare the fluxes and EWs of the UV emission lines to the model predictions

Proposal 16213 (STScI Edit Number: 2, Created: Tuesday, September 28, 2021 at 10:00:29 AM Eastern Standard Time) - Overview and infer the ISM conditions, (2) calibrate the UV diagnostics that predict potential Lyman continuum escape, and (3) obtain constraints on the ionizing sources (very massive stars, WR stars, or binaries) based on the hardness of the ionizing radiation. The results from our analysis of local analogs will offer crucial insights into the stellar populations and ISM conditions in extreme starbursts at high redshifts that are responsible for reionization.

OBSERVING DESCRIPTION

The observations in this program are designed to obtain the rest-UV spectra of a sample of 5 local compact star forming galaxies (CSFGs) at $z = 0.03-0.07$ that have high $[\text{OIII}]/[\text{OII}]$ ratios = 23 - 43. The CSFGs are the best local analogs to study the extreme ionizing conditions observed in high redshift galaxies at the reionization epoch. All of these CSFGs have existing HST COS observations using the G130M grating that covers the Lyman-alpha emission line. The CSFGs are selected from the SDSS and their optical spectra are also available in the SDSS database. The CSFGs will be observed using the COS G140L grating for the FUV wavelengths, primarily for the C IV, He II, and O III] emission lines. Since the sensitivity of this instrument setup drops precipitously at wavelengths > 1800 , we will use the STIS G230L grating to observe the C III] line which falls in wavelength range 1960 - 2026 Angstrom. We do not require to resolve the O III] and C III] doublet emission lines because we are interested in measuring the integrated line fluxes, and will use the low resolution gratings for both instruments. The overlap in the wavelengths around the weaker OIII] emission line is an added advantage, and also serves to cross-calibrate the derived fluxes.

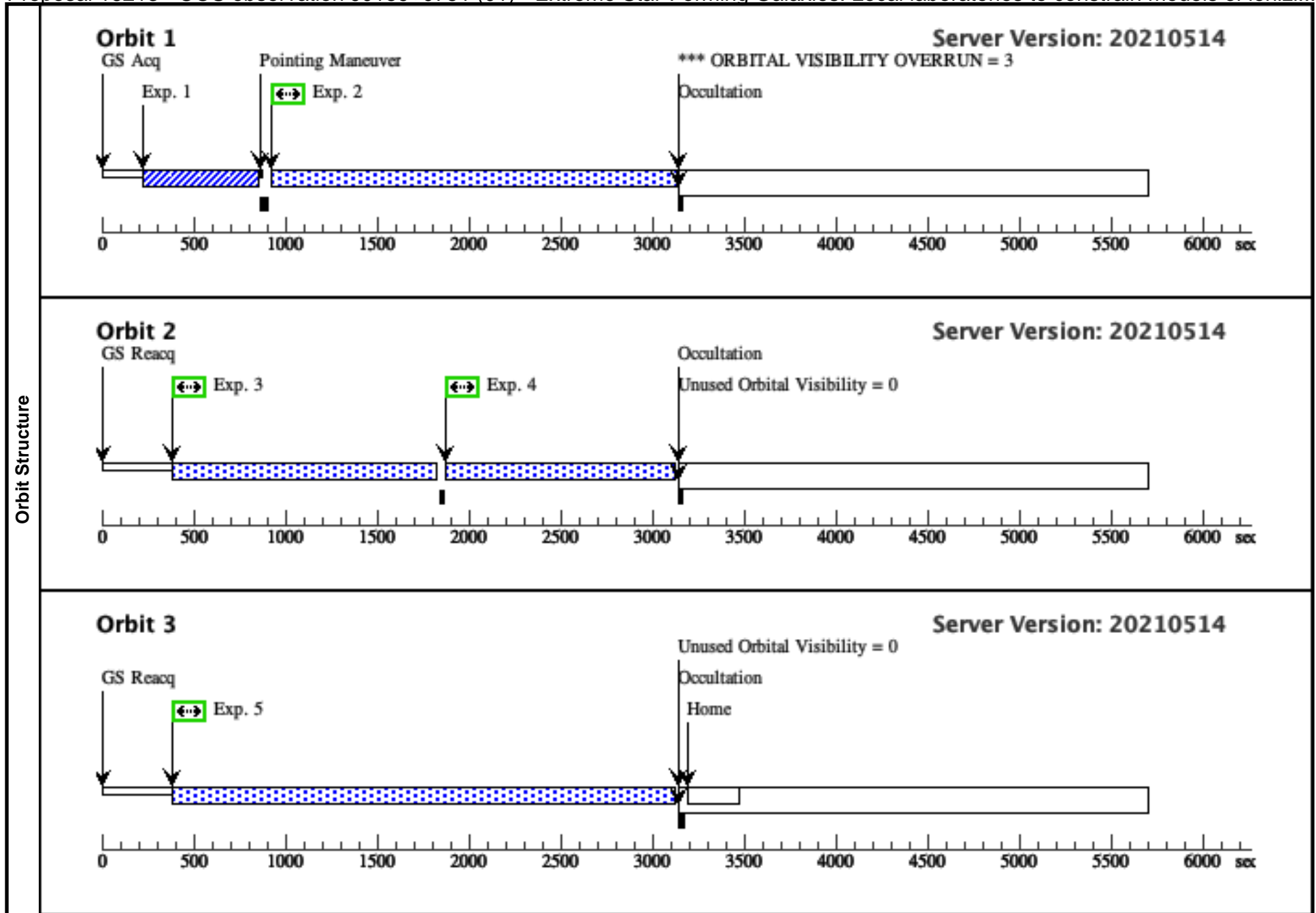
We used the online exposure time calculator for COS and STIS to compute the exposure times required to achieve signal-to-noise (S/N) > 3 per resolution element. The information on the optical emission line fluxes from SDSS, were used to derive the predicted O III] and C III] UV emission line fluxes using the CLOUDY photoionization models (Jaskot & Ravindranath 2016; Nakajima et al. 2018). The predicted UV emission line fluxes and the continuum estimated using the GALEX magnitudes, along with the UV continuum information available from the HST COS G130M grism were used to derive the exposure times.

The ETC calculations were performed for COS using the G140L, with central wavelength 1280 Angstrom, and the primary science aperture (PSA). The CSFGs are compact with half-light radii less than 1", and we used a point source approximation for the exposure time calculations. The estimated exposure times range from 2000 - 6000s depending on the target brightness and the O III] line fluxes. We will use the TIME-TAG mode and FP-POS = ALL for the science exposures. The buffer times for the science exposures were adopted to be 2/3 of the values returned by the ETC as recommended by the COS instrument handbook. For the COS target acquisition, we assumed that the target is an extended source. All of our targets have COS acquisition images taken previously in HST-GO-14080 and HST-GO-15136. The COS acquisition images show that in most cases

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the source has multiple clumps of star formation, with one brightest clump centered on the source coordinates. We used the COS ETC to compute the acquisition exposure times required to obtain a S/N $\sim 15 - 20$ for an extended source, using the ACQ/IMAGE mode with MirrorA and PSA. The CSFGs are more extended than a point source, but may not fill the 1.25" radius of the COS aperture since they are unresolved in the SDSS images. We also followed the method in proposal HST-GO-14080 and assumed the case of a point source which only accounts for 10% of the total NUV flux within the COS PSF. The acquisition exposures times we derive from the ETC will yield S/N $\sim 20 - 30$ and was verified by using the acquisition images obtained for the same targets in previously executed COS programs (14080 and 15136).

For the STIS ETC calculations, we used the G230L grating, and the 52" x 0.5" aperture. We find that the exposure times for the required S/N range from 1000 - 5000s depending on the target brightness and the C III] line fluxes. We used the TIME-TAG mode and the buffer times were adopted to be 4/5 of the values returned by the ETC as recommended for use in the APT. For STIS target acquisition, we used the SDSS g-band magnitudes for an extended source and computed the exposure times required for S/N=40. Although the sources are unresolved at the SDSS resolution they are resolved on the STIS acquisition images. The acquisition exposure times were calculated for ACQ mode using the long pass F28X50LP aperture, and with MIRROR and STIS CCD.

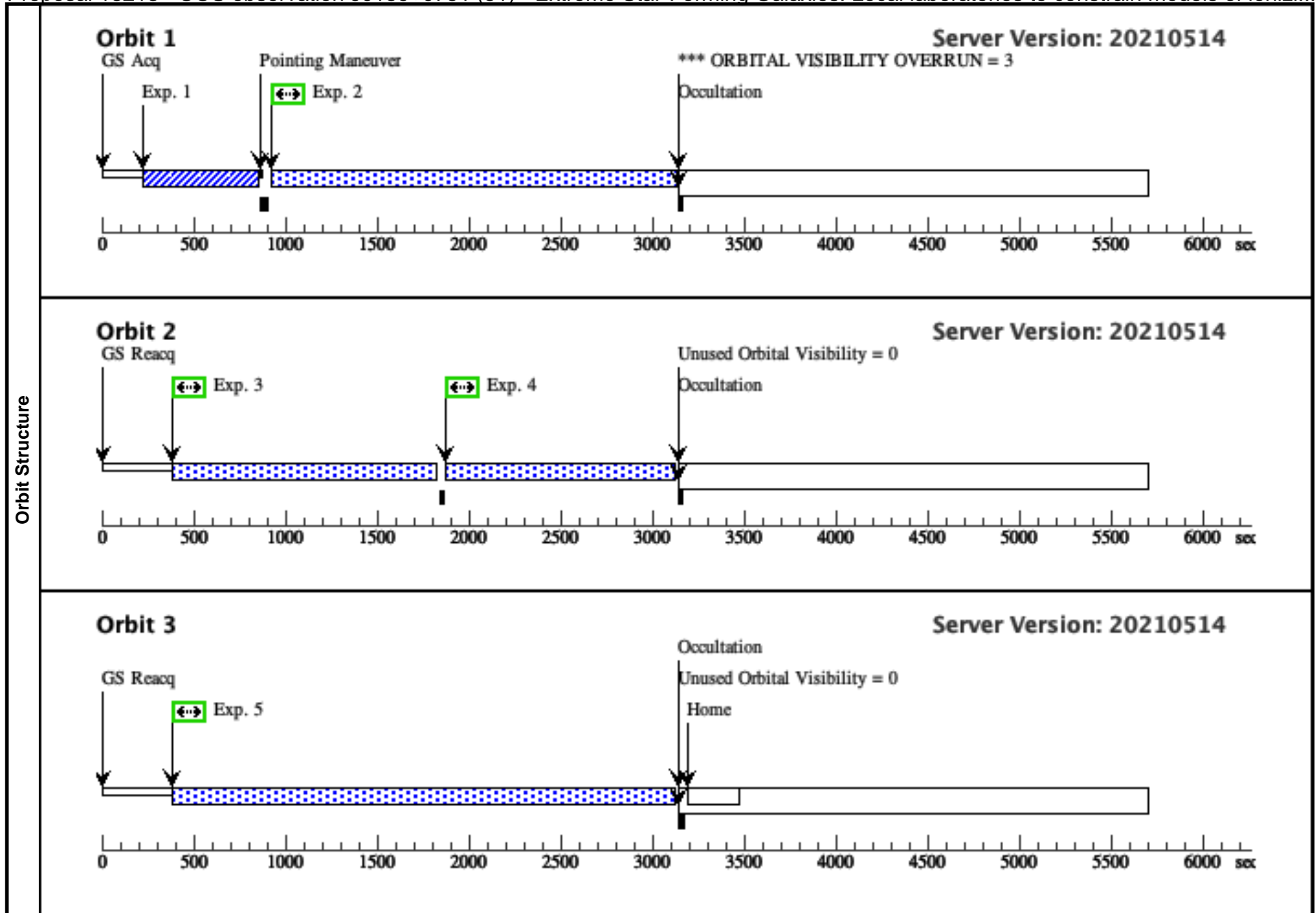
We also used the Bright Object Tool to verify that there are no UV bright objects close to the targets that would cause health and safety concerns for the COS FUV, and STIS NUV-MAMA detectors.



Proposal 16213 - COS observation J0159+0751 (51) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

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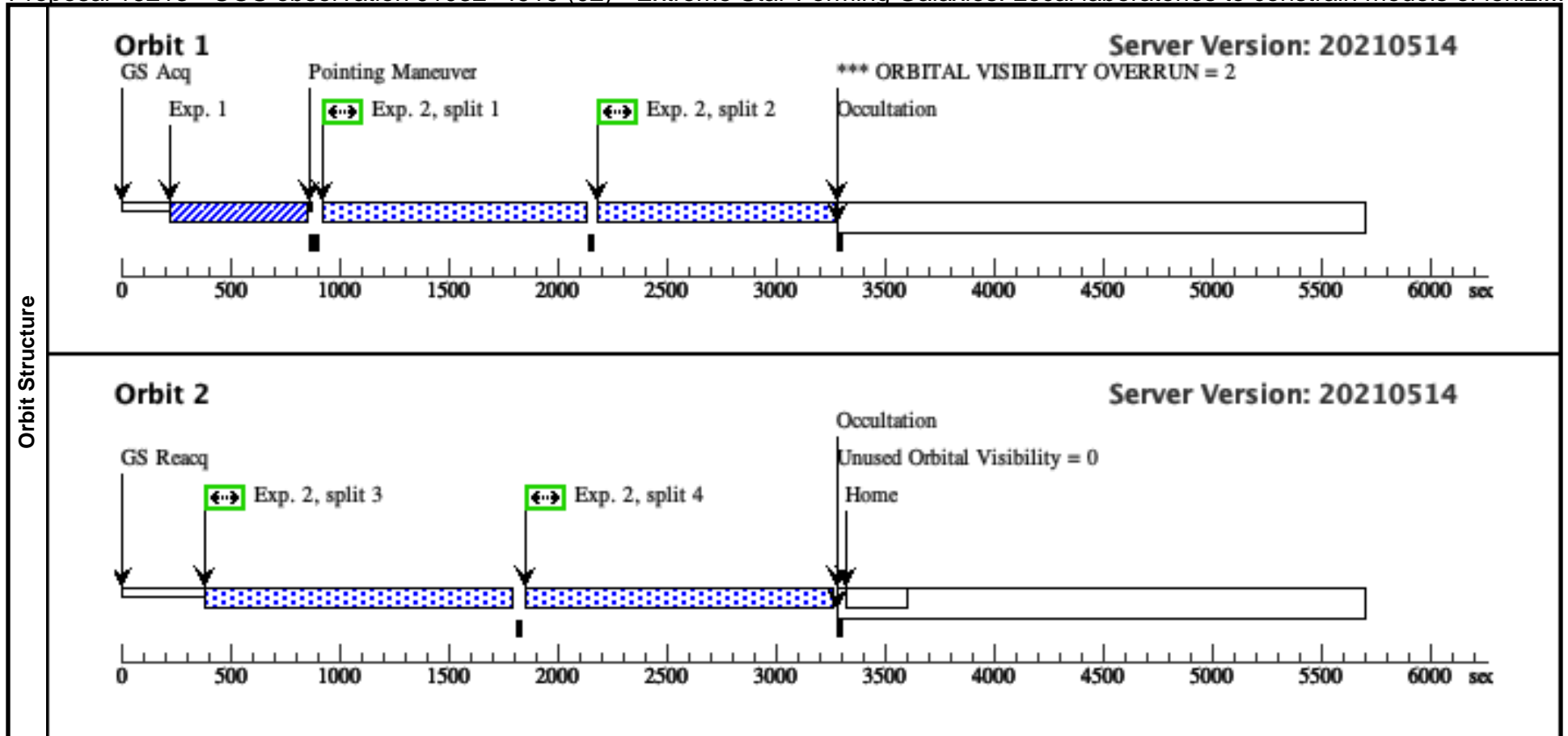
Visit	Proposal 16213, COS observation J0159+0751 (51) Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: (none) <i>Comments: Duplicate of failed visit 01 (impacted by COS safing)</i>																																																																
	Diagnosics (COS observation J0159+0751 (51)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																																																																
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Proposal 16213 - COS observation J1032+4919 (02) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

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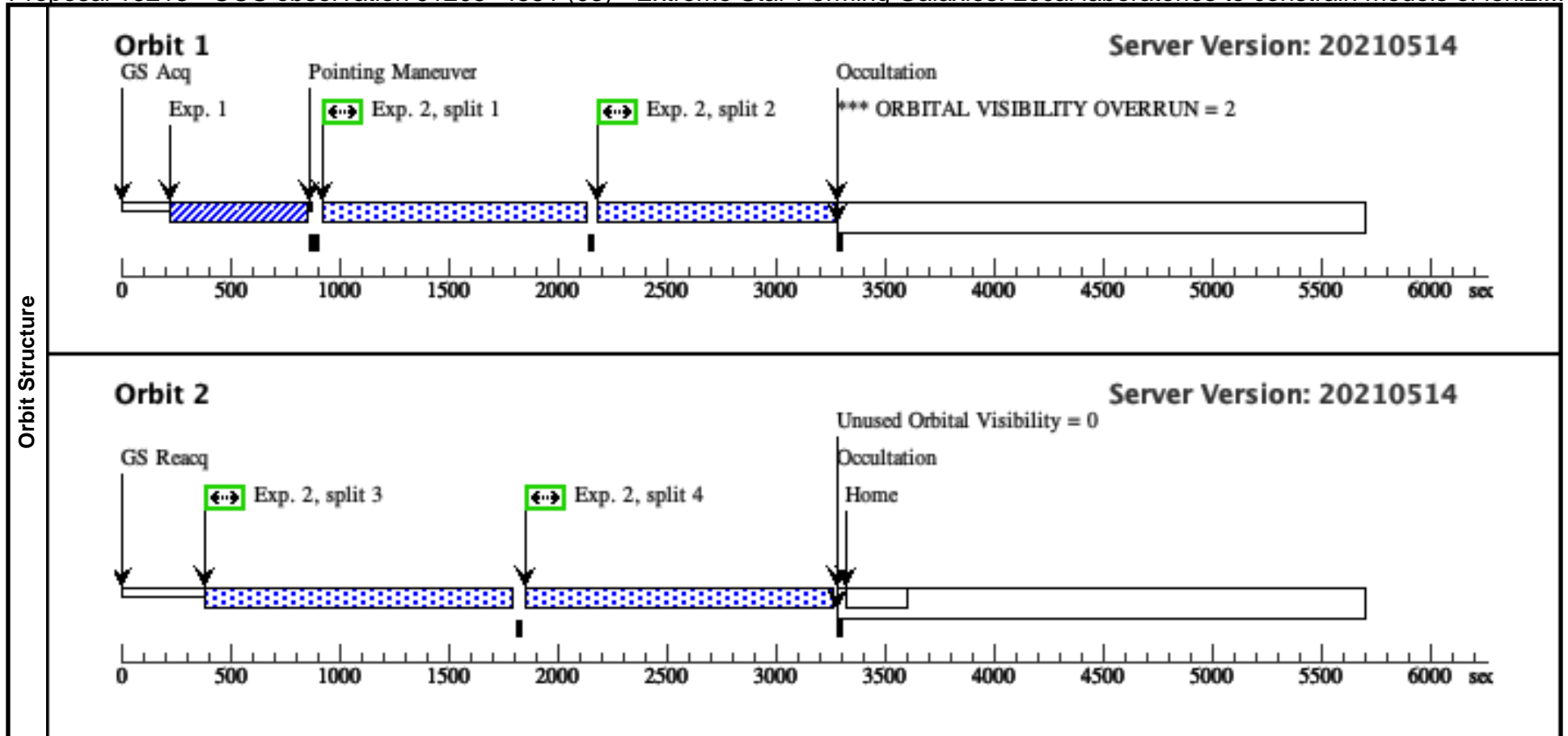
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									[==>1035.0 Secs (Split 2)]	[2]
								[==>1362.0 Secs (Split 3)] [==>1362.0 Secs (Split 4)]		



Proposal 16213 - COS observation J1205+4551 (03) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

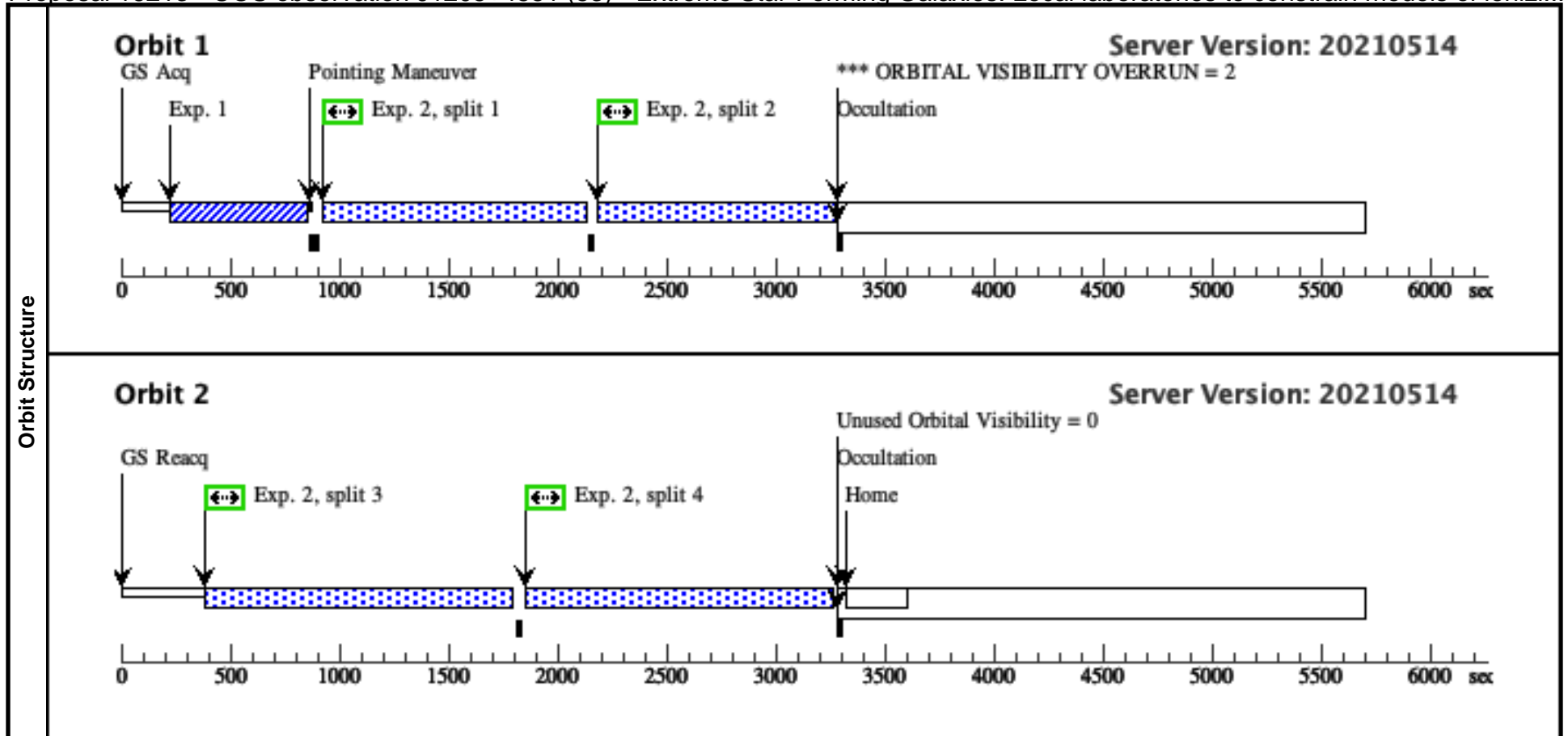
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Diagnosics										
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(3)	J1205+4551	RA: 12 05 3.5500 (181.2647917d) Dec: +45 51 50.94 (45.86415d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.06540	V=19.74 FUV = 21.04, NUV = 20.58	Reference Frame: ICRS				
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Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
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	2	Science Exp (COS.sp.134 3369)	(3) J1205+4551	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20000; FP-POS=ALL; FLASH=YES; SEGMENT=BOTH			1832 Secs (4794 Secs) [==>1035.0 Secs (Split 1)] [==>1035.0 Secs (Split 2)] [==>1362.0 Secs (Split 3)] [==>1362.0 Secs (Split 4)]	[1] [2]



Proposal 16213 - COS observation J1205+4551 (53) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

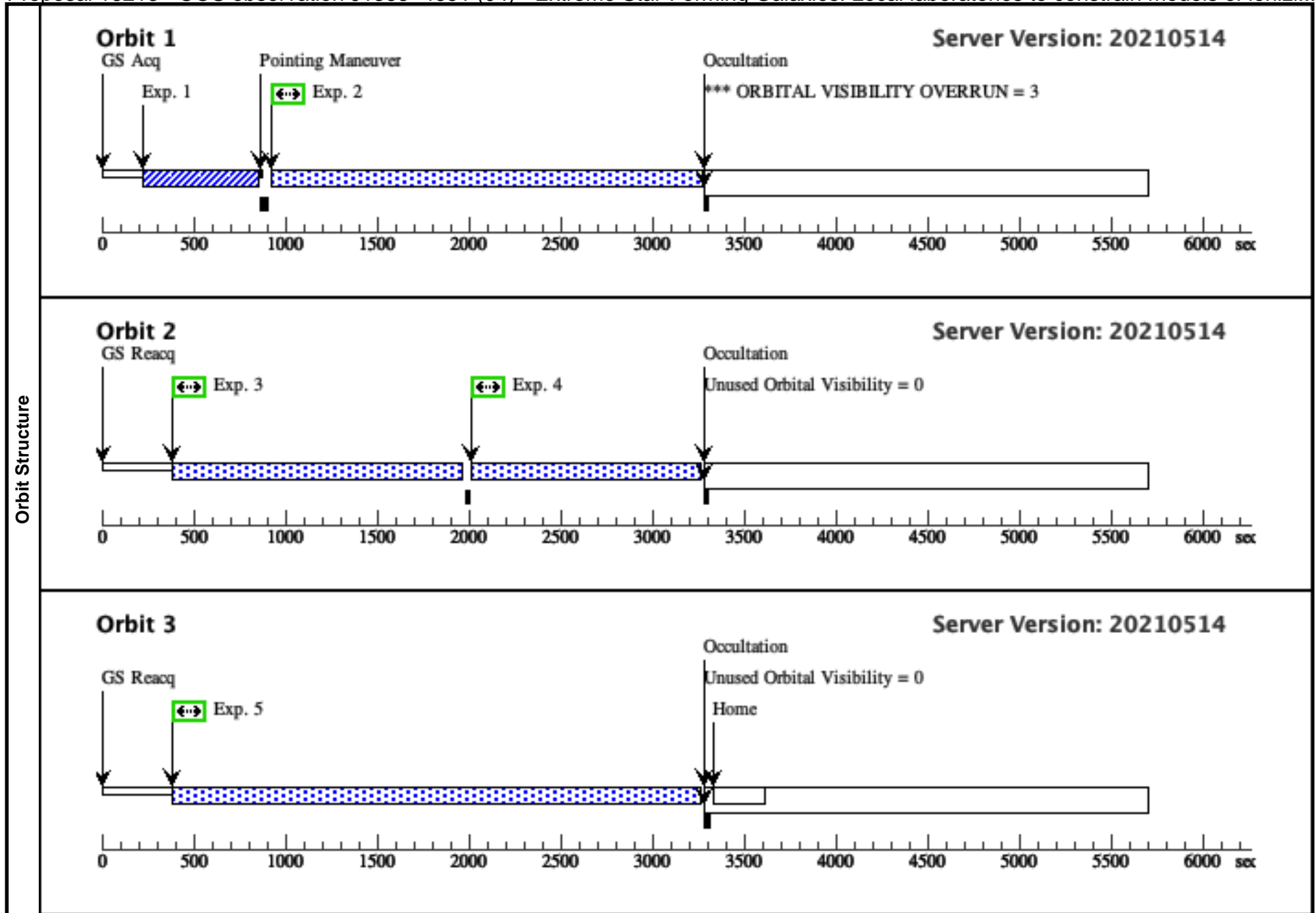
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#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																										
1	Acquisition (COS.ta.146 9333)	(3) J1205+4551	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) [==>]	[1]																										
2	Science Exp (COS.sp.134 3369)	(3) J1205+4551	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20000; FP-POS=ALL; FLASH=YES; SEGMENT=BOTH			1832 Secs (4794 Secs) [==>1035.0 Secs (Split 1)] [==>1035.0 Secs (Split 2)] [==>1362.0 Secs (Split 3)] [==>1362.0 Secs (Split 4)]	[1] [2]																										



Proposal 16213 - COS observation J1355+4651 (04) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

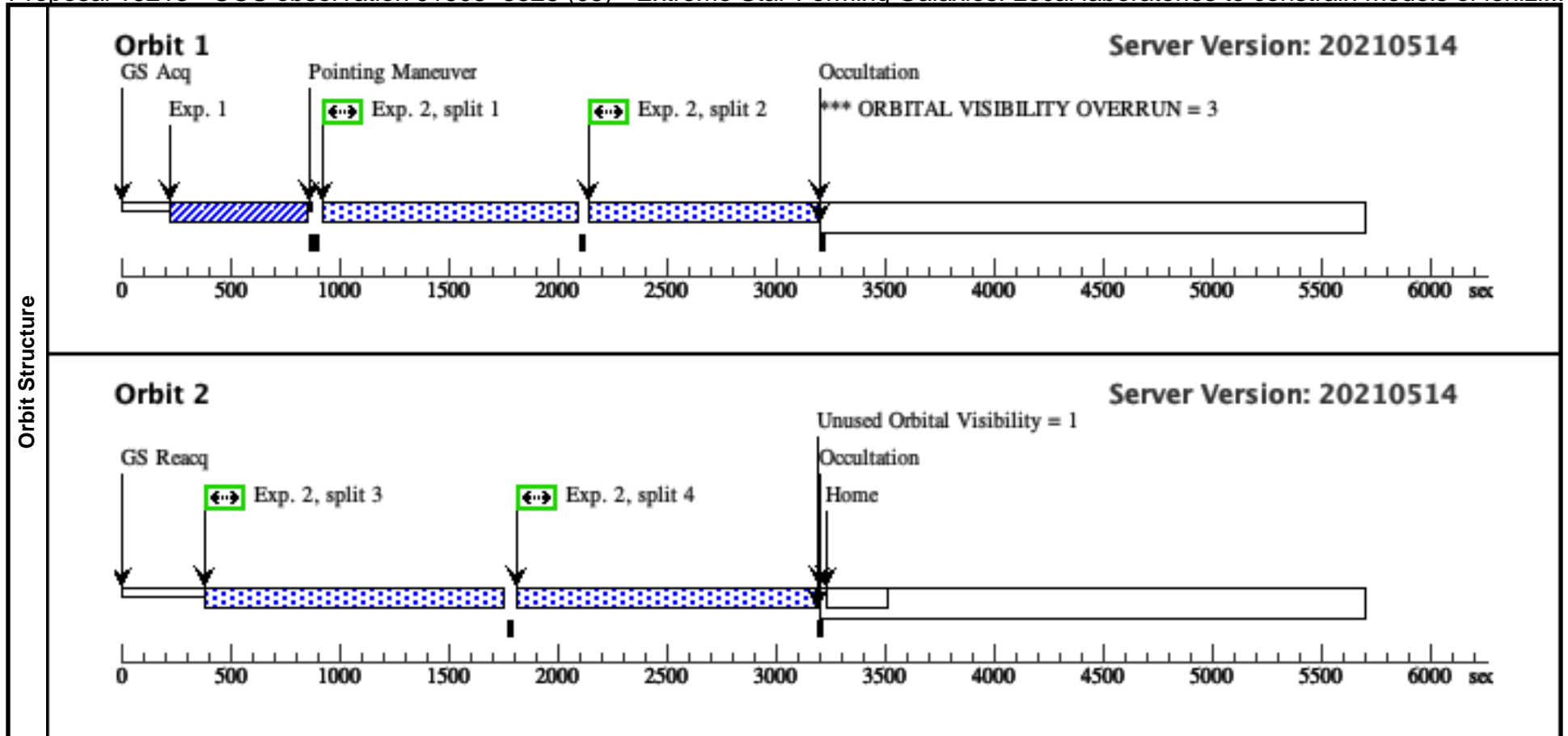
Visit	Proposal 16213, COS observation J1355+4651 (04), completed Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: (none)									
	(COS observation J1355+4651 (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(4)	J1355+4651	RA: 13 55 25.6600 (208.8569167d) Dec: +46 51 51.34 (46.86426d) Equinox: J2000	Redshift: 0.02810	V=19.22 FUV = 20.54, NUV = 20.66	Reference Frame: ICRS				
Comments: Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO										
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition (COS.ta.146 9336)	(4) J1355+4651	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) [==>]	[1]
	2	Science Exp (COS.sp.134 3352)	(4) J1355+4651	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20 000; FP-POS=1; FLASH=YES; SEGMENT=BOTH			2451 Secs (2176 Secs) [==>2176.0 Secs]	[1]
	3	Science Exp (COS.sp.134 3352)	(4) J1355+4651	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20 000; FP-POS=2; FLASH=YES; SEGMENT=BOTH			2451 Secs (1524 Secs) [==>1524.0 Secs]	[2]
	4	Science Exp (COS.sp.134 3352)	(4) J1355+4651	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20 000; FP-POS=3; FLASH=YES; SEGMENT=BOTH			2451 Secs (1200 Secs) [==>1200.0 Secs]	[2]
	5	Science Exp (COS.sp.134 3352)	(4) J1355+4651	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20 000; FP-POS=4; FLASH=YES; SEGMENT=BOTH			2451 Secs (2829 Secs) [==>2829.0 Secs]	[3]



Proposal 16213 - COS observation J1608+3528 (05) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

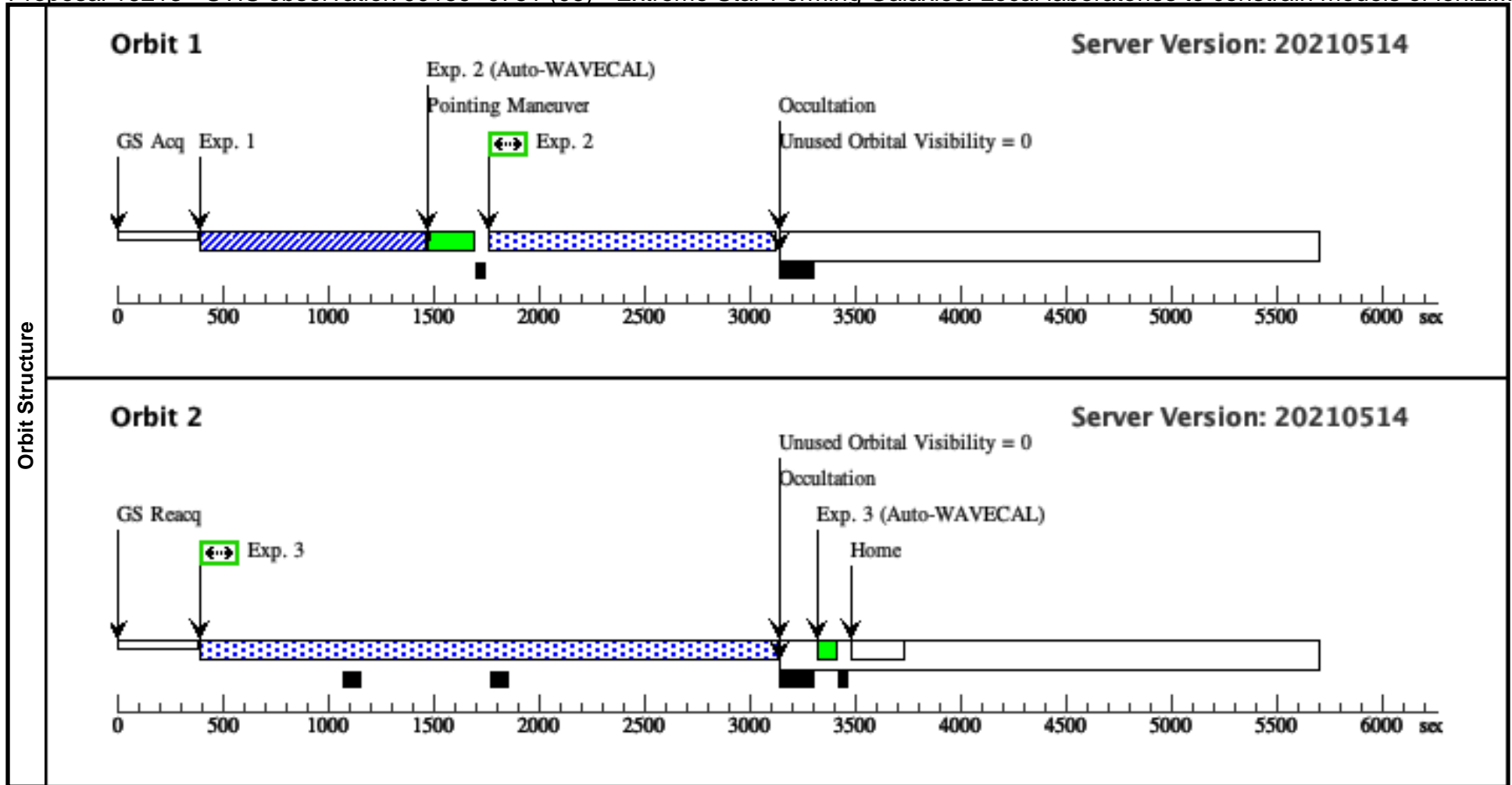
Visit	Proposal 16213, COS observation J1608+3528 (05), completed Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: (none)																																		
	(COS observation J1608+3528 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																																		
Diagnosics																																			
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(5)</td> <td>J1608+3528</td> <td>RA: 16 08 10.3600 (242.0431667d) Dec: +35 28 9.34 (35.46926d) Equinox: J2000</td> <td>Epoch of Position: 2000.0 Redshift: 0.03274</td> <td>V=18.59 FUV = 20.10, NUV = 20.40</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(5)	J1608+3528	RA: 16 08 10.3600 (242.0431667d) Dec: +35 28 9.34 (35.46926d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.03274	V=18.59 FUV = 20.10, NUV = 20.40	Reference Frame: ICRS	Comments: Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO																					
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																													
(5)	J1608+3528	RA: 16 08 10.3600 (242.0431667d) Dec: +35 28 9.34 (35.46926d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.03274	V=18.59 FUV = 20.10, NUV = 20.40	Reference Frame: ICRS																														
<table border="1"> <thead> <tr> <th>#</th> <th>Label (ETC Run)</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Acquisition (COS.ta.146 9339)</td> <td>(5) J1608+3528</td> <td>COS/NUV, ACQ/IMAGE, PSA</td> <td>MIRRORA</td> <td></td> <td></td> <td></td> <td>200 Secs (200 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>Science Exp (COS.sp.134 3339)</td> <td>(5) J1608+3528</td> <td>COS/FUV, TIME-TAG, PSA</td> <td>G140L 1280 A</td> <td>BUFFER-TIME=20000; FP-POS=ALL; FLASH=YES; SEGMENT=BOTH</td> <td></td> <td></td> <td>1096 Secs (4624 Secs) [==>993.0 Secs (Split 1)] [==>993.0 Secs (Split 2)] [==>1319.0 Secs (Split 3)] [==>1319.0 Secs (Split 4)]</td> <td>[1] [2]</td> </tr> </tbody> </table>						#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	1	Acquisition (COS.ta.146 9339)	(5) J1608+3528	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) [==>]	[1]	2	Science Exp (COS.sp.134 3339)	(5) J1608+3528	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20000; FP-POS=ALL; FLASH=YES; SEGMENT=BOTH			1096 Secs (4624 Secs) [==>993.0 Secs (Split 1)] [==>993.0 Secs (Split 2)] [==>1319.0 Secs (Split 3)] [==>1319.0 Secs (Split 4)]	[1] [2]
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																										
1	Acquisition (COS.ta.146 9339)	(5) J1608+3528	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs (200 Secs) [==>]	[1]																										
2	Science Exp (COS.sp.134 3339)	(5) J1608+3528	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=20000; FP-POS=ALL; FLASH=YES; SEGMENT=BOTH			1096 Secs (4624 Secs) [==>993.0 Secs (Split 1)] [==>993.0 Secs (Split 2)] [==>1319.0 Secs (Split 3)] [==>1319.0 Secs (Split 4)]	[1] [2]																										



Proposal 16213 - STIS observation J0159+0751 (06) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

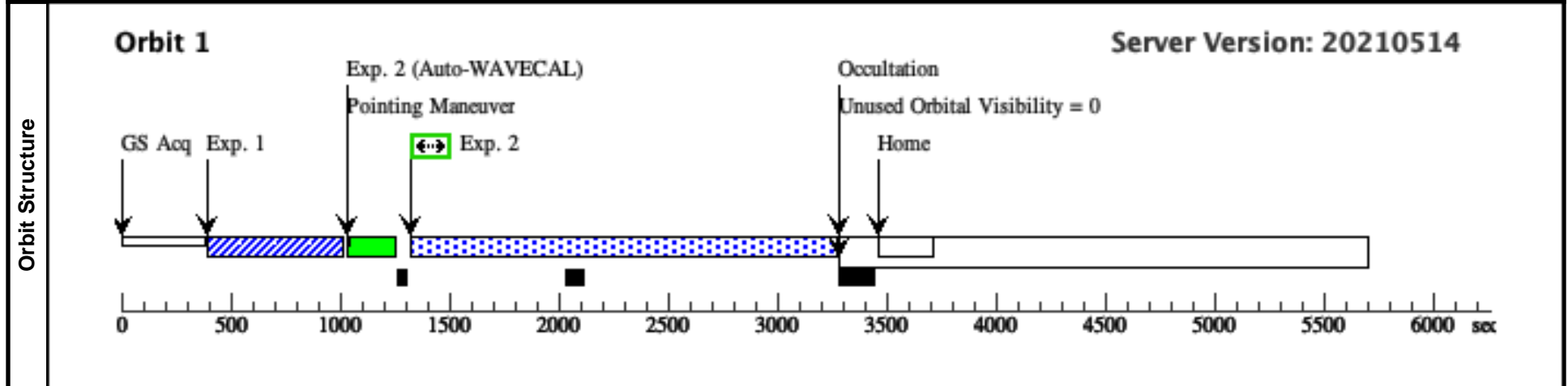
Visit	Proposal 16213, STIS observation J0159+0751 (06), completed Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(1)	J0159+0751	RA: 01 59 52.7500 (29.9697917d) Dec: +07 51 48.80 (7.86356d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.06110	V=19.47 FUV = 20.64, NUV = 20.43	Reference Frame: ICRS			
	<i>Comments:</i> Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition (STIS.ta.147 0838)	(1) J0159+0751	STIS/CCD, ACQ, F28X50LP	MIRROR				210 Secs (210 Secs) [==>]	[1]
	2	Science Exp (STIS.sp.14 70850)	(1) J0159+0751	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2962 Secs (1327 Secs) [==>1327.0 Secs]	[1]
	3	Science Exp (STIS.sp.14 70850)	(1) J0159+0751	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2962 Secs (2725 Secs) [==>2725.0 Secs]	[2]



Visit	Proposal 16213, STIS observation J1032+4919 (07), scheduling				
	Diagnostic Status: No Diagnostics				
	Scientific Instruments: STIS/NUV-MAMA, STIS/CCD				
	Special Requirements: (none)				

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J1032+4919	RA: 10 32 56.7200 (158.2363333d) Dec: +49 19 47.24 (49.32979d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.04420	V=18.67 FUV = 20.26, NUV = 20.25	Reference Frame: ICRS
<i>Comments:</i>					
Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO					

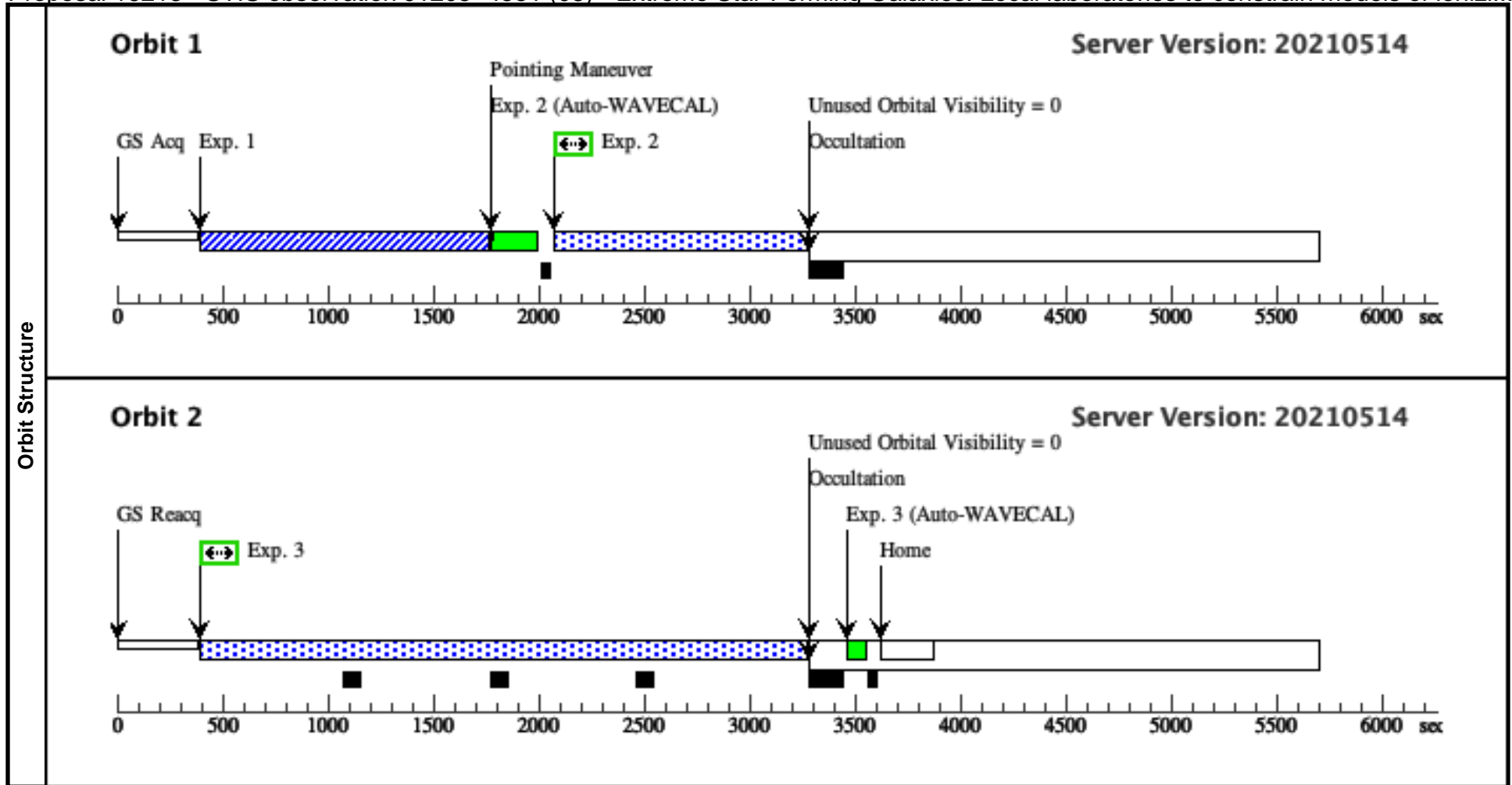
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Acquisition (STIS.ta.147 0839)	(2) J1032+4919	STIS/CCD, ACQ, F28X50LP	MIRROR				99.00 Secs (99 Secs) [=>]	[1]
2	Science Exp (STIS.sp.14 70851)	(2) J1032+4919	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			1800 Secs (1911 Secs) [=>1911.0 Secs]	[1]



Proposal 16213 - STIS observation J1205+4551 (08) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:29 GMT 2021

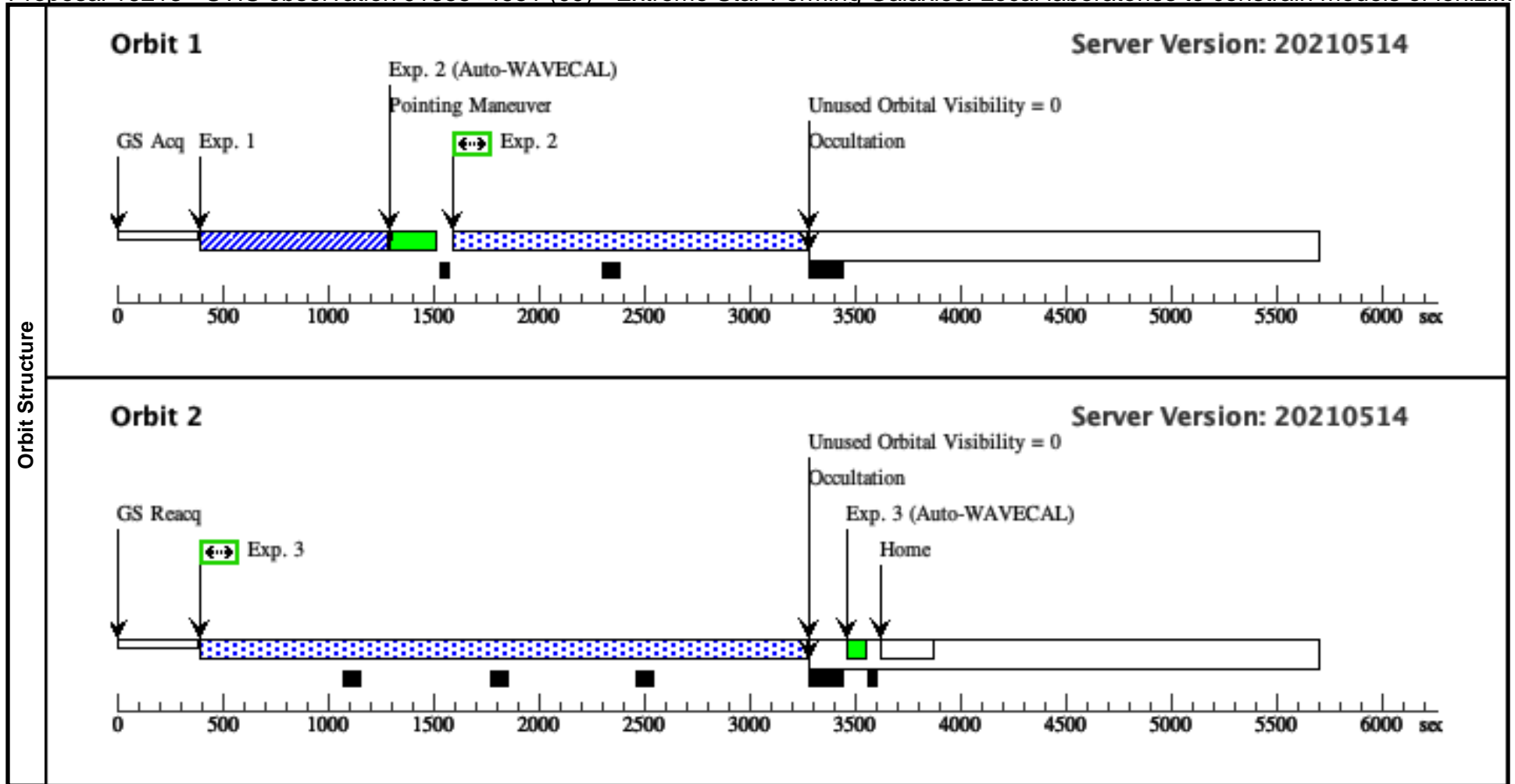
Visit	Proposal 16213, STIS observation J1205+4551 (08), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: (none)									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
		(3)	J1205+4551	RA: 12 05 3.5500 (181.2647917d) Dec: +45 51 50.94 (45.86415d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.06540	V=19.74 FUV = 21.04, NUV = 20.58	Reference Frame: ICRS			
	<i>Comments:</i> Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition (STIS.ta.147 0840)	(3) J1205+4551	STIS/CCD, ACQ, F28X50LP	MIRROR				286 Secs (286 Secs)	
									[==>]	[1]
	2	Science Exp (STIS.sp.14 70890)	(3) J1205+4551	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (1163 Secs)	
								[==>1163.0 Secs]	[1]	
3	Science Exp (STIS.sp.14 70890)	(3) J1205+4551	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (2865 Secs)		
								[==>2865.0 Secs]	[2]	



Proposal 16213 - STIS observation J1355+4651 (09) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:30 GMT 2021

Visit	Proposal 16213, STIS observation J1355+4651 (09), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: (none)																																								
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(4)</td> <td>J1355+4651</td> <td> RA: 13 55 25.6600 (208.8569167d) Dec: +46 51 51.34 (46.86426d) Equinox: J2000 </td> <td>Redshift: 0.02810</td> <td> V=19.22 FUV = 20.54, NUV = 20.66 </td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:</i> Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO</p>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(4)	J1355+4651	RA: 13 55 25.6600 (208.8569167d) Dec: +46 51 51.34 (46.86426d) Equinox: J2000	Redshift: 0.02810	V=19.22 FUV = 20.54, NUV = 20.66	Reference Frame: ICRS																												
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous																																				
(4)	J1355+4651	RA: 13 55 25.6600 (208.8569167d) Dec: +46 51 51.34 (46.86426d) Equinox: J2000	Redshift: 0.02810	V=19.22 FUV = 20.54, NUV = 20.66	Reference Frame: ICRS																																				
Exposures	<table border="1"> <thead> <tr> <th>#</th> <th>Label (ETC Run)</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time (Total)/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Acquisition (STIS.ta.147 0841)</td> <td>(4) J1355+4651</td> <td>STIS/CCD, ACQ, F28X50LP</td> <td>MIRROR</td> <td></td> <td></td> <td></td> <td>166 Secs (166 Secs) [==>]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>Science Exp (STIS.sp.14 70897)</td> <td>(4) J1355+4651</td> <td>STIS/NUV-MAMA, TIME-TAG, 52X0.5</td> <td>G230L 2376 A</td> <td>BUFFER-TIME=69 0</td> <td></td> <td></td> <td>2500 Secs (1643 Secs) [==>1643.0 Secs]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>Science Exp (STIS.sp.14 70897)</td> <td>(4) J1355+4651</td> <td>STIS/NUV-MAMA, TIME-TAG, 52X0.5</td> <td>G230L 2376 A</td> <td>BUFFER-TIME=69 0</td> <td></td> <td></td> <td>2500 Secs (2865 Secs) [==>2865.0 Secs]</td> <td>[2]</td> </tr> </tbody> </table>	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	1	Acquisition (STIS.ta.147 0841)	(4) J1355+4651	STIS/CCD, ACQ, F28X50LP	MIRROR				166 Secs (166 Secs) [==>]	[1]	2	Science Exp (STIS.sp.14 70897)	(4) J1355+4651	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (1643 Secs) [==>1643.0 Secs]	[1]	3	Science Exp (STIS.sp.14 70897)	(4) J1355+4651	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (2865 Secs) [==>2865.0 Secs]	[2]
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit																																
1	Acquisition (STIS.ta.147 0841)	(4) J1355+4651	STIS/CCD, ACQ, F28X50LP	MIRROR				166 Secs (166 Secs) [==>]	[1]																																
2	Science Exp (STIS.sp.14 70897)	(4) J1355+4651	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (1643 Secs) [==>1643.0 Secs]	[1]																																
3	Science Exp (STIS.sp.14 70897)	(4) J1355+4651	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2500 Secs (2865 Secs) [==>2865.0 Secs]	[2]																																



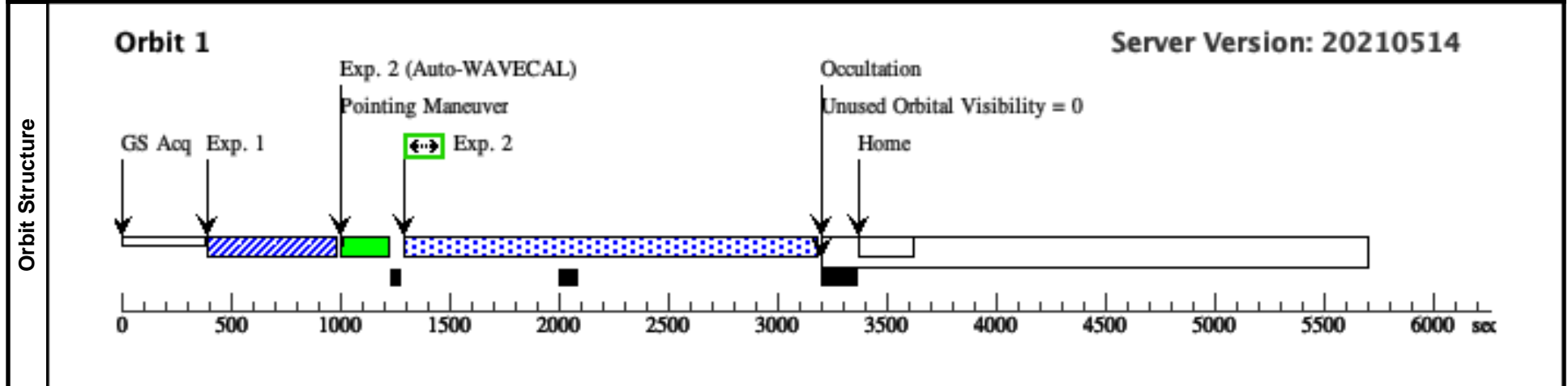
Proposal 16213 - STIS observation J1608+3528 (10) - Extreme Star-Forming Galaxies: Local laboratories to constrain models of ionizi...

Tue Sep 28 15:00:30 GMT 2021

Visit	Proposal 16213, STIS observation J1608+3528 (10), failed				
	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)	J1608+3528	RA: 16 08 10.3600 (242.0431667d) Dec: +35 28 9.34 (35.46926d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.03274	V=18.59 FUV = 20.10, NUV = 20.40	Reference Frame: ICRS
	<i>Comments:</i>					
	Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO					

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition (STIS.ta.147 0842)	(5) J1608+3528	STIS/CCD, ACQ, F28X50LP	MIRROR				92 Secs (92 Secs) [=>]	[1]
	2	Science Exp (STIS.sp.14 70898)	(5) J1608+3528	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2000 Secs (1854 Secs) [=>1854.0 Secs]	[1]



Visit	Proposal 16213, STIS observation J1608+3528 (50), scheduling Diagnostic Status: No Diagnostics Scientific Instruments: STIS/NUV-MAMA, STIS/CCD Special Requirements: (none) <i>Comments: This is a duplicate of failed visit 10 (impacted by HST safing)</i>				

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(5)	J1608+3528	RA: 16 08 10.3600 (242.0431667d) Dec: +35 28 9.34 (35.46926d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 0.03274	V=18.59 FUV = 20.10, NUV = 20.40	Reference Frame: ICRS
<i>Comments:</i> Category=GALAXY Description=[DWARF COMPACT, EMISSION LINE NEBULA, STARBURST] Extended=NO						

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquisition (STIS.ta.147 0842)	(5) J1608+3528	STIS/CCD, ACQ, F28X50LP	MIRROR				92 Secs (92 Secs) [=>]	[1]
2	Science Exp (STIS.sp.14 70898)	(5) J1608+3528	STIS/NUV-MAMA, TIME-TAG, 52X0.5	G230L 2376 A	BUFFER-TIME=69 0			2000 Secs (1854 Secs) [=>1854.0 Secs]	[1]	

