



17116 - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Cycle: 30, 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) TON116	COS/FUV COS/NUV	2	26-Sep-2022 13:03:06.0	yes
02	(1) TON116	COS/FUV COS/NUV	2	26-Sep-2022 13:03:08.0	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>
03	(2) PG1246+586	COS/FUV COS/NUV	2	26-Sep-2022 13:03:09.0	yes
04	(2) PG1246+586	COS/FUV COS/NUV	2	26-Sep-2022 13:03:11.0	yes
05	(3) PG1437+398	COS/FUV COS/NUV	2	26-Sep-2022 13:03:12.0	yes
06	(4) 1H1515+660	COS/FUV COS/NUV	3	26-Sep-2022 13:03:13.0	yes
07	(4) 1H1515+660	COS/FUV COS/NUV	3	26-Sep-2022 13:03:15.0	yes
08	(5) RBS76	COS/FUV COS/NUV	3	26-Sep-2022 13:03:17.0	yes
09	(5) RBS76	COS/FUV COS/NUV	3	26-Sep-2022 13:03:20.0	yes
10	(6) 3C279	COS/FUV COS/NUV	2	26-Sep-2022 13:03:21.0	yes
11	(6) 3C279	COS/FUV COS/NUV	3	26-Sep-2022 13:03:23.0	yes
12	(7) 1H0414+009	COS/FUV COS/NUV	3	26-Sep-2022 13:03:25.0	yes

30 Total Orbits Used

ABSTRACT

Less than one-third of the baryons in a galaxy are in the stars and gaseous disk, with the rest being in a gaseous halo region that may extend to or beyond R_{200} . According to models, this is because feedback from stars heats the halo gas, shaping galaxy evolution and regulating star formation today. Most of the extended gaseous mass is near the virial temperature, $\sim 10^{6.3}$ K for L^* galaxies, and this gas is measured by the O VII and O VIII lines in the X-rays. The other essential halo gas property is the net cooling rate, measured from the O VI line, which carries the cooling as it passes through the $\sim 10^{5.5}$ K range. These lines define the most important aspects of halo gas models -- a cooling flow with feedback. The X-ray

Proposal 17116 (STScI Edit Number: 0, Created: Monday, September 26, 2022 at 12:03:25 PM Eastern Standard Time) - Overview

lines in external galaxies will be measured with future X-ray observatories, such as Athena or Arcus, while only HST-COS can measure the O VI line. This proposed legacy program will nearly triple the redshift space for which all three lines will be observed along the same sightlines, producing about 30 absorption systems. This will provide enough statistical power to determine halo properties, including the feedback efficiency, metallicity, and departures from steady state.

OBSERVING DESCRIPTION

This program is driven by the goal of detecting all three high ionization oxygen ions, so we consider the redshift space over which one could obtain O VI as well as the X-ray lines. This places a lower redshift limit of 0.14 (the exact value depends on the settings used for the G130M on COS), and excludes the redshift range $0.170 < z < 0.186$ due to the presence of the wide Galactic Ly α absorption feature.

For exposure times, we need to detect O VI lines with a limiting value of $\log N(\text{OVI}) \geq 13.2$, as indicated in the model (Fig. 2); this ensures that the frequency in redshift space is greater than the projected O VII line. For the deepest X-ray observations that would likely be observed with future missions, the equivalent width of O VII is 1 mÅ, which would have a about 14 O VII absorption systems per unit redshift of search space. That frequency of detection for O VI is exceeded when $\text{EW}(\text{O VI}) < 100 \text{ mÅ}$ or $1.2 \times 10^{14} \text{ cm}^2$ (all EW are rest frame values [3]). This is easily met with our target $N(\text{OVI})$ value.

These O VI lines have a characteristic line width (FWHM) of 60 km s $^{-1}$ (Doppler $b \approx 30 \text{ km s}^{-1}$)[3], so they are resolved at COS G130M or G160M resolution. From experience with such spectra, a SNR = 20 leads to a 4 σ detection for $\log N(\text{OVI}) = 13.2$, which motivates the observing times. Our goal here is to answer the question “is there O VI absorption at the redshift of an O VII absorption system?”, rather than performing the most sensitive blind search for O VI absorption features. This makes it easier to achieve our observational goal.

The observations (Table 1) are in the far UV band (fuv; 1150-2000 Å), so to determine the observing time, we use the Galex fuv magnitudes (contamination from the host galaxy is insignificant at these z_{AGN}). For one case, 1RXS J003334.6-192130, we use the Swift UVMW2 magnitude of 15.6, which agrees with the power-law extrapolation between the optical and X-ray bands for this BL Lac object. Some observations only require coverage to 1400 Å, so we use the G130M (Table 1); the allowed central wavelength of 1291 Å for the G130M will be used. All observing times were obtained with the COS ETC and fractional orbits rounded up to full orbits. We will use the default lifetime positions.

One target, 3C 279, is a well-known UV-bright AGN that was observed with the FOS (resolution of 1250Å)[21] but never with COS. Therefore, we propose to reobserve it with COS, which will provide more than an order of magnitude improvement in spectral resolution, and at a sensitivity level similar to other surveys. At its redshift ($z = 0.5362$), the O VI line could occur up to $\lambda = 1585 \text{ Å}$, so we propose to observe it in both the G130M and the G160M. The modest observing time needed for this observation justifies the large improvements.

The SNR of the continuum in Table 1 is given at 1250 Å and has a median value of 18. When making the $1+z$ correction, the effective continuum

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SNR = 22 in the O VI rest frame. The declining sensitivity (SNR) in the G130M band is compensated for by the $1+z$ increase in the equivalent width of the line in the observer frame. The UV figure of merit for a single object is $|*|z(\text{OVI search space})/\text{exposure}$, and the objects are ordered in Table 1 by this descending

schedule is that the COS observations would be obtained in 2023, followed by analysis and publication (2024-25). Then we would carry out ground-based observations to identify the hosts of the absorption (2025-26), followed by the preparation of the initial Arcus target lists (2027). We cannot wait several years for the COS observations $|*|$ they need to be taken soon. figure of merit. We do not request a proprietary period.

This is an excellent time to conduct these observations, as much work is needed before the soonest launch date of an X-ray absorption mission, that of Arcus in 2027-28. The

For each G130M exposure both side A and side B data are needed, and only $\text{cenwave}=1291$ is allowed, limiting the choice to FP-POS=3 and 4. In each orbit for the first half FP-POS is set to 3, for the second half it is set to 4.

For G160M exposures four settings are used, which together remove the gap in wavelength coverage.

Each orbit has two FP-POS settings, which is allowed because the S/N ratio in the exposure is <10 .

Splitting up exposures further to use four FP-POS settings would lower the S/N ratio in individual exposures more and make combining them more difficult.

For the first half of orbit 1, $\text{cenwave}=1600$, FP-POS=3 covers 1410-1580 and 1601-1770

For the second half of orbit 1, $\text{cenwave}=1600$, FP-POS=4 covers 1407-1576 and 1598-1764

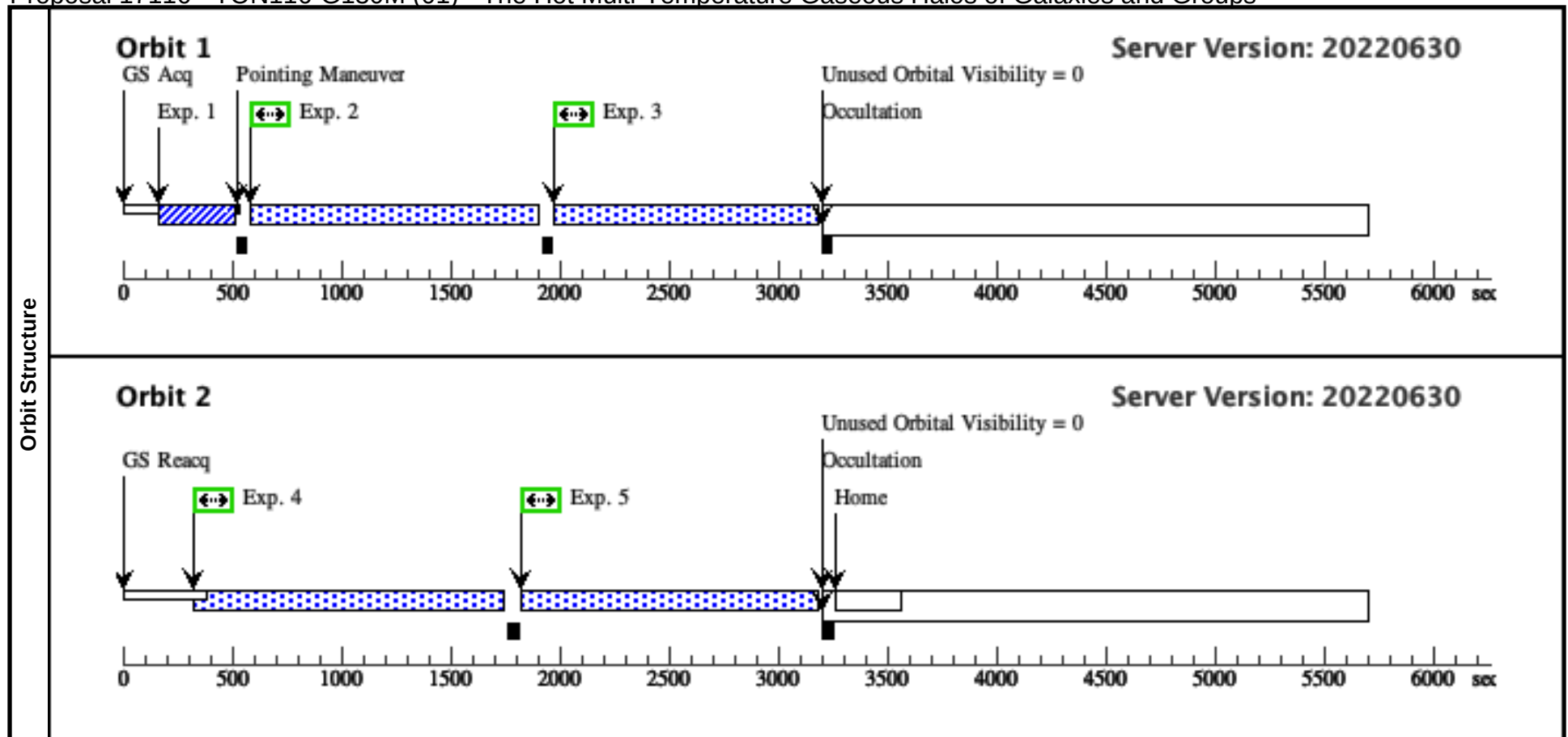
For the first half of orbit 2, $\text{cenwave}=1623$, FP-POS=1 covers 1441-1610 and 1633-1799

For the second half of orbit 2, $\text{cenwave}=1623$, FP-POS=2 covers 1438-1608 and 1629-1795

For each individual exposure an estimated S/N is given in the notes, using an exposure time of 1000 sec (actual exposure times are similar).

Proposal 17116 - TON116-G130M (01) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, TON116-G130M (01), implementation										Mon Sep 26 17:03:25 GMT 2022	
	Diagnostic Status: Warning											
	Scientific Instruments: COS/FUV, COS/NUV											
	Special Requirements: (none)											
Diagnostics	(TON116-G130M (01)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.											
	(TON116-G130M (01)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS											
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous						
	(1)	TON116	RA: 12 43 12.7440 (190.8031000d) Dec: +36 27 43.65 (36.46213d) Equinox: J2000	Redshift: 1.18207	V=16.0+/-1 Galex fuv = 17.4	Reference Frame: ICRS						
Comments: Category=GALAXY Description=[BL LAC] Extended=NO												
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit	
	1	TON116-G1 30M-ACQ (COS.ta.182 3756)	(1) TON116	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs (30 Secs)			
										[==>]	[1]	
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 17.4, F=5.9E-15 Count rate 36/sec											
	2	TON116-G1 30M-1 (COS.sp.181 5651)	(1) TON116	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00				1155 Secs (1155 Secs)		
										[==>]	[1]	
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 449/sec S/N ~7.0											
	3	TON116-G1 30M-2 (COS.sp.181 5651)	(1) TON116	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00				1155 Secs (1155 Secs)		
										[==>]	[1]	
	Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 449/sec S/N ~7.0											
	4	TON116-G1 30M-3 (COS.sp.181 5651)	(1) TON116	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00				1305 Secs (1305 Secs)		
									[==>]	[2]		
Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 449/sec S/N ~7.0												
5	TON116-G1 30M-4 (COS.sp.181 5651)	(1) TON116	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00				1305 Secs (1305 Secs)			
									[==>]	[2]		
Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 449/sec S/N ~7.0												

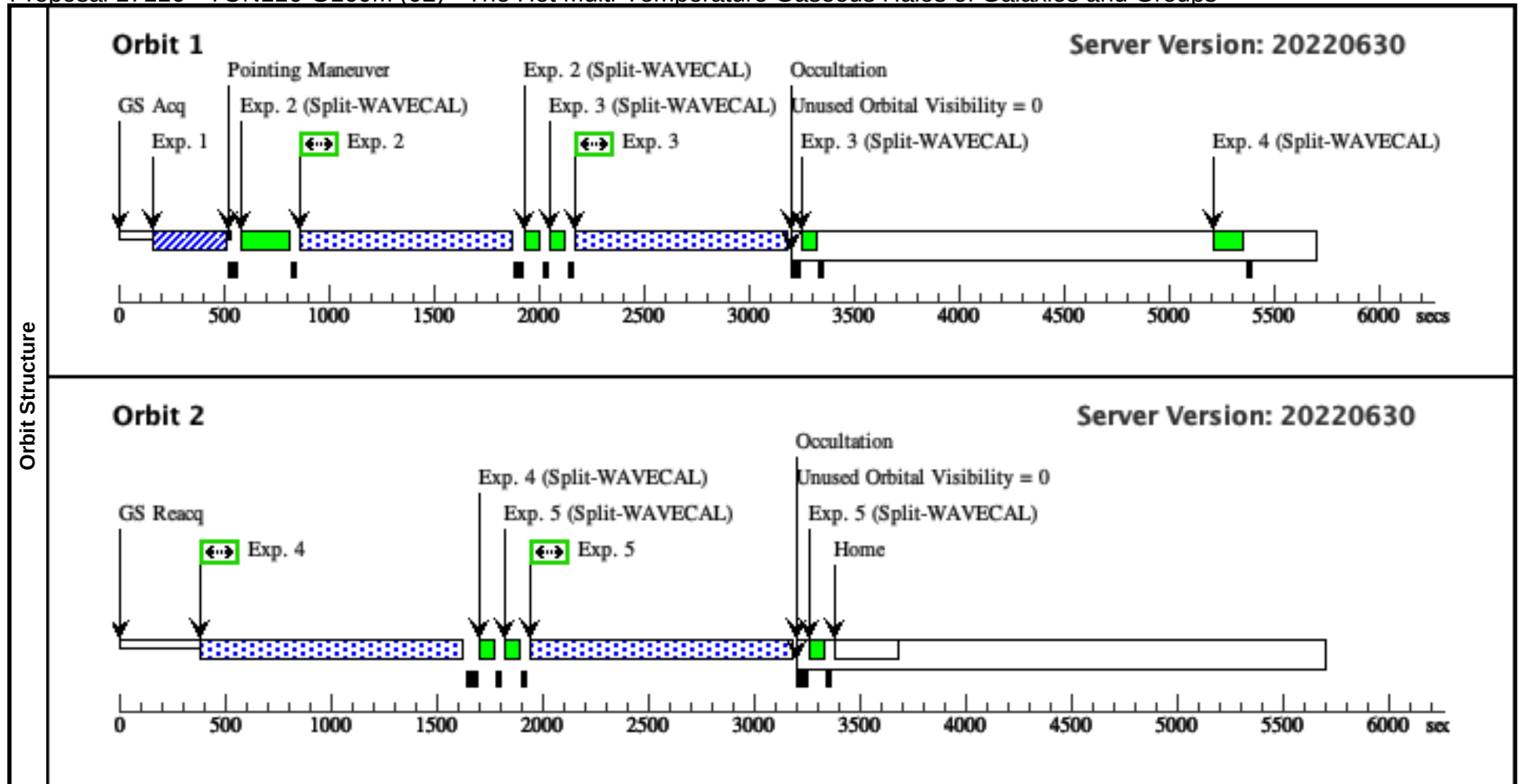


Proposal 17116 - TON116-G160M (02) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, TON116-G160M (02), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(TON116-G160M (02)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	TON116	RA: 12 43 12.7440 (190.8031000d)	Redshift: 1.18207	V=16.0+/-1	Reference Frame: ICRS
			Dec: +36 27 43.65 (36.46213d)		Galex fuv = 17.4	
			Equinox: J2000			
		Comments: Category=GALAXY Description=[BL LAC] Extended=NO				

Proposal 17116 - TON116-G160M (02) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	TON116-G1 60M-ACQ (COS.ta.182 3756)	(1) TON116	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs (30 Secs) [==>]	[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 17.4, F=5.9E-15 Count rate 36/sec									
	2	TON116-G1 60M-1 (COS.sp.181 5659)	(1) TON116	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			956 Secs (956 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 1 total count rate 171/sec S/N ~5.5									
	3	TON116-G1 60M-2 (COS.sp.181 5659)	(1) TON116	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			957 Secs (957 Secs) [==>]	[1]
Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 1 total count rate 171/sec S/N ~5.5										
4	TON116-G1 60M-3 (COS.sp.181 5659)	(1) TON116	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=35 00			1188 Secs (1188 Secs) [==>]	[2]	
Comments: Exposure with FP-POS=1, cenwave 1623, cover 1441-1610 and 1633-1799 first half of orbit 2 total count rate 171/sec S/N ~5.5										
5	TON116-G1 60M-4 (COS.sp.181 5659)	(1) TON116	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=35 00			1189 Secs (1189 Secs) [==>]	[2]	
Comments: Exposure with FP-POS=2, cenwave 1623, cover 1438-1608 and 1629-1795 second half of orbit 2 total count rate 171/sec S/N ~5.5										

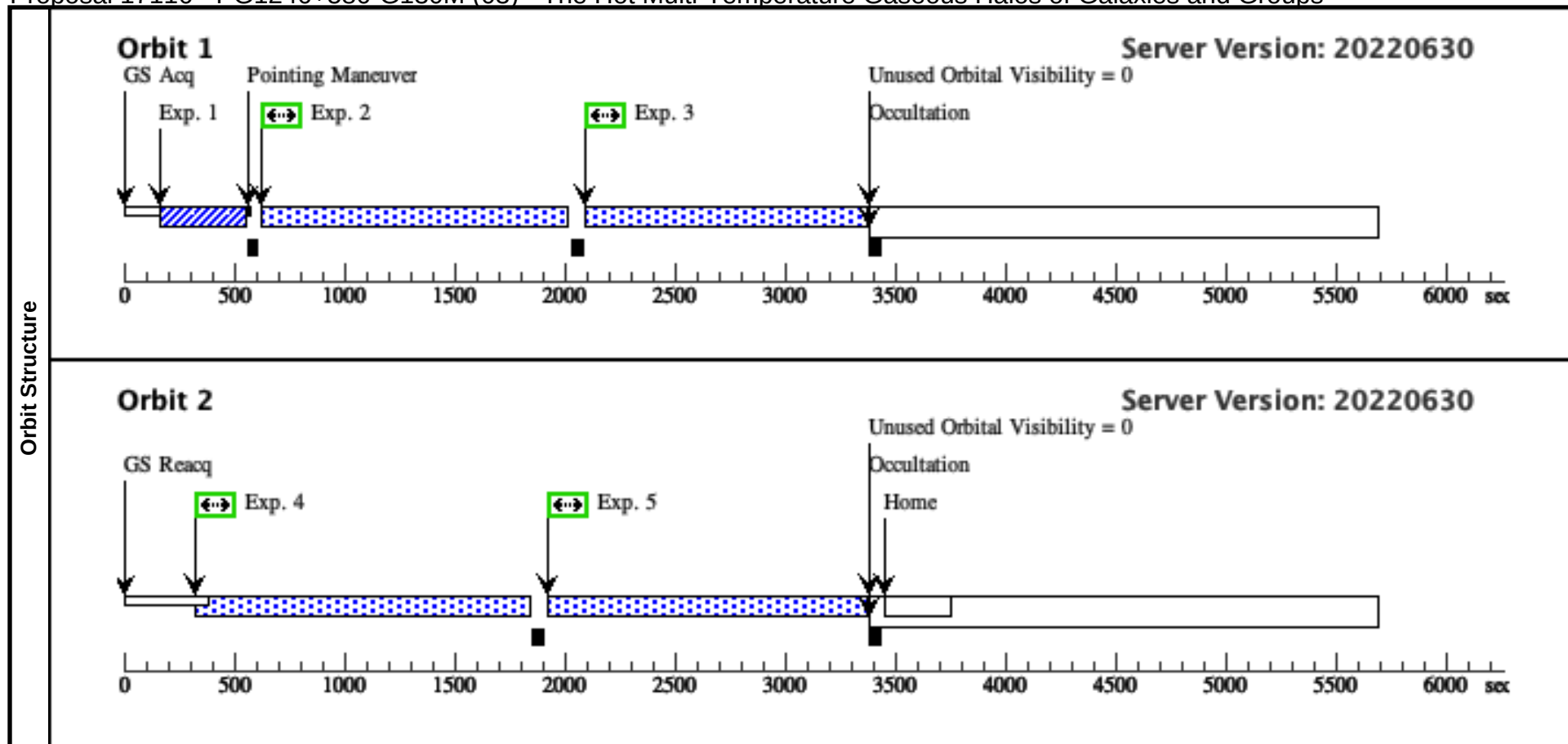


Proposal 17116 - PG1246+586-G130M (03) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, PG1246+586-G130M (03), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(PG1246+586-G130M (03)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(PG1246+586-G130M (03)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	PG1246+586	RA: 12 48 18.7800 (192.0782500d)	Redshift: 0.8474	V=15.5+/-0.3	Reference Frame: ICRS
			Dec: +58 20 28.70 (58.34131d)		fuv = 17.7	
			Equinox: J2000			
	Comments: Category=GALAXY Description=[BL LAC] Extended=NO					

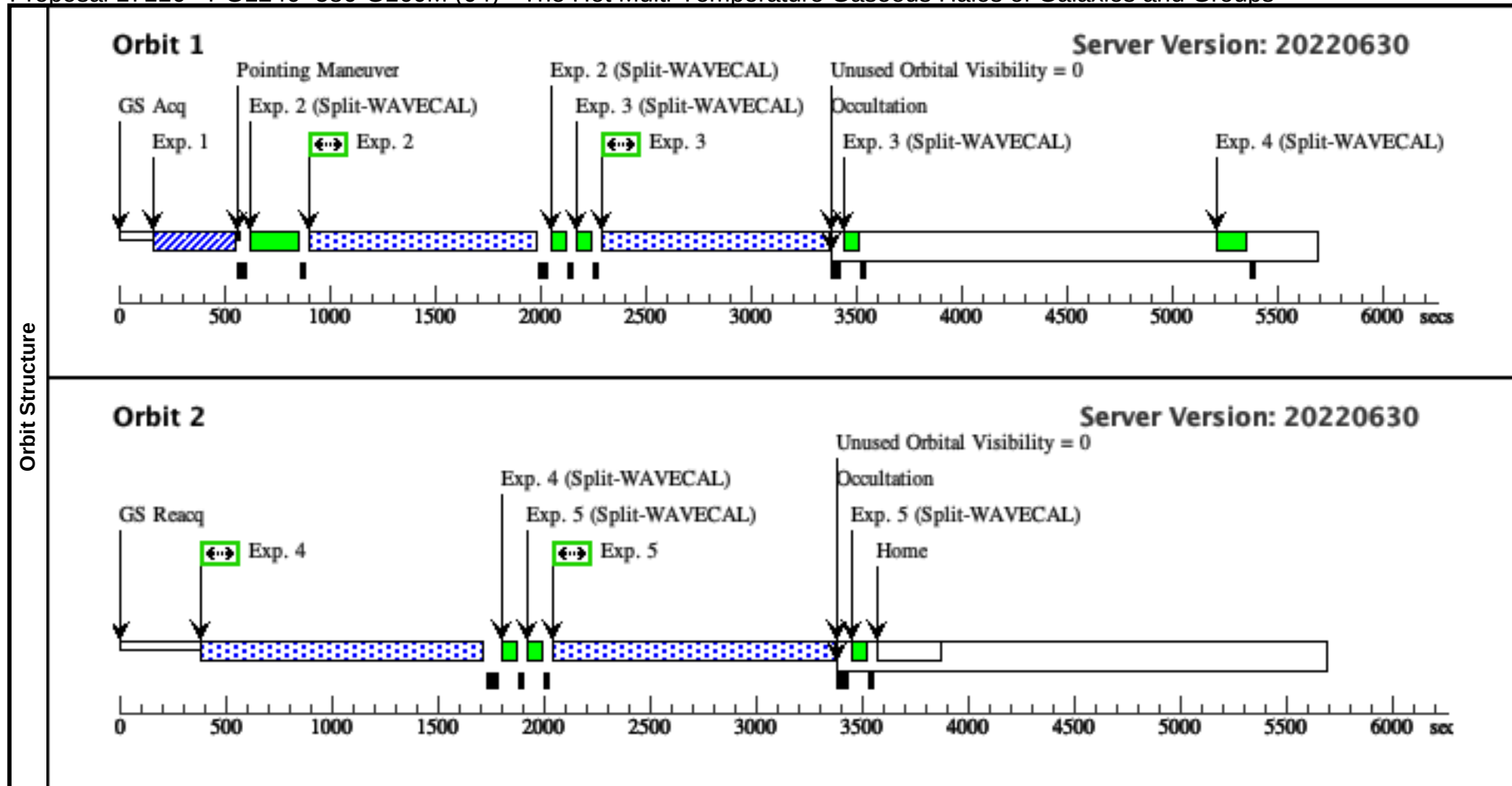
Proposal 17116 - PG1246+586-G130M (03) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	PG1246+58 6-G130M-A CQ (COS.ta.182 3757)	(2) PG1246+586	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) [==>]	[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 17.7. F=3.1E-15 Count rate 19/sec									
	2	PG1246+58 6-G130M-1 (COS.sp.181 5652)	(2) PG1246+586	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1224 Secs (1224 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 367/sec S/N ~5.1									
	3	PG1246+58 6-G130M-2 (COS.sp.181 5652)	(2) PG1246+586	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1225 Secs (1225 Secs) [==>]	[1]
Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 367/sec S/N ~5.1										
	4	PG1246+58 6-G130M-3 (COS.sp.181 5652)	(2) PG1246+586	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1399 Secs (1399 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 367/sec S/N ~5.1									
	5	PG1246+58 6-G130M-4 (COS.sp.181 5652)	(2) PG1246+586	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1400 Secs (1400 Secs) [==>]	[2]
Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 367/sec S/N ~5.1										



Proposal 17116 - PG1246+586-G160M (04) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, PG1246+586-G160M (04), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnosics	(PG1246+586-G160M (04)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(2)	PG1246+586	RA: 12 48 18.7800 (192.0782500d)	Redshift: 0.8474	V=15.5+/-0.3	Reference Frame: ICRS
			Dec: +58 20 28.70 (58.34131d)		fuv = 17.7	
			Equinox: J2000			
	Comments: Category=GALAXY Description=[BL LAC] Extended=NO					

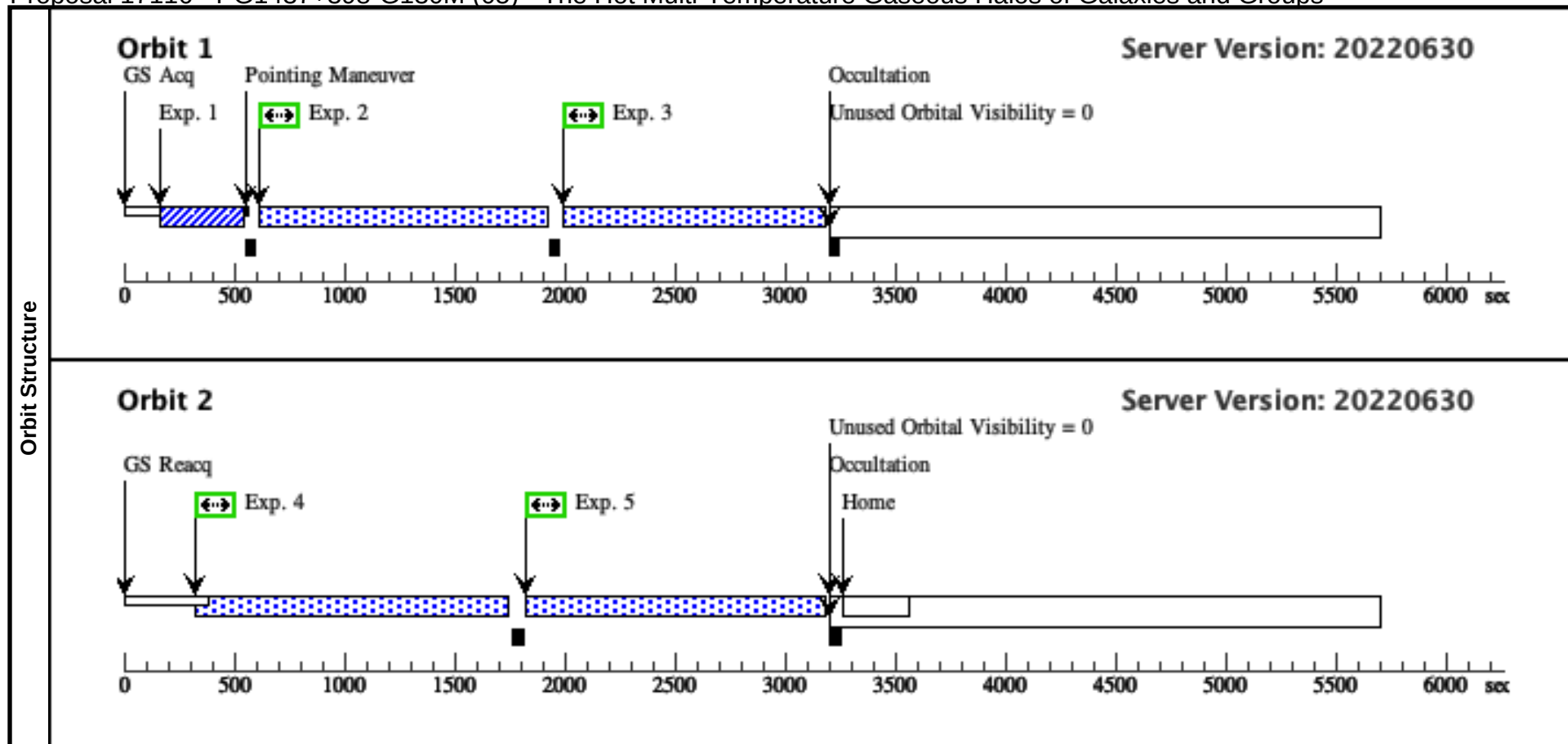


Proposal 17116 - PG1437+398-G130M (05) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, PG1437+398-G130M (05), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(PG1437+398-G130M (05)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(PG1437+398-G130M (05)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	PG1437+398	RA: 14 39 17.4750 (219.8228125d)	Redshift: 0.343663	V=16.9+/-0.2	Reference Frame: ICRS
			Dec: +39 32 42.97 (39.54527d)		fuv = 17.8	
			Equinox: J2000			
	Comments: Category=GALAXY Description=[BL LAC] Extended=NO					

Proposal 17116 - PG1437+398-G130M (05) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	PG1437+39 8-G130M-A CQ (COS.ta.182 3758)	(3) PG1437+398	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				45 Secs (45 Secs) [==>]	[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 17.8. F=3.3E-15 Count rate 20/sec									
	2	PG1437+39 8-G130M-1 (COS.sp.181 5653)	(3) PG1437+398	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1140 Secs (1140 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 373/sec S/N ~5.2									
	3	PG1437+39 8-G130M-2 (COS.sp.181 5653)	(3) PG1437+398	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1140 Secs (1140 Secs) [==>]	[1]
Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 373/sec S/N ~5.2										
	4	PG1437+39 8-G130M-3 (COS.sp.181 5653)	(3) PG1437+398	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1305 Secs (1305 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 373/sec S/N ~5.2									
	5	PG1437+39 8-G130M-4 (COS.sp.181 5653)	(3) PG1437+398	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1305 Secs (1305 Secs) [==>]	[2]
Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 373/sec S/N ~5.2										

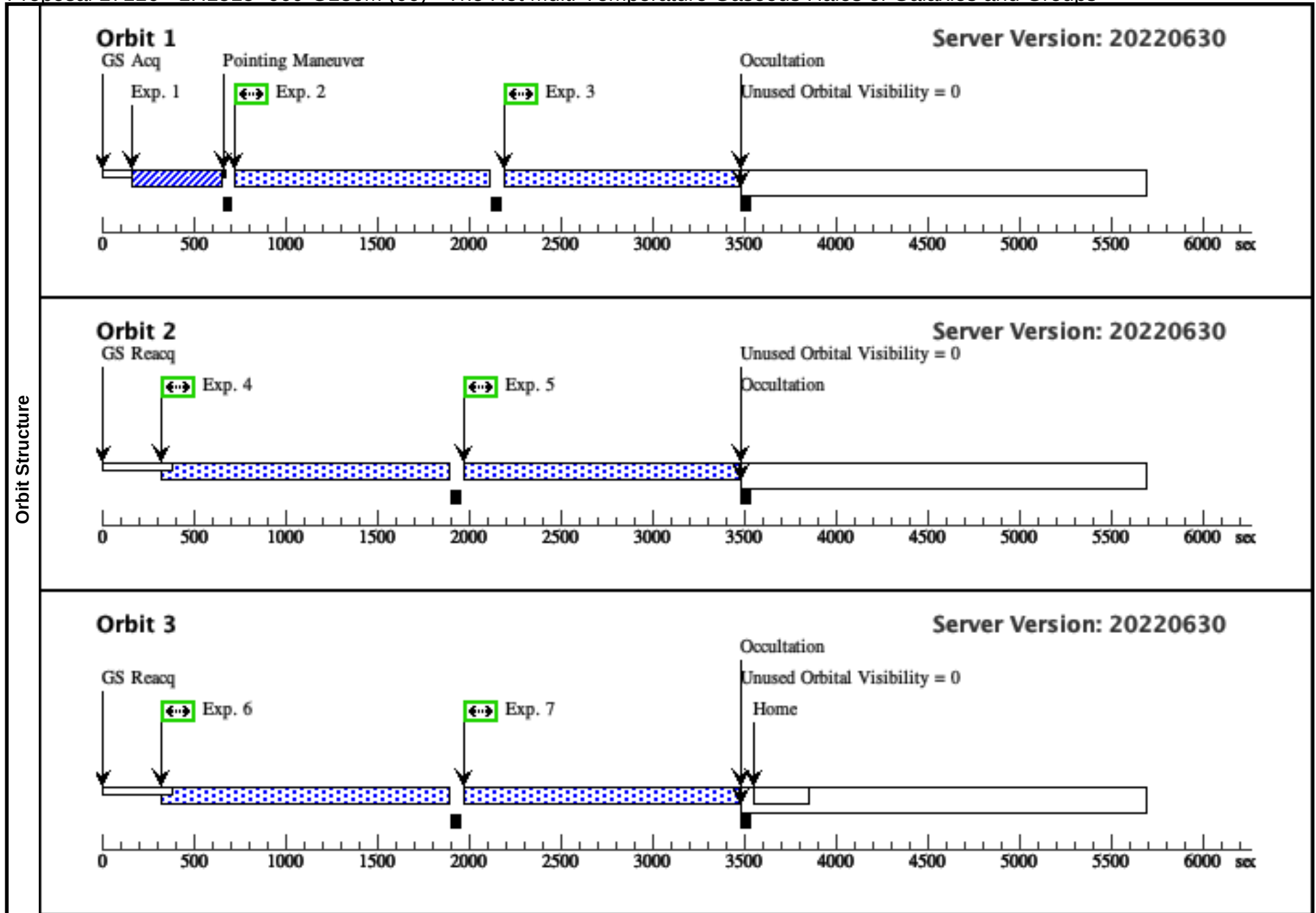


Proposal 17116 - 1H1515+660-G130M (06) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, 1H1515+660-G130M (06), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(1H1515+660-G130M (06)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(1H1515+660-G130M (06)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
	(1H1515+660-G130M (06)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(4)	1H1515+660	RA: 15 17 47.6000 (229.4483333d)		V=16.5+/-0.6	Reference Frame: ICRS
			Dec: +65 25 22.90 (65.42303d)		fuv = 18.5	
			Equinox: J2000			
		Comments: Category=GALAXY Description=[BL LAC] Extended=NO				

Proposal 17116 - 1H1515+660-G130M (06) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	1H1515+66 0-G130M-A CQ (COS.ta.182 3759)	(4) 1H1515+660	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				100 Secs (100 Secs)		
									[==>]		[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 18.5, F=1.8E-15 Count rate 11/sec										
	2	1H1515+66 0-G130M-1 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1223 Secs (1223 Secs)		
									[==>]		[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 329/sec S/N ~3.9										
	3	1H1515+66 0-G130M-2 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1223 Secs (1223 Secs)		
									[==>]		[1]
	Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 329/sec S/N ~3.9										
	4	1H1515+66 0-G130M-3 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1448 Secs (1448 Secs)		
									[==>]		[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 329/sec S/N ~3.9										
	5	1H1515+66 0-G130M-4 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1448 Secs (1448 Secs)		
									[==>]		[2]
	Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 329/sec S/N ~3.9										
	6	1H1515+66 0-G130M-5 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1448 Secs (1448 Secs)		
									[==>]		[3]
	Comments: Exposure with FP-POS=3, first half of orbit 3 total count rate 329/sec S/N ~3.9										
	7	1H1515+66 0-G130M-6 (COS.sp.181 5654)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1448 Secs (1448 Secs)		
									[==>]		[3]
	Comments: Exposure with FP-POS=4, second half of orbit 3 total count rate 329/sec S/N ~3.9										

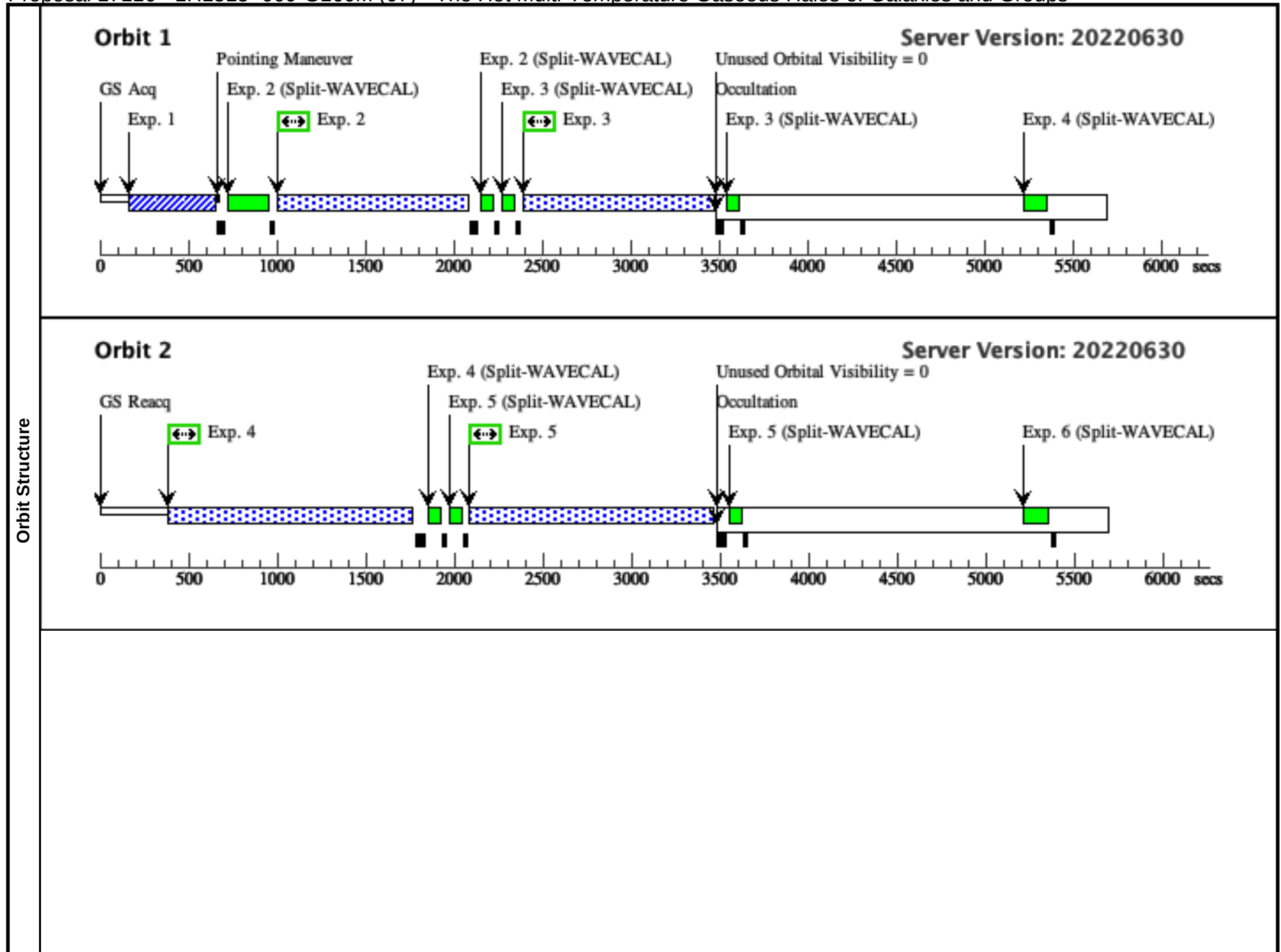


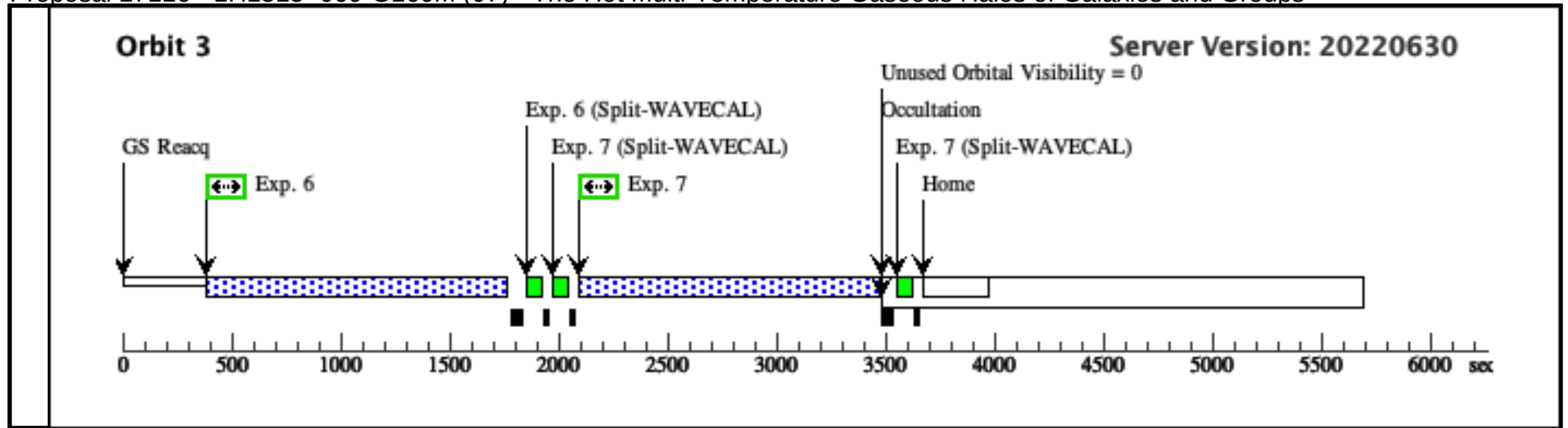
Proposal 17116 - 1H1515+660-G160M (07) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, 1H1515+660-G160M (07), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(1H1515+660-G160M (07)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(1H1515+660-G160M (07)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(4)	1H1515+660	RA: 15 17 47.6000 (229.4483333d)		V=16.5+/-0.6	Reference Frame: ICRS
			Dec: +65 25 22.90 (65.42303d)		fuv = 18.5	
			Equinox: J2000			
	Comments: Category=GALAXY Description=[BL LAC] Extended=NO					

Proposal 17116 - 1H1515+660-G160M (07) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	1H1515+66 0-G160M-A CQ (COS.ta.182 3759)	(4) 1H1515+660	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				100 Secs (100 Secs) [==>]	[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 18.5, F=1.8E-15 Count rate 11/sec									
	2	1H1515+66 0-G160M-1 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			1030 Secs (1030 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 1 total count rate 102/sec S/N ~3.0									
	3	1H1515+66 0-G160M-2 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			1029 Secs (1029 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 1 total count rate 102/sec S/N ~3.0									
	4	1H1515+66 0-G160M-3 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			1331 Secs (1331 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 2 total count rate 102/sec S/N ~3.0									
	5	1H1515+66 0-G160M-4 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			1332 Secs (1332 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 2 total count rate 102/sec S/N ~3.0									
	6	1H1515+66 0-G160M-5 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=35 00			1332 Secs (1332 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=1, cenwave 1623, cover 1441-1610 and 1633-1799 first half of orbit 3 total count rate 102/sec S/N ~3.0									
	7	1H1515+66 0-G160M-6 (COS.sp.181 5662)	(4) 1H1515+660	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=35 00			1331 Secs (1331 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=2, cenwave 1623, cover 1438-1608 and 1629-1795 second half of orbit 3 total count rate 102/sec S/N ~3.0									



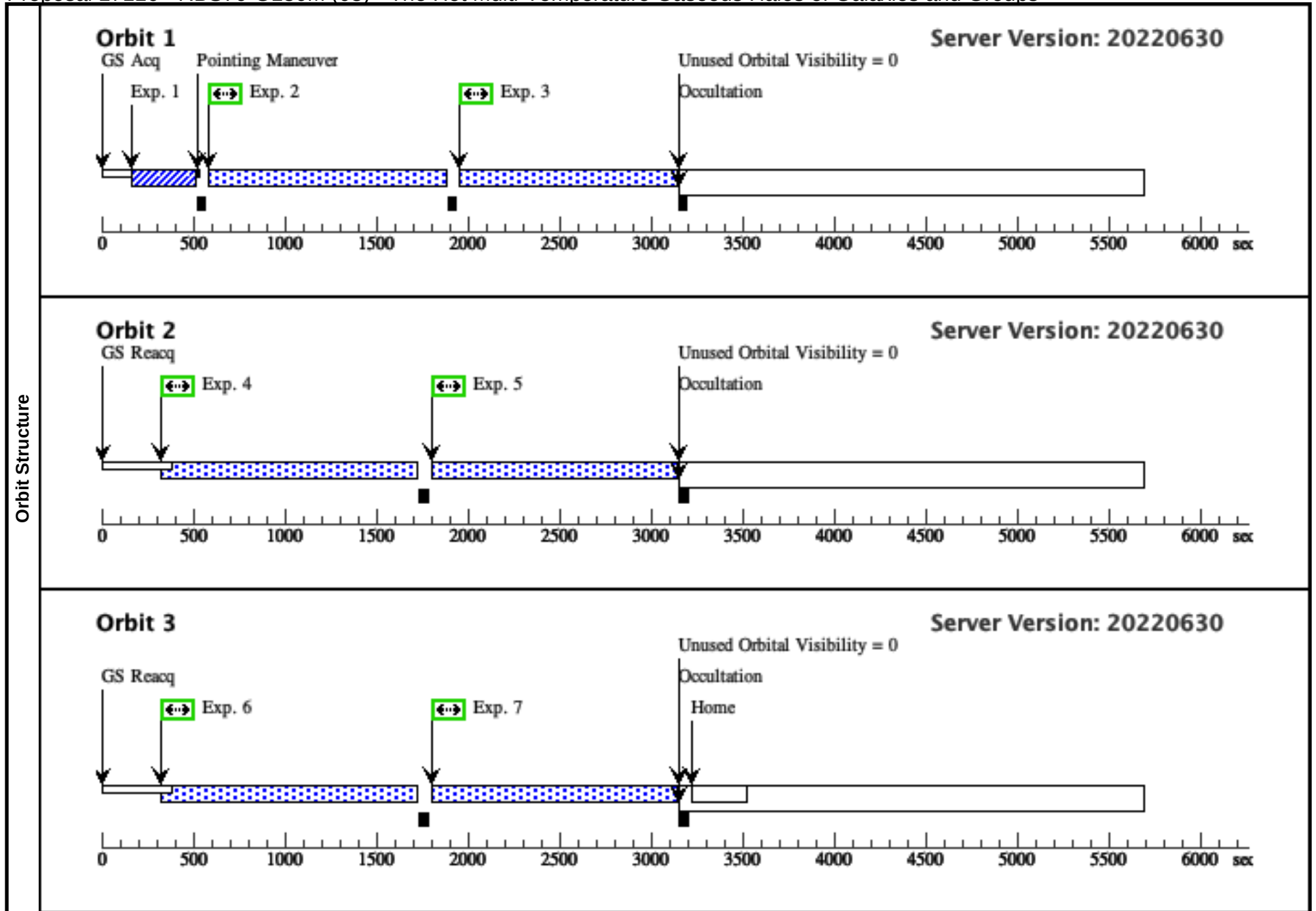


Proposal 17116 - RBS76-G130M (08) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, RBS76-G130M (08), implementation Mon Sep 26 17:03:26 GMT 2022				
	Diagnostic Status: Warning Scientific Instruments: COS/FUV, COS/NUV Special Requirements: (none)				
Diagnostics	(RBS76-G130M (08)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M. (RBS76-G130M (08)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS (RBS76-G130M (08)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(5)	RBS76	RA: 00 33 34.4000 (8.3933333d) Dec: -19 21 33.20 (-19.35922d) Equinox: J2000		V=16.3+/-0.7 Swift UVMW2=15.6
Fixed Targets	Comments: Category=GALAXY Description=[BL LAC] Extended=NO				
Fixed Targets	Reference Frame: ICRS				

Proposal 17116 - RBS76-G130M (08) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	RBS76-G13 0M-ACQ (COS.ta.182 3760)	(5) RBS76	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs (30 Secs) [==>]	[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 15.6. F=4.9E-15 Count rate 30/sec									
	2	RBS76-G13 0M-1 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1133 Secs (1133 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 499/sec S/N ~8.0									
	3	RBS76-G13 0M-2 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1133 Secs (1133 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 499/sec S/N ~8.0									
	4	RBS76-G13 0M-3 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1283 Secs (1283 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 499/sec S/N ~8.0									
	5	RBS76-G13 0M-4 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1283 Secs (1283 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 499/sec S/N ~8.0									
	6	RBS76-G13 0M-5 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1283 Secs (1283 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=3, first half of orbit 3 total count rate 499/sec S/N ~8.0									
	7	RBS76-G13 0M-6 (COS.sp.181 5655)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1283 Secs (1283 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=4, second half of orbit 3 total count rate 499/sec S/N ~8.0									

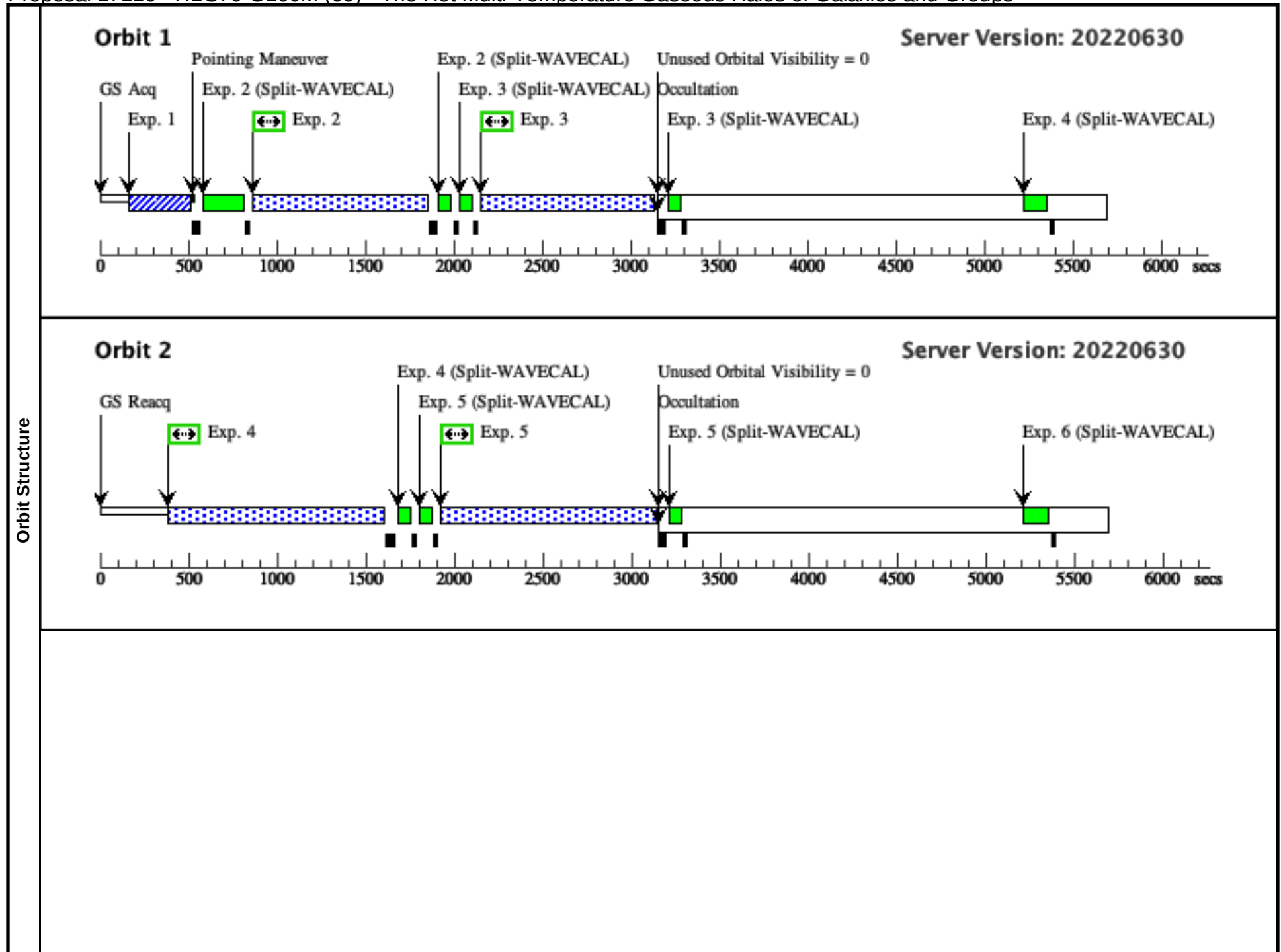


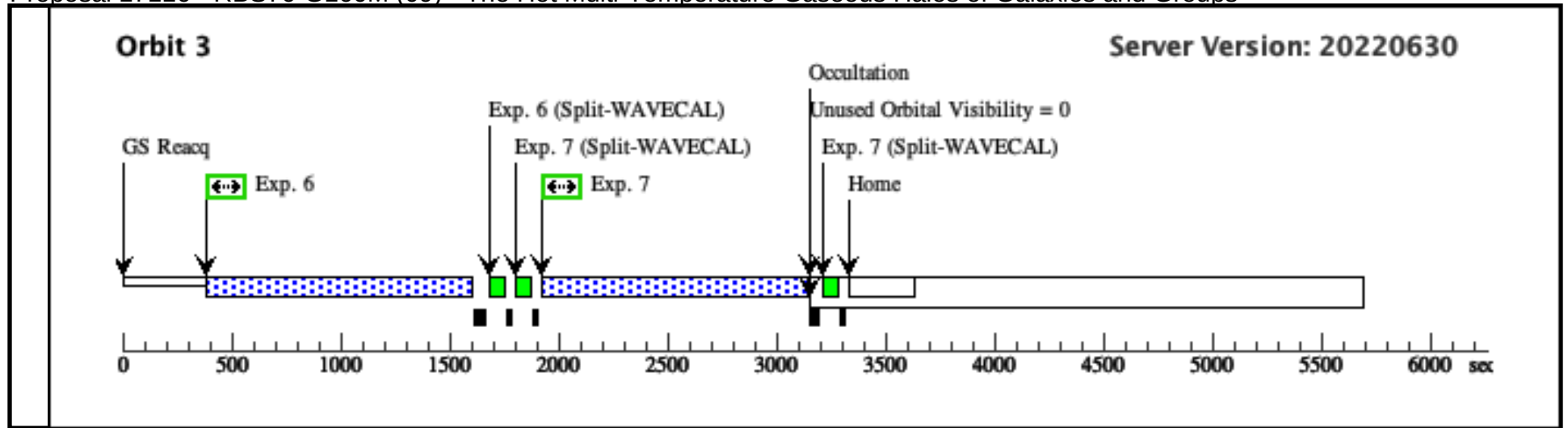
Proposal 17116 - RBS76-G160M (09) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, RBS76-G160M (09), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(RBS76-G160M (09)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(RBS76-G160M (09)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(5)	RBS76	RA: 00 33 34.4000 (8.3933333d)		V=16.3+/-0.7	Reference Frame: ICRS
			Dec: -19 21 33.20 (-19.35922d)		Swift UVMW2=15.6	
			Equinox: J2000			
		Comments: Category=GALAXY Description=[BL LAC] Extended=NO				

Proposal 17116 - RBS76-G160M (09) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

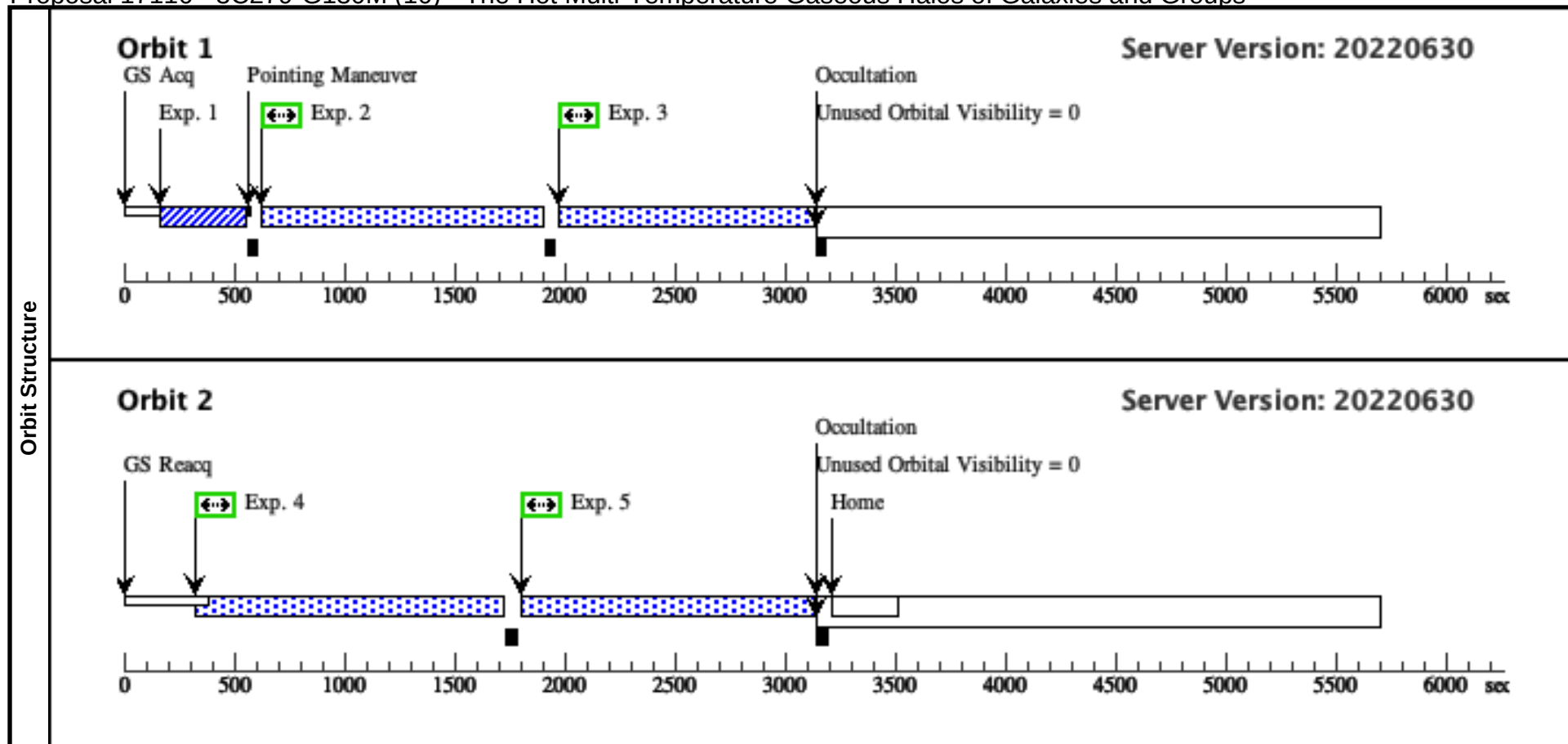
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	RBS76-G16 0M-ACQ (COS.sa.182 3760)	(5) RBS76	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs (30 Secs) [==>]	[1]
	Comments: NUV acquisition exposure 3xCOS ETC result for S/N=30; galex mag = 15.6. F=4.9E-15 Count rate 30/sec									
	2	RBS76-G16 0M-1 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			935 Secs (935 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 1 total count rate 200/sec S/N ~6.3									
	3	RBS76-G16 0M-2 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			934 Secs (934 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 1 total count rate 200/sec S/N ~6.3									
	4	RBS76-G16 0M-3 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			1167 Secs (1167 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 2 total count rate 200/sec S/N ~6.3									
	5	RBS76-G16 0M-4 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 2 total count rate 200/sec S/N ~6.3									
	6	RBS76-G16 0M-5 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=35 00			1167 Secs (1167 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=1, cenwave 1623, cover 1441-1610 and 1633-1799 first half of orbit 3 total count rate 200/sec S/N ~6.3									
	7	RBS76-G16 0M-6 (COS.sp.181 5663)	(5) RBS76	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=2, cenwave 1623, cover 1438-1608 and 1629-1795 second half of orbit 3 total count rate 200/sec S/N ~6.3									





Proposal 17116 - 3C279-G130M (10) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, 3C279-G130M (10), implementation										Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning										
	Scientific Instruments: COS/FUV, COS/NUV										
	Special Requirements: (none)										
Diagnostics	(3C279-G130M (10)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.										
	(3C279-G130M (10)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(6)	3C279	RA: 12 56 11.1660 (194.0465250d) Dec: -05 47 21.52 (-5.78931d) Equinox: J2000				V=16.8+/-1 FOS(1500) = 4E-15		Reference Frame: ICRS		
Comments: Category=GALAXY Description=[BL LAC] Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	3C279-G13 0M-ACQ (COS.sa.182 3761)	(6) 3C279	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) [==>]		[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 17.5, F=3.0E-15 Count rate18/sec										
	2	3C279-G13 0M-1 (COS.sp.181 5656)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1108 Secs (1108 Secs) [==>]		[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 393/sec S/N ~5.8										
	3	3C279-G13 0M-2 (COS.sp.181 5656)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1107 Secs (1107 Secs) [==>]		[1]
	Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 393/sec S/N ~5.8										
	4	3C279-G13 0M-3 (COS.sp.181 5656)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1278 Secs (1278 Secs) [==>]		[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 393/sec S/N ~5.8										
	5	3C279-G13 0M-4 (COS.sp.181 5656)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1277 Secs (1277 Secs) [==>]		[2]
	Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 393/sec S/N ~5.8										



Proposal 17116 - 3C279-G160M (11) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

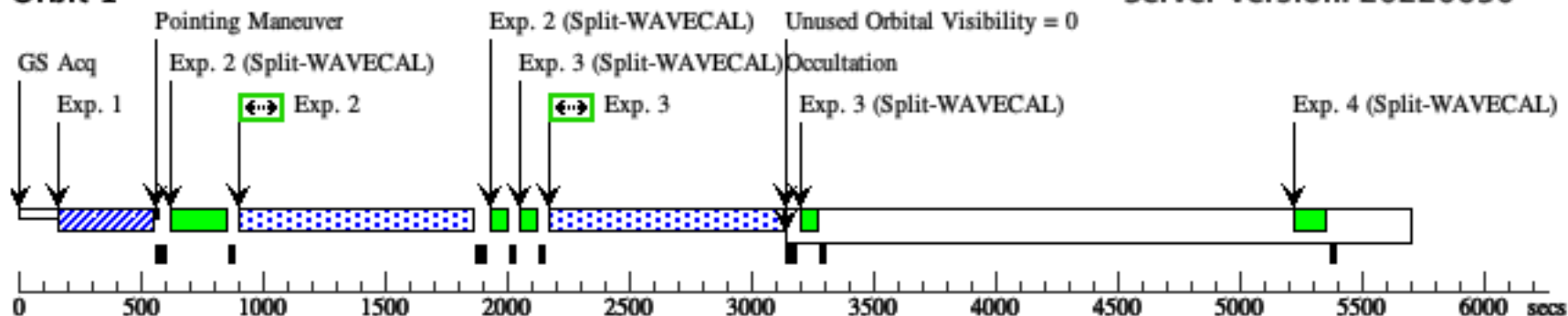
Visit	Proposal 17116, 3C279-G160M (11), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(3C279-G160M (11)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(3C279-G160M (11)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(6)	3C279	RA: 12 56 11.1660 (194.0465250d)		V=16.8+/-1	Reference Frame: ICRS
			Dec: -05 47 21.52 (-5.78931d)		FOS(1500) = 4E-15	
			Equinox: J2000			
	Comments: Category=GALAXY Description=[BL LAC] Extended=NO					

Proposal 17116 - 3C279-G160M (11) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	3C279-G16 0M-ACQ (COS.sa.182 3761)	(6) 3C279	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				50 Secs (50 Secs) [==>]	[1]
	Comments: NUV acquisition exposure 3xCOS ETC result for S/N=30; galex mag = 17.5, F=3.0E-15 Count rate 18/sec									
	2	3C279-G16 0M-1 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			909 Secs (909 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 1 total count rate 139/sec S/N ~4.5									
	3	3C279-G16 0M-2 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			909 Secs (909 Secs) [==>]	[1]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 1 total count rate 139/sec S/N ~4.5									
	4	3C279-G16 0M-3 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=3, cenwave 1600, cover 1410-1580 and 1601-1770 first half of orbit 2 total count rate 139/sec S/N ~4.5									
	5	3C279-G16 0M-4 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=4; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[2]
	Comments: Exposure with FP-POS=4, cenwave 1600, cover 1407-1576 and 1598-1764 second half of orbit 2 total count rate 139/sec S/N ~4.5									
	6	3C279-G16 0M-5 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=1; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=1, cenwave 1623, cover 1441-1610 and 1633-1799 first half of orbit 3 total count rate 139/sec S/N ~4.5									
	7	3C279-G16 0M-6 (COS.sp.181 5664)	(6) 3C279	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=2; BUFFER-TIME=35 00			1166 Secs (1166 Secs) [==>]	[3]
	Comments: Exposure with FP-POS=2, cenwave 1623, cover 1438-1608 and 1629-1795 second half of orbit 3 total count rate 139/sec S/N ~4.5									

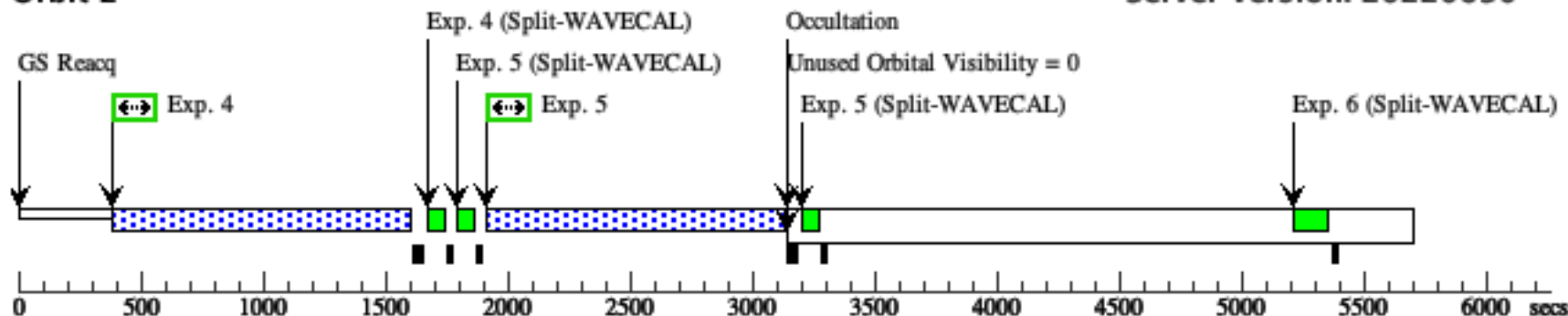
Orbit 1

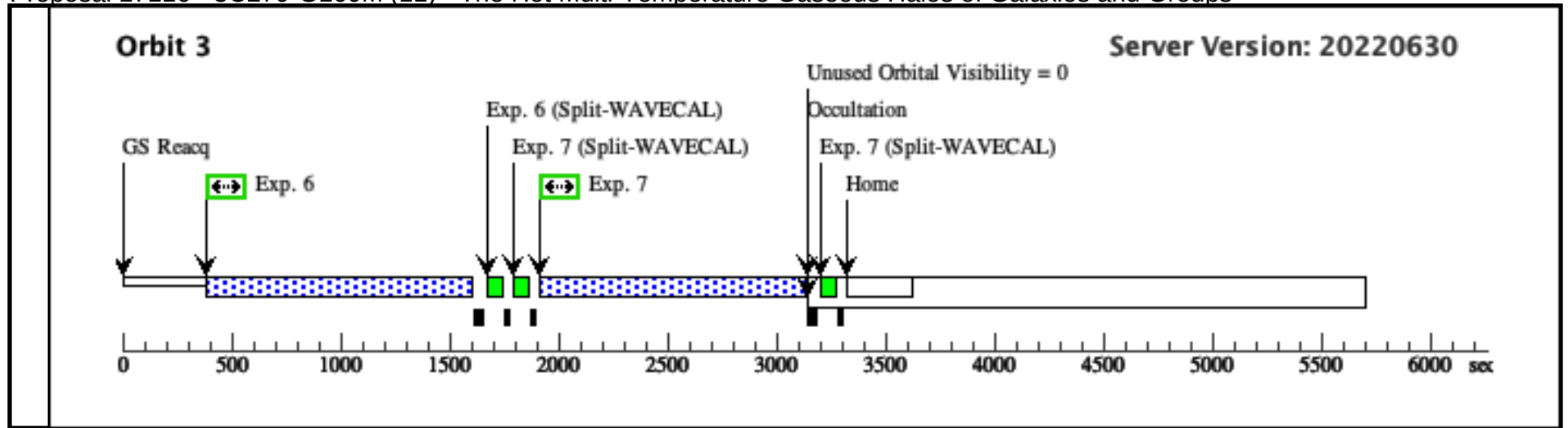
Server Version: 20220630



Orbit 2

Server Version: 20220630





Proposal 17116 - 1H0414+009-G130M (12) - The Hot Multi-Temperature Gaseous Halos of Galaxies and Groups

Visit	Proposal 17116, 1H0414+009-G130M (12), implementation					Mon Sep 26 17:03:26 GMT 2022
	Diagnostic Status: Warning					
	Scientific Instruments: COS/FUV, COS/NUV					
	Special Requirements: (none)					
Diagnostics	(1H0414+009-G130M (12)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.					
	(1H0414+009-G130M (12)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS					
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(7)	1H0414+009	RA: 04 16 52.4900 (64.2187083d)		V=15.5+/-1	Reference Frame: ICRS
			Dec: +01 05 23.90 (1.08997d)		fuv = 18.1	
			Equinox: J2000			
		Comments: Category=GALAXY Description=[BL LAC] Extended=NO				

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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
	1	1H0414+00 9-G130M-A CQ (COS.sa.182 3762)	(7) 1H0414+009	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				65 Secs (65 Secs)		
									[==>]		[1]
	Comments: NUV acquisition exposure COS ETC result for S/N=30; galex mag = 18.1, F=0.24E-15 Count rate 14/sec										
	2	1H0414+00 9-G130M-1 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1079 Secs (1079 Secs)		
									[==>]		[1]
	Comments: Exposure with FP-POS=3, first half of orbit 1 total count rate 347/sec S/N ~4.5										
	3	1H0414+00 9-G130M-2 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1079 Secs (1079 Secs)		
									[==>]		[1]
	Comments: Exposure with FP-POS=4, second half of orbit 1 total count rate 347/sec S/N ~4.5										
	4	1H0414+00 9-G130M-3 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1276 Secs (1276 Secs)		
									[==>]		[2]
	Comments: Exposure with FP-POS=3, first half of orbit 2 total count rate 347/sec S/N ~4.5										
	5	1H0414+00 9-G130M-4 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1276 Secs (1276 Secs)		
									[==>]		[2]
	Comments: Exposure with FP-POS=4, second half of orbit 2 total count rate 347/sec S/N ~4.5										
	6	1H0414+00 9-G130M-5 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=35 00			1276 Secs (1276 Secs)		
									[==>]		[3]
	Comments: Exposure with FP-POS=3, first half of orbit 3 total count rate 347/sec S/N ~4.5										
	7	1H0414+00 9-G130M-6 (COS.sp.181 5657)	(7) 1H0414+009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=35 00			1276 Secs (1276 Secs)		
									[==>]		[3]
	Comments: Exposure with FP-POS=4, second half of orbit 3 total count rate 347/sec S/N ~4.5										

