13178 - Spitzer Trigonometric Parallaxes of the Solar Neighborhood's Coldest Brown Dwarfs

Cycle: 20, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. J. Davy Kirkpatrick (PI) (Contact)	**California Institute of Technology**	**davy@ipac.caltech.edu**
Dr. Christopher R. Gelino (CoI)	Jet Propulsion Laboratory	cgelino@ipac.caltech.edu
Dr. Charles A. Beichman (CoI)	Jet Propulsion Laboratory	chas@pop.jpl.nasa.gov
Dr. Christopher Tinney (CoI)	University of New South Wales	cgt@phys.unsw.edu.au
Dr. Richard Smart (CoI) (ESA Member)	Osservatorio Astronomico di Torino	smart@oato.inaf.it
Dr. Jacqueline Kelly Faherty (CoI)	Carnegie Institution of Washington	jfaherty17@gmail.com
Dr. Michael C. Cushing (CoI)	University of Toledo	michael.cushing@utoledo.edu
Prof. Edward L. Wright (CoI)	University of California - Los Angeles	wright@astro.ucla.edu
Dr. Patrick J. Lowrance (CoI)	California Institute of Technology	lowrance@ipac.caltech.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) WISE0138+2016	WFC3/IR	1	03-Jun-2013 21:35:29.0	yes
02	(1) WISE0138+2016	WFC3/IR	1	03-Jun-2013 21:35:40.0	yes
03	(1) WISE0138+2016	WFC3/IR	1	03-Jun-2013 21:35:50.0	yes
04	(2) WISE0325-5044	WFC3/IR	1	03-Jun-2013 21:35:56.0	yes
05	(2) WISE0325-5044	WFC3/IR	1	03-Jun-2013 21:36:04.0	yes
06	(2) WISE0325-5044	WFC3/IR	1	03-Jun-2013 21:36:13.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
07	(3) WISE0404-6420	WFC3/IR	1	03-Jun-2013 21:36:19.0	yes
08	(3) WISE0404-6420	WFC3/IR	1	03-Jun-2013 21:36:26.0	yes
09	(3) WISE0404-6420	WFC3/IR	1	03-Jun-2013 21:36:37.0	yes
10	(4) WISE1206+8401	WFC3/IR	1	03-Jun-2013 21:36:43.0	yes
11	(4) WISE1206+8401	WFC3/IR	1	03-Jun-2013 21:36:50.0	yes
12	(4) WISE1206+8401	WFC3/IR	1	03-Jun-2013 21:36:58.0	yes
13	(5) WISE2354+0240	WFC3/IR	1	03-Jun-2013 21:37:04.0	yes
14	(5) WISE2354+0240	WFC3/IR	1	03-Jun-2013 21:37:12.0	yes
15	(5) WISE2354+0240	WFC3/IR	1	03-Jun-2013 21:37:20.0	yes

15 Total Orbits Used

ABSTRACT

There are rare times in astronomy when -- by fortuitous circumstances, careful planning, or both -- giant leaps forward in our understanding can be made within a very short time. The combination of WISE, Spitzer, and HST is now capable of fast forwarding our knowledge of the immediate Solar Neighborhood. With just six months of survey operations, WISE was able to give us an unprecedented view of the entire sky that revealed the positions of the coldest brown dwarfs with effective temperatures as cold as ~300K (i.e., room temperature). With the investment of two years of Spitzer follow-up, we are capable of having distances measured for all of them. In this proposal, we consider a volume-limited (d < 20 pc) sample of the coldest known spectral types, T6 through early Y. These are the objects that give us the most leverage in discerning the shape of the low-mass end of the field mass function as well as defining the low-mass cutoff itself. Although ongoing ground-based programs will provide astrometric monitoring of about half of the sample, Spitzer Cycle 9+10 is needed to measure trigonometric parallaxes for the other half (79 objects), which include the faintest and coldest objects and hence those most difficult to monitor. A combination of current ground-based and HST Cycle 20 spectroscopy will complete the picture by providing the spectral classfications needed for temperature determination on this sample. Having distances and temperature determinations for all of the coldest objects in the the Sun's environs allows us an unprecedented look at the modern-day products of past star formation and our most comprehensive, three-dimensional view to date of the Solar Neighborhood.

OBSERVING DESCRIPTION

We will acquire G102 and G141 grism spectroscopy to determine accurate classifications (and hence temperatures) across the 0.8 - 1.7 micron region. To provide a wavelength calibration and registration for the slitless grism images, direct images of the fields in the F125W (for G141) and F098M (for G102) filters will have to be acquired. Because the WFC3 grism observations are slitless, roll angle constraints must be placed on the observations in order to avoid contamination of the target by other sources in the field. To eliminate any possibility of contamination, we will first observe each candidate through the F125W filter alone so that we can use the resulting images and the aXeSIM software to derive precise, contamination-free roll angles which will then be entered in to the APT for subsequent grism imaging.

Visit

Proposal 13178, F125W Direct Image for WISE0138+2016 (01), completed Tue Jun 04 01:37:28 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

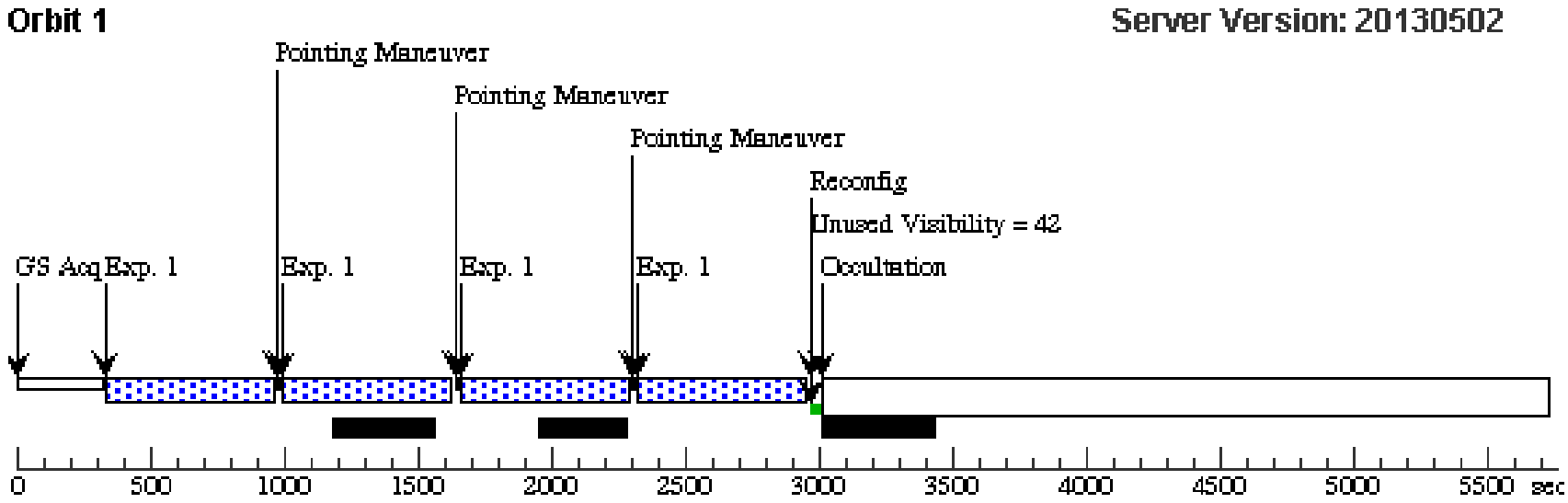
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WISE0138+2016	RA: 01 38 10.9800 (24.5457500d) Dec: +20 16 57.60 (20.28267d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W imaging	(1) WISE0138+2016	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=13; SAMP-SEQ=SPARS50		Pattern 1, Exps 1-1 in F125W Direct Image for WISE0138+2016 (01) (1)	602.937703 Secs (2411.751 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 13178, G102 Grism for WISE0138+2016 (02), implementation Tue Jun 04 01:37:30 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 1D TO 3 D; ORIENT 97D TO 100 D; ORIENT 181D TO 183 D; ORIENT 277D TO 280 D

Patterns

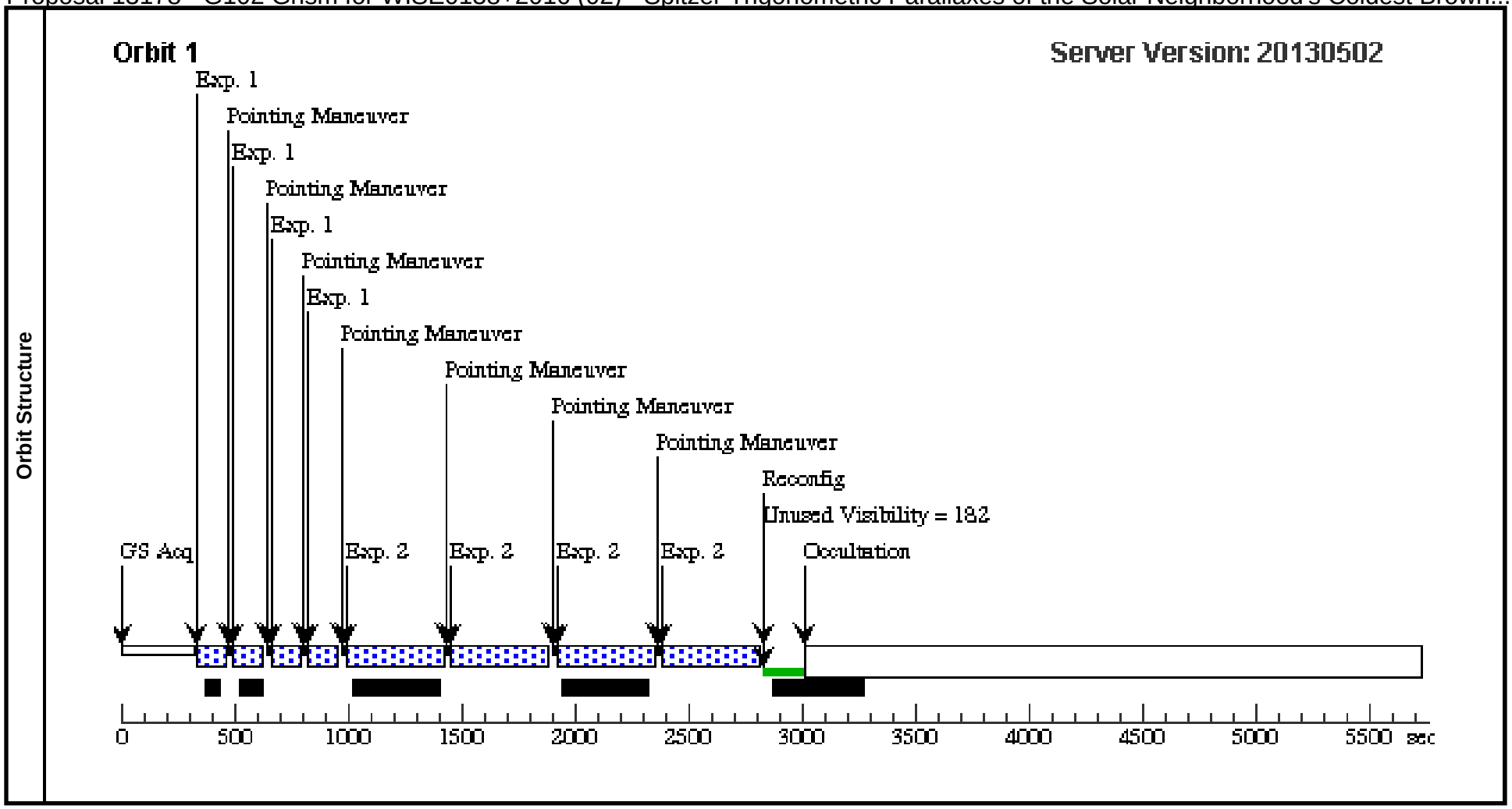
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WISE0138+2016	RA: 01 38 10.9800 (24.5457500d) Dec: +20 16 57.60 (20.28267d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F105W Direct Image for WISE0138+2016	(1) WISE0138+2016	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G102 Grism for WISE0138+2016 (02) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) WISE0138+2016	WFC3/IR, MULTIACCUM, GRISM1024	G102	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G102 Grism for WISE0138+2016 (02) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20130502
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Visibility = 182
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13178, G141 Grism for WISE0138+2016 (03), implementation Tue Jun 04 01:37:31 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 1D TO 3 D; ORIENT 97D TO 100 D; ORIENT 181D TO 183 D; ORIENT 277D TO 280 D

Patterns

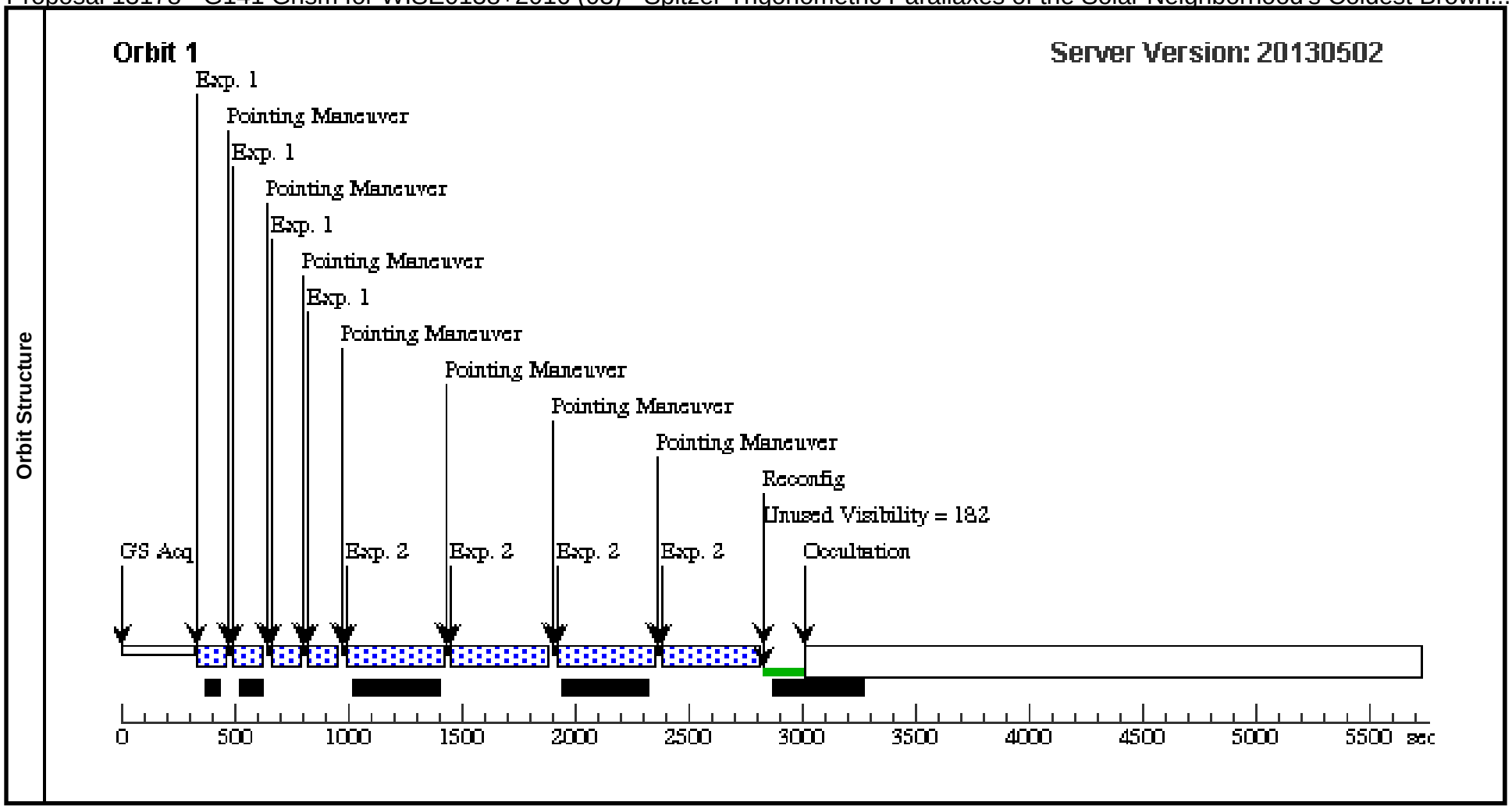
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WISE0138+2016	RA: 01 38 10.9800 (24.5457500d) Dec: +20 16 57.60 (20.28267d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE0138+2016	(1) WISE0138+2016	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE0138+2016 (03) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) WISE0138+2016	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G141 Grism for WISE0138+2016 (03) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20130502
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Visibility = 182
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13178, F125W Direct Image for WISE0325-5044 (04), scheduling Tue Jun 04 01:37:32 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

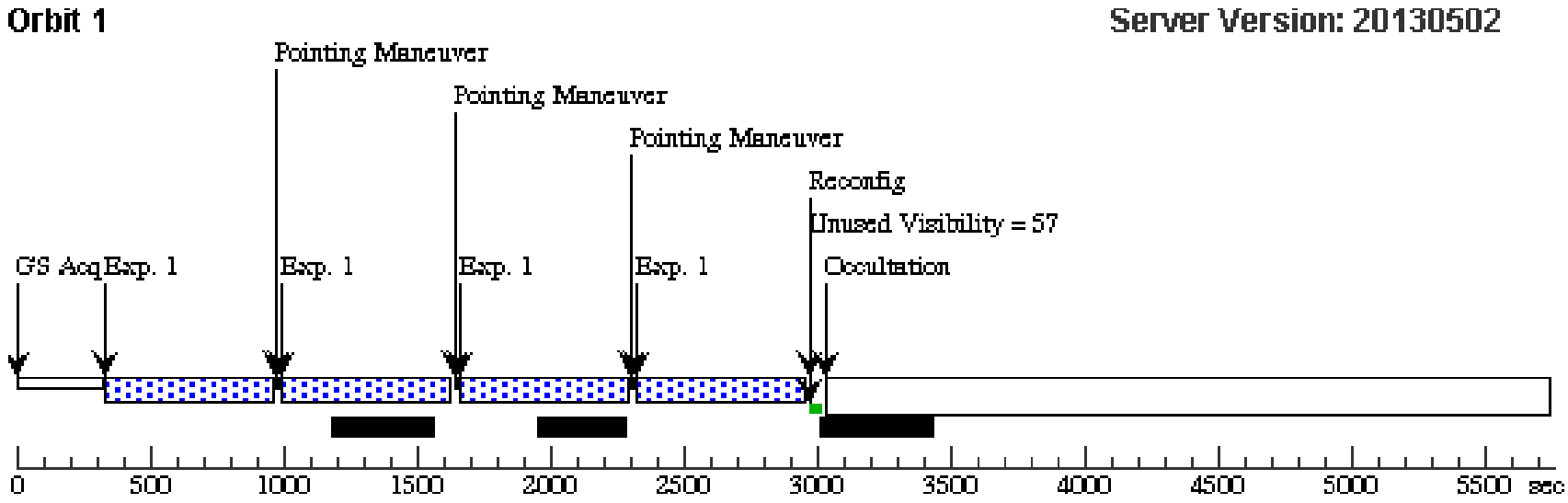
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WISE0325-5044	RA: 03 25 4.3300 (51.2680417d) Dec: -50 44 0.30 (-50.73342d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W imaging	(2) WISE0325-5044	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=13; SAMP-SEQ=SPARS50		Pattern 1, Exps 1-1 in F125W Direct Image for WISE0325-5044 (04) (1)	602.937703 Secs (2411.751 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 13178, G102 Grism for WISE0325-5044 (05), implementation Tue Jun 04 01:37:33 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 84D TO 87 D; ORIENT 264D TO 267 D

Patterns

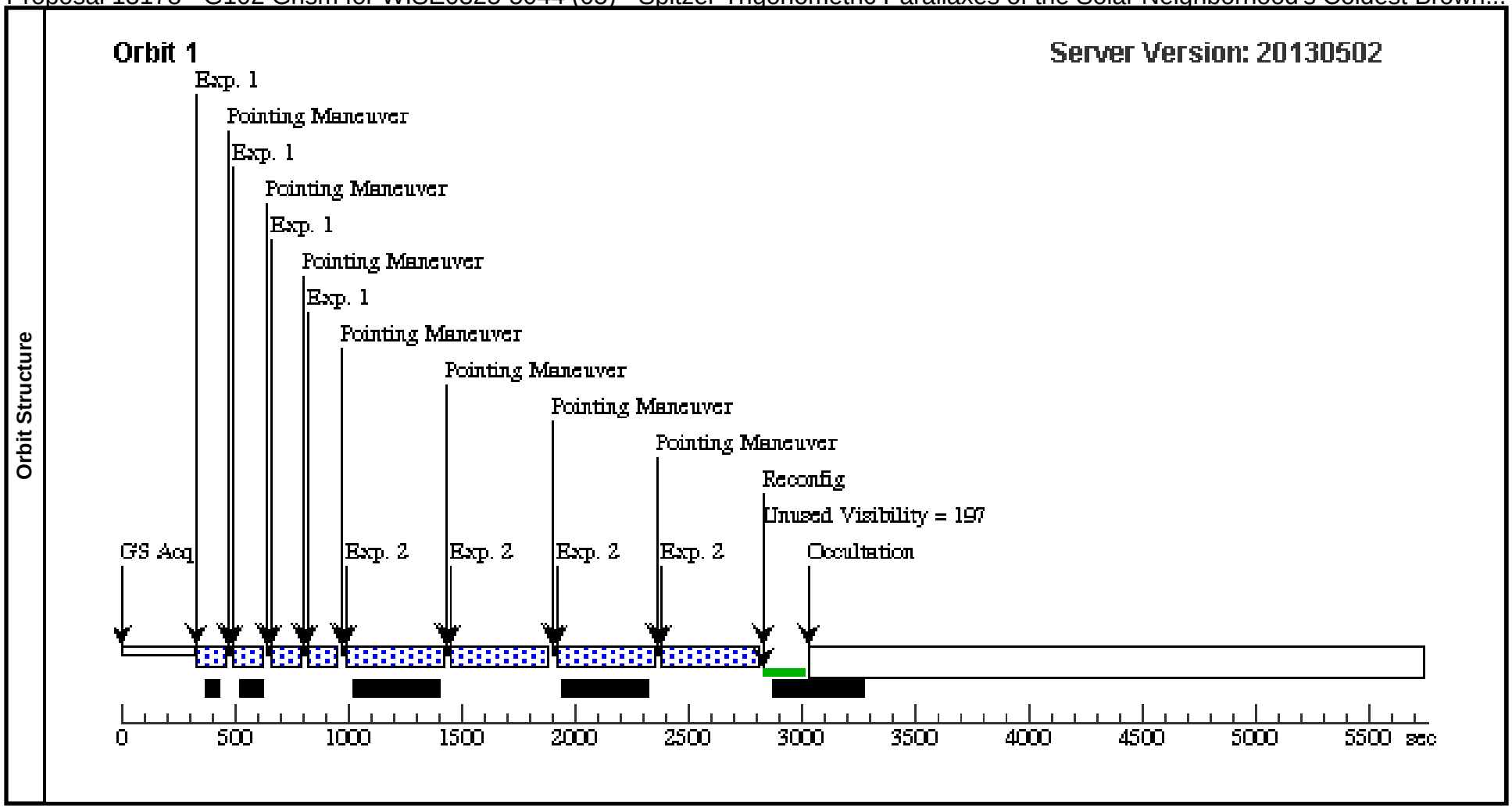
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WISE0325-5044	RA: 03 25 4.3300 (51.2680417d) Dec: -50 44 0.30 (-50.73342d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F105W Direct Image for WISE0325-5044	(2) WISE0325-5044	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G102 Grism for WISE0325-5044 (05) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) WISE0325-5044	WFC3/IR, MULTIACCUM, GRISM1024	G102	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G102 Grism for WISE0325-5044 (05) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20130502
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Visibility = 197
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13178, G141 Grism for WISE0325-5044 (06), implementation Tue Jun 04 01:37:34 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 84D TO 87 D; ORIENT 264D TO 267 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

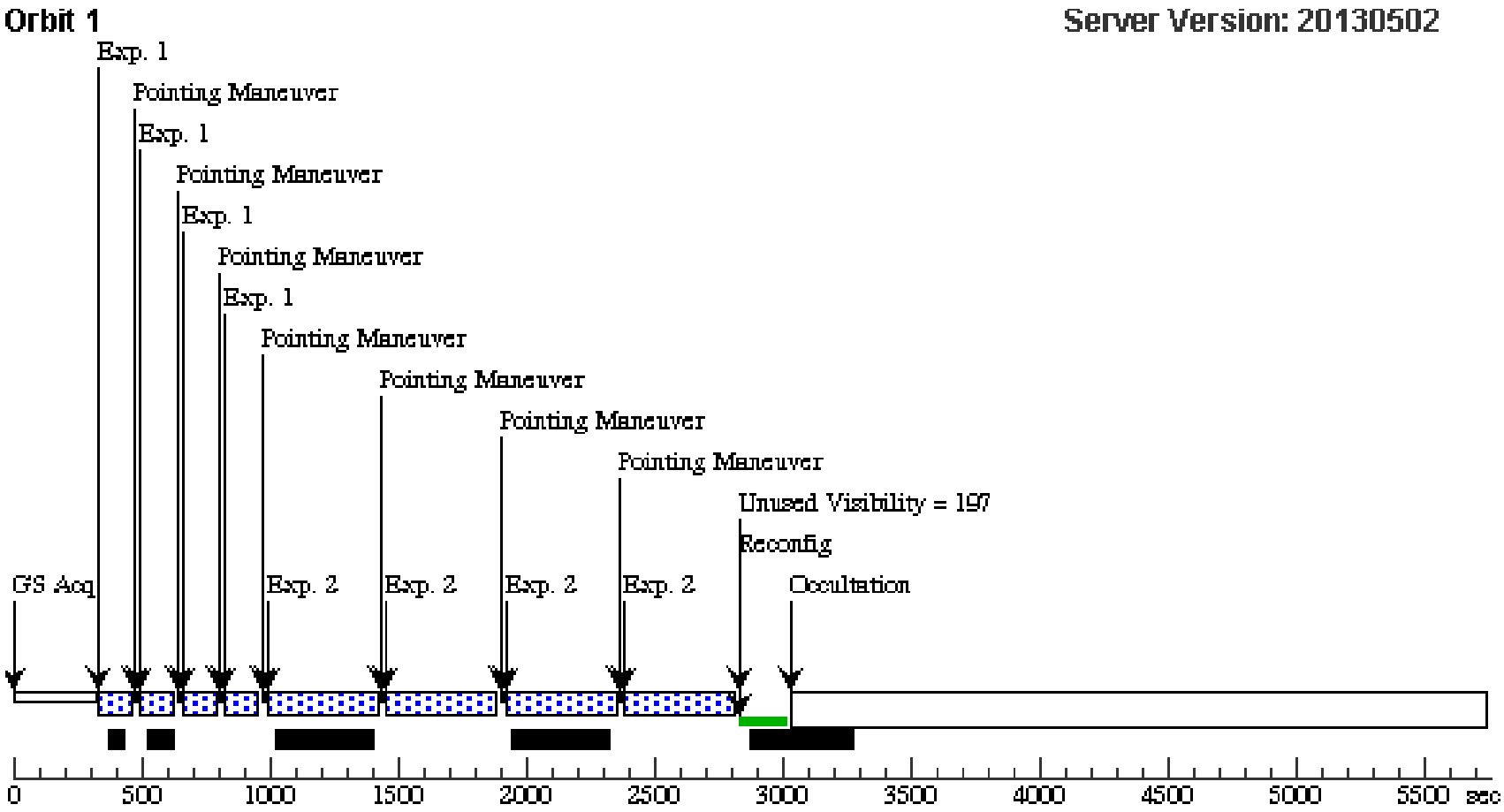
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WISE0325-5044	RA: 03 25 4.3300 (51.2680417d) Dec: -50 44 0.30 (-50.73342d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE0325-5044	(2) WISE0325-5044	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE0325-5044 (06) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) WISE0325-5044	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G141 Grism for WISE0325-5044 (06) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 13178, F125W Direct Image for WISE0404-6420 (07), scheduling Tue Jun 04 01:37:35 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

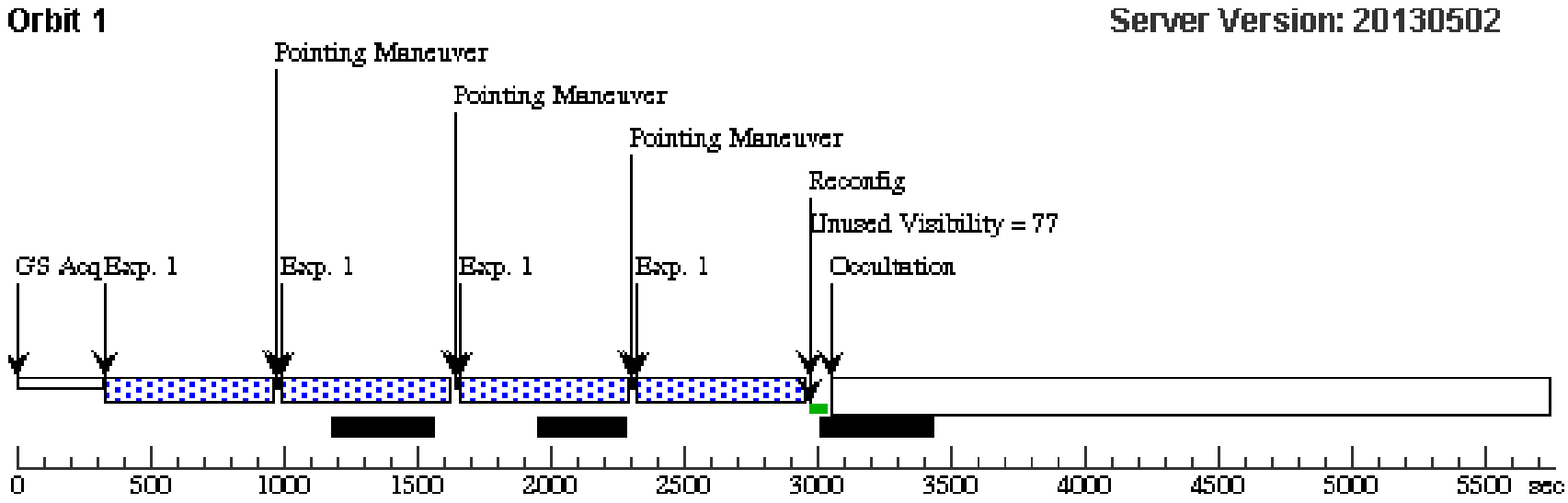
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	WISE0404-6420	RA: 04 04 43.4600 (61.1810833d) Dec: -64 20 30.00 (-64.34167d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W imaging	(3) WISE0404-6420	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=13; SAMP-SEQ=SPARS50		Pattern 1, Exps 1-1 in F125W Direct Image for WISE0404-6420 (07) (1)	602.937703 Secs (2411.751 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 13178, G102 Grism for WISE0404-6420 (08), implementation Tue Jun 04 01:37:36 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 116D TO 117 D; ORIENT 122D TO 123 D; ORIENT 140D TO 143 D; ORIENT 296D TO 297 D; ORIENT 302D TO 303 D; ORIENT 320D TO 323 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

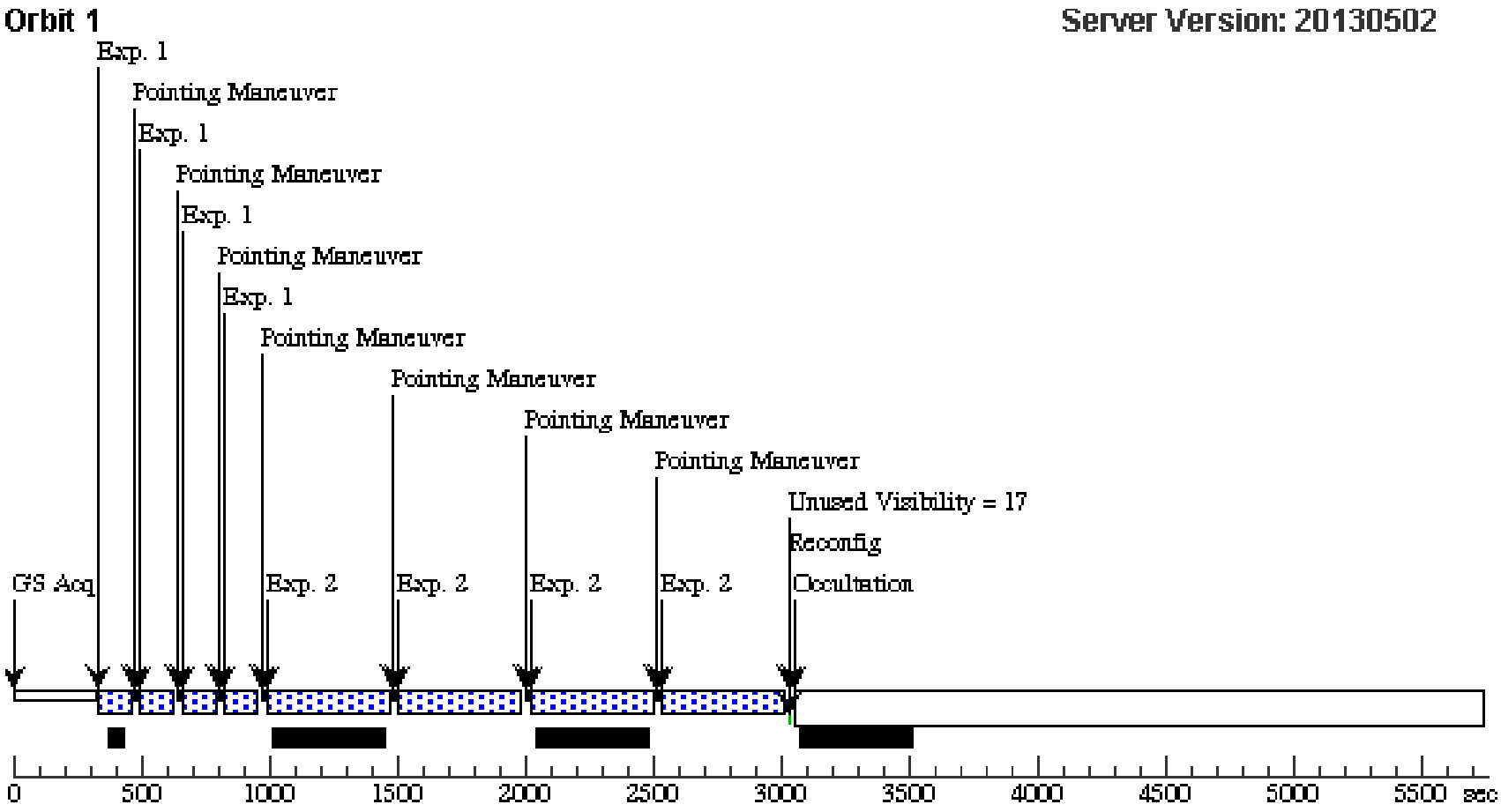
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	WISE0404-6420	RA: 04 04 43.4600 (61.1810833d) Dec: -64 20 30.00 (-64.34167d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F105W Direct Image for WISE0404-6420	(3) WISE0404-6420	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G102 Grism for WISE0404-6420 (08) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(3) WISE0404-6420	WFC3/IR, MULTIACCUM, GRISM1024	G102	SAMP-SEQ=SPARS50; NSAMP=10		Pattern 1, Exps 2-2 in G102 Grism for WISE0404-6420 (08) (1)	452.93635 Secs (1811.745 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 13178, G141 Grism for WISE0404-6420 (09), implementation Tue Jun 04 01:37:37 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 116D TO 117 D; ORIENT 122D TO 123 D; ORIENT 140D TO 143 D; ORIENT 296D TO 297 D; ORIENT 302D TO 303 D; ORIENT 320D TO 323 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

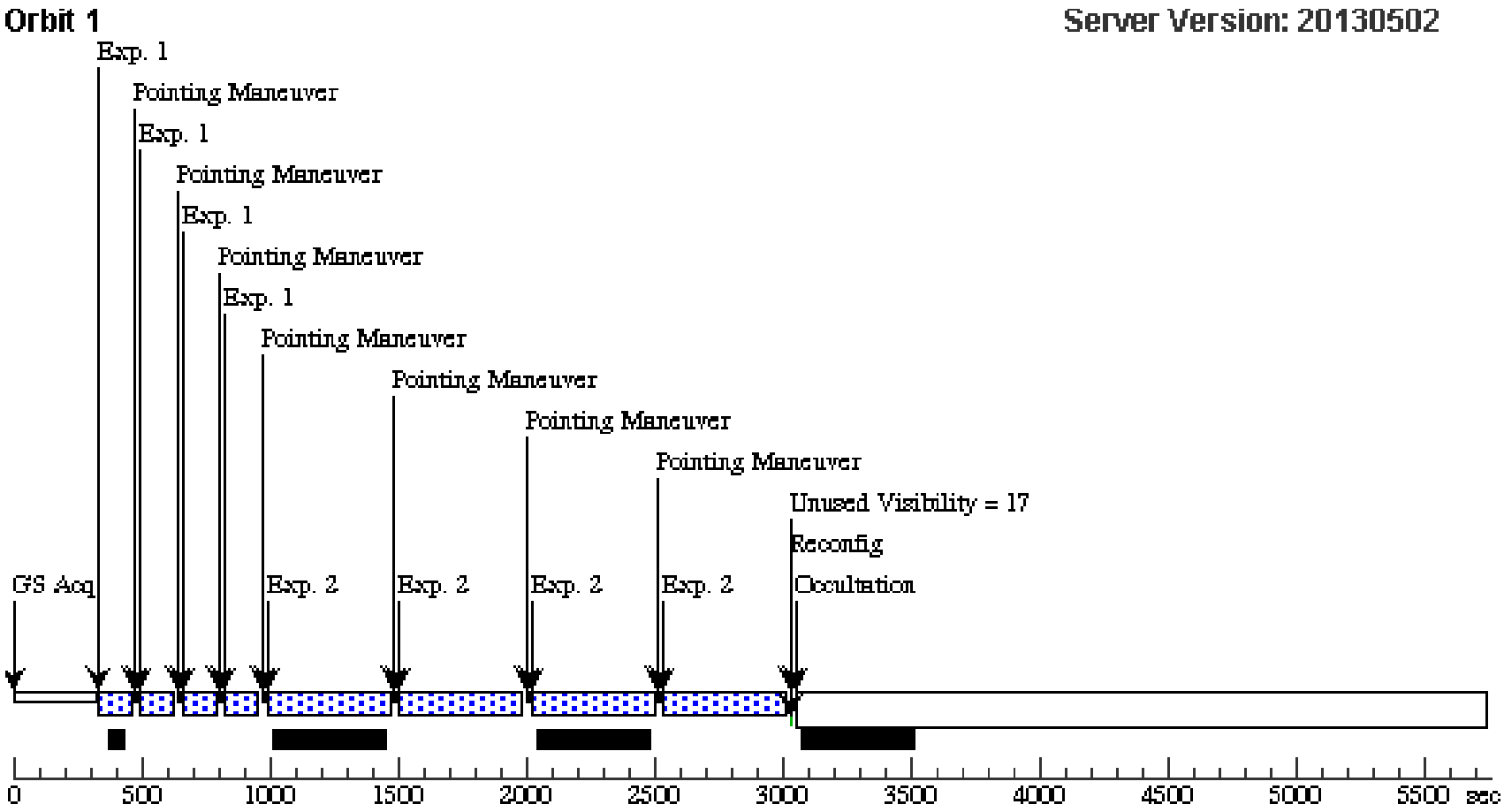
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	WISE0404-6420	RA: 04 04 43.4600 (61.1810833d) Dec: -64 20 30.00 (-64.34167d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE0404-6420	(3) WISE0404-6420	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE0404-6420 (09) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(3) WISE0404-6420	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=10		Pattern 1, Exps 2-2 in G141 Grism for WISE0404-6420 (09) (1)	452.93635 Secs (1811.745 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 13178, F125W Direct Image for WISE1206+8401 (10), scheduling Tue Jun 04 01:37:38 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

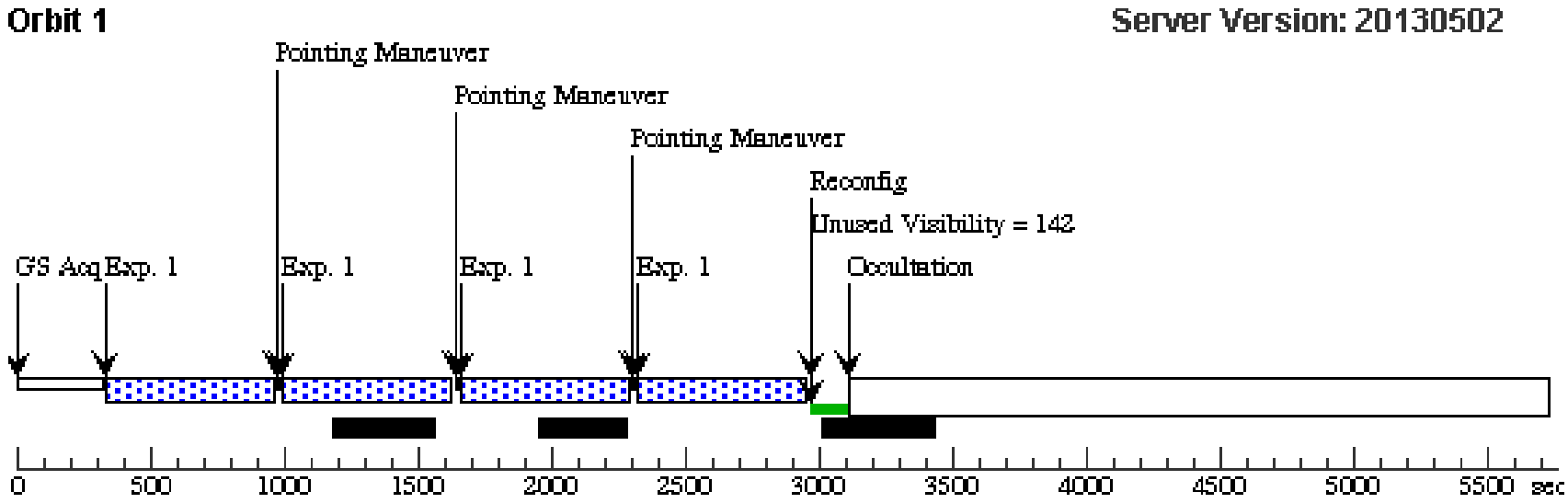
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	WISE1206+8401	RA: 12 06 4.3400 (181.5180833d) Dec: +84 01 10.60 (84.01961d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W imaging	(4) WISE1206+8401	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=13; SAMP-SEQ=SPARS50		Pattern 1, Exps 1-1 in F125W Direct Image for WISE1206+8401 (10) (1)	602.937703 Secs (2411.751 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 13178, G102 Grism for WISE1206+8401 (11), implementation Tue Jun 04 01:37:39 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 63D TO 65 D; ORIENT 243D TO 245 D; BETWEEN 01-JUL-2013 AND 31-JUL-2013

Patterns

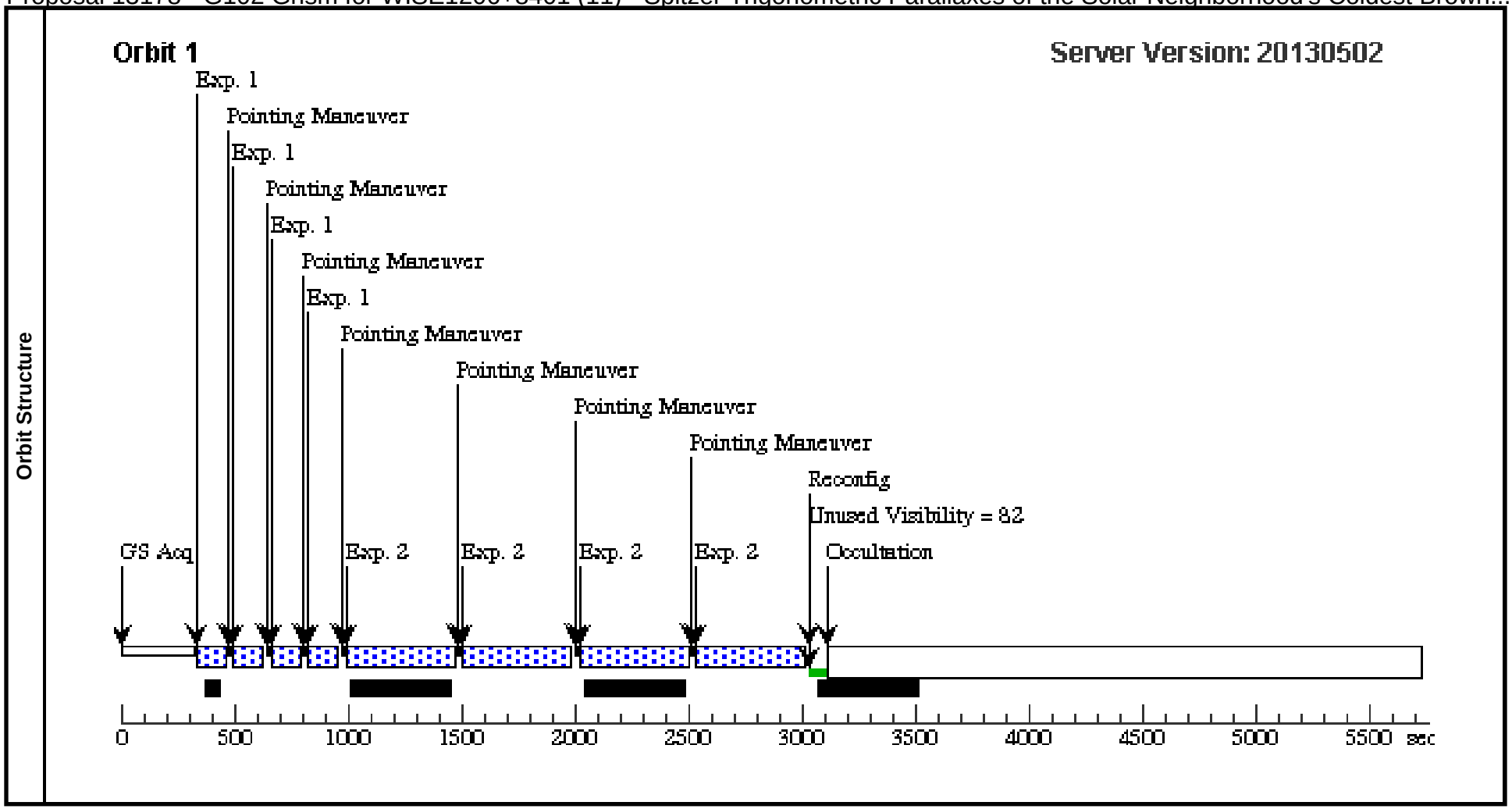
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	WISE1206+8401	RA: 12 06 4.3400 (181.5180833d) Dec: +84 01 10.60 (84.01961d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F105W Direct Image for WISE1206+8401	(4) WISE1206+8401	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G102 Grism for WISE1206+8401 (11) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) WISE1206+8401	WFC3/IR, MULTIACCUM, GRISM1024	G102	SAMP-SEQ=SPARS50; NSAMP=10		Pattern 1, Exps 2-2 in G102 Grism for WISE1206+8401 (11) (1)	452.93635 Secs (1811.745 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20130502
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Unused Visibility = 82
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13178, G141 Grism for WISE1206+8401 (12), implementation Tue Jun 04 01:37:40 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 63D TO 65 D; ORIENT 243D TO 245 D; BETWEEN 01-JUL-2013 AND 31-JUL-2013

Patterns

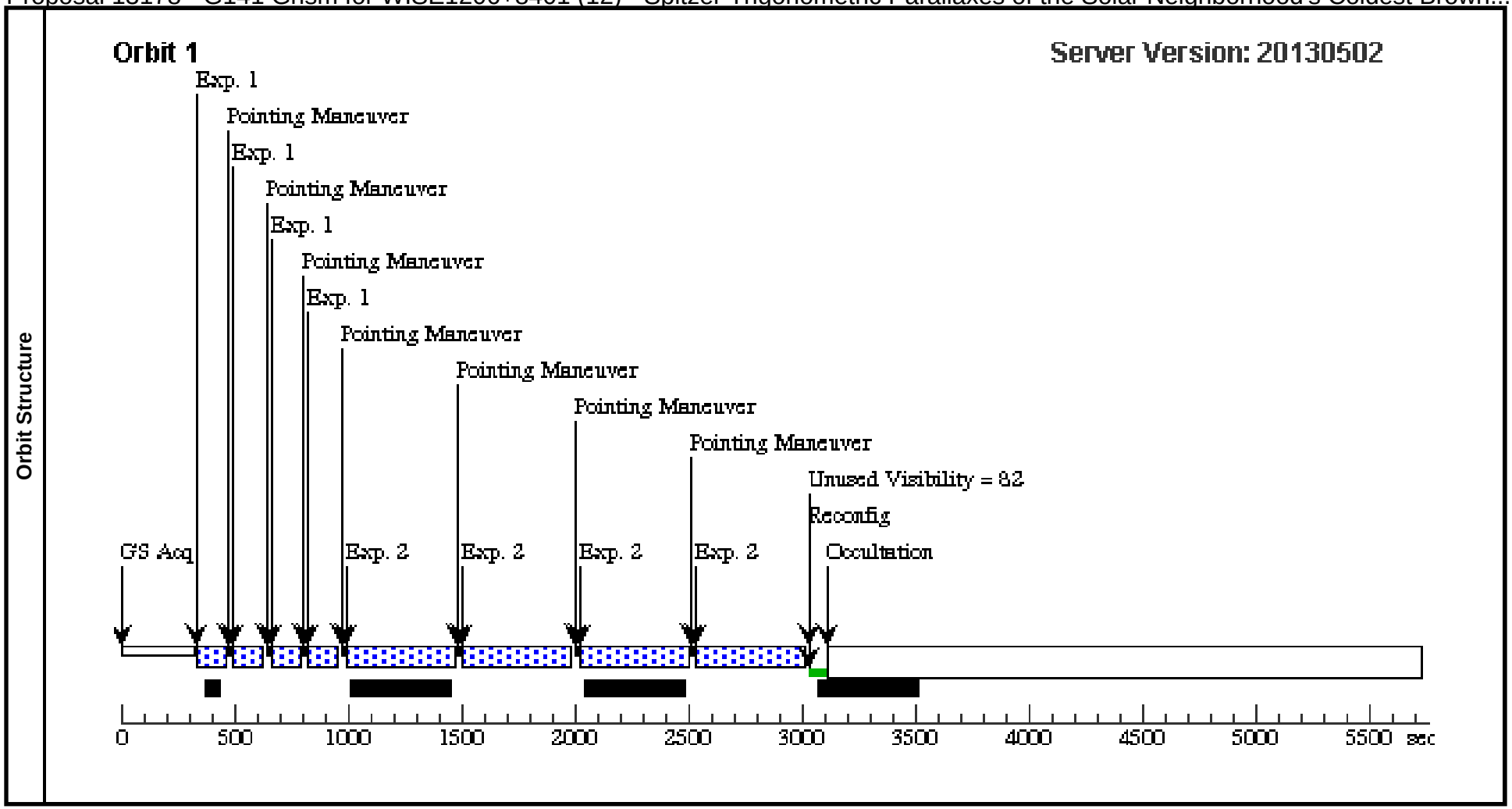
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	WISE1206+8401	RA: 12 06 4.3400 (181.5180833d) Dec: +84 01 10.60 (84.01961d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE1206+8401	(4) WISE1206+8401	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE1206+8401 (12) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) WISE1206+8401	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=10		Pattern 1, Exps 2-2 in G141 Grism for WISE1206+8401 (12) (1)	452.93635 Secs (1811.745 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20130502
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 82
Reconfig
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13178, F125W Direct Image for WISE2354+0240 (13), scheduling Tue Jun 04 01:37:41 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1)

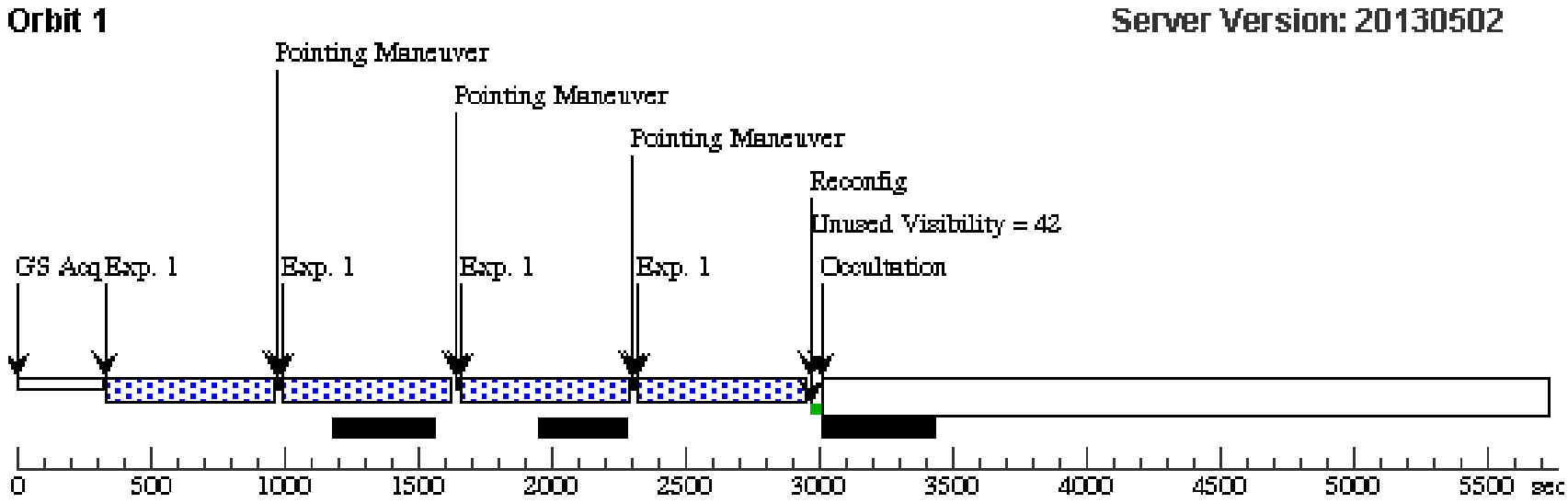
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	WISE2354+0240	RA: 23 54 2.2711 (358.5094629d) Dec: +02 39 46.28 (2.66286d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W imaging	(5) WISE2354+0240	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=13; SAMP-SEQ=SPARS50		Pattern 1, Exps 1-1 in F125W Direct Image for WISE2354+0240 (13) (1)	602.937703 Secs (2411.751 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 13178, G141 Grism for WISE2354+0240 (first orbit) (14), implementation Tue Jun 04 01:37:42 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 139D TO 139 D; ORIENT 175D TO 175 D; ORIENT 355D TO 355 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

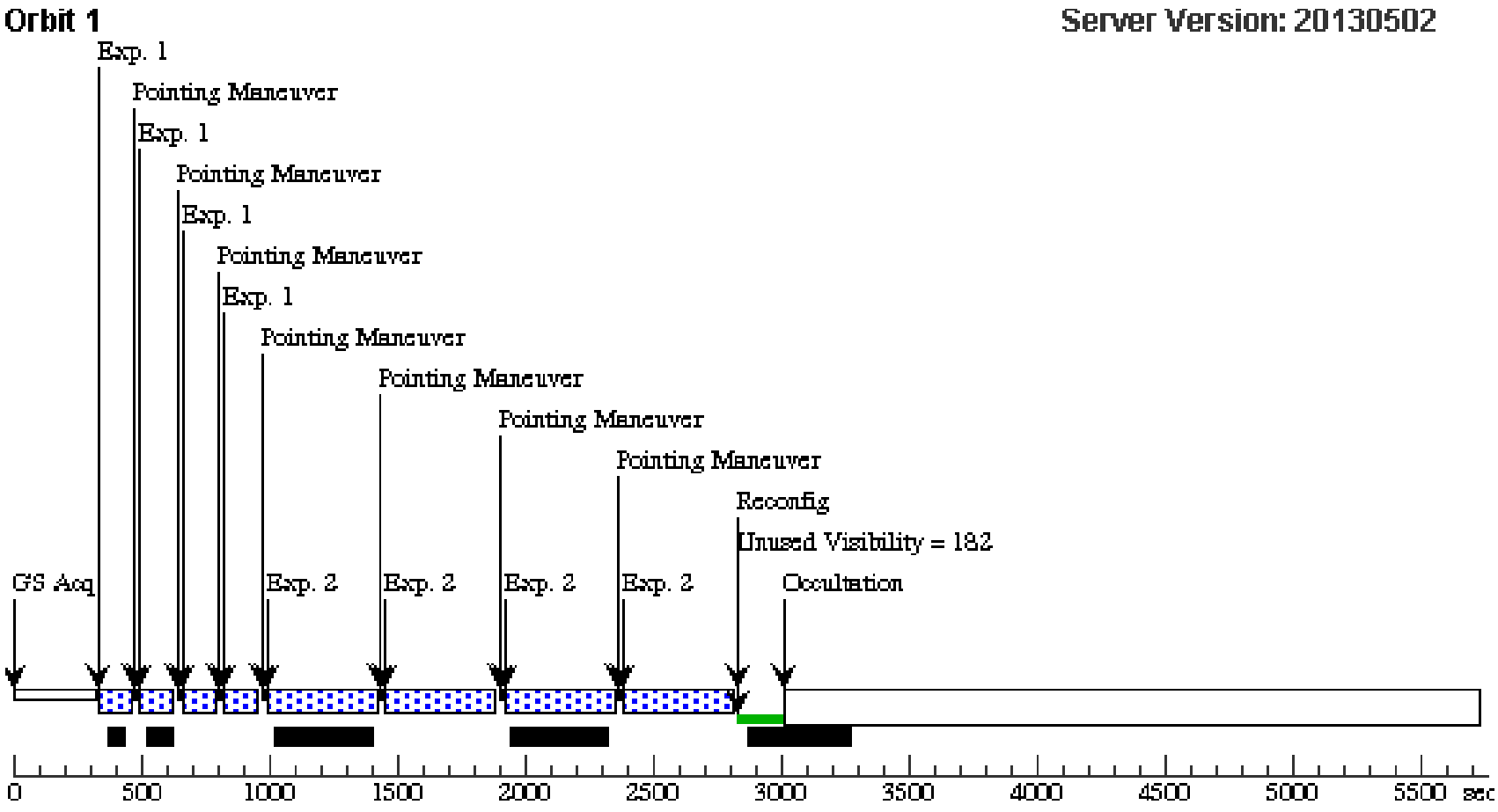
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	WISE2354+0240	RA: 23 54 2.2711 (358.5094629d) Dec: +02 39 46.28 (2.66286d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE2354+0240	(5) WISE2354+0240	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE2354+0240 (first orbit) (14) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(5) WISE2354+0240	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G141 Grism for WISE2354+0240 (first orbit) (14) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure



Visit

Proposal 13178, G141 Grism for WISE2354+0240 (second orbit) (15), implementation Tue Jun 04 01:37:43 GMT 2013

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SCHED 100%; ORIENT 139D TO 139 D; ORIENT 175D TO 175 D; ORIENT 355D TO 355 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(1), (2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	WISE2354+0240	RA: 23 54 2.2711 (358.5094629d) Dec: +02 39 46.28 (2.66286d) Equinox: J2000		V=35.0	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F125W Direct Image for WISE2354+0240	(5) WISE2354+0240	WFC3/IR, MULTIACCUM, GRISM1024	F125W	NSAMP=5; SAMP-SEQ=SPARS25		Pattern 1, Exps 1-1 in G141 Grism for WISE2354+0240 (second orbit) (15) (1)	102.934351 Secs (411.737 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(5) WISE2354+0240	WFC3/IR, MULTIACCUM, GRISM1024	G141	SAMP-SEQ=SPARS50; NSAMP=9		Pattern 1, Exps 2-2 in G141 Grism for WISE2354+0240 (second orbit) (15) (1)	402.935899 Secs (1611.744 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure