16693 - The host galaxy and environment of a radio galaxy near the epoch of reionization

Cycle: 29, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) TGSSJ1530+1049	ACS/WFC	3	06-Jan-2023 12:00:14.0	yes
51	(1) TGSSJ1530+1049	ACS/WFC	1	06-Jan-2023 12:00:15.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(1) TGSSJ1530+1049	ACS/WFC	2	06-Jan-2023 12:00:16.0	yes
03	(1) TGSSJ1530+1049	ACS/WFC	2	06-Jan-2023 12:00:17.0	yes
53	(1) TGSSJ1530+1049	ACS/WFC	1	06-Jan-2023 12:00:17.0	yes
04	(1) TGSSJ1530+1049	ACS/WFC	3	06-Jan-2023 12:00:19.0	yes
05	(1) TGSSJ1530+1049	ACS/WFC	2	06-Jan-2023 12:00:20.0	yes
06	(1) TGSSJ1530+1049	WFC3/IR	2	06-Jan-2023 12:00:21.0	yes
07	(1) TGSSJ1530+1049	WFC3/IR	2	06-Jan-2023 12:00:23.0	yes
08	(1) TGSSJ1530+1049	WFC3/IR	2	06-Jan-2023 12:00:25.0	yes

20 Total Orbits Used

ABSTRACT

Radio-loud active galactic nuclei (RLAGN) are the most luminous radio sources in the Universe, and RLAGN at high-z are important for studying the formation of massive galaxies and supermassive black holes (SMBHs). The discovery of a radio galaxy at z=5.72 (TGSS J1530+1049) has pushed studies of RLAGN closer to the epoch of reionization (EoR). HST imaging of other high-z radio galaxies has shown that such systems are massive, with intense star-formation. They exhibit complex morphologies, large sizes and are frequently surrounded by overdensities of faint galaxies, indicative of a forming cluster environment. TGSS J1530+1049 at z=5.72 offers an opportunity to now investigate these phenomena at z~6, and we propose deep multi-band HST imaging with ACS and WFC3 to image the radio galaxy and its close companions, searching for overdensities on scales of 5 Mpc (co-moving) in its environment.

TGSS J1530+1049 is a JWST NIRCam GTO target and is the subject of an approved Cycle 1 NIRSpec/IFU program. It benefits from high-resolution VLBI radio imaging of its AGN jets and is an approved Chandra target. The combination of these proposed HST observations with JWST data will result in maps of the distribution of stellar mass and measurements of star-formation rate, dust, ionisation state and metallicity of the gas. Correlating the rest-UV morphology with AGN jets and constraining the evolutionary stage of the stellar populations are crucial to understand AGN feedback in massive galaxies near the EoR. Further, rest-frame UV HST imaging will allow the identification of any nearby companions through Lyman break selection, which will not be possible from the NIRCam data alone.

OBSERVING DESCRIPTION

This is a proposal to obtain deep ACS and WFC3 images of the most distant radio selected galaxy currently known, TGSS J1530+1049 at z = 5.72.

The ACS observations will be done in F606W, F775W and F850LP, and the WFC3 observations in F105W, F125W and F160W. Our choice for these filters is driven by the need to: (i) obtain deep multi-wavelength imaging for accurate characterisation of the rest UV morphology and the physical properties of the host galaxy for TGSS1530, which will complement forthcoming JWST NIRCam and NIRSpec observations, and (ii) optimize the selection of z~6 galaxies in the vicinity of TGSS1530 using the standard (i775-z850) versus (Y105-H160) color diagram, with the V606 needed to identify foreground interlopers (i.e., S/N(V606) < 2 or V606-z850 > 2.7), and the J125 and H160 filters needed to identify background (i.e., z > 7) galaxies.

The WFC3 images in F105W, F125W and F160W will probe the UV continuum red- wards of Lya, giving crucial measures of the UV continuum slopes, and star-formation rates. We will perform standard dithered imaging with the ACS/WFC and WFC3/IR chan- nels to close the ACS/WFC gap, improve the PSF and remove bad pixels and cosmic rays. Besides this color-based selection, accurate multi-band photometry can be used to obtain reliable photometric redshifts, which are sufficient for making a first cut of galaxy candidates that are plausibly part of any large-scale structure associated with TGSS1530.

The depth of the filters are primarily motivated by the need to accurately constrain the size and morphology of TGSS1530 and robustly detect the radio galaxy host across a broad range of wavelengths. With these HST observations we will also be able to probe sufficiently down the luminosity function of z~6 star-forming galaxies in the vicinity of TGSS1530 to study large-scale structure around this RLAGN.

We require a limiting S/N ~ 2 down to 29AB in V606, and a S/N ~ 5 in i775 and z850 down to 27.7AB and 27.2AB, respectively. The IR bands will also be used to measure the sizes and morphologies of both TGSS1530 and nearby dropouts, and therefore, need to be slightly deeper with 5sigma point source sensitivities (AB) of: Y105 = 27.4, J125 = 27.3, and H160 = 27.0. These limiting depths have been indicated in Figure 4 (horizontal bars). Therefore, assuming a typical orbit duration with 2000s on-source exposures, we request 3 orbits in V606, 4 in i775, 5 in z850, 2 in Y105, 2 in J125, and 2 in H160, for a total of 18 orbits.

We will use dithering in all observations to improve image quality. For ACS observations, we use a "line" pattern to fill the detector gaps, and within each pattern we use a "box" dithering pattern to improve image quality. For WFC3 observations, we use a "blob" dithering pattern. These dithering

patters are included in every visit/orbit, and help to maximise the science exposure time per orbit. Particularly for WFC3 exposures, the individual expososures are close to the optimum exposure times recommended in the intstrument handbook.

The ORIENT of the first ACS visit has been chosen to most closely reproduce the roll angle restrictions for planned JWST NIRCam GTO observations. The ORIENT of every subsequent ACS visit has been made to be the same as the first visit. There are no ORIENT constraints for WFC3 visits owing to the smaller field of view, but the ORIENT of subsequent WFC3 visits have been set to be the same as the first WFC3 visit.

Total time requested: 18 orbits are requested to observe one field in 6 filters.

Visit

Proposal 16693, F606_visit1 (01), failed Fri Jan 06 17:00:25 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 80D TO 160 D; ORIENT 220D TO 300 D

Comments: Single visit using the F606W filter consisting of 3 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049. The orients of all subsequent visits using ACS are the same as F606_visit1.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false	(1)

Fixed Targets

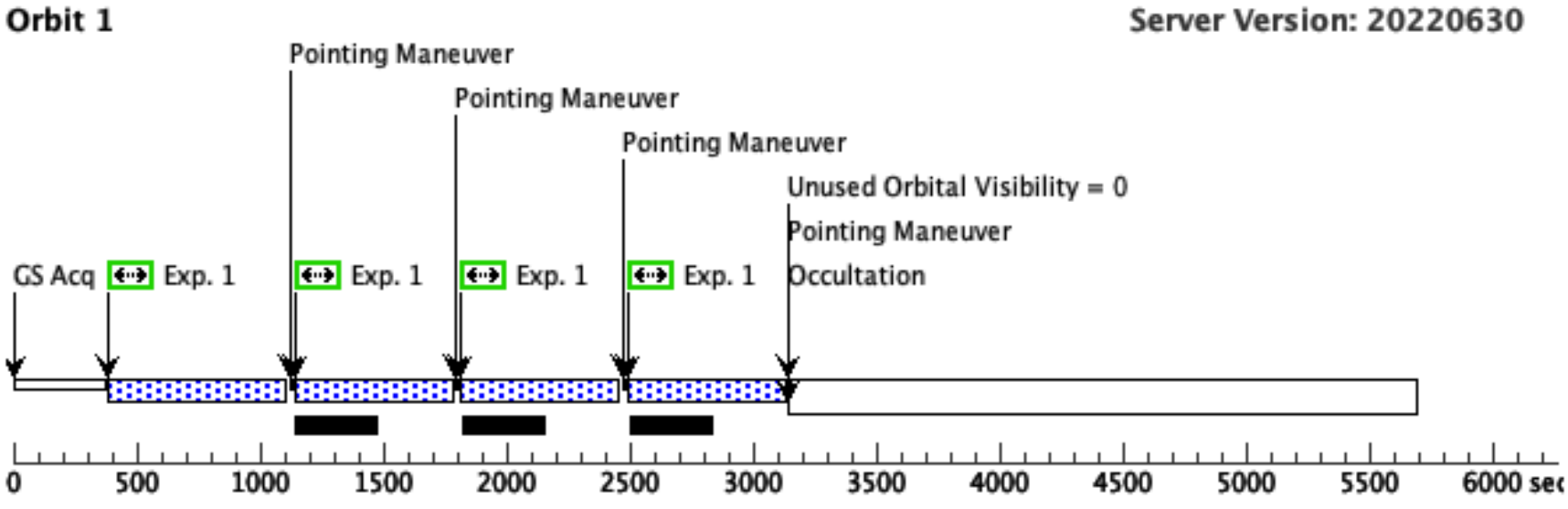
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

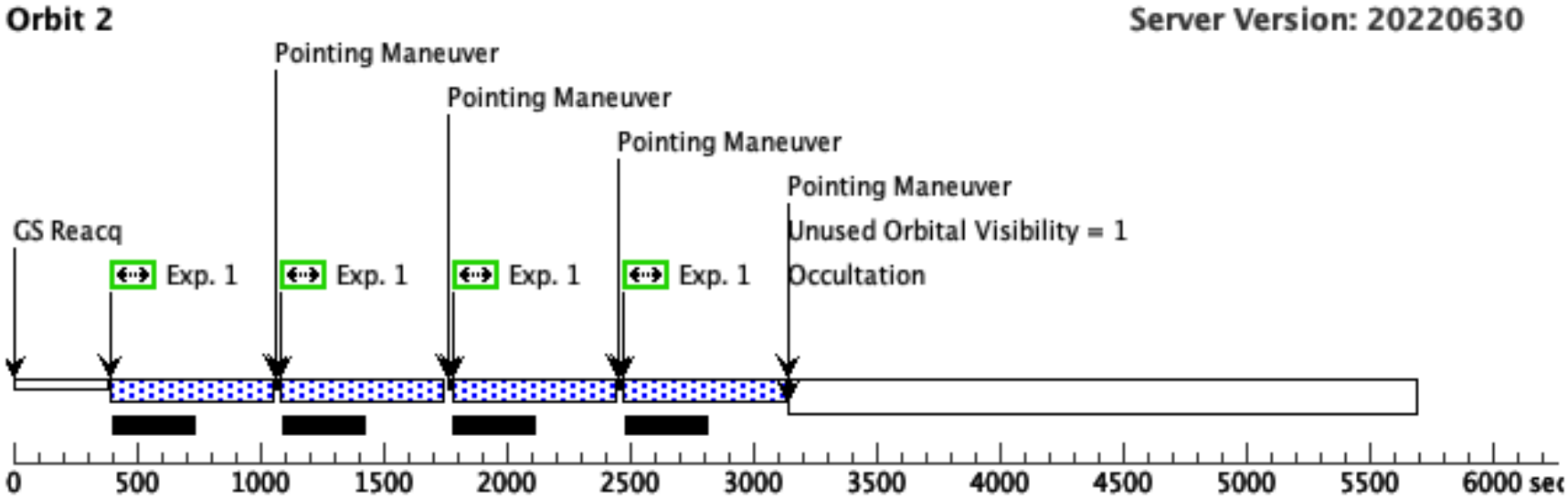
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

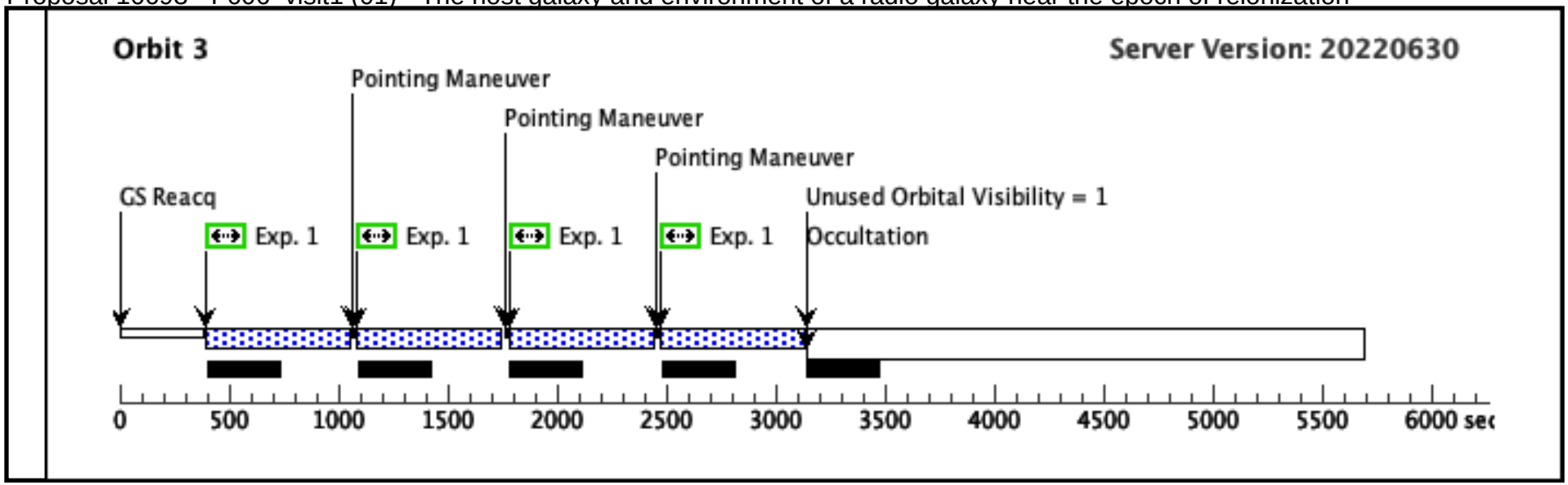
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	V606	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F606W			Pattern 1, Exps 1-1 in F606_visit1 (01) (1)	500 Secs (6360 Secs)	
								[==>518.0 Secs (Pattern 1,1)] *[==>518.0 Secs (Pattern 1,2)]* *[==>518.0 Secs (Pattern 1,3)]* *[==>518.0 Secs (Pattern 1,4)]*	***[1]***
								[==>536.0 Secs (Pattern 2,1)] *[==>536.0 Secs (Pattern 2,2)]* *[==>536.0 Secs (Pattern 2,3)]* *[==>536.0 Secs (Pattern 2,4)]*	***[2]***
								[==>536.0 Secs (Pattern 3,1)] *[==>536.0 Secs (Pattern 3,2)]* *[==>536.0 Secs (Pattern 3,3)]* *[==>536.0 Secs (Pattern 3,4)]*	***[3]***

Orbit Structure






Orbit 3
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Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
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Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 16693, F606_visit1 (51), implementation Fri Jan 06 17:00:25 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 80D TO 134 D; ORIENT 274D TO 300 D

Comments: Single visit using the F606W filter consisting of 3 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049. The orients of all subsequent visits using ACS are the same as F606_visit1.

HOPR Repeat of visit 01.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false	(1)

Fixed Targets

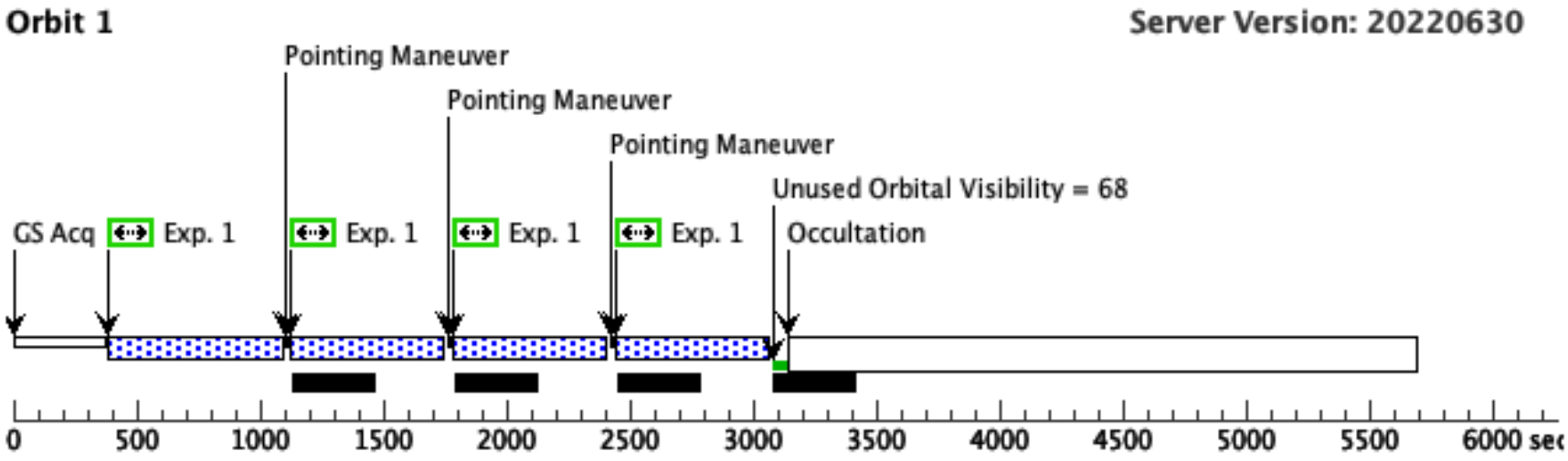
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	V606	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F606W			Pattern 4, Exps 1-1 in F606_visit1 (51) (4)	500 Secs (2000 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***

Orbit Structure



Visit

Proposal 16693, F775_visit1 (02), completed Fri Jan 06 17:00:25 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Comments: First visit using the F775W filter consisting of 3 out of 5 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049 and are the same as F606_visit1.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false	(1)

Fixed Targets

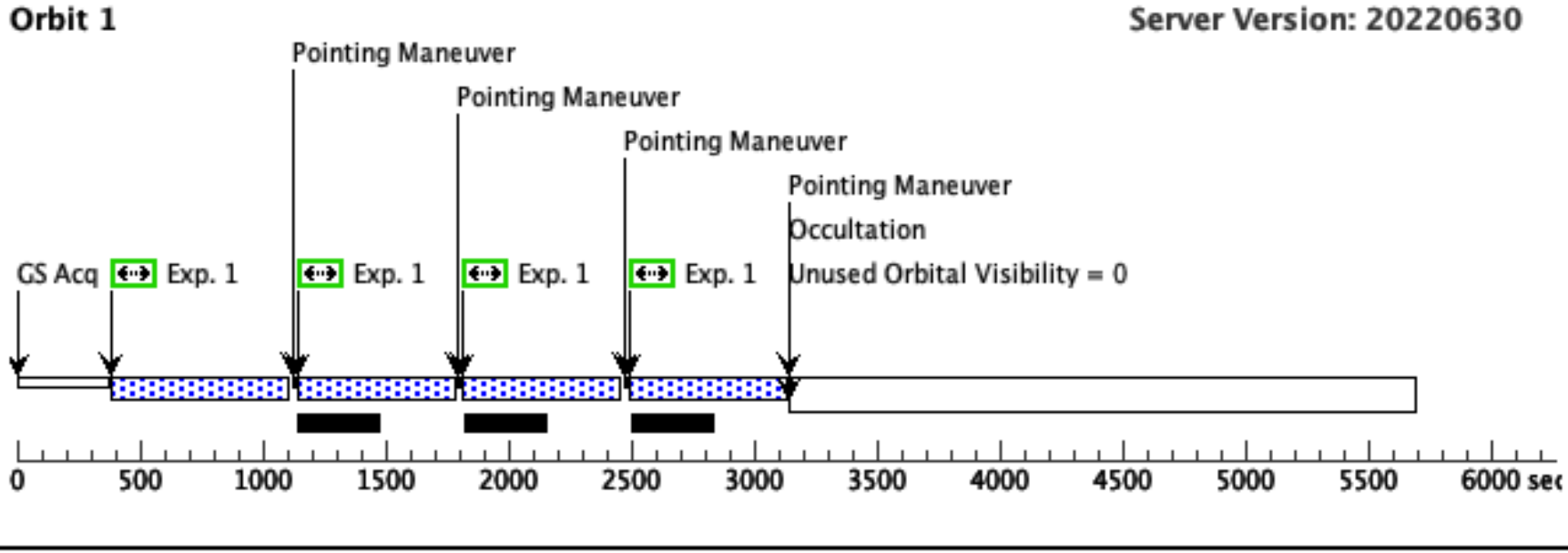
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

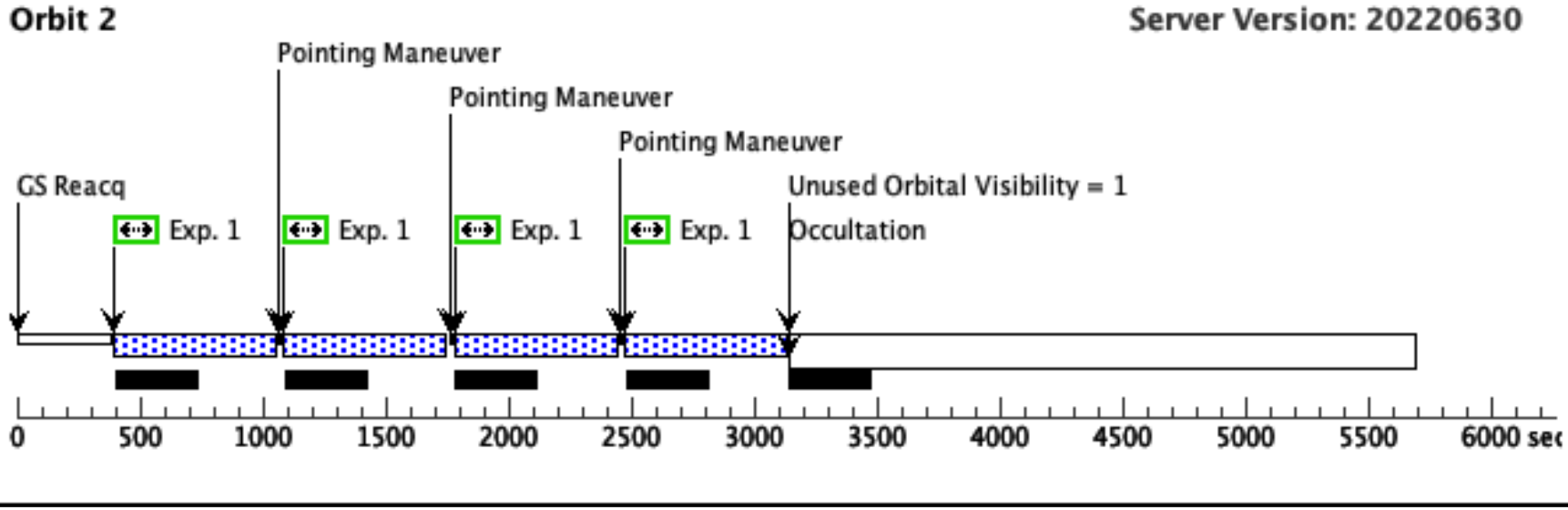
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	i775	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F775W			Pattern 3, Exps 1-1 in F775_visit1 (02) (3)	500 Secs (4216 Secs)	
								[==>518.0 Secs (Pattern 1,1)] *[==>518.0 Secs (Pattern 1,2)]* *[==>518.0 Secs (Pattern 1,3)]* *[==>518.0 Secs (Pattern 1,4)]*	***[1]***
								[==>536.0 Secs (Pattern 2,1)] *[==>536.0 Secs (Pattern 2,2)]* *[==>536.0 Secs (Pattern 2,3)]* *[==>536.0 Secs (Pattern 2,4)]*	***[2]***

Orbit Structure





Visit

Proposal 16693, F775_visit2 (03), failed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Comments: Second visit using the F775W filter consisting of the remaining 2 out of 5 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049 and are the same as F606_visit1.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false	(1)

Fixed Targets

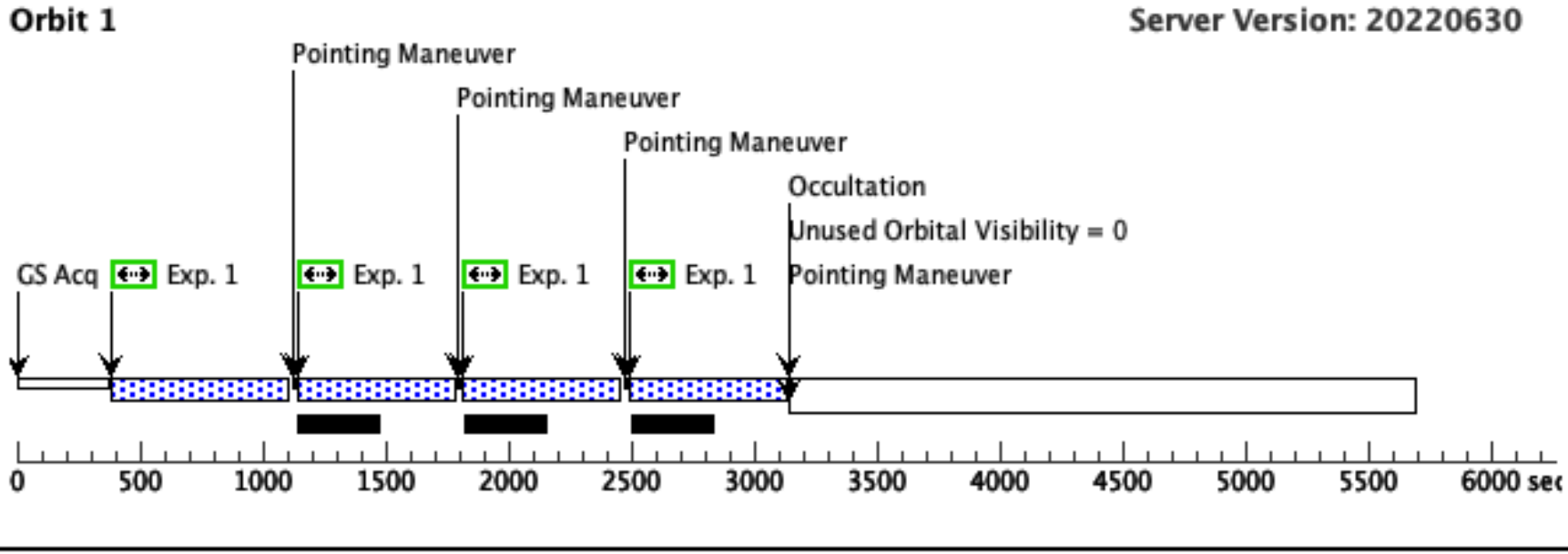
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

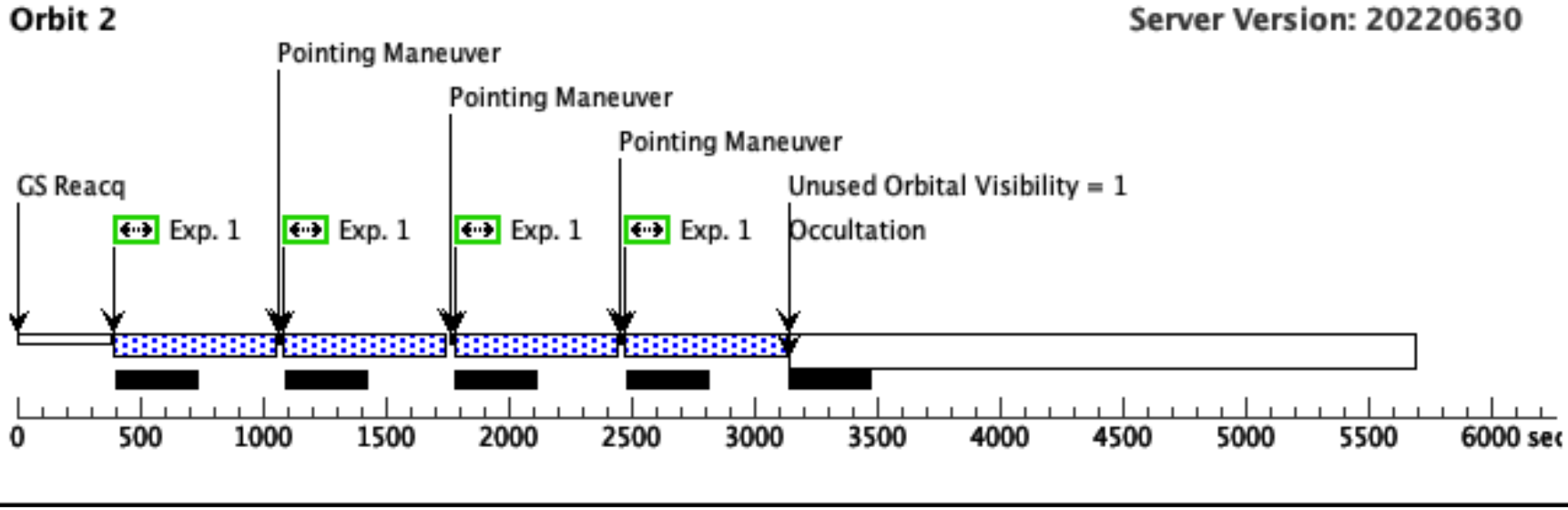
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	i775	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F775W			Pattern 3, Exps 1-1 in F775_visit2 (03) (3)	500 Secs (4216 Secs)	
								[==>518.0 Secs (Pattern 1,1)] *[==>518.0 Secs (Pattern 1,2)]* *[==>518.0 Secs (Pattern 1,3)]* *[==>518.0 Secs (Pattern 1,4)]*	***[1]***
								[==>536.0 Secs (Pattern 2,1)] *[==>536.0 Secs (Pattern 2,2)]* *[==>536.0 Secs (Pattern 2,3)]* *[==>536.0 Secs (Pattern 2,4)]*	***[2]***

Orbit Structure





Visit

Proposal 16693, F775_visit2 (53), implementation Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 51

Comments: Second visit using the F775W filter consisting of the remaining 2 out of 5 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049 and are the same as F606_visit1.

HOPR repeat of visit 03.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.23 Angle Between Sides= Center Pattern=false	(1)

Fixed Targets

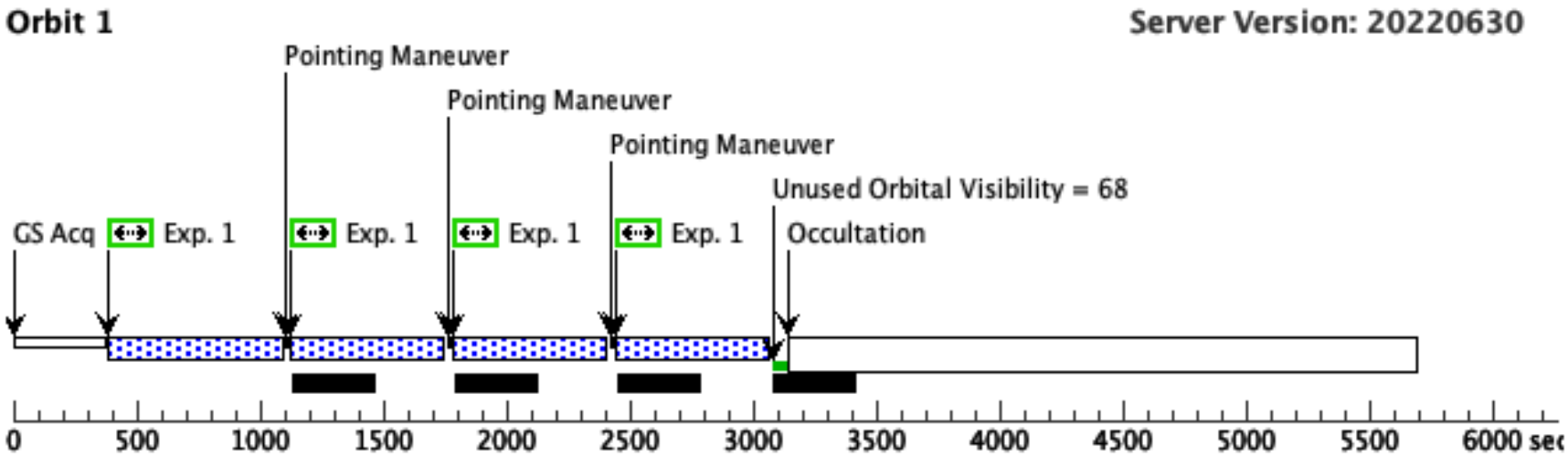
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	i775	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F775W			Pattern 4, Exps 1-1 in F775_visit2 (53) (4)	500 Secs (2000 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***

Orbit Structure



Visit

Proposal 16693, F850_visit1 (04), completed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Comments: First visit using the G850LP filter consisting of 2 out of 4 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049 and are the same as F606_visit1.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=3 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false	(1)

Fixed Targets

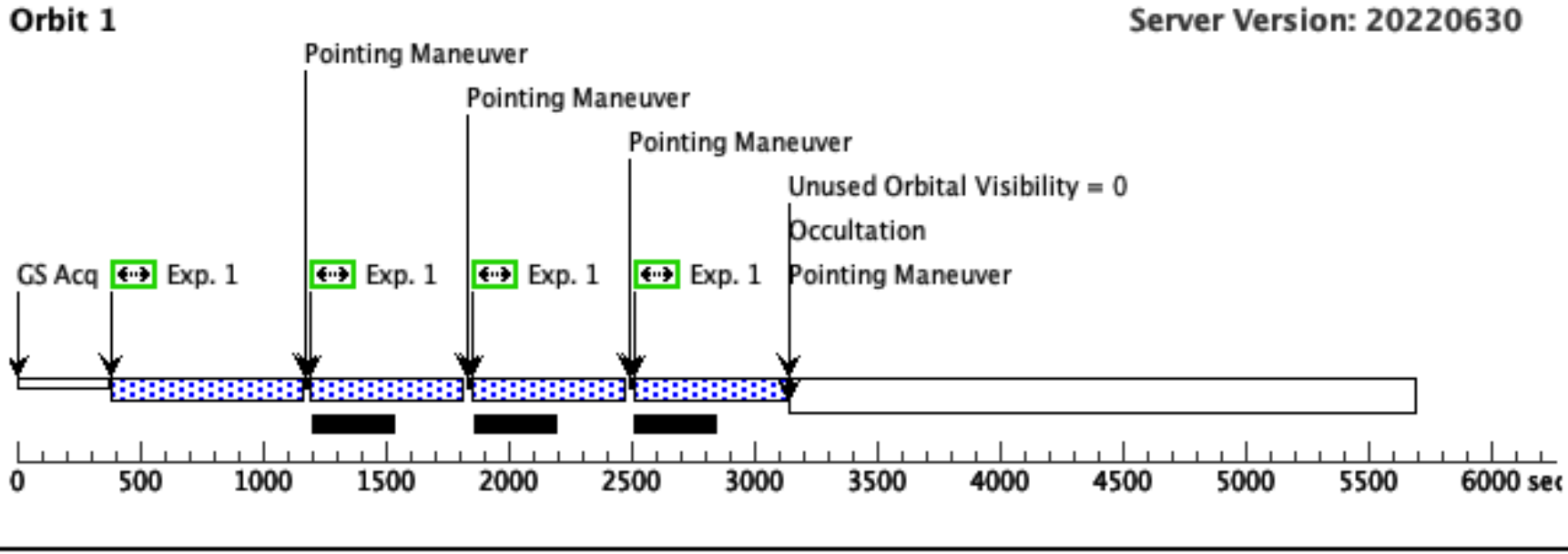
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

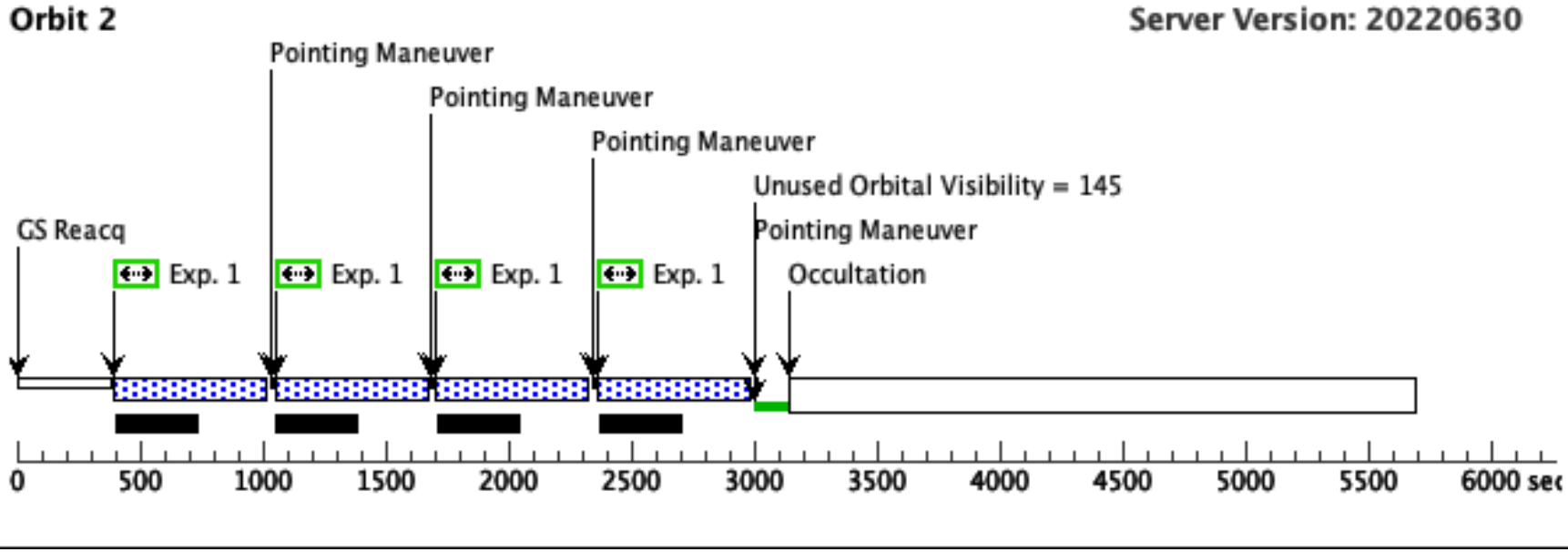
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

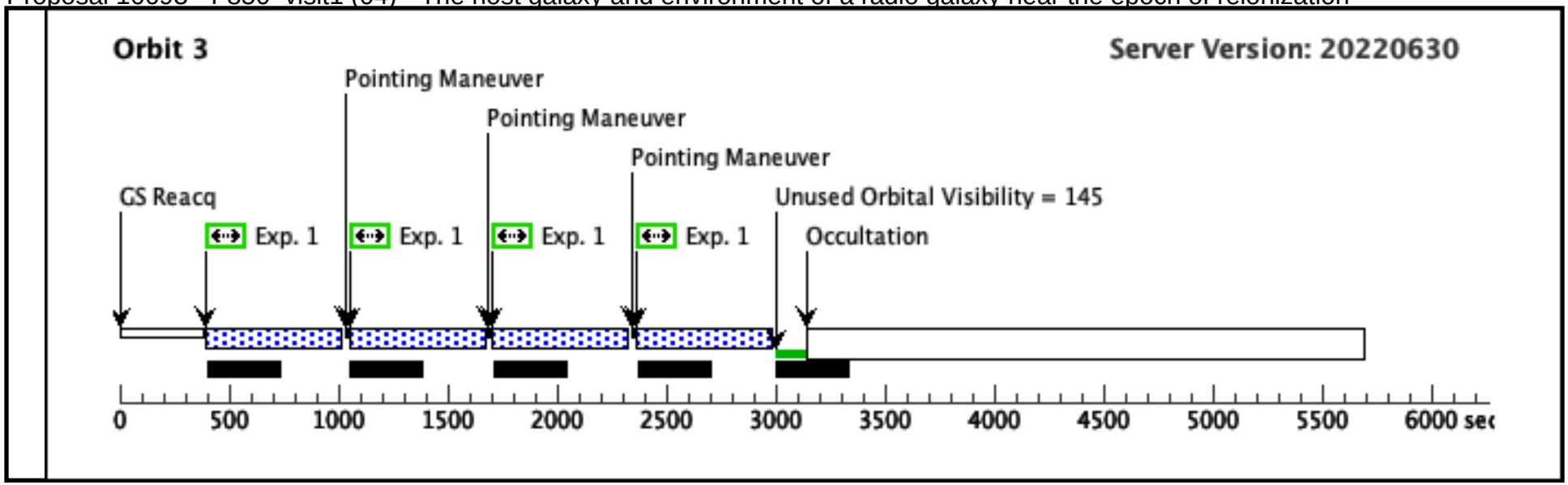
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	z850	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F850LP			Pattern 1, Exps 1-1 in F850_visit1 (04) (1)	500 Secs (6072 Secs)	
								[==>572.0 Secs (Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 1,3)]* *[==>(Pattern 1,4)]*	***[1]***
								[==>(Pattern 2,1)] *[==>(Pattern 2,2)]* *[==>(Pattern 2,3)]* *[==>(Pattern 2,4)]*	***[2]***
								[==>(Pattern 3,1)] *[==>(Pattern 3,2)]* *[==>(Pattern 3,3)]* *[==>(Pattern 3,4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Unused Orbital Visibility = 145
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 16693, F850_visit2 (05), completed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: SAME ORIENT AS 01

Comments: Second visit using the G850LP filter consisting of the remaining 2 out of 4 orbits for the target TGSS J1530+1049. The dither line pattern has been used to fill the gap between the detectors, and a box sub-pattern has been used to improve image quality. The orient constraints have been introduced to match the JWST NIRCam GTO observations of TGSS J1530+1049 and are the same as F606_visit1.

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.262 Line Spacing=0.192	Coordinate Frame=POS-TARG Pattern Orientation=18.39 Angle Between Sides=68.14 Center Pattern=false	(1)

Fixed Targets

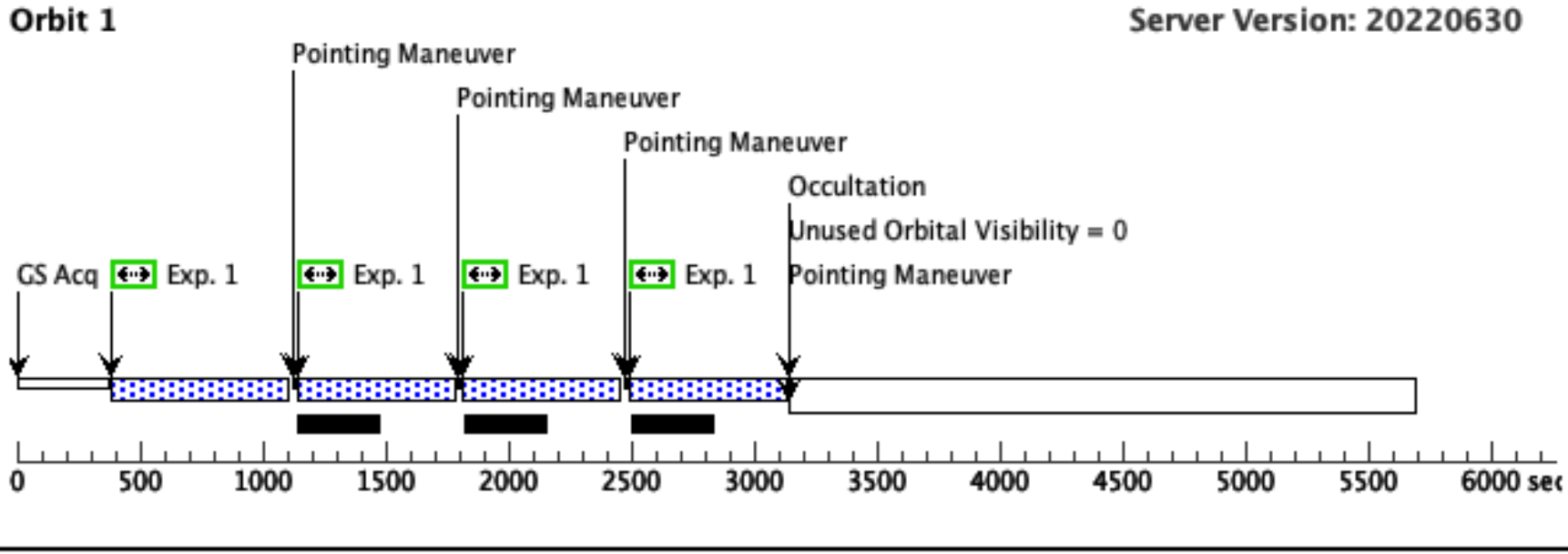
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

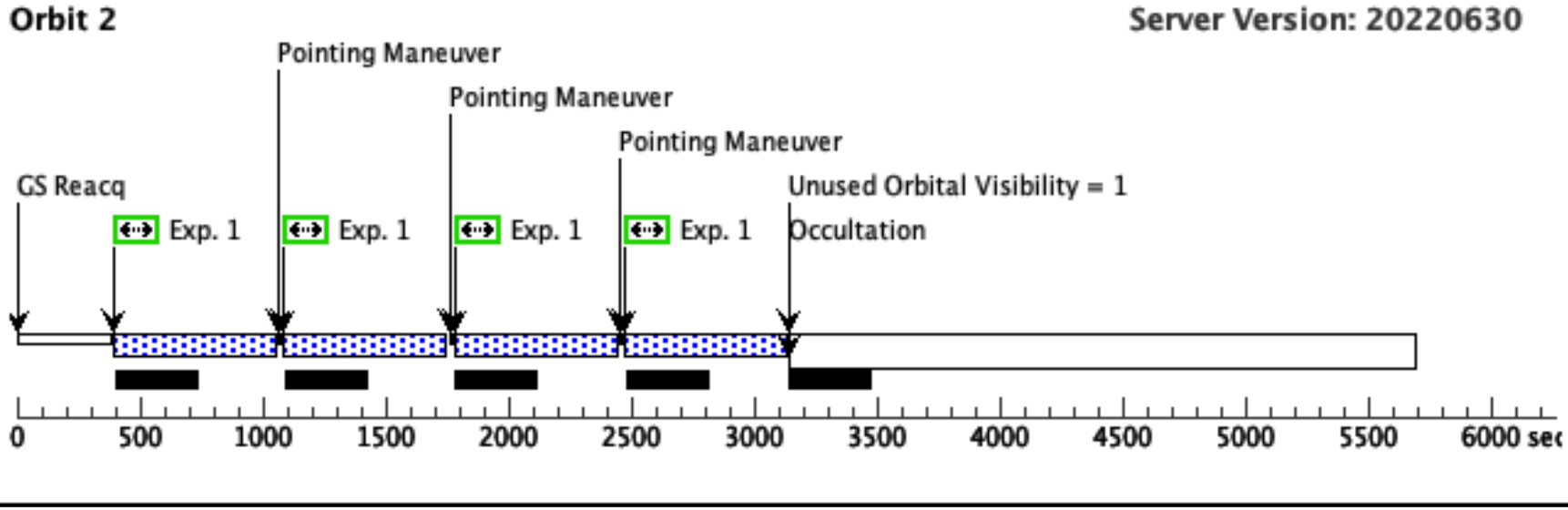
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	z850	(1) TGSSJ1530+1049	ACS/WFC, ACCUM, WFC	F850LP			Pattern 3, Exps 1-1 in F850_visit2 (05) (3)	500 Secs (4216 Secs)	
								[==>518.0 Secs (Pattern 1,1)] *[==>518.0 Secs (Pattern 1,2)]* *[==>518.0 Secs (Pattern 1,3)]* *[==>518.0 Secs (Pattern 1,4)]*	***[1]***
								[==>536.0 Secs (Pattern 2,1)] *[==>536.0 Secs (Pattern 2,2)]* *[==>536.0 Secs (Pattern 2,3)]* *[==>536.0 Secs (Pattern 2,4)]*	***[2]***

Orbit Structure





Visit

Proposal 16693, F105_visit1 (06), completed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Comments: Single visit using the F105W filter consisting of 2 orbits for the target TGSS J1530+1049. The dither blob pattern has been used to improve image quality. Since the WFC3 field of view is smaller than the ACS field of view, no orient constraints have been set for this visit. However, the orient of every subsequent visit using WFC3 has been made to be the same as F105_visit1.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=12 Point Spacing=2 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true		(1)

Fixed Targets

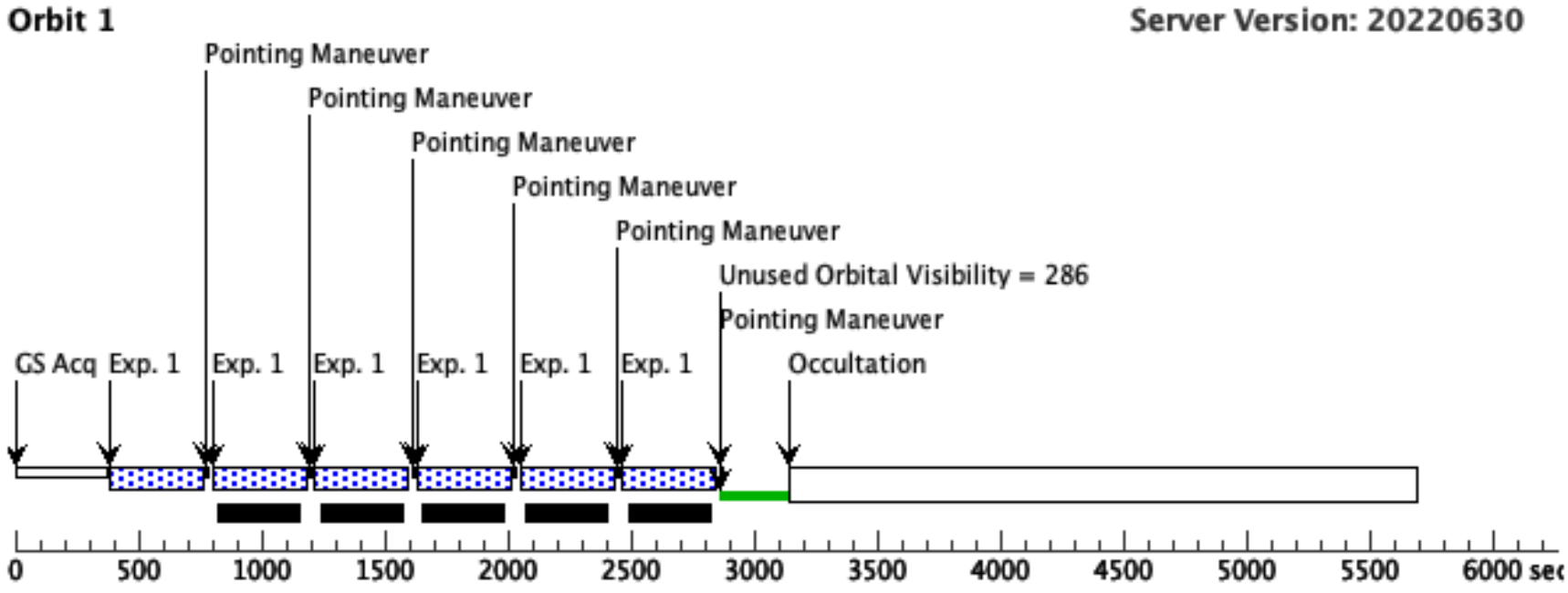
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

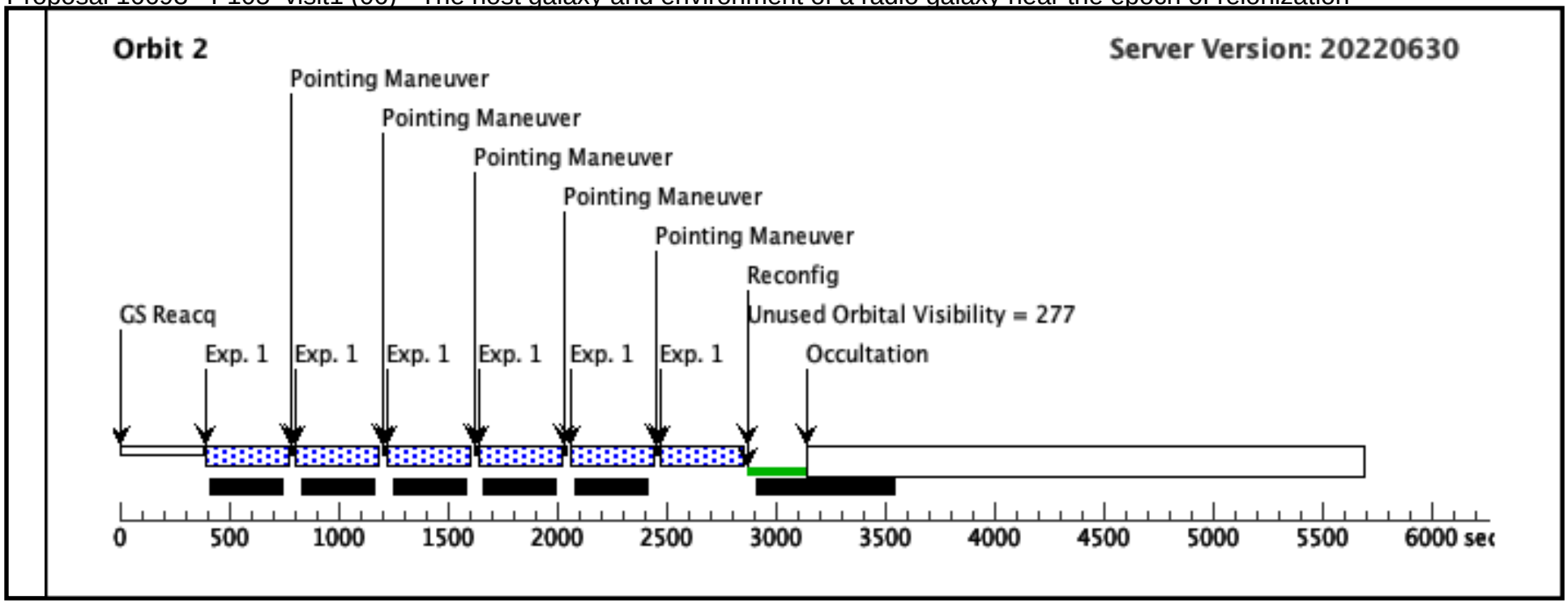
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Y105	(1) TGSSJ1530+1049	WFC3/IR, MULTIACCUM, IR	F105W	SAMP-SEQ=SPARS25; NSAMP=15		Pattern 2, Exps 1-1 in F105_visit1 (06) (2)	352.939501 Secs (4235.274 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]* *[==>(Pattern 5)]* *[==>(Pattern 6)]*	***[1]***
								[==>(Pattern 7)] *[==>(Pattern 8)]* *[==>(Pattern 9)]* *[==>(Pattern 10)]* *[==>(Pattern 11)]* *[==>(Pattern 12)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
GS Reacq
Unused Orbital Visibility = 277
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 16693, F125_visit1 (07), completed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 06

Comments: Single visit using the F125W filter consisting of 2 orbits for the target TGSS J1530+1049. The dither blob pattern has been used to improve image quality. The orient is set to be the same as that of visit F105_visit1.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=12 Point Spacing=2 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true		(1)

Fixed Targets

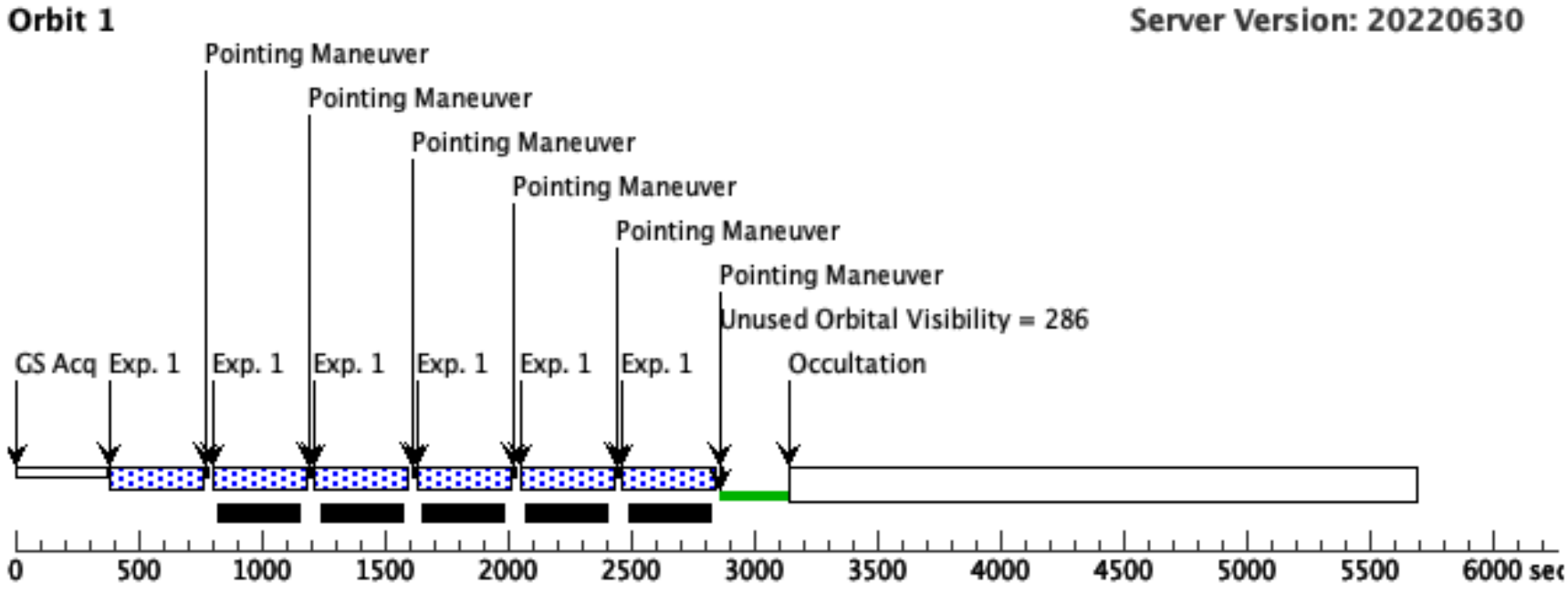
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

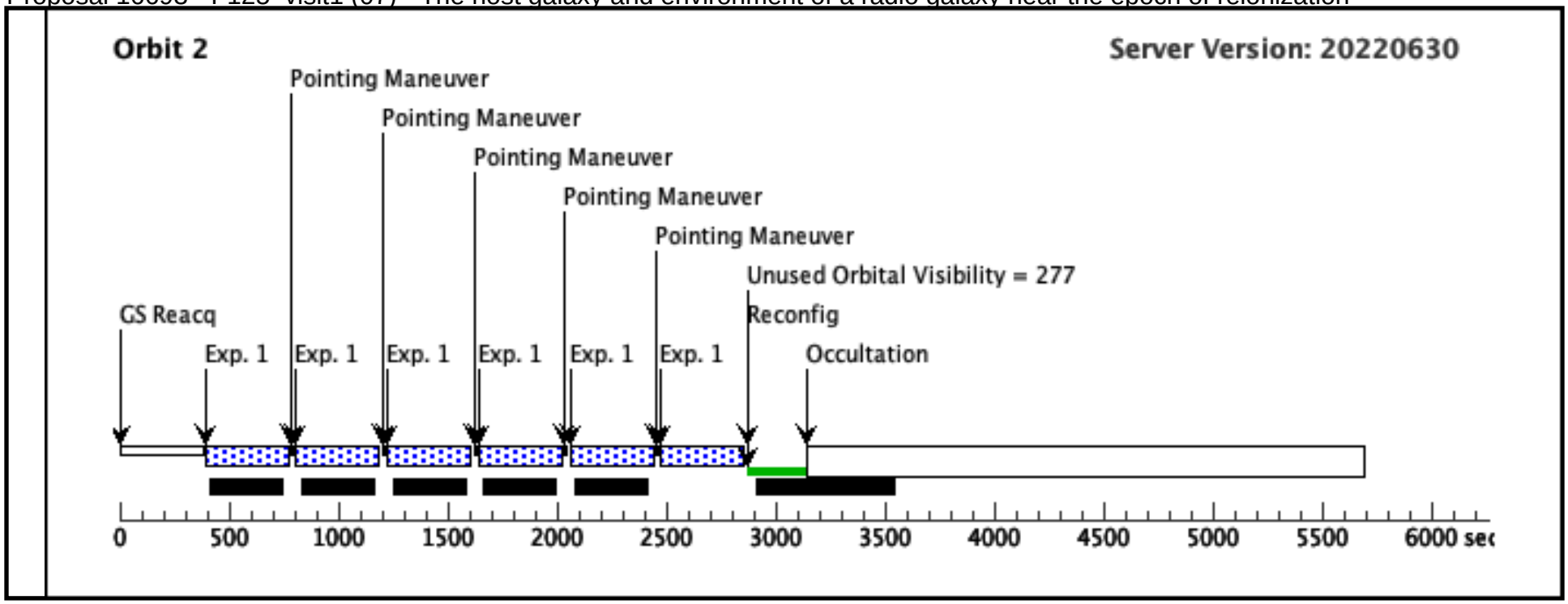
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J125	(1) TGSSJ1530+1049	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=SPARS25; NSAMP=15		Pattern 2, Exps 1-1 in F125_visit1 (07) (2)	352.939501 Secs (4235.274 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]* *[==>(Pattern 5)]* *[==>(Pattern 6)]*	***[1]***
								[==>(Pattern 7)] *[==>(Pattern 8)]* *[==>(Pattern 9)]* *[==>(Pattern 10)]* *[==>(Pattern 11)]* *[==>(Pattern 12)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 277
GS Reacq
Reconfig
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 16693, F160_visit1 (08), completed Fri Jan 06 17:00:26 GMT 2023

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 06

Comments: Single visit using the F160W filter consisting of 2 orbits for the target TGSS J1530+1049. The dither blob pattern has been used to improve image quality. The orient is set to be the same as that of visit F105_visit1.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=12 Point Spacing=2 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true		(1)

Fixed Targets

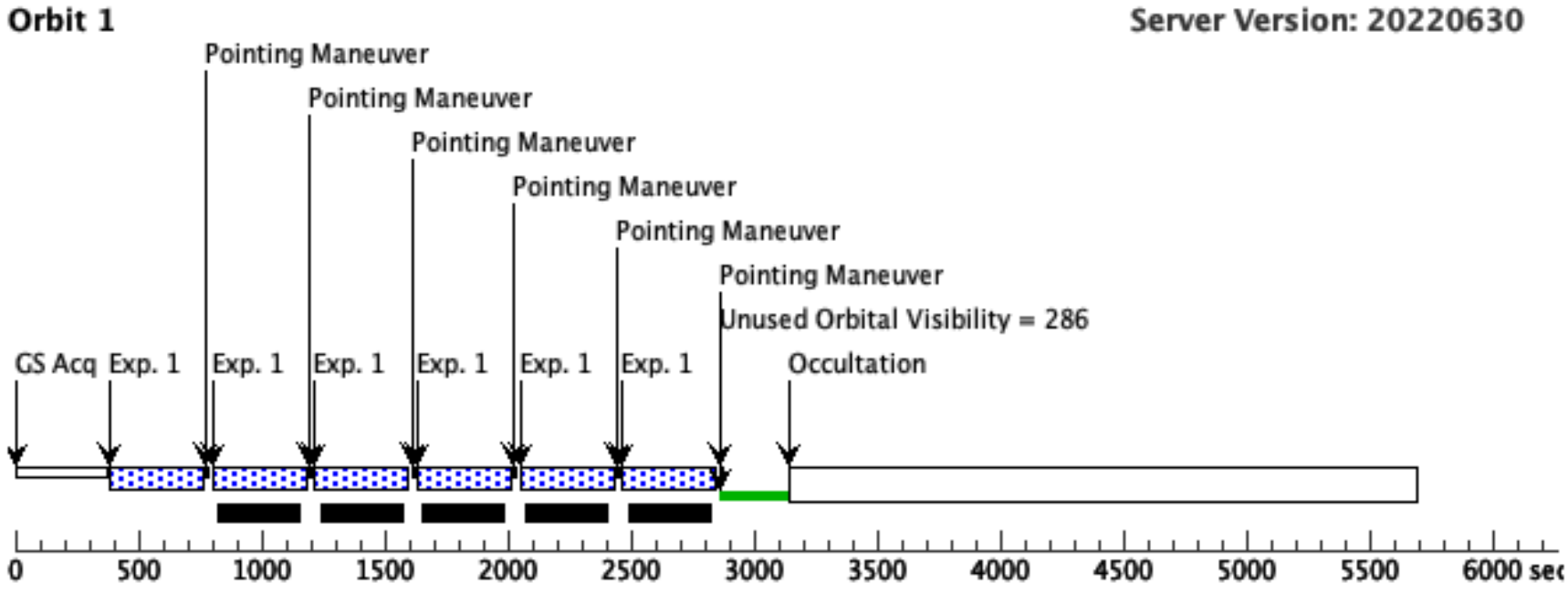
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TGSSJ1530+1049 Alt Name1: TGSS1530	RA: 15 30 49.9000 (232.7079167d) Dec: +10 49 31.10 (10.82531d) Equinox: J2000	Redshift: 5.72	V=(?) z-band 25 to 27 mag	Reference Frame: ICRS

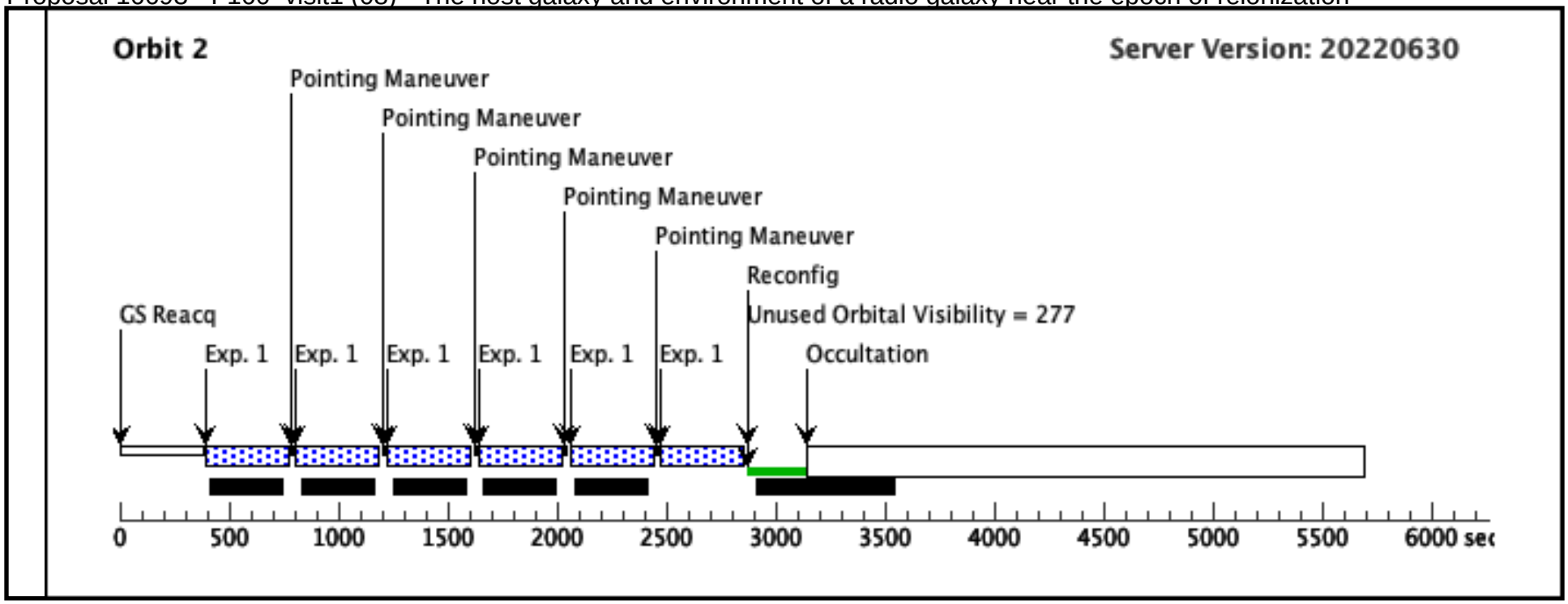
Comments:
Category=GALAXY
Description=[HIGH REDSHIFT GALAXY, RADIO GALAXY]
Extended=NO

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	H160	(1) TGSSJ1530+1049	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS25; NSAMP=15		Pattern 2, Exps 1-1 in F160_visit1 (08) (2)	352.939501 Secs (4235.274 Secs)	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]* *[==>(Pattern 5)]* *[==>(Pattern 6)]*	***[1]***
								[==>(Pattern 7)] *[==>(Pattern 8)]* *[==>(Pattern 9)]* *[==>(Pattern 10)]* *[==>(Pattern 11)]* *[==>(Pattern 12)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20220630
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
GS Reacq
Unused Orbital Visibility = 277
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Exp. 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec