12325 - Photometry with Spatial Scans

Cycle: 17, Proposal Category: CAL/WFC3

(Availability Mode: RESTRICTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. John W. MacKenty (PI)	**Space Telescope Science Institute**	**mackenty@stsci.edu**
Dr. Peter McCullough (CoI)	Space Telescope Science Institute	pmcc@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) P330E	WFC3/IR	1	06-Apr-2011 21:01:05.0	yes
02	(4) GJ1214	WFC3/IR WFC3/UVIS	2	06-Apr-2011 21:01:30.0	yes
03	(3) HD-80606	WFC3/IR	1	06-Apr-2011 21:01:38.0	yes
04	(5) HD-17156	WFC3/IR	1	06-Apr-2011 21:01:40.0	yes

5 Total Orbits Used

ABSTRACT

This program tests the performance of spatial scans and the WFC3 IR channel. Observations of a spectrophotometric standard star will determine the velocity vector of motion and its controlability and repeatability. It will also answer some basic questions regarding the initiation of a scan (ramp up and offset positioning). These measurements will also serve to obtain a confirmation of the imaging photometric zero point for the IR channel and the residual errors in the flat field.

OBSERVING DESCRIPTION

The standard star P330E is placed at the nominal center of the IR detector (default aperture location).

Proposal 12325 - Visit 01 - Photometry with Spatial Scans

Visit

Proposal 12325, Visit 01, completed Thu Apr 07 01:01:44 GMT 2011

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 0D TO 10 D; ORIENT 25D TO 100 D; ORIENT 115D TO 190 D; ORIENT 205D TO 280 D; ORIENT 295D TO 359.99 D

Comments: Visit 1 packs into one orbit according to APT, but we expect that with the spatial scanning overheads, it will actually take two orbits, and that's ok. Please keep blocks of exposures together: i.e. keep exposures 1-6, 7-10, 11-17, and 18-23 together.

*If the ORIENT constraints impact scheduling, please realize that the ORIENT constraint is not critical and can be relaxed, especially for Visit 1 (with no grism spectrum, just trailed stellar PSFs); the ORIENTs that would be worst are 14 degrees + N*90, with N = 0, 1, 2, 3, because ORIENT=14 degrees corresponds to the PA of the nearest bright star (59 degrees) to the target minus 45 degrees (the detector orient w.r.t. to due North). APT predicts that the ORIENT constraints expressed in this Phase 2 change the window of schedulability of Nov 12-27 into two windows Nov 12-16 and Nov 21-27. If schedulers need to put this program in the Nov 16-21 window in order to schedule it in 2010, then proceed anyway - the chance of overlapping trails is still very very small. Getting some data expediently is more important than non-overlapping trails.*

Diagnostics

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

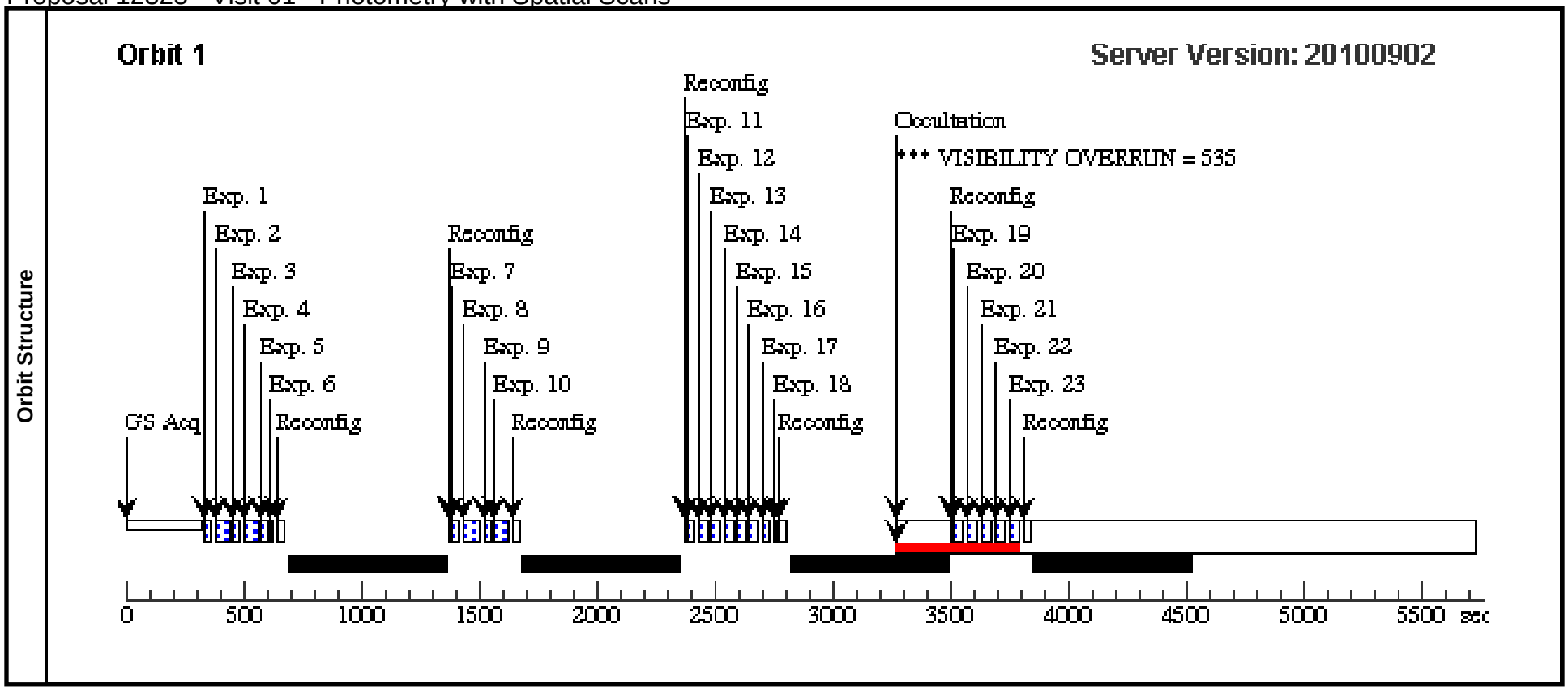
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	P330E	RA: 16 31 33.8500 (247.8910417d) Dec: +30 08 47.10 (30.14642d) Equinox: J2000		V=13.00	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2			*[==>]*	***[1]***
Comments: Image to establish initial pointing location.									
2		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec; same pos as Exp 1.									
3		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
4		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec.									
5		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Purposefully choose NOT to use SAME POS as Exposure 1 to test omission. Staring mode.									
6		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2			*[==>]*	***[1]***
Comments: Staring mode. Same POS as Exp 1 (to test that again).									
7		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
8		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=15	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 0.5 arcsec/sec.									
9		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
10		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=11	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 2.0 arcsec/sec.									
11		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
12		(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=4	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 5.0 arcsec/sec.									

13	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=4	*[==>]*	***[1]***
Comments: Scan at 5.0 arcsec/sec.						
14	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=4	*[==>]*	***[1]***
Comments: Scan at 5.0 arcsec/sec.						
15	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=4	*[==>]*	***[1]***
Comments: Scan at 5.0 arcsec/sec.						
16	(1) P330E	WFC3/IR, MULTIACCUM, IR	F110W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=4	*[==>]*	***[1]***
Comments: Scan at 5.0 arcsec/sec. F110W is intentional in order to validate that photometry of trailed stars is similar to that of untrailed stars (which we have from many calibration programs of P330E); F110W also gives 50% greater more flux, which may be helpful for the highest scanning rate (5 arcsec/sec).						
17	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=2	*[==>]*	***[1]***
Comments: Staring mode.						
18	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	*[==>]*	***[1]***
Comments: Staring mode.						
19	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=6	*[==>]*	***[1]***
Comments: Scan at 3.0 arcsec/sec.						
20	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=6	*[==>]*	***[1]***
Comments: Scan at 3.0 arcsec/sec. Angle = 90 degrees						
21	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=6	*[==>]*	***[1]***
Comments: Scan at 3.0 arcsec/sec. ANGLE = 180 degrees						
22	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=6	*[==>]*	***[1]***
Comments: Scan at 3.0 arcsec/sec. ANGLE = 270 degrees						
23	(1) P330E	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID NEW ALIGNMENT ; NSAMP=5	*[==>]*	***[1]***
Comments: Scan at 3.0 arcsec/sec. ANGLE = 30 degrees						


Orbit Structure
Orbit 1
Server Version: 20100902
GS Acq
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Reconfig
Reconfig
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Reconfig
Reconfig
Exp. 11
Exp. 12
Exp. 13
Exp. 14
Exp. 15
Exp. 16
Exp. 17
Exp. 18
Reconfig
Occultation
*** VISIBILITY OVERRUN = 535
Reconfig
Exp. 19
Exp. 20
Exp. 21
Exp. 22
Exp. 23
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12325, Visit 02, implementation Thu Apr 07 01:01:46 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: SCHED 50%; ORIENT 236D TO 336 D; BETWEEN 2011.108:04:00:00 AND 2011.108:08:00:00

Comments: Target = GJ 1214, a superearth transiting planet around an M dwar star, for comparison with data from program 12251, the P.I. of which, Zach Berta approves our observing GJ 1214 for these purposes, so program 12325 does not conflict with GO program 12251.

This visit consists of three non-interuptible sequences, and IR one, a UVIS one, and an identical copy of the IR one. Ideally, we would fit the first two sequences into the first orbit and the third one in the second orbit (in which case the rest of the second orbit can be used simply to keep repeating the forward-reverse pairs of exposures 6 and 7 again and again until the visibility ends).

An orientation of 80.68 degrees would match that actually observed in visit 2 of program 12251, which would simplify comparison of the spatial scan spectra with that of nominal spectra. It also would help us know what confusing sources might overlap the spectra. However, orient 80.68 degrees is not available until the Fall, so we choose a wider range of orients that can be observed in April or May 2011. In program 12251, they avoided orient 196 deg by 15 degrees to assure the spectrum of the nearest bright star (16 arcsec away at PA=151 deg) wouldn't come within 30 rows of the target spectrum. We expand that to 80 rows in order to accomodate 50 rows of scanning (plus the same 30 rows for PSF wings), which gives orient constraint of 56 to 156 degrees or 236 degrees to 336 degrees. (The roll angle report suggests an orient range of 260 to 290 degrees will allow it to schedule before May 5, 2011.)

The phase constraints ensure that the planet is in transit for at least 3/4 of the second orbit of the visit. That will astrophysically match this program's second visit and second orbit to the third orbit of visit 2 of program 12251. We assume the HST orbit is 96.0 minutes long.

NOTE: the phase constraints given for the first direct image that initiates the non-interupptible sequence are desired but not required for this engineering test. Please do not delay the test past April 24, 2011 in order to match the phase constraint, but if all other things are equal, please use these phase constraints. If the phase constraints can be adopted, this engineering test will also produce excellent scientific added value to program 12251. However, the engineering test is time critical and expediency should be a very high priority. If the visit cannot be scheduled until after April 24, 2011 in any case, please do not delay more than an additional 4 days to meet the phase constraint. Bottom line: schedule as you please, but if you can also schedule with the phase constraint, please do!

The POS TARG on the direct image along with the SAME POS on the staring-mode grism exposures makes the direct image on the same quadrant as the zeroth order image and approximately on the same rows as the first order spectrum and the zeroth order image appear. We quote from proposal 12251: "We position our target such that the direct image is located at pixels (505 px, 532 px). As described by L. Petro (TIR 2010-03), this location optimally avoids known bad pixels and IR blobs while keeping both the 1st order spectrum from crossing an amplifier boundary and the 0th order spectrum in view on the subarray. As calculated in TIR 2010-03, we introduce a POS TARG of (-2.303", 1.202") to offset the target from (522 px, 522 px), the fiducial pixel for the IRSUB512 aperture we are using."

NOTE that we are not allowed to use "SAME POS" with spatial scans, so we cut and paste the POS TARG above to each scanned exposure.

Implementation Notes: Originally PERIOD 1.5804075D and ZERO-PHASE HJD2454983.908864 were specified on the Visit. This was replaced by a BETWEEN to accomplish the intention with the SPSS scheduling.

The scheduling requires a break in the original NON-INT SEQUENCEs after exposures 6 and 24

Two additional WFC3/IR exposures added to the end of the Visit. These will be used to validate better timing offsets between the start of the exposure commanding and the start of constant velocity of the scan.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	GJ1214	RA: 17 15 18.9180 (258.8288250d)	Proper Motion RA: +585 mas/yr	V=14.67	Reference Frame: ICRS
		Dec: +04 57 50.09 (4.96391d)	Proper Motion Dec: -752 mas/yr	J=9.75,	
		Equinox: J2000	Parallax: 0.0772"	H=9.09,	
			Epoch of Position: 2000	K=8.78	

Comments: Coordinates are copied from program 12251, which states:

R.A. and Dec. (equinox = J2000.0, epoch = 2000.000) and proper motions are taken from the LSPM-North Catalog (Lepine & Shara, 2005). Accounting for proper motion, this position agrees with the 2MASS position quoted in SIMBAD (equinox = J2000.0, epoch ~ 2000.5) to within 0.1".

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Direct Image	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	F130N	NSAMP=3; SAMP-SEQ=RAPID	POS TARG -2.303,1.202	Sequence 1-6 Non-Int in Visit 02	*[==>]*	***[1]***
	Comments: Originally this exposure contained PHASE 0.942 TO 0.954 which was replaced by a BETWEEN to implement the intent.								
2	2 Grisms, staring mode	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=RAPID; NSAMP=7	SAME POS AS 1	Sequence 1-6 Non-Int in Visit 02	*[==>(Copy 1)]* *[==>(Copy 2)]*	***[1]***
	Comments: These two staring mode grism spectra replicate the type used in program 12251, except there the sequence was of 48 of these. Including a pair here provides contemporaneous staring-mode spectra, without proprietary restrictions, for comparison with the spatial scan spectra which are coming later in this visit.								
3	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 1-6 Non-Int in Visit 02	*[==>]*	***[1]***
	Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly. *Scan_Rate = 0.10 arcsec/sec* *Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).* *Scan_Direction = Forward* *Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.* *We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.*								
4	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 1-6 Non-Int in Visit 02	*[==>]*	***[1]***
	Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly. *Scan_Rate = 0.10 arcsec/sec* *Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).* *Scan_Direction = Forward* *Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.* *We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.*								
5	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 1-6 Non-Int in Visit 02	*[==>]*	***[1]***
	Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly. *Scan_Rate = 0.10 arcsec/sec* *Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).* *Scan_Direction = Forward* *Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.* *We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.*								

6	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 1-6 Non-Int in Visit 02	*[==>]*	***[1]***

Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward

Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the starin g mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.

We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.

7	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 7-10 Non-Int in Visit 02	*[==>]*	***[1]***

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one forward.

8	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 7-10 Non-Int in Visit 02	*[==>]*	***[1]***

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one reverse.

9	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 7-10 Non-Int in Visit 02	*[==>]*	***[1]***

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one forward.

10	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 7-10 Non-Int in Visit 02	[==>]	[1]

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one Reverse.

11	3 images, staring mode	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	1 Secs X 3 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)]	[1]

Comments: Demo a time series of subarray images, to establish nominal overheads and to validate positioning of target. ETC predicts peak pixel saturates in 3.2 sec for Pickels M5V and H=9.09 mag.

12	Scanning forward repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

13	Scanning forward repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

14	Scanning forward repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

15	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

16	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Reverse

17	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs [==>]	[1]

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

18	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Reverse*								
19	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Forward*								
20	Scanning RT repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Reverse*								
21	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Forward*								
22	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0,5; NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 0 degrees* *Scan_Direction = Forward*								
23	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0,5; NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 0 degrees* *Scan_Direction = Reverse*								
24	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 11-24 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Reverse*								
25	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 25-28 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 90 degrees* *Scan_Direction = Reverse*								
26	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0,5; NEW ALIGNMENT	Sequence 25-28 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***
	Comments: Scan_Rate = 0.999 arcsec/sec *Scan_Orient = 0 degrees* *Scan_Direction = Reverse*								

27	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	POS TARG 0,5; NEW ALIGNMENT	Sequence 25-28 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 0 degrees
Scan_Direction = Forward

28	Scanning L-shape repeatedly	(4) GJ1214	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F814W	CR-SPLIT=NO	NEW ALIGNMENT	Sequence 25-28 Non-Int in Visit 02	5 Secs *[==>]*	***[1]***

Comments: Scan_Rate = 0.999 arcsec/sec
Scan_Orient = 90 degrees
Scan_Direction = Forward

29	Direct Image	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	F130N	NSAMP=3; SAMP-SEQ=RAPID	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***
30	2 Grisms, staring mode	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=RAPID; NSAMP=7	SAME POS AS 1	Sequence 29-39 Non-Int in Visit 02	*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***

Comments: These two staring mode grism spectra replicate the type used in program 12251, except there the sequence was of 48 of these. Including a pair here provides contemporaneous staring-mode spectra, without proprietary restrictions, for comparison with the spatial scan spectra which are coming later in this visit.

31	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***

Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward

Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.

We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.

32	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***

Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward

Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.

We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.

33	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	[==>] **[2]**

Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward

Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.

We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.

34	4 Grisms, scanning mode, forward repeatedly	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	[==>] **[2]**

Comments: These spatially scanned exposures will benchmark the overhead of forward scanning repeatedly.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward

Exposure time is intended to be 60 sec, to scan 6 arcsec or 46 rows of IR detector. Based upon 6-sec exposures of program 12251, we anticipate 13000 DN/pixel peak in the scanned spectra at 0.10 arcsec/s; the staring mode spectra of 12251 had peak counts of 27000 DN/pixel. We prefer to stay far below full well for these tests in order to simplify analysis and interpretation.

We repeat 4 times to test for repeatability and examine charge persistence issues. Although we anticipate (hope) that SPARS10 can be maintained indefinitely with IRSUB512 without stopping for buffer dumps, to be even more confident for this test, we might use SPARS25 instead if necessary to benchmark other overheads without confusion. SPARS10 is preferred because it will provide better time sampling of emission of persistent charge and evidence of any variations in scanning rate.

35	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	[==>] **[2]**

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one forward.

36	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	[==>] **[2]**

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one Reverse.

37	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one forward.

38	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***

Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one reverse.

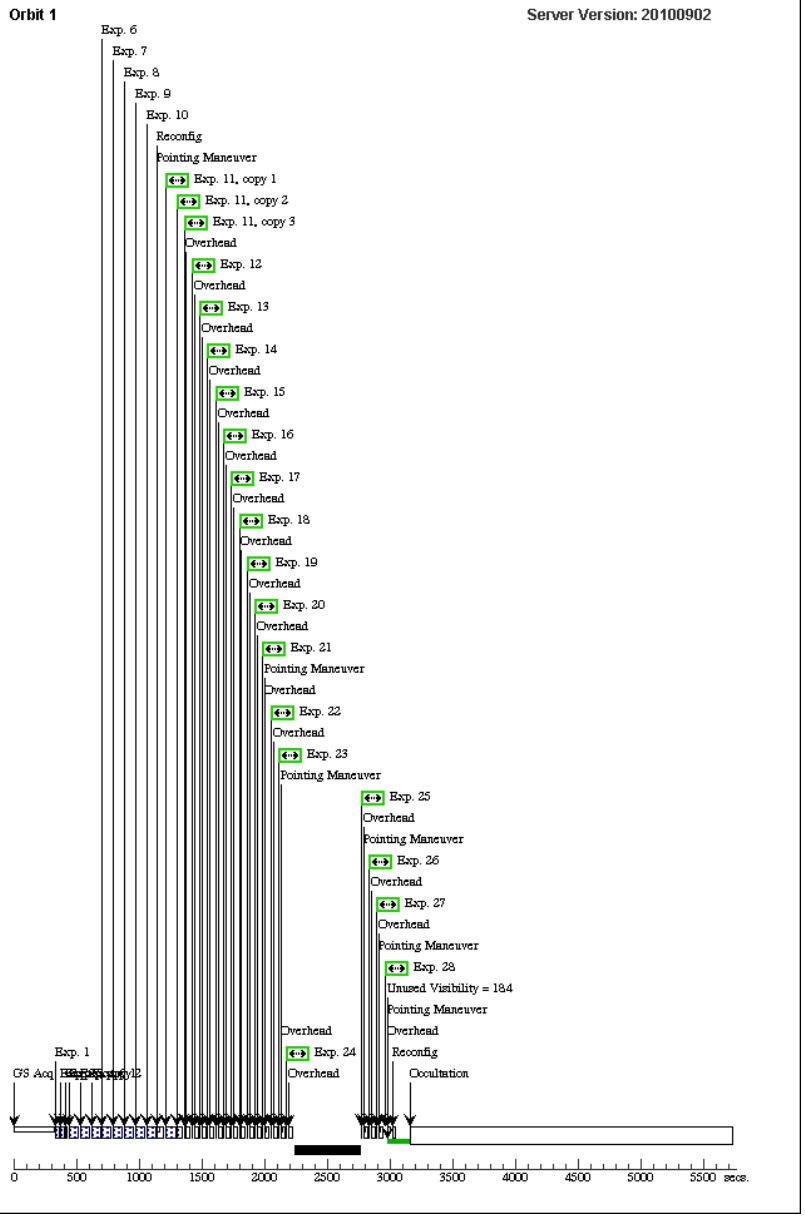
39	4 Grisms, scanning mode, RT	(4) GJ1214	WFC3/IR, MULTIACCUM, IRSUB512	G141	SAMP-SEQ=SPARS10; NSAMP=7	POS TARG -2.303,1.202; NEW ALIGNMENT	Sequence 29-39 Non-Int in Visit 02	*[==>]*	***[2]***

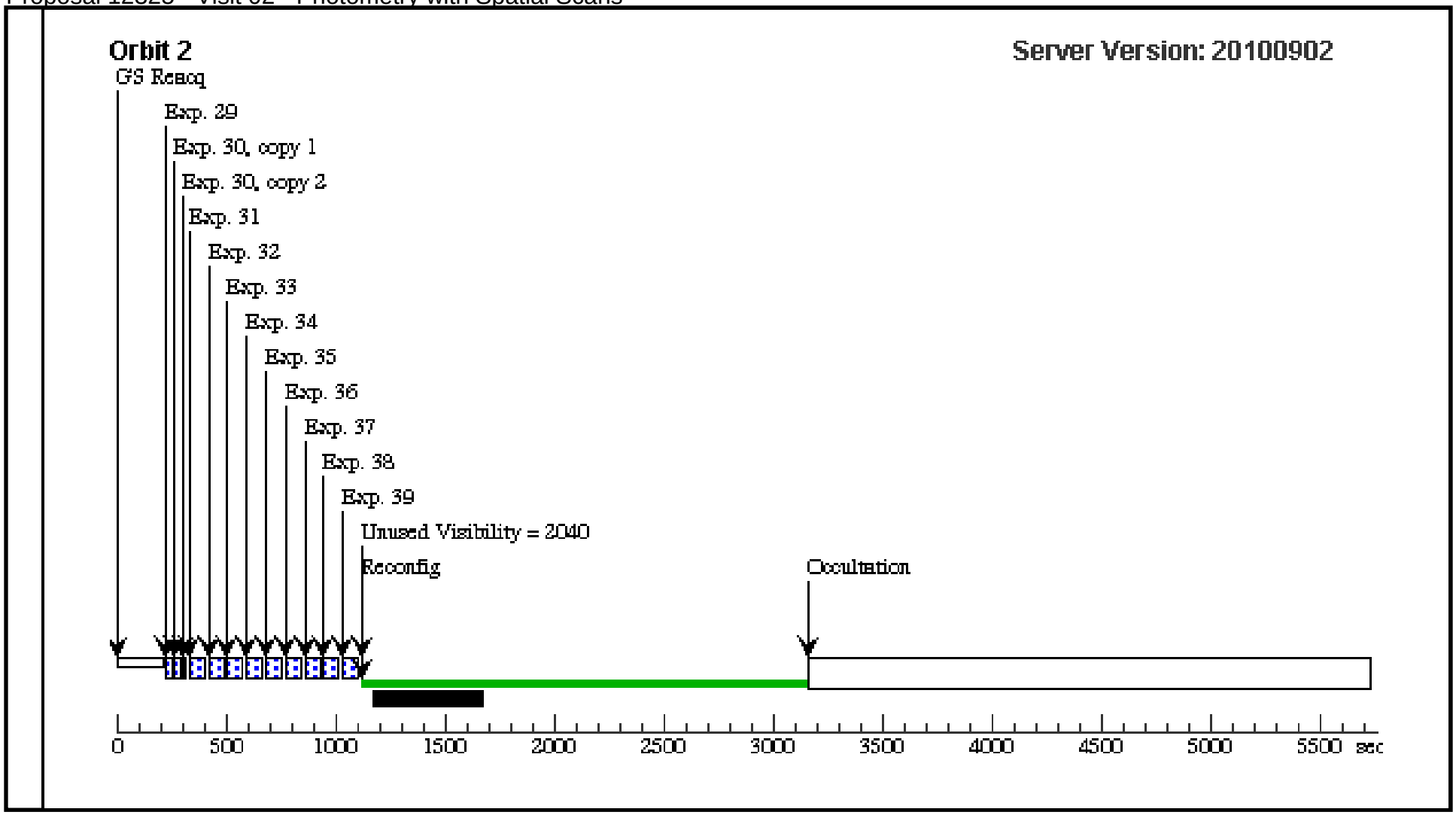
Comments: Similar to previous quadruplet of scanned spectra, these spatially scanned exposures will benchmark the overhead of round-trip scanning repeated 2 times (4 scans). For a round trip, one must explicitly request forward then reverse Scan_Direction. Number of iterations must be 1, and repeats of the forward+reverse must be cut-and-pasted explicitly in APT as we have done here.

Scan_Rate = 0.10 arcsec/sec
Scan_Orient = 90 degrees, or whatever makes the scan spread the spectrum out perpendicular to dispersion as indicated in the accompanying diagram, in a separate document. We want the stars to scan upward (i.e. increase their Y values on the FITS image with time).
Scan_Direction = Forward and Reverse alternated (odd ones Forward, even ones Reverse)

THIS one forward.

Orbit Structure




Orbit 2
Server Version: 20100902
GS Reacq
Exp. 29
Exp. 30, copy 1
Exp. 30, copy 2
Exp. 31
Exp. 32
Exp. 33
Exp. 34
Exp. 35
Exp. 36
Exp. 37
Exp. 38
Exp. 39
Unused Visibility = 2040
Reconfig
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12325, Visit 03, implementation Thu Apr 07 01:01:48 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Comments: Visit 3 packs into one orbit according to APT, but we expect that with the spatial scanning overheads, it will actually take two orbits, and that's ok. Please keep blocks of exposures together: i.e. keep exposures xxx together. HD 80606 is a double star, which restricts the length and orientation of any scan to avoid overlap of spectra.

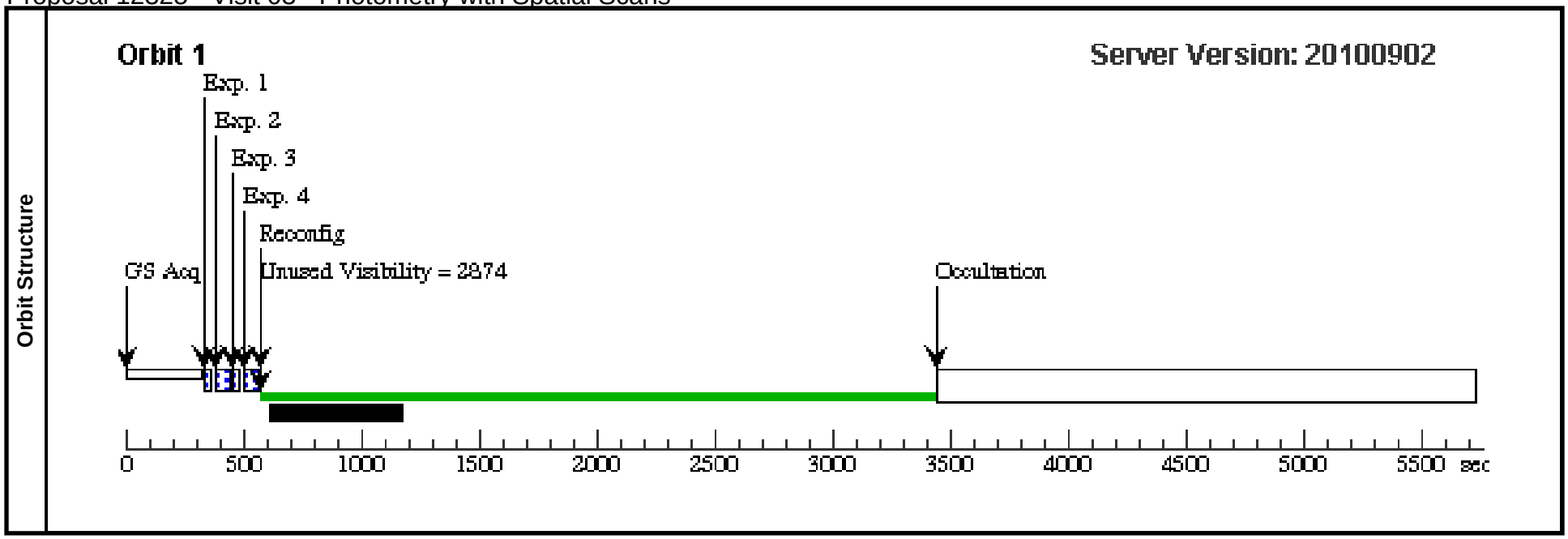
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HD-80606	RA: 09 22 37.5679 (140.6565329d) Dec: +50 36 13.40 (50.60372d) Equinox: J2000		V=9.06	Reference Frame: ICRS

Comments: Double check coordinates etc because 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/[Actual Dur.]	Orbit
1		(3) HD-80606	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2			*[==>]*	***[1]***
Comments: Image to establish initial pointing location.									
2		(3) HD-80606	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec; same pos as Exp 1.									
3		(3) HD-80606	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
4		(3) HD-80606	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec.									


Orbit Structure
Orbit 1
Server Version: 20100902
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Reconfig
GS Acq
Unused Visibility = 2874
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12325, Visit 04, implementation Thu Apr 07 01:01:48 GMT 2011

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Comments: target = hd 17156, a bright star with a highly eccentric transiting planet in a 111 day orbit; this was observed for 10 days with HST FGS by Gilliland et al and has many hours of SST observations also.

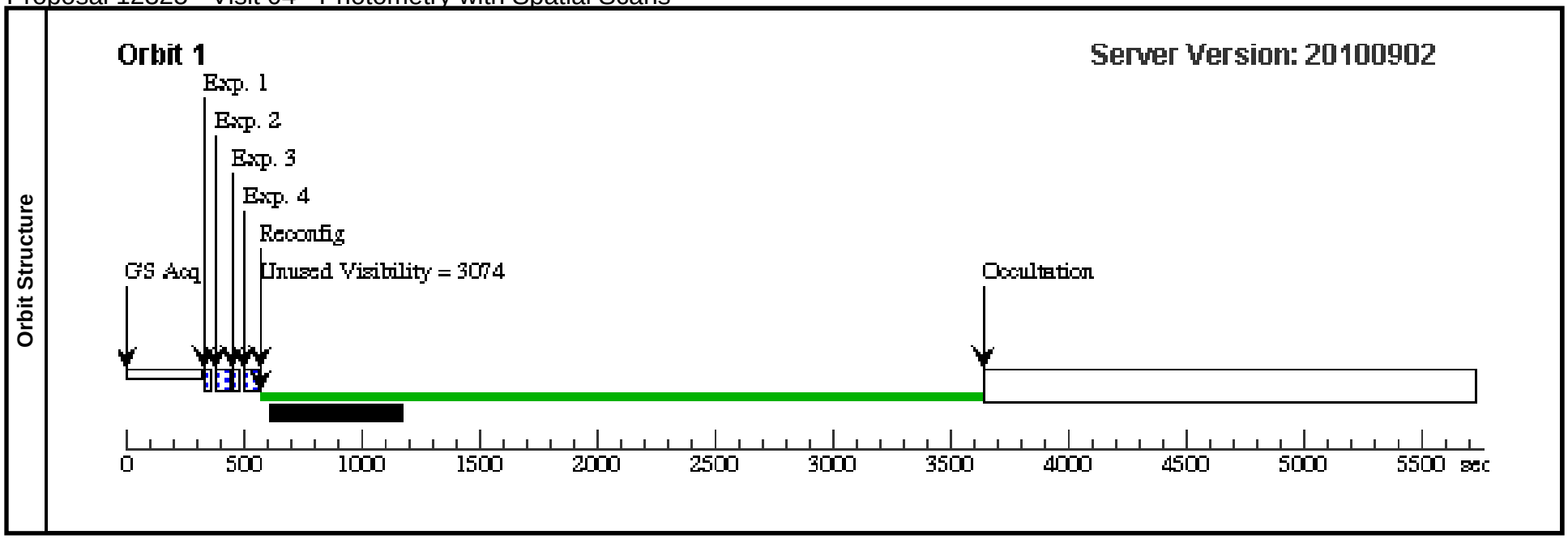
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	HD-17156	RA: 02 49 44.4875 (42.4353646d) Dec: +71 45 11.64 (71.75323d) Equinox: J2000		V=8.17	Reference Frame: ICRS

Comments: Double check everything because 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/[Actual Dur.]	Orbit
1		(5) HD-17156	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2			*[==>]*	***[1]***
Comments: Image to establish initial pointing location.									
2		(5) HD-17156	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec; same pos as Exp 1.									
3		(5) HD-17156	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=2	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Staring mode.									
4		(5) HD-17156	WFC3/IR, MULTIACCUM, IR	F125W	SAMP-SEQ=RAPID ; NSAMP=10	NEW ALIGNMENT		*[==>]*	***[1]***
Comments: Scan at 1 arcsec/sec.									


Orbit Structure
Orbit 1
Server Version: 20100902
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Reconfig
GS Acq
Unused Visibility = 3074
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec