15150 - Local Void Reflex: IR TRGB Distances to Obscured Galaxies at the South Supergalactic Pole

Cycle: 25, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. R. Brent Tully (PI) (Contact)	**University of Hawaii**	**tully@ifa.hawaii.edu**
Dr. Edward J. Shaya (CoI)	University of Maryland	eshaya@umd.edu
Prof. Igor Dmitrievich Karachentsev (CoI)	Russian Academy of Sciences, Special Astrophysical Obs.	ikar@sao.ru
Dr. Luca Rizzi (CoI)	California Association for Research in Astronomy (CARA)	lrizzi@keck.hawaii.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NAME-ORI-DWARF-GALAXY	WFC3/IR	1	27-Sep-2017 15:21:10.0	yes
02	(1) NAME-ORI-DWARF-GALAXY	WFC3/IR	1	27-Sep-2017 15:21:11.0	yes
03	(1) NAME-ORI-DWARF-GALAXY	WFC3/IR	1	27-Sep-2017 15:21:12.0	yes
04	(2) HIZSS-003	WFC3/IR	1	27-Sep-2017 15:21:13.0	yes
05	(2) HIZSS-003	WFC3/IR	1	27-Sep-2017 15:21:14.0	yes
06	(2) HIZSS-003	WFC3/IR	1	27-Sep-2017 15:21:15.0	yes
07	(3) HIZSS-021	WFC3/IR	1	27-Sep-2017 15:21:15.0	yes
08	(3) HIZSS-021	WFC3/IR	1	27-Sep-2017 15:21:16.0	yes
09	(3) HIZSS-021	WFC3/IR	1	27-Sep-2017 15:21:17.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
10	(4) ESO-558-011	WFC3/IR	1	27-Sep-2017 15:21:18.0	yes
11	(4) ESO-558-011	WFC3/IR	1	27-Sep-2017 15:21:18.0	yes
12	(4) ESO-558-011	WFC3/IR	1	27-Sep-2017 15:21:19.0	yes

12 Total Orbits Used

ABSTRACT

Our galaxy lies in a thin sheet that is part of a wall of the Local Void. It is now evident that our `Local Sheet' has a peculiar velocity of several hundred km/s away from the void. Further, it is evident that there is a compression onto the Local Sheet, with galaxies above and below the sheet exhibiting peculiar velocities toward us. This trend was confirmed with HST observations of a lonely galaxy toward the void center. Galaxies in the opposite direction also have peculiar velocities toward us. However, galaxies with good distances in the sector opposed to the void lie at sufficient angles that only moderate fractions of their anomalous radial motions are directed away from the void. There are good nearby candidates to test the hypothesis of compression toward the Local Sheet but they lie in the zone of obscuration, requiring observations in the infrared. Experience has shown that the measurements are possible with the tip of the red giant branch method, now well calibrated. The experiment is important because the measurement in the void anti-apex coupled with an existing sample of distances to significant redshifts will give the absolute amplitude of expansion of the Local Void. The expansion velocity of a void depends on the size and emptiness of the void and on cosmological parameters. The measurement can only realistically be carried out at this boundary of the Local Void and requires a foundation in the motions of galaxies in the anti-void direction.

OBSERVING DESCRIPTION

We propose to observe 4 high priority obscured galaxies; each for 3 orbits. The exposures times will be divided between F110W and F160W filters with variations that account for relative obscuration; the relative exposure times in the F110W filter will be greater for more obscured sources. We are guided by the exposure times used in the course of the cycle 17 SNAP program 11719 (PI Dalcanton) and our own cycle 20 program 12877 with galaxies at similar distances.

We follow dithering procedures demonstrated to be optimal for psf reconstruction. The photometry is carried out with the software DOLPHOT, the successor to HSTPHOT (Dolphin 2000), enhanced to be used with WFC3 data (http://purcell.as.arizona.edu/dolphot). Calibration of the TRGB in the F110W and F160W filters (Wu et al. 2014) is carried out using archival data from program 11719, involving observations of well studied nearby

high latitude galaxies using the same F110W and F160W filters, then applied to 3 major obscured galaxies in the Maffei group. The analysis follows procedures developed by Makarov et al. (2006) and Rizzi et al. (2007) with optical band material. With both ACS and WFC3/IR data our pipeline is now sufficiently well established that the photometry leading to CMD can be carried out within 24 hours of receipt of data from HST and within another 24 hours the TRGB and a distance can be established with a maximum likelihood method that involves recovery tests with artificial stars. The tests establish the fractional recovery as a function of magnitude and color and the associated errors. The products, both tabular and graphical, are made available through the Extragalactic Distance Database (http://edd.ifa.hawaii.edu) by selecting the catalog CMDs/TRGB (Tully et al. 2009; Jacobs et al. 2009).

Reddening in the line-of-sight can be determined from the color displacement of the zero age main sequence. It is seen in the comparisons of the IC 342 and NGC 300 CMD that suitable information will be available to determine the reddening in the immediate field of the IR observations. All our candidates are gas-rich and likely to have prominent population I components. For comparison, foreground reddening can be estimated from the colors of galactic main sequence stars projected across the entire field of view with simulations generated by the TRILEGAL code (Girardi et al. 2012).

Even in the infrared, reddening is the largest source of error for low latitude targets. For the relatively nearby objects that will be observed, the TRGB can be established to +-5% in distance, modulo obscuration. An uncertainty of +-0.1 mag in absorption at F110W, roughly what might be expected for the more obscured candidates, adds in quadrature another 5% uncertainty in distance (Wu et al. 2014). Presently, there is no information on the distances of any of the targets beyond inferences from redshifts.

Visit

Proposal 15150, Visit 01, implementation

Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

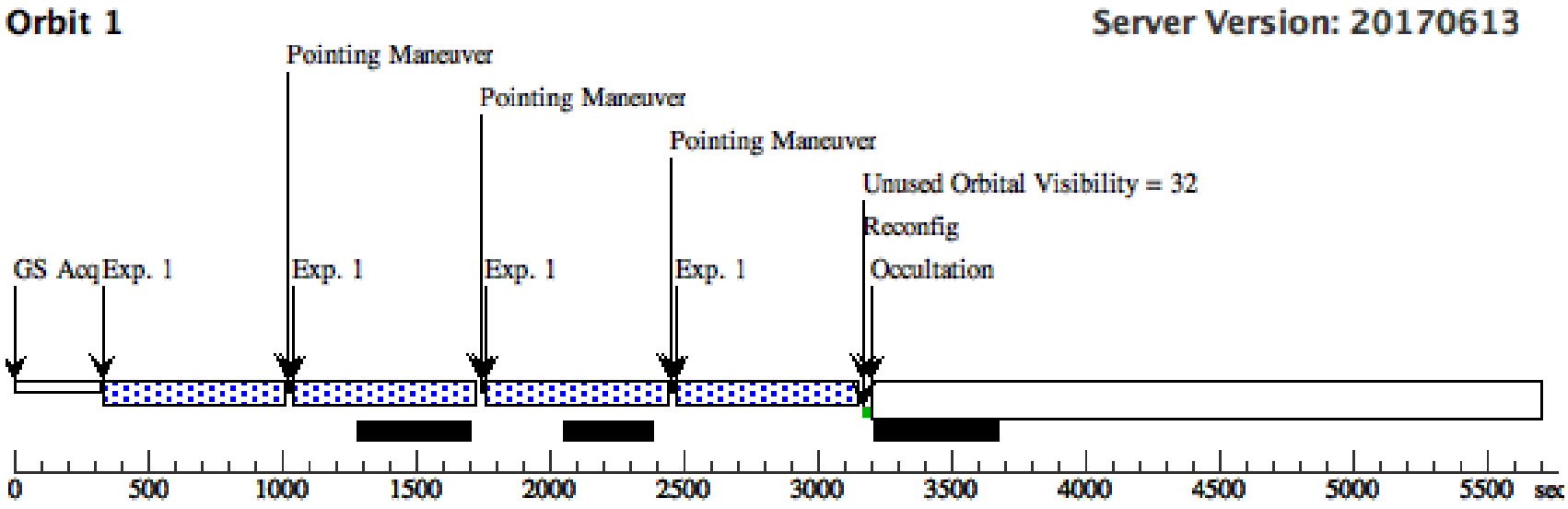
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NAME-ORI-DWARF-GALAXY Alt Name1: PGC17716	RA: 05 45 2.1155 (86.2588146d) Dec: +05 04 10.67 (5.06963d) Equinox: J2000		V=15	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NAME-ORI-DWARF-GALAXY	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 01 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 02, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

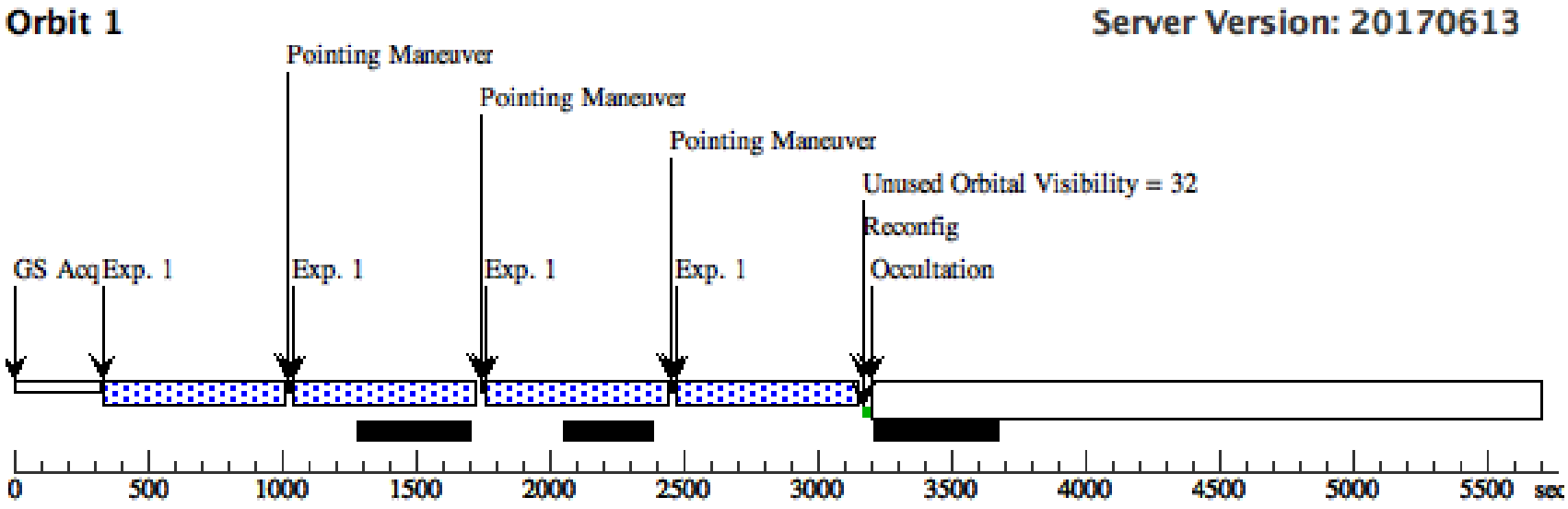
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NAME-ORI-DWARF-GALAXY Alt Name1: PGC17716	RA: 05 45 2.1155 (86.2588146d) Dec: +05 04 10.67 (5.06963d) Equinox: J2000		V=15	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NAME-ORI-DWARF-GALAXY	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 02 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 03, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)

Fixed Targets

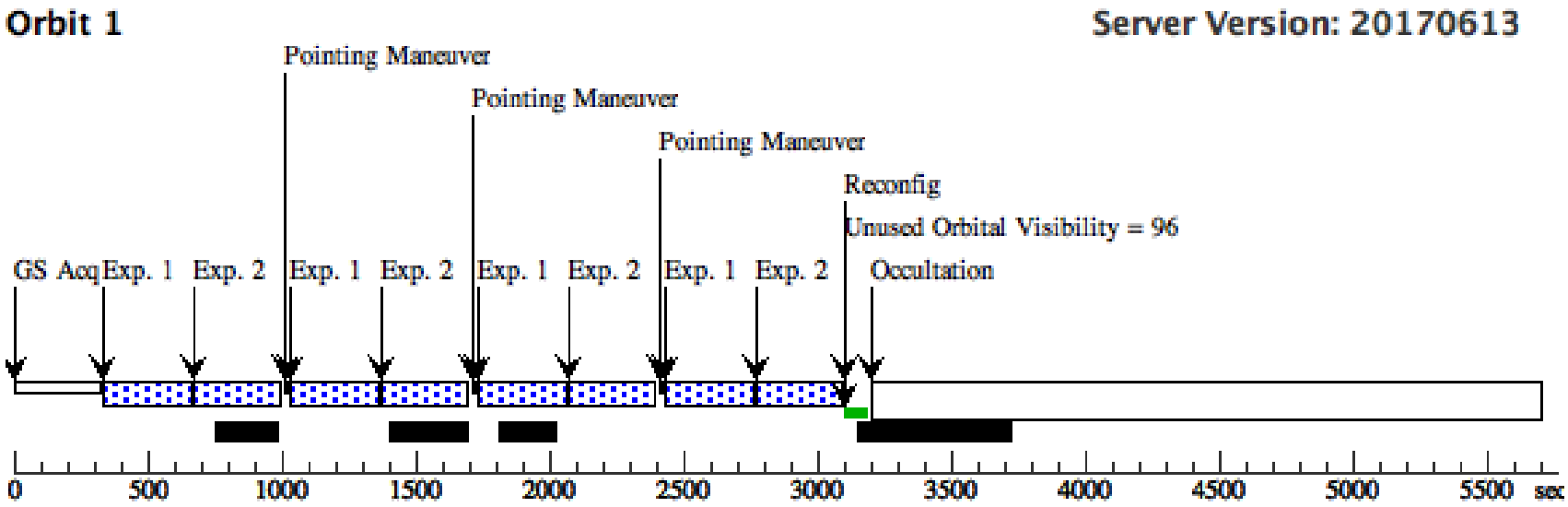
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NAME-ORI-DWARF-GALAXY Alt Name1: PGC17716	RA: 05 45 2.1155 (86.2588146d) Dec: +05 04 10.67 (5.06963d) Equinox: J2000		V=15	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NAME-ORI-DWARF-GALAXY	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 03 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) NAME-ORI-DWARF-GALAXY	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 03 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 15150, Visit 04, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

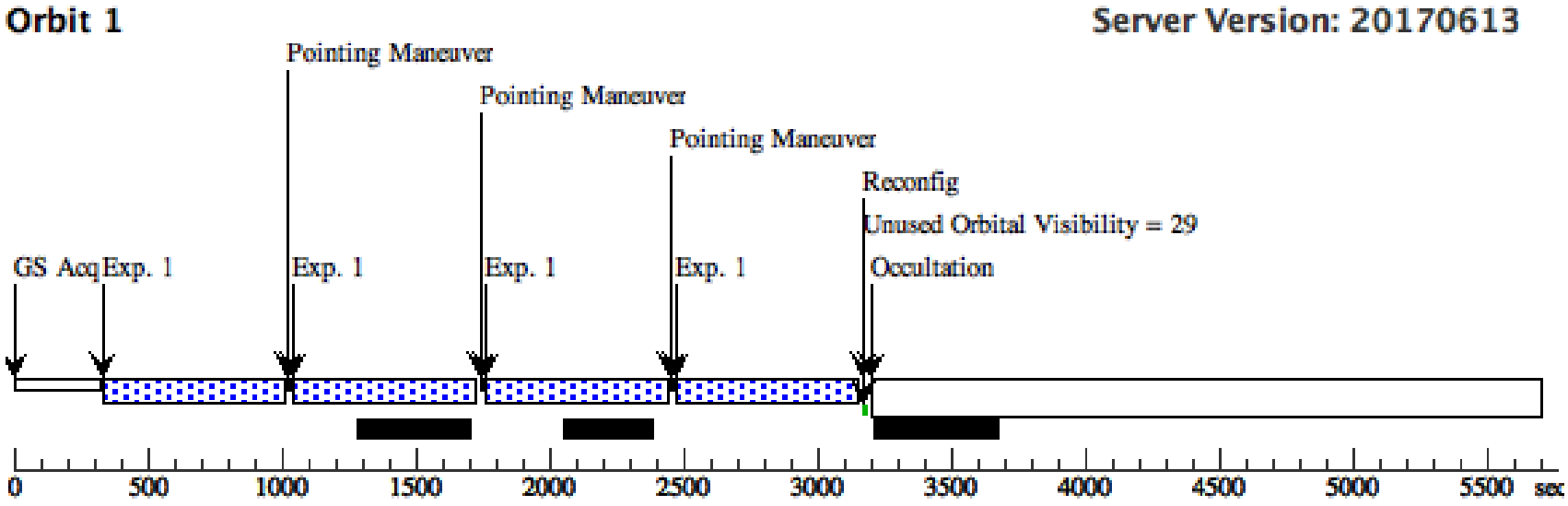
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HIZSS-003 Alt Name1: PGC2807061	RA: 07 00 26.4988 (105.1104117d) Dec: -04 12 36.97 (-4.21027d) Equinox: J2000		V=18	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) HIZSS-003	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS 50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 04 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 05, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

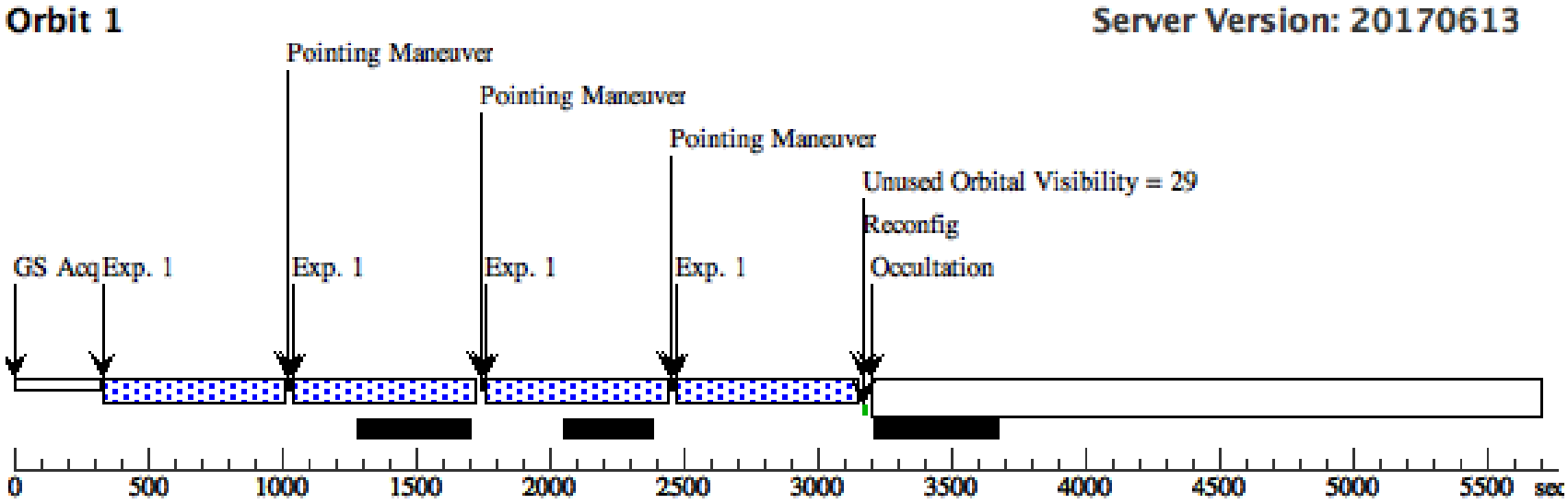
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HIZSS-003 Alt Name1: PGC2807061	RA: 07 00 26.4988 (105.1104117d) Dec: -04 12 36.97 (-4.21027d) Equinox: J2000		V=18	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) HIZSS-003	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 05 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 06, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)

Fixed Targets

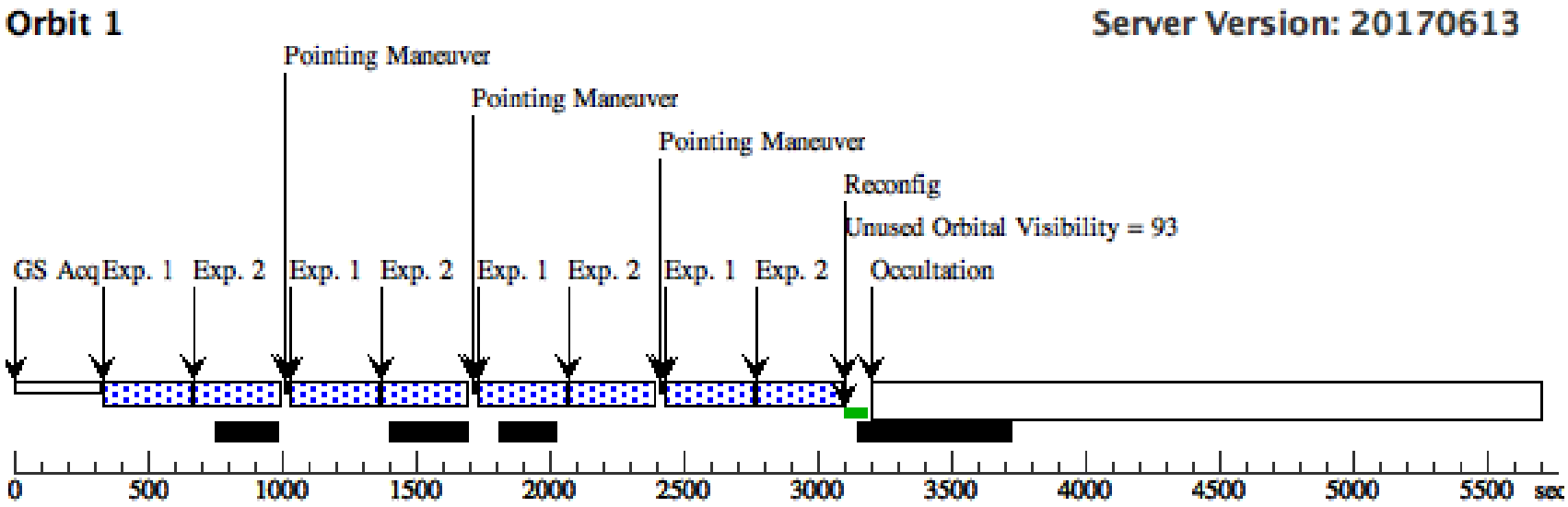
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	HIZSS-003 Alt Name1: PGC2807061	RA: 07 00 26.4988 (105.1104117d) Dec: -04 12 36.97 (-4.21027d) Equinox: J2000		V=18	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) HIZSS-003	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 06 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***
2		(2) HIZSS-003	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 06 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15150, Visit 07, implementation Wed Sep 27 19:21:20 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

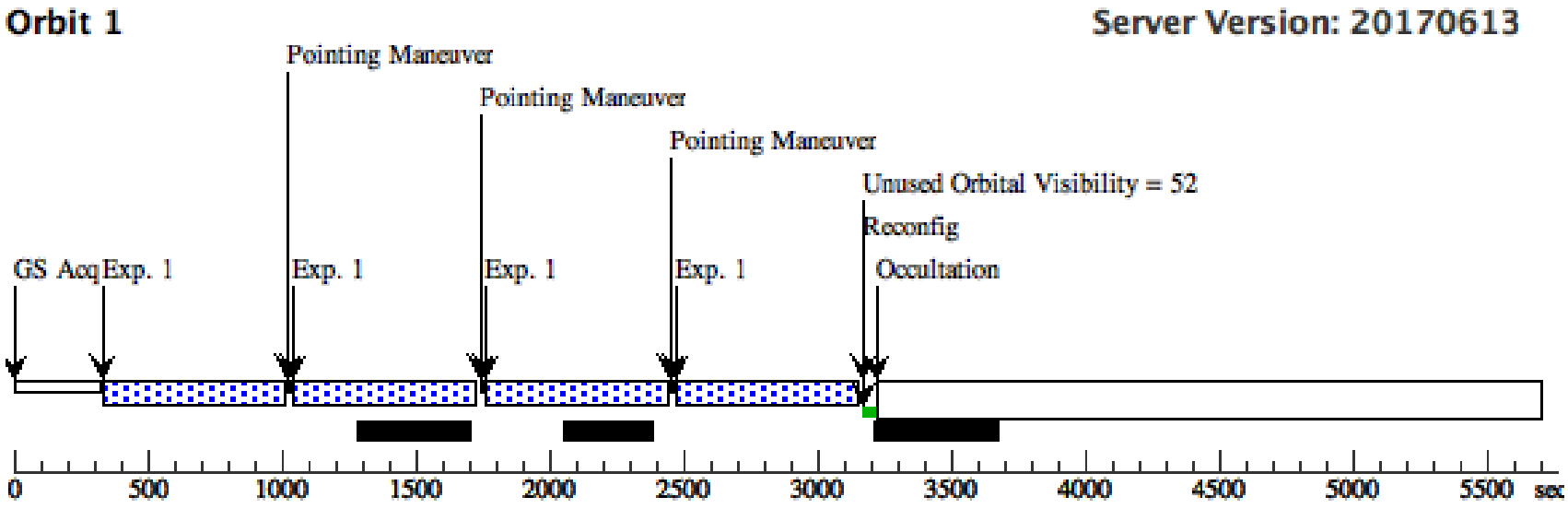
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HIZSS-021 Alt Name1: PGC2807065	RA: 07 46 16.1918 (116.5674658d) Dec: -28 28 3.70 (-28.46769d) Equinox: J2000		V=17	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) HIZSS-021	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 07 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 08, implementation Wed Sep 27 19:21:21 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

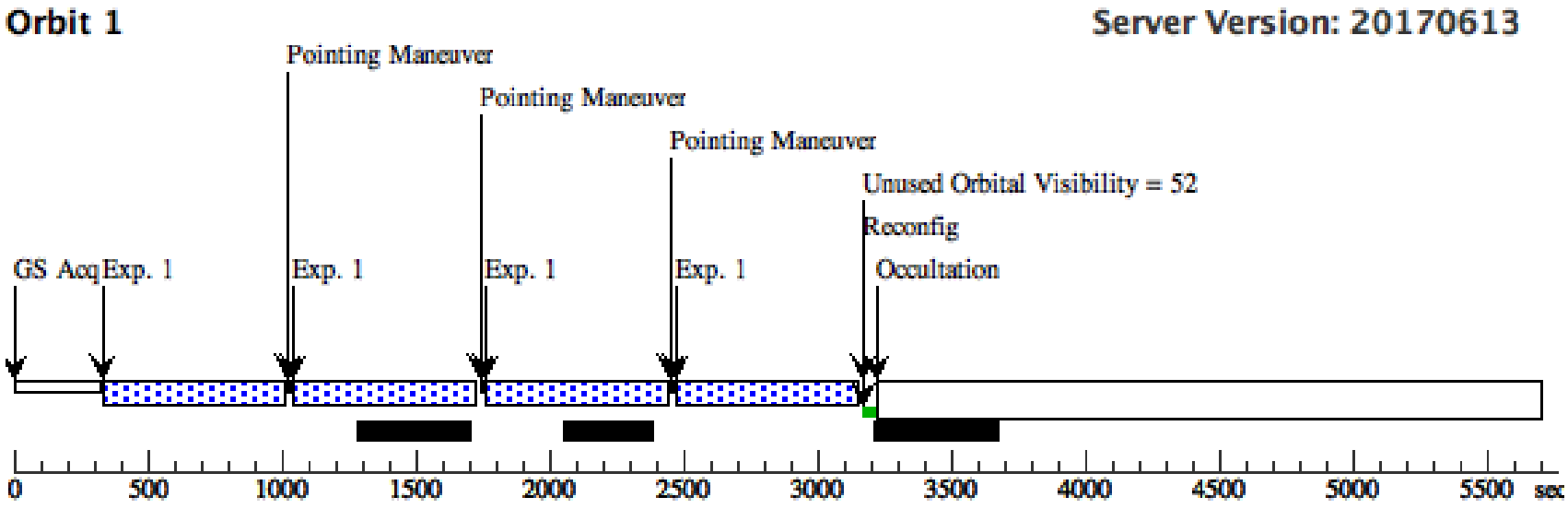
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HIZSS-021 Alt Name1: PGC2807065	RA: 07 46 16.1918 (116.5674658d) Dec: -28 28 3.70 (-28.46769d) Equinox: J2000		V=17	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) HIZSS-021	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 08 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 09, implementation Wed Sep 27 19:21:21 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)

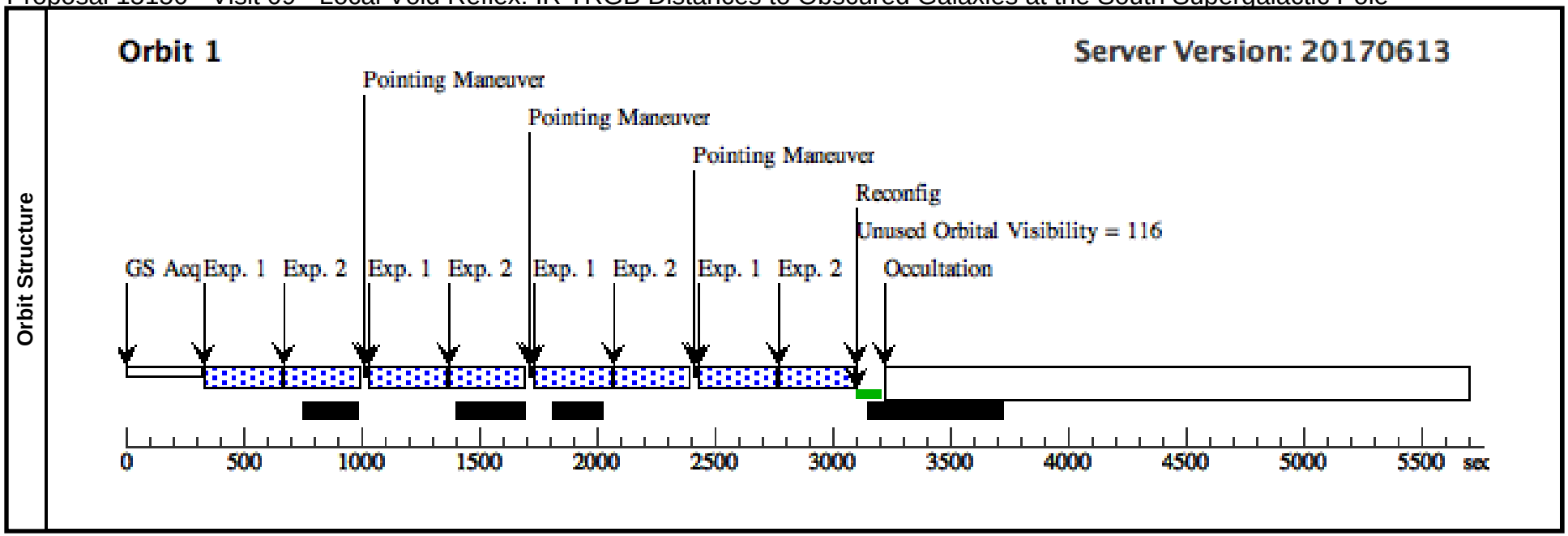
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HIZSS-021 Alt Name1: PGC2807065	RA: 07 46 16.1918 (116.5674658d) Dec: -28 28 3.70 (-28.46769d) Equinox: J2000		V=17	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) HIZSS-021	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 09 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***
2		(3) HIZSS-021	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 09 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Orbital Visibility = 116
GS Acq
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 15150, Visit 10, implementation Wed Sep 27 19:21:21 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

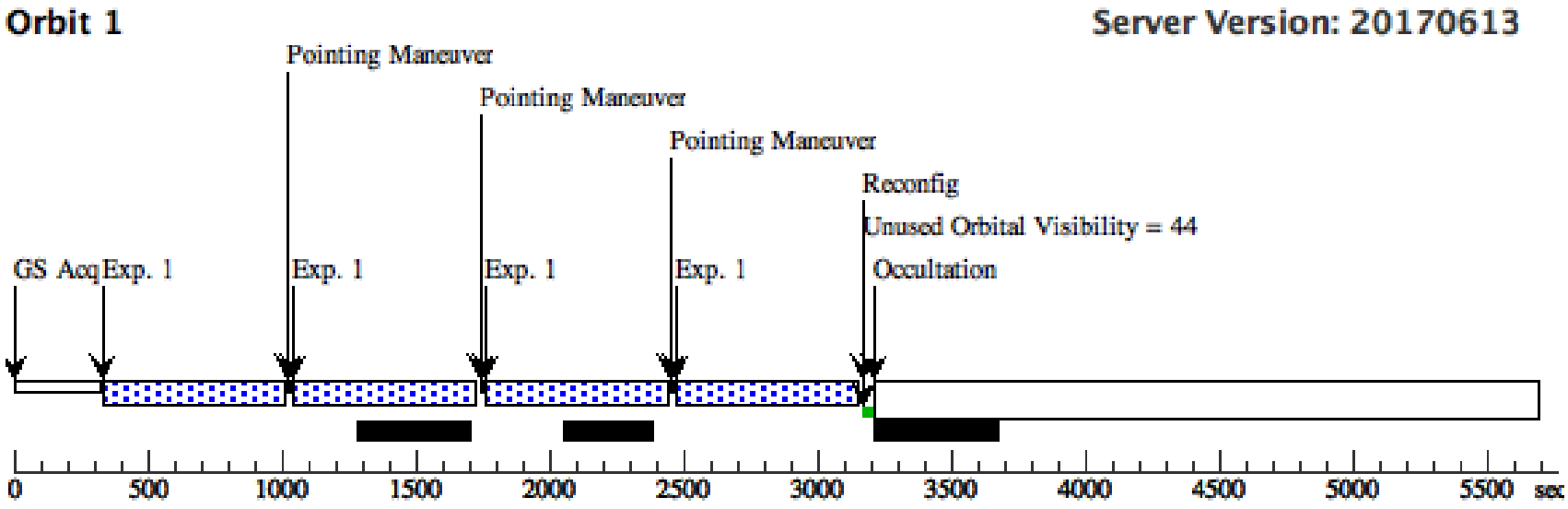
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	ESO-558-011 Alt Name1: PGC20171	RA: 07 06 57.1271 (106.7380296d) Dec: -22 02 25.48 (-22.04041d) Equinox: J2000		V=14	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) ESO-558-011	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 10 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 11, implementation Wed Sep 27 19:21:21 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

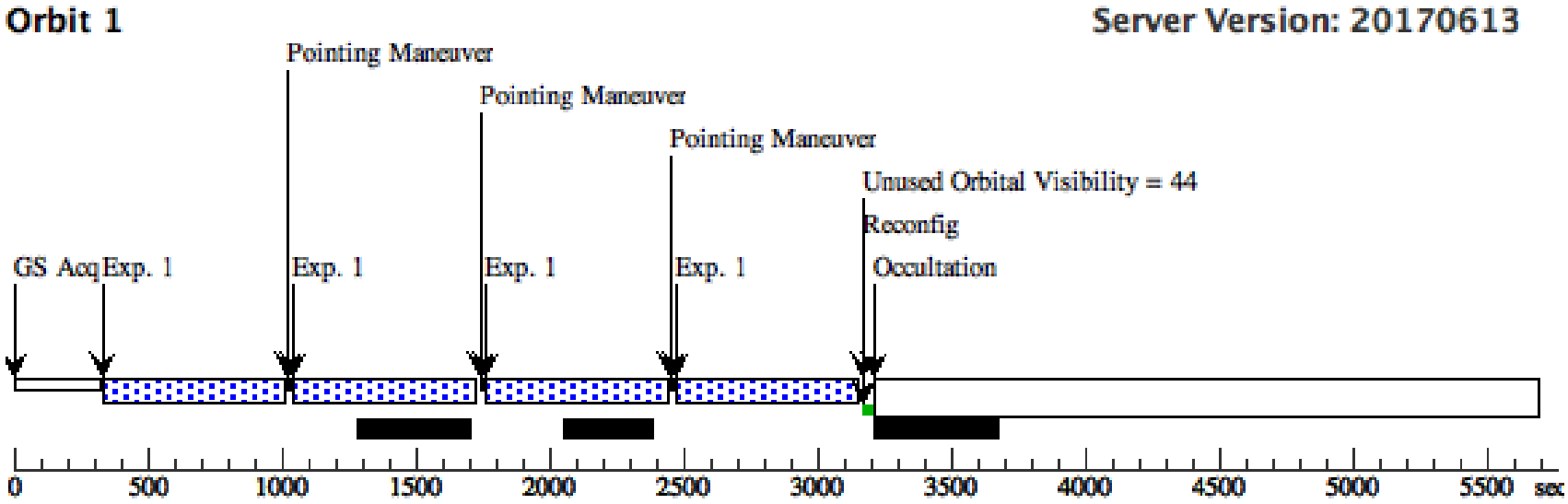
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	ESO-558-011 Alt Name1: PGC20171	RA: 07 06 57.1271 (106.7380296d) Dec: -22 02 25.48 (-22.04041d) Equinox: J2000		V=14	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) ESO-558-011	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=14		Pattern 1, Exps 1-1 in Visit 11 (1)	652.938154 Secs (2611.753 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15150, Visit 12, implementation Wed Sep 27 19:21:21 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-2)

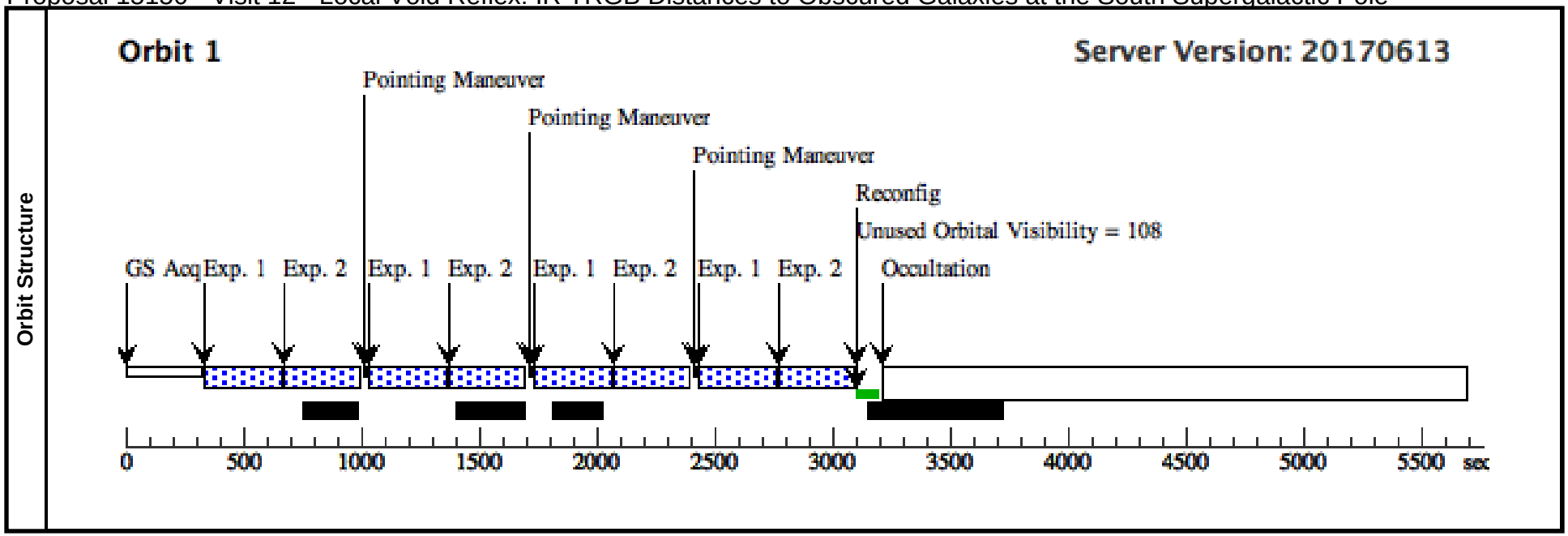
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	ESO-558-011 Alt Name1: PGC20171	RA: 07 06 57.1271 (106.7380296d) Dec: -22 02 25.48 (-22.04041d) Equinox: J2000		V=14	Reference Frame: NED

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) ESO-558-011	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 12 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) ESO-558-011	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=SPARS50; NSAMP=7		Pattern 1, Exps 1-2 in Visit 12 (1)	302.934997 Secs (1211.74 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20170613
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Orbital Visibility = 108
GS Acq
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec