14638 - What Makes Radio-detected and Optically-detected Supernova Remnants in NGC6946 Different?

Cycle: 24, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:29.0	yes
02	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:31.0	yes
03	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:32.0	yes
04	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:33.0	yes
05	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:34.0	yes
06	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:34.0	yes
07	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:35.0	yes
08	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:36.0	yes
09	(1) NGC-6946	WFC3/IR	1	29-Jul-2016 14:12:37.0	yes

9 Total Orbits Used

ABSTRACT

In the Galaxy, most SNRs were first detected as extended non-thermal radio sources. By contrast, in galaxies beyond the Magellanic Clouds, most SNRs have been identified as emission nebulae with elevated [S II]:Ha emission ratios compared to HII regions. NGC6946, which has had more historical SNe than any other galaxy, is one of the very few galaxies with both a large number of radio and optical SNRs and SNR candidates. Surprisingly, the radio and the optical samples of SNRs in this (and other) galaxies are almost disjoint, possibly due to the fact that the radio-detected objects tend to be located in or very near HII regions with higher than normal extinction. If this is correct, these radio SNRs should be detectable as nebulae with strong [Fe II] emission lines in the near IR, since extinction should be much less of a factor and since the ratio of [Fe II]:Pa Beta is expected to be high, of order 10, in shocked SNR gas, and very low in photoionized regions. To find out, we propose to use existing Pa Beta and new [Fe II] WFC3 imagery of NGC6946, along with the results of our new radio and optical imaging and spectroscopic surveys, to find the radio sample. Since we also should detect many, if not all, of the optically identified SNRs in [Fe II], we will be able to compare the properties (diameter distribution, [Fe II] flux) of the two sub-populations in order to improve our understanding both of the selection effects and of the evolutionary state of the populations. More generally, the combination of radio, optical, IR and X-ray data (from existing Chandra observations) will allow us to complete one of the most detailed characterizations of SNRs in any nearby galaxy.

OBSERVING DESCRIPTION

This is a project to observe NGC6946 with the [Fe II] 1.64 micron (F164N) and H-band (F160W) filters. The continuum filter is primarily used for star subtraction.

Our goal is to identify SNRs in NGC6946 in the IR. Our observational definition of an IR SNR for the purpose of this program is an emission nebulae with a large [Fe II]:Pbeta ratio. The Pbeta images exist as archival data, obtained in program 14156 (Leroy PI).

Our observing strategy, which involves obtaining a 3 x 3 mosaic of the innner part or the galaxy with WFC3/IR, is very similar to the earlier progam. Our tight orientation requirement maximizes the overlap between the earlier program, and also allows us to cover most of the inner spiral arms, where the optically and radio SNRs and candidates are located.

Visit

Proposal 14638, Tile Visit 01, implementation Fri Jul 29 18:12:38 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 76.77D TO 76.77 D; ORIENT 256.77D TO 256.77 D; ORIENT 166.77D TO 166.77 D; ORIENT 346.77D TO 346.77 D

Diagnostics

(Tile Visit 01) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 01) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 01) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

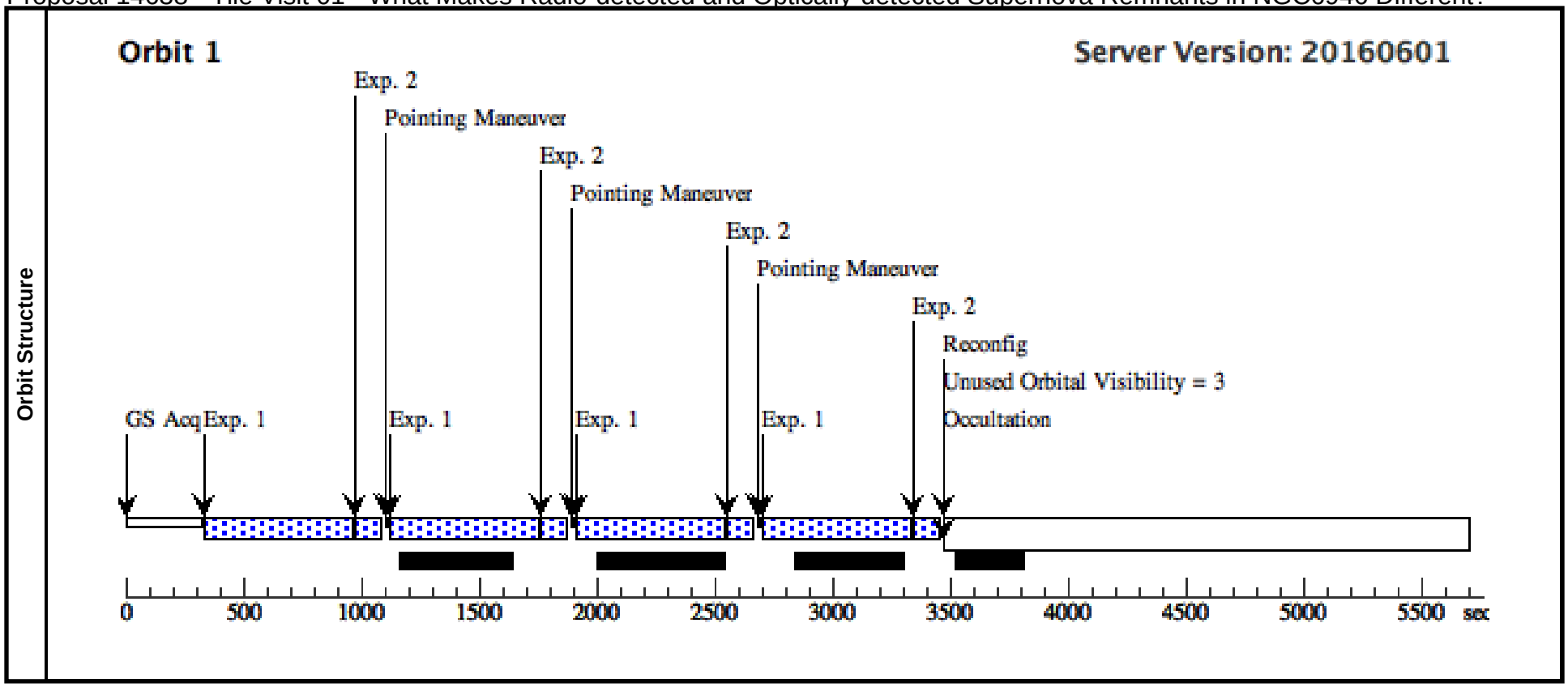
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG -132.08467499999998,-117.07799999999993	Pattern 2, Exps 1-2 in Tile Visit 01 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG -132.08467499999998,-117.07799999999993	Pattern 2, Exps 1-2 in Tile Visit 01 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 02, implementation Fri Jul 29 18:12:38 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 02) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 02) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 02) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

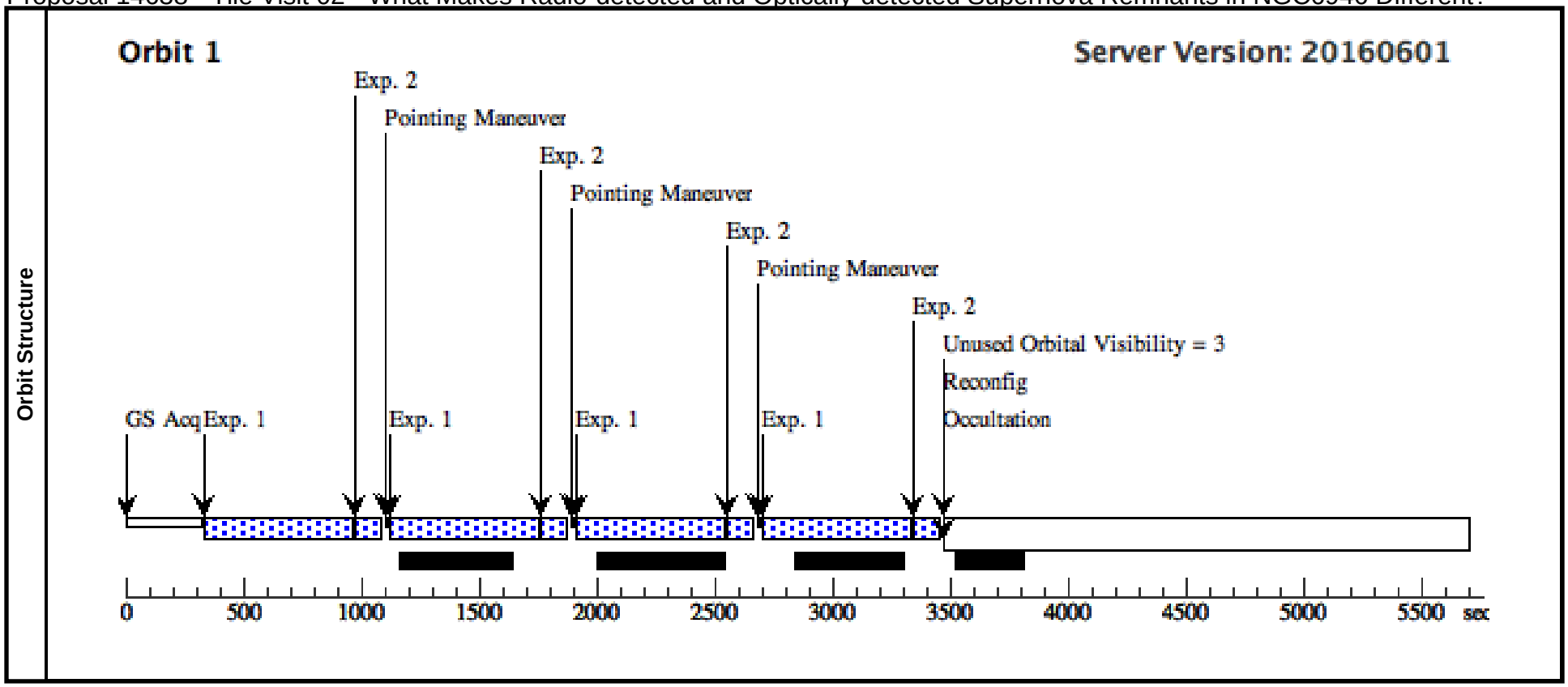
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 2.84217094304040 07E-14,-117.07799999999993	Pattern 2, Exps 1-2 in Tile Visit 02 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 2.84217094304040 07E-14,-117.07799999999993	Pattern 2, Exps 1-2 in Tile Visit 02 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Unused Orbital Visibility = 3
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 03, implementation Fri Jul 29 18:12:38 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 03) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 03) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 03) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

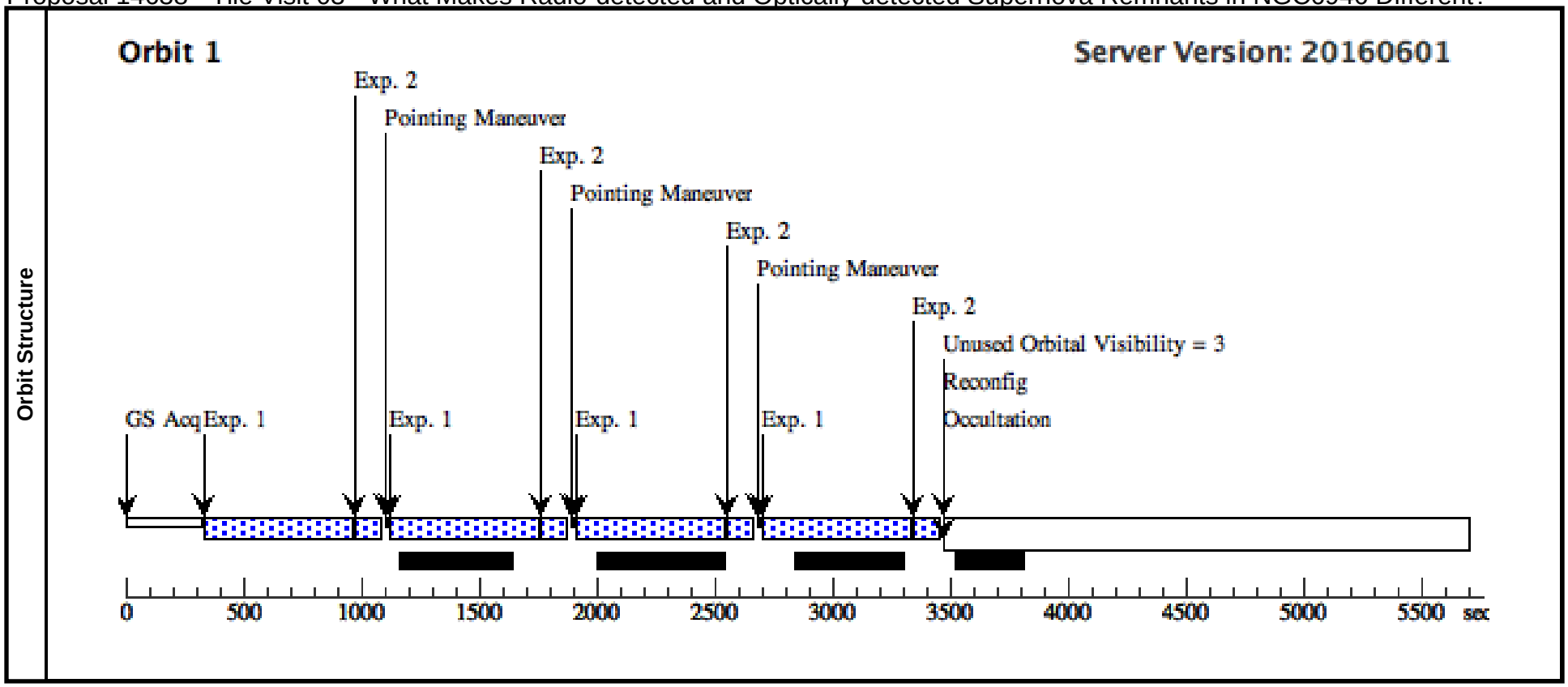
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 132.08467500000003,-117.07799999999993; GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-2 in Tile Visit 03 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 132.08467500000003,-117.07799999999993	Pattern 2, Exps 1-2 in Tile Visit 03 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Unused Orbital Visibility = 3
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 04, implementation Fri Jul 29 18:12:38 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 04) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 04) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 04) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

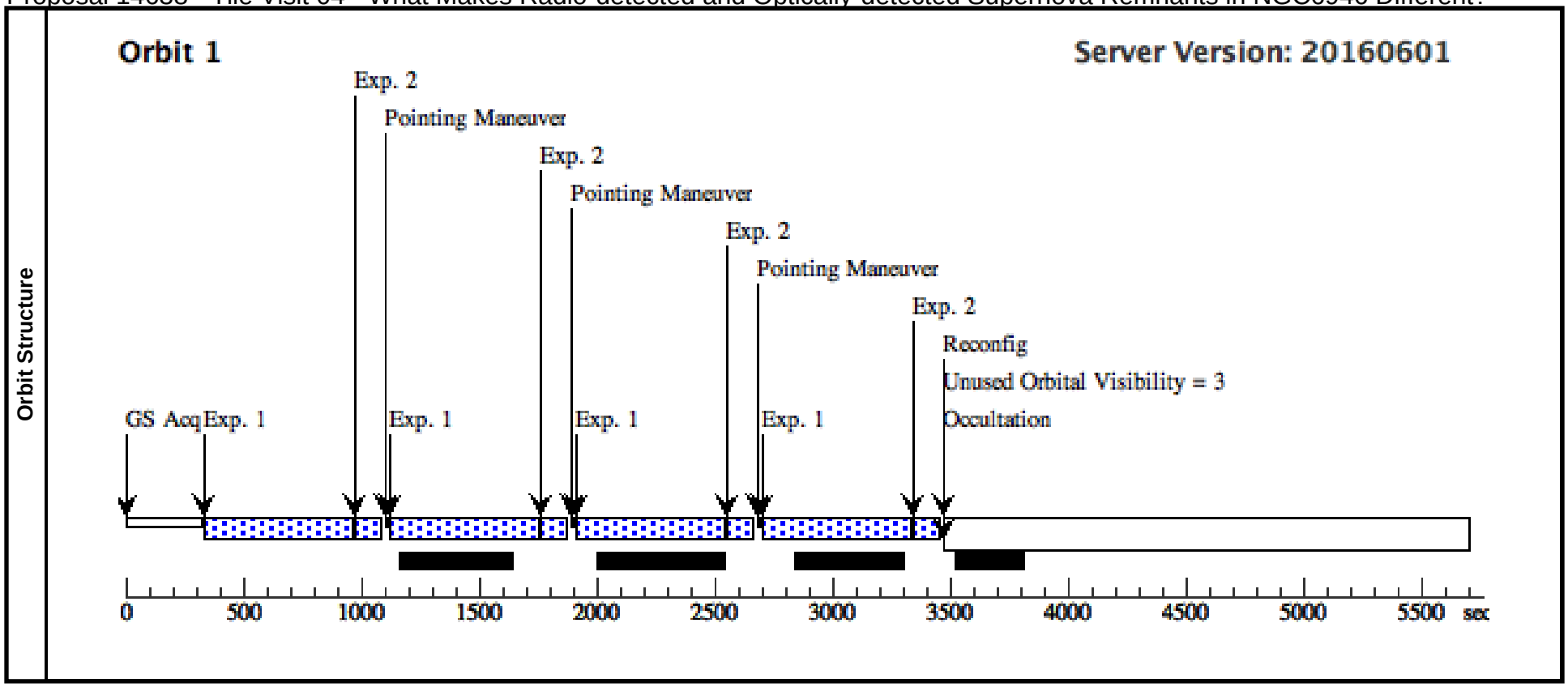
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG -132.08467499999998,1.4210854715202004E-14	Pattern 2, Exps 1-2 in Tile Visit 04 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG -132.08467499999998,1.4210854715202004E-14	Pattern 2, Exps 1-2 in Tile Visit 04 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 05, implementation Fri Jul 29 18:12:38 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 05) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 05) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

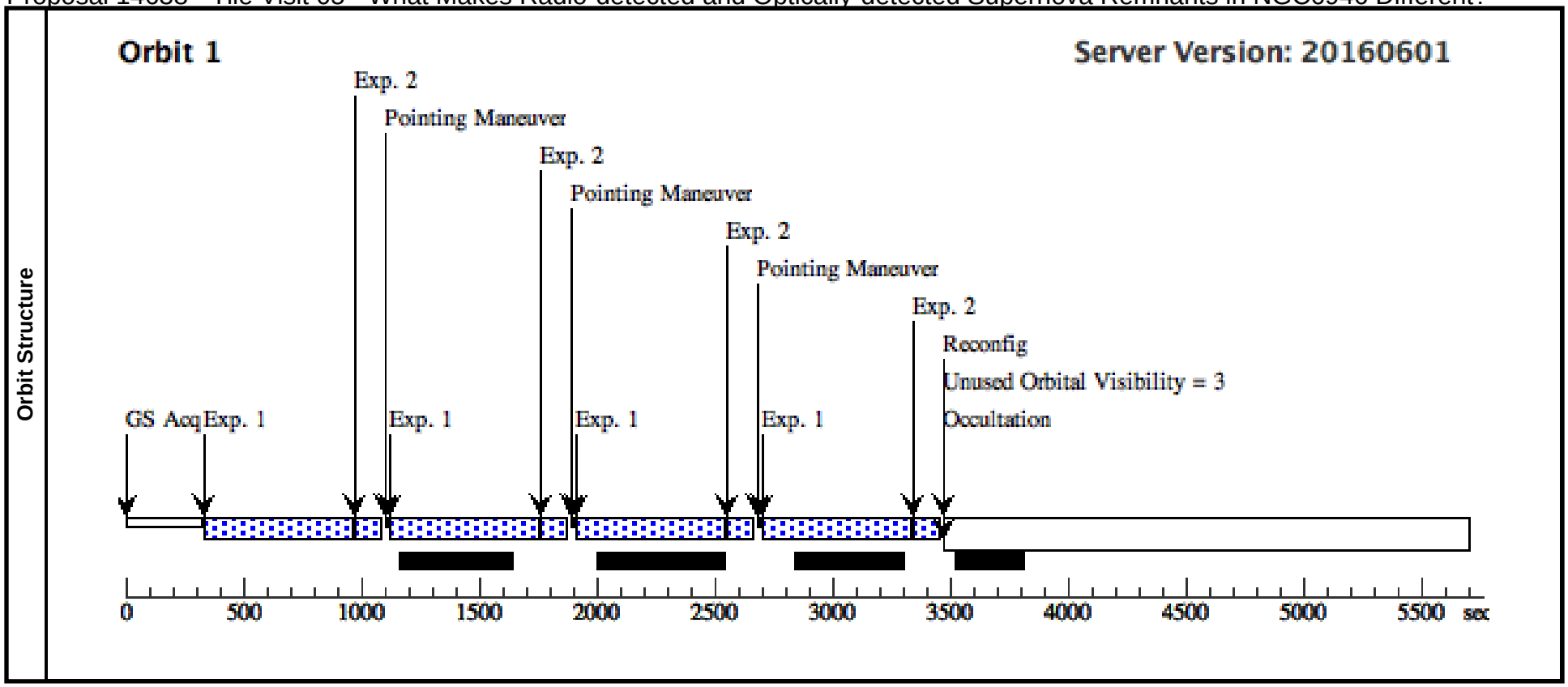
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 2.84217094304040 07E-14,1.4210854715202004E-14	Pattern 2, Exps 1-2 in Tile Visit 05 (2)	599.232292 Secs (2396.929 Secs)	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 2.84217094304040 07E-14,1.4210854715202004E-14	Pattern 2, Exps 1-2 in Tile Visit 05 (2)	99.231256 Secs (396.925 Secs)	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 06, implementation Fri Jul 29 18:12:39 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 06) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 06) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 06) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

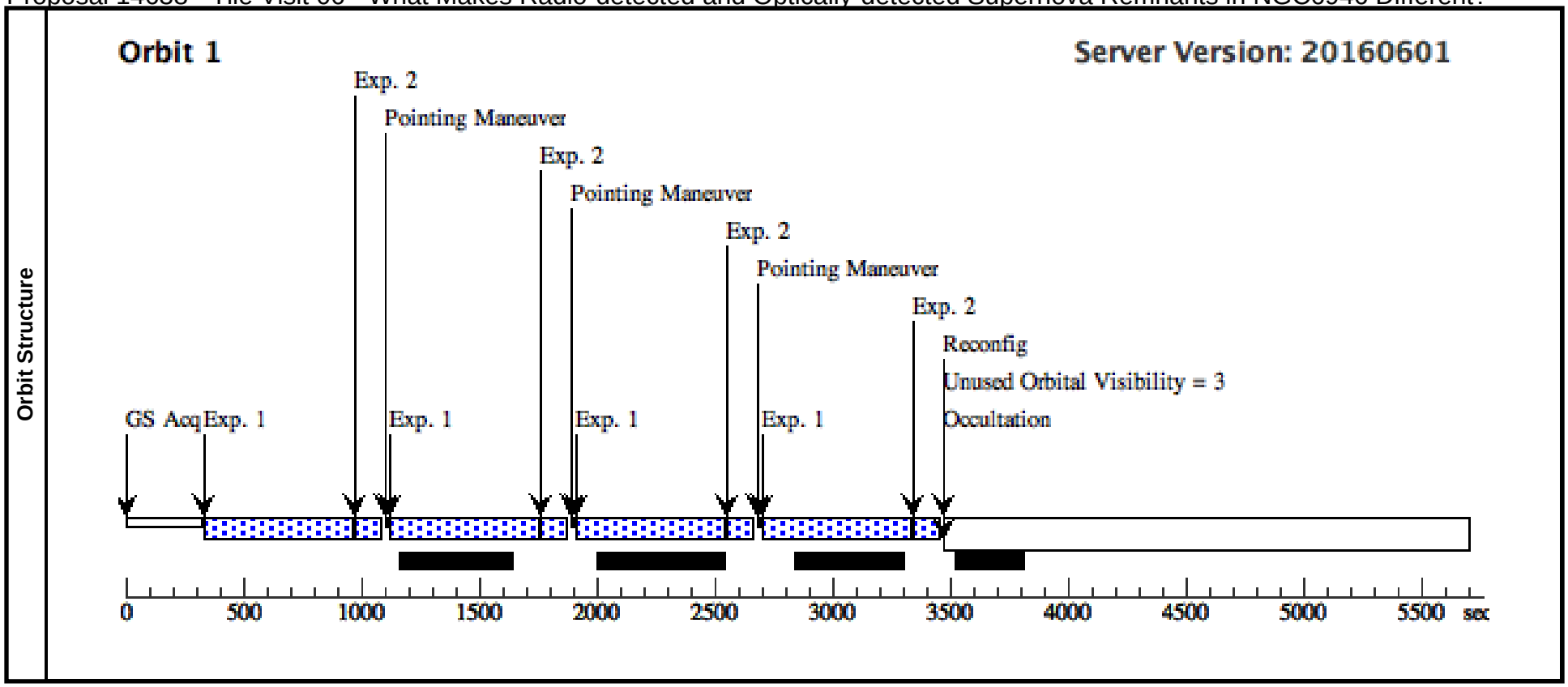
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 132.08467500000003,1.421085471520200 4E-14; GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-2 in Tile Visit 06 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	 ***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 132.08467500000003,1.421085471520200 4E-14	Pattern 2, Exps 1-2 in Tile Visit 06 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
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Visit

Proposal 14638, Tile Visit 07, implementation Fri Jul 29 18:12:39 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 07) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 07) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 07) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

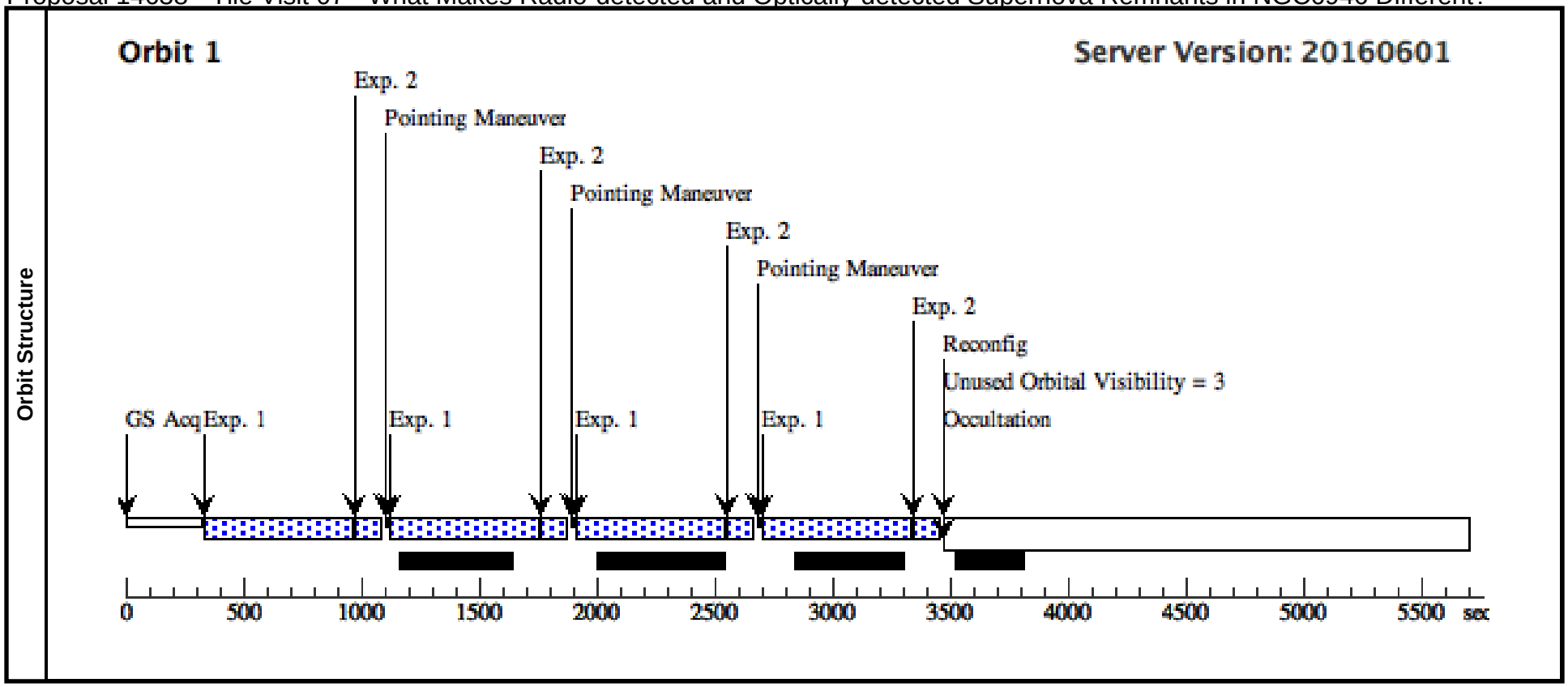
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG -132.08467499999998,117.07799999999996	Pattern 2, Exps 1-2 in Tile Visit 07 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG -132.08467499999998,117.07799999999996	Pattern 2, Exps 1-2 in Tile Visit 07 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14638, Tile Visit 08, implementation Fri Jul 29 18:12:39 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 08) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 08) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 08) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

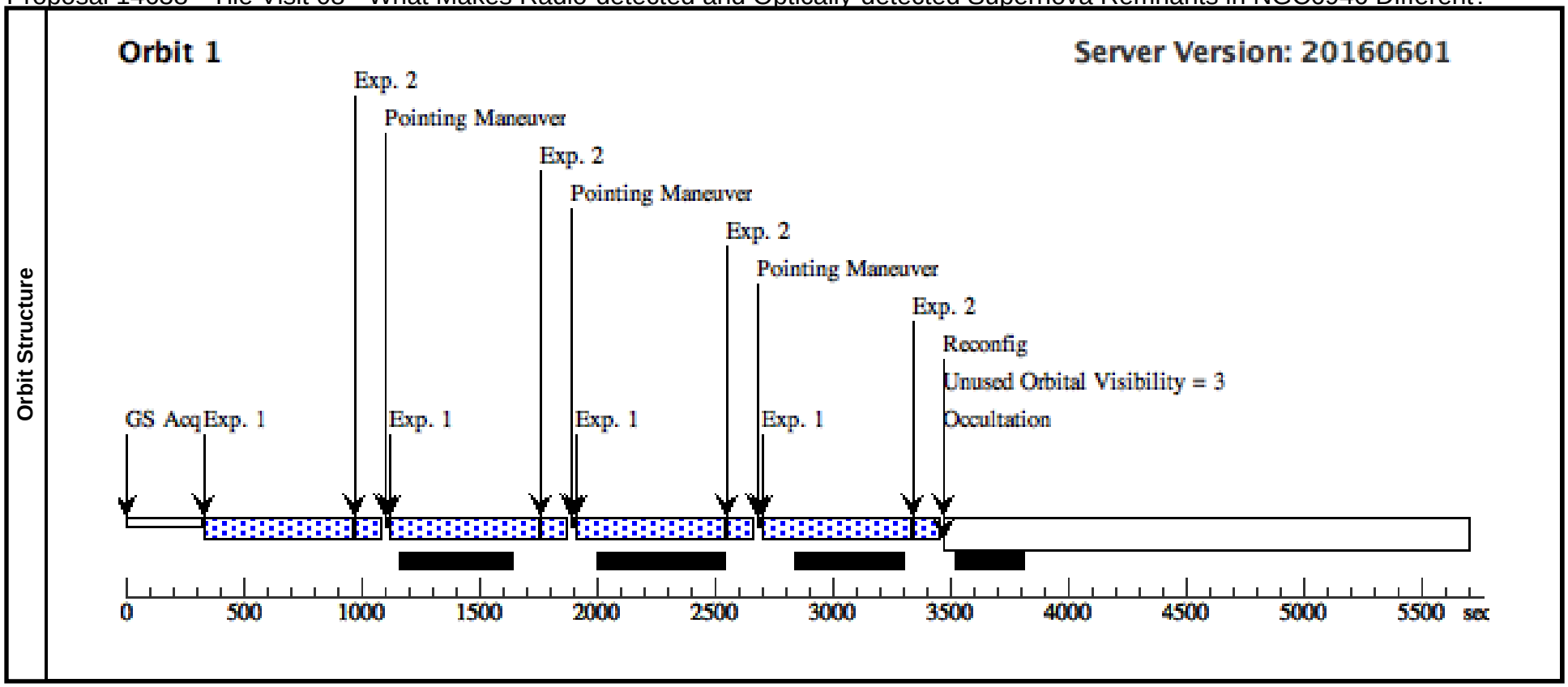
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 2.84217094304040 07E-14,117.07799999999996	Pattern 2, Exps 1-2 in Tile Visit 08 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 2.84217094304040 07E-14,117.07799999999996	Pattern 2, Exps 1-2 in Tile Visit 08 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20160601
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Reconfig
Unused Orbital Visibility = 3
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14638, Tile Visit 09, implementation Fri Jul 29 18:12:39 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR

Special Requirements: SAME ORIENT AS 01

Diagnostics

(Tile Visit 09) Warning (Orbit Planner): PATTERN POSITION OUTSIDE APERTURE

(Exposure 1 (Pattern 2, Exps 1-2 in Tile Visit 09) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2, Exps 1-2 in Tile Visit 09) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=WFC3-IR-DITHER-BLOB Purpose=DITHER Number Of Points=2 Point Spacing=5.183 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.859 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false	(1-2)

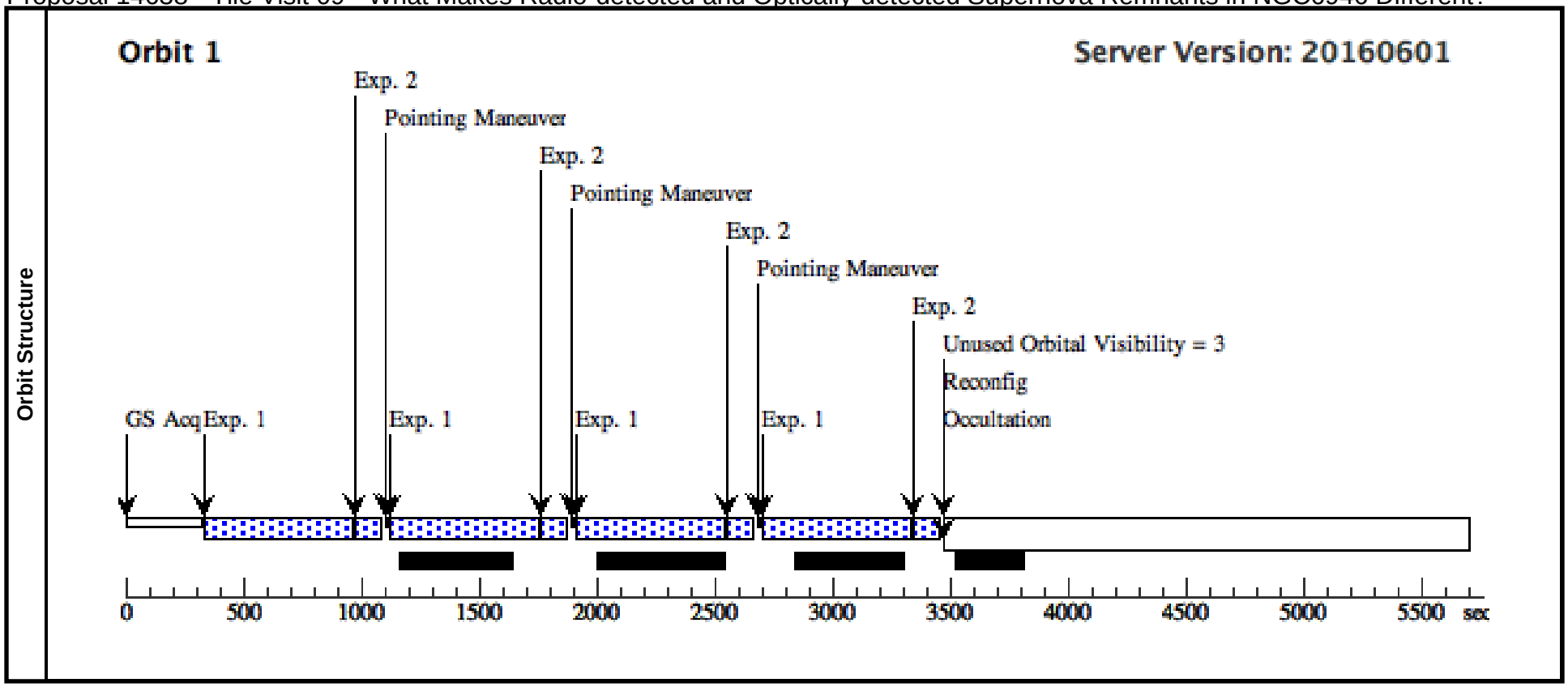
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-6946	RA: 20 34 52.3320 (308.7180500d) Dec: +60 09 13.24 (60.15368d) Equinox: J2000		V=7.4+/-0.1	Reference Frame: SIMBAD

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F164N	SAMP-SEQ=STEP100; NSAMP=12	POS TARG 132.08467500000003,117.07799999999996; GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-2 in Tile Visit 09 (2)	599.232292 Secs (2396.929 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	 ***[1]***
2		(1) NGC-6946	WFC3/IR, MULTIACCUM, IR	F160W	SAMP-SEQ=STEP25; NSAMP=8	POS TARG 132.08467500000003,117.07799999999996	Pattern 2, Exps 1-2 in Tile Visit 09 (2)	99.231256 Secs (396.925 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	 ***[1]***


Orbit 1
Server Version: 20160601
Orbit Structure
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Unused Orbital Visibility = 3
Reconfig
Occultation
GS Acq
Exp. 1
Exp. 1
Exp. 1
Exp. 1
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec