14896 - Precise Photometric Redshifts For Two Bright z>8 Galaxies

Cycle: 24, Proposal Category: GO

(JWST Initative)

(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) SPT-GALJ015126-595439-ACS (3) SPT-GALJ015126-595439-WFC3	ACS/WFC WFC3/IR	3	19-Dec-2016 21:04:38.0	yes
02	(2) SGASJ095237+343531	WFC3/IR	2	19-Dec-2016 21:04:40.0	yes

5 Total Orbits Used

ABSTRACT

Deep field observations with the Hubble Space Telescope have revealed several hundred z>8 galaxy candidates in the universe's first billion years, but few if any are bright enough (H<24.5 AB) for detailed, high-S/N spectroscopic follow-up study with the James Webb Space Telescope. With the JWST launch fast-approaching it is essential that we make every attempt to identify as many bright high-z galaxies as possible to feed early science programs. With this is mind, we are proposing for WFC3/IR imaging observations of two exceptionally bright (H~24 AB) candidate z~8-10 dropout galaxies that were only recently identified in September 2016. Both targets are detected in H-band imaging and drop out strongly in blue bands. A preliminary Bayesian photo-z analysis of existing data reveals a a high probability that both sources are z>8, but cannot provide precise photometric redshift constraints. We propose for HST/WFC3 + ACS imaging to obtain the multi-band imaging necessary to recover precise photometric redshifts for these two dropout galaxies.

OBSERVING DESCRIPTION

The goal of this proposal is to obtain imaging of two fields in a total of six HST imaging bands, spanning 0.6-1.7 microns, to precisely constrain the photometric redshifts of two bright candidate z>8 galaxies. For one of the candidates we already have archival imaging in three bands, and only require new 2 orbits of WFC3/IR observations. The other candidate requires 2 orbits of WFC3/IR plus one orbit of WCS imaging.

We have arranged the observations to fit into two visits, one for each target. If it makes the scheduling easier, however, we could easily split the 3-orbit observation into two visits (2 orbits of WFC3/IR and 1 separate orbit of ACS/WFC).

In all of these observations we dither manually between several positions using the POS-TARG field in the special requirements for each exposure.

Visit

Proposal 14896, SPT0151_A (01), implementation Tue Dec 20 02:04:41 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: (none)

Fixed Targets

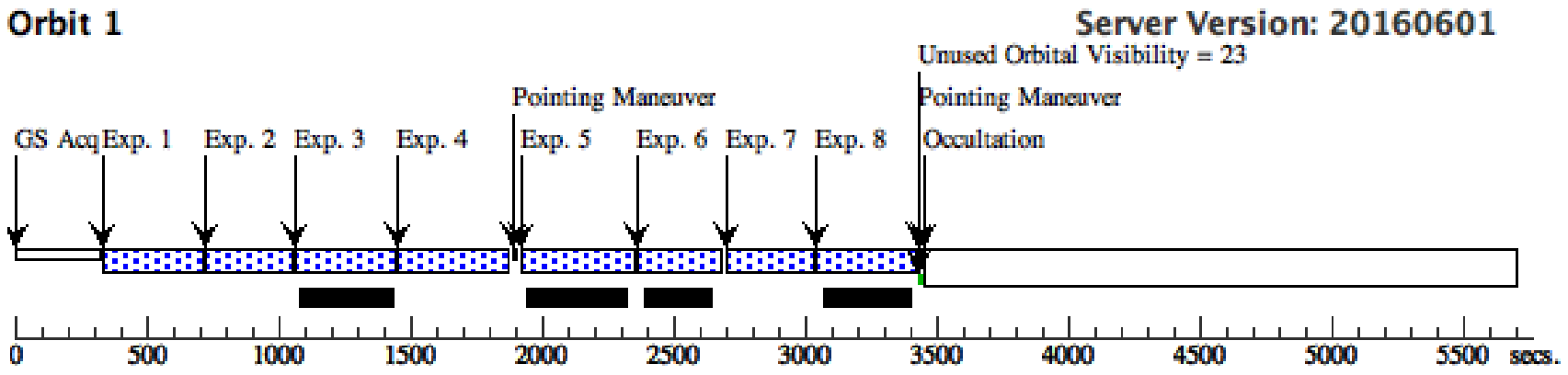
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SPT-GALJ015126-595439-ACS	RA: 01 51 26.7000 (27.8612500d) Dec: -59 54 39.00 (-59.91083d) Equinox: J2000		V=30.0 H=24.0	Reference Frame: 2MASS
(3)	SPT-GALJ015126-595439-WFC3	RA: 01 51 26.7000 (27.8612500d) Dec: -59 54 59.00 (-59.91639d) Equinox: J2000		V=30.0 H=24.0	Reference Frame: 2MASS

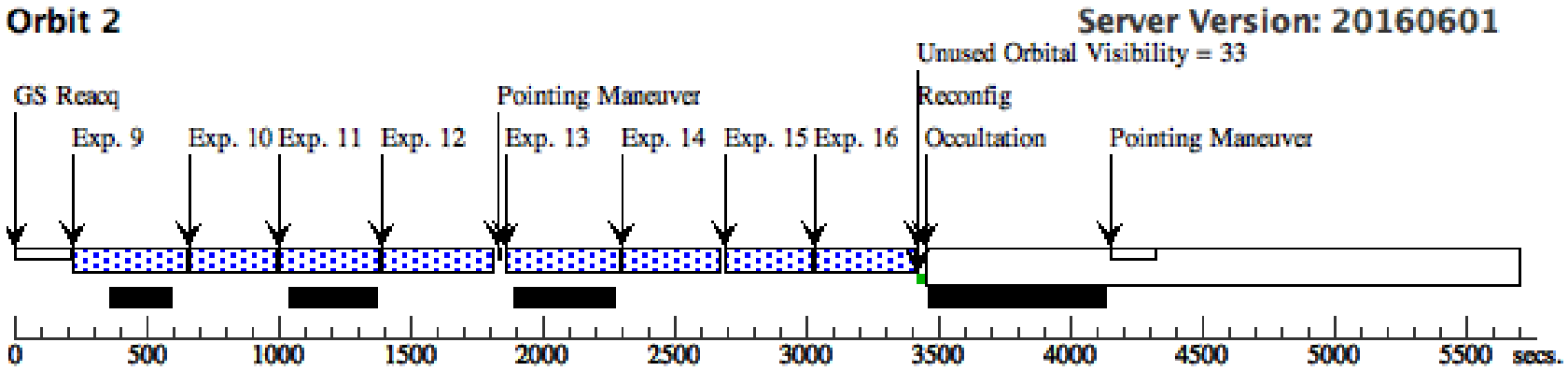
Exposures

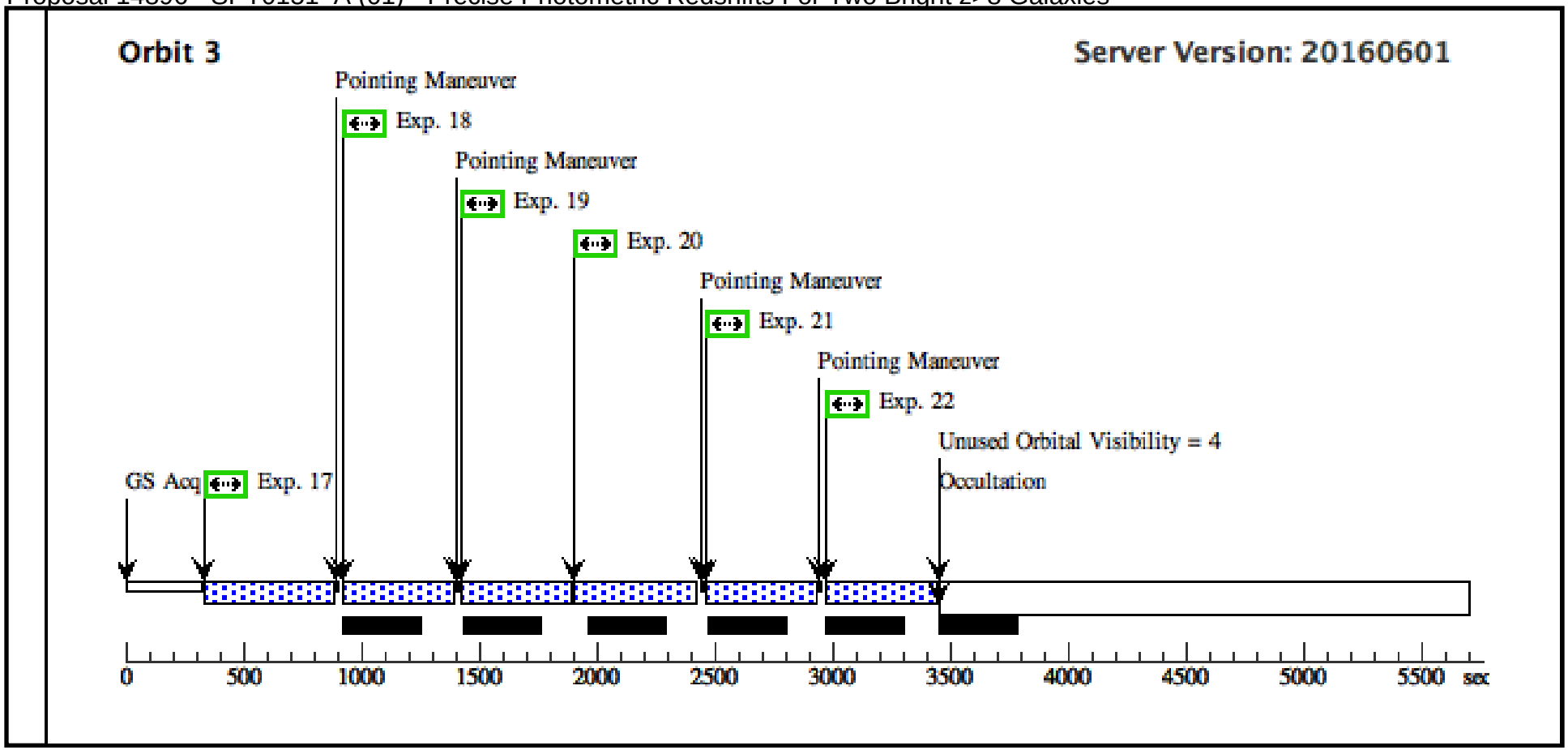
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W_1	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=8; SAMP-SEQ=SPARS50		Sequence 1-8 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[1]
2	F140W_2	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=7; SAMP-SEQ=SPARS50	SAME POS AS 1	Sequence 1-8 Non-Int in SPT0151_A (01)	302.934997 Secs (302.935 Secs) [==>]	[1]
3	F125W_1	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=8; SAMP-SEQ=SPARS50	SAME POS AS 2	Sequence 1-8 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[1]
4	F105W_2	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F105W	NSAMP=9; SAMP-SEQ=SPARS50	SAME POS AS 3	Sequence 1-8 Non-Int in SPT0151_A (01)	402.935899 Secs (402.936 Secs) [==>]	[1]
5	F105W_1	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F105W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 0.30275, 6.48275	Sequence 1-8 Non-Int in SPT0151_A (01)	402.935899 Secs (402.936 Secs) [==>]	[1]
6	F160W_2	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=7; SAMP-SEQ=SPARS50	SAME POS AS 5	Sequence 1-8 Non-Int in SPT0151_A (01)	302.934997 Secs (302.935 Secs) [==>]	[1]
7	F140W_1	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=7; SAMP-SEQ=SPARS50	SAME POS AS 6	Sequence 1-8 Non-Int in SPT0151_A (01)	302.934997 Secs (302.935 Secs) [==>]	[1]
8	F125W_2	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=8; SAMP-SEQ=SPARS50	SAME POS AS 7	Sequence 1-8 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[1]
9	F160W_3	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 0.3455,-0.47425	Sequence 9-16 Non-Int in SPT0151_A (01)	402.935899 Secs (402.936 Secs) [==>]	[2]
10	F140W_4	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=7; SAMP-SEQ=SPARS50	SAME POS AS 9	Sequence 9-16 Non-Int in SPT0151_A (01)	302.934997 Secs (302.935 Secs) [==>]	[2]
11	F125W_3	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=8; SAMP-SEQ=SPARS50	SAME POS AS 10	Sequence 9-16 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[2]
12	F105W_4	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F105W	NSAMP=9; SAMP-SEQ=SPARS50	SAME POS AS 11	Sequence 9-16 Non-Int in SPT0151_A (01)	402.935899 Secs (402.936 Secs) [==>]	[2]
13	F105W_3	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F105W	NSAMP=9; SAMP-SEQ=SPARS50	POS TARG 0.64825, 7.1370	Sequence 9-16 Non-Int in SPT0151_A (01)	402.935899 Secs (402.936 Secs) [==>]	[2]
14	F160W_4	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=8; SAMP-SEQ=SPARS50	SAME POS AS 13	Sequence 9-16 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[2]
15	F140W_3	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=7; SAMP-SEQ=SPARS50	SAME POS AS 13	Sequence 9-16 Non-Int in SPT0151_A (01)	302.934997 Secs (302.935 Secs) [==>]	[2]
16	F125W_4	(3) SPT-GALJ01512 6-595439-WFC3	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=8; SAMP-SEQ=SPARS50	SAME POS AS 13	Sequence 9-16 Non-Int in SPT0151_A (01)	352.935448 Secs (352.935 Secs) [==>]	[2]

	17	F814W_1	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F814W		Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***
	18	F814W_2	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F814W	POS TARG 0.247,2.984	Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***
	19	F814W_3	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F814W	POS TARG 0.494,5.968	Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***
	20	F606W_1	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F606W	SAME POS AS 19	Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***
	21	F606W_2	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F606W	SAME POS AS 18	Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***
	22	F606W_3	(1) SPT-GALJ015126-595439-ACS	ACS/WFC, ACCUM, WFC-FIX	F606W	SAME POS AS 17	Sequence 17-22 Non-Int in SPT0151_A (01)	350 Secs (343 Secs) *[==>343.0 Secs]*	 ***[3]***

Orbit Structure



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Exp. 19
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Exp. 22
Unused Orbital Visibility = 4
Occultation
GS Acq
Exp. 17
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14896, SGAS0952 (02), implementation Tue Dec 20 02:04:42 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SGASJ095237+343531	RA: 09 52 37.9000 (148.1579167d) Dec: +34 35 21.10 (34.58919d) Equinox: J2000		V=30. H=23.8	Reference Frame: 2MASS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F140W_1	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=10; SAMP-SEQ=SPARS50		Sequence 1-6 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[1]***
2	F125W_2	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=9; SAMP-SEQ=SPARS50	SAME POS AS 1	Sequence 1-6 Non-Int in SGAS0952 (02)	402.935899 Secs (402.936 Secs) *[==>]*	***[1]***
3	F098M_1	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F098M	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 2	Sequence 1-6 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[1]***
4	F098M_2	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F098M	NSAMP=10; SAMP-SEQ=SPARS50	POS TARG 6.48275, 0.30275	Sequence 1-6 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[1]***
5	F140W_2	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 4	Sequence 1-6 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[1]***
6	F125W_1	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=9; SAMP-SEQ=SPARS50	SAME POS AS 4	Sequence 1-6 Non-Int in SGAS0952 (02)	402.935899 Secs (402.936 Secs) *[==>]*	***[1]***
7	F140W_3	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=10; SAMP-SEQ=SPARS50	POS TARG 0.47425, 0.6055	Sequence 7-12 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[2]***
8	F125W_4	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 7	Sequence 7-12 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[2]***
9	F098M_3	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F098M	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 8	Sequence 7-12 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[2]***
10	F098M_4	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F098M	NSAMP=11; SAMP-SEQ=SPARS50	POS TARG 7.317,0.90825	Sequence 7-12 Non-Int in SGAS0952 (02)	502.936801 Secs (502.937 Secs) *[==>]*	***[2]***
11	F140W_4	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F140W	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 10	Sequence 7-12 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[2]***
12	F125W_3	(2) SGASJ095237+343531	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=10; SAMP-SEQ=SPARS50	SAME POS AS 10	Sequence 7-12 Non-Int in SGAS0952 (02)	452.93635 Secs (452.936 Secs) *[==>]*	***[2]***

Orbit Structure