



13316 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Cycle: 21, Proposal Category: GO
(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) SGR-A	WFC3/IR	1	18-Mar-2014 21:10:48.0	yes
02	(1) SGR-A	WFC3/IR	7	18-Mar-2014 21:12:10.0	yes
03	(1) SGR-A	WFC3/IR	5	18-Mar-2014 21:13:20.0	yes
04	(1) SGR-A	WFC3/IR	5	18-Mar-2014 21:14:22.0	yes
05	(1) SGR-A	WFC3/IR	4	18-Mar-2014 21:15:12.0	yes

22 Total Orbits Used

ABSTRACT

Observations of the Galactic Center have recently discovered a dense, dusty gas cloud, known as G2, infalling towards the dormant Super-Massive Black Hole (SMBH) Sgr A* at the center of our galaxy. This cloud is on a highly eccentric orbit, which should reach pericenter around September 2013. It has already started to show signs of tidal disruption by the black hole. The fragmentation of the cloud should lead to it becoming the dominant source of accretion activity over the next year or so. It is expected that high-energy emission from Sgr A* resulting from this encounter will increase significantly during and after this time. The circularization of some fraction of the cloud mass should dissipate a considerable fraction of its kinetic energy, resulting in large increases in emission at all wavelengths from the accretion disk. Multiwavelength observations are being planned to monitor the resulting flaring of Sgr A* in radio, X-rays, and gamma-rays. Near-IR observations will be crucial to this once in a lifetime opportunity, because accretion events always manifest themselves first and most often in the near-IR. We propose WFC3 IR monitoring observations of Sgr A* to be conducted simultaneously with already awarded X-ray observations from XMM-Newton. These multiwavelength observations will allow us study the radiation properties of Sgr A* as the cloud breaks up and its fragments feed gas into the central accretion flow, and will give us the ability to test features of many existing accretion models. HST/WFC3 is the only facility that can provide the long-duration and photometrically-stable near-IR measurements that are necessary.

OBSERVING DESCRIPTION

Our XMM observations will occur in 3 blocks of 53 ksec each, on Feb 27, Mar 15, and Apr 4, 2014, with the observation starts matching the VLT visibility windows of Sgr A* in Chile. Our plan is to use the 5-6 consecutive SAA-free orbits that are available each day to obtain WFC3/IR observations over a time span of ~8 hours, interrupted only by Earth occultation. We will obtain WFC3/IR observations with the F153M filter and the SPARS-25 readout sequence. This readout sequence not only gives us equally-spaced readout intervals of 25 secs to keep the detector stable, but also results in exposures of 5-6 min duration, which is long enough to perform WFC3 buffer dumps in parallel with the exposures, thus maximizing our on-source time. We will embed the exposures within 4-point dither pattern, in order to mitigate the effects of bad pixels, flat-field uncertainties, and persistence from bright stars. A total of 8 such exposures can be obtained within each orbit, giving us nearly constant coverage of Sgr A* over a span of about 50 mins per orbit.

ADDITIONAL COMMENTS

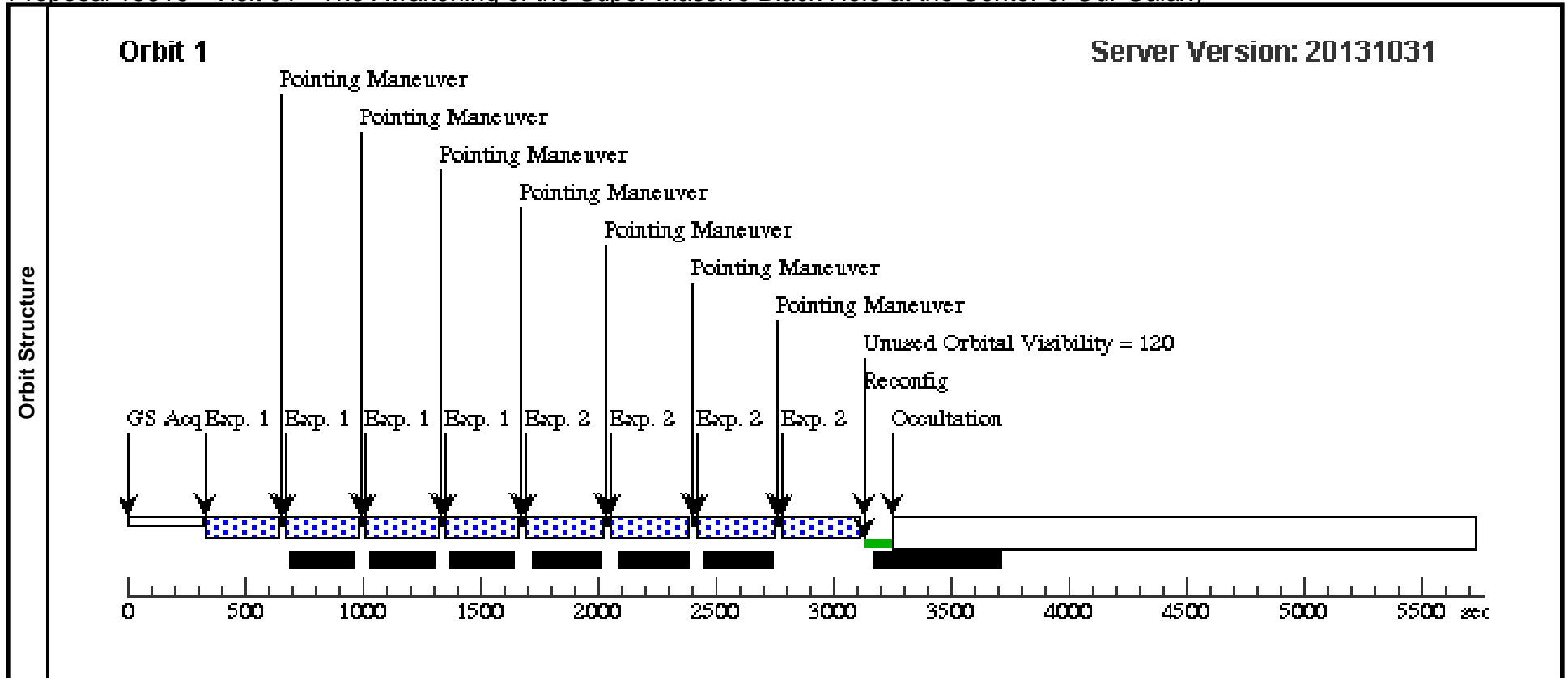
Proposal 13316 (STScI Edit Number: 12, Created: Tuesday, March 18, 2014 8:15:26 PM EST) - Overview

The 22 orbits of this proposal need to be scheduled in coordination with the 6 HST orbits from the companion joint XMM/HST program 13403 (PI: N. Grosso), such that as many of the 28 total orbits as possible are scheduled within the 3 XMM observing windows, in order to obtain simultaneous observations. The BETWEEN times listed for each visit are the current windows in which XMM observations will be taking place. We will be working with the XMM schedulers to see if any of those times could be shifted by a few hours or so, in order to more closely synchronize the XMM observing times with the HST SAA-free orbits, so that the HST target visibilities are not restricted or interrupted by SAA passages.

Proposal 13316 - Visit 01 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Wed Mar 19 01:15:27 GMT 2014

Visit	Proposal 13316, Visit 01, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: BETWEEN 28-FEB-2014:18:21:00 AND 01-MAR-2014:09:04:00									
	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)	SGR-A	RA: 17 45 40.0360 (266.4168167d) Dec: -29 00 28.17 (-29.00783d) Equinox: J2000		V=35 0.15 mJy in H-band	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=12			Pattern 1, Exps 1-1 in Visit 01 (1)	277.937956 Secs (1111.752 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
2	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13			Pattern 1, Exps 2-2 in Visit 01 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]	



Proposal 13316 - Visit 02 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Visit	Proposal 13316, Visit 02, completed Wed Mar 19 01:15:29 GMT 2014 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: BETWEEN 10-MAR-2014:14:20:00 AND 11-MAR-2014:05:03:00					
	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), (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SGR-A	RA: 17 45 40.0360 (266.4168167d) Dec: -29 00 28.17 (-29.00783d) Equinox: J2000		V=35 0.15 mJy in H-band	Reference Frame: ICRS

Proposal 13316 - Visit 02 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

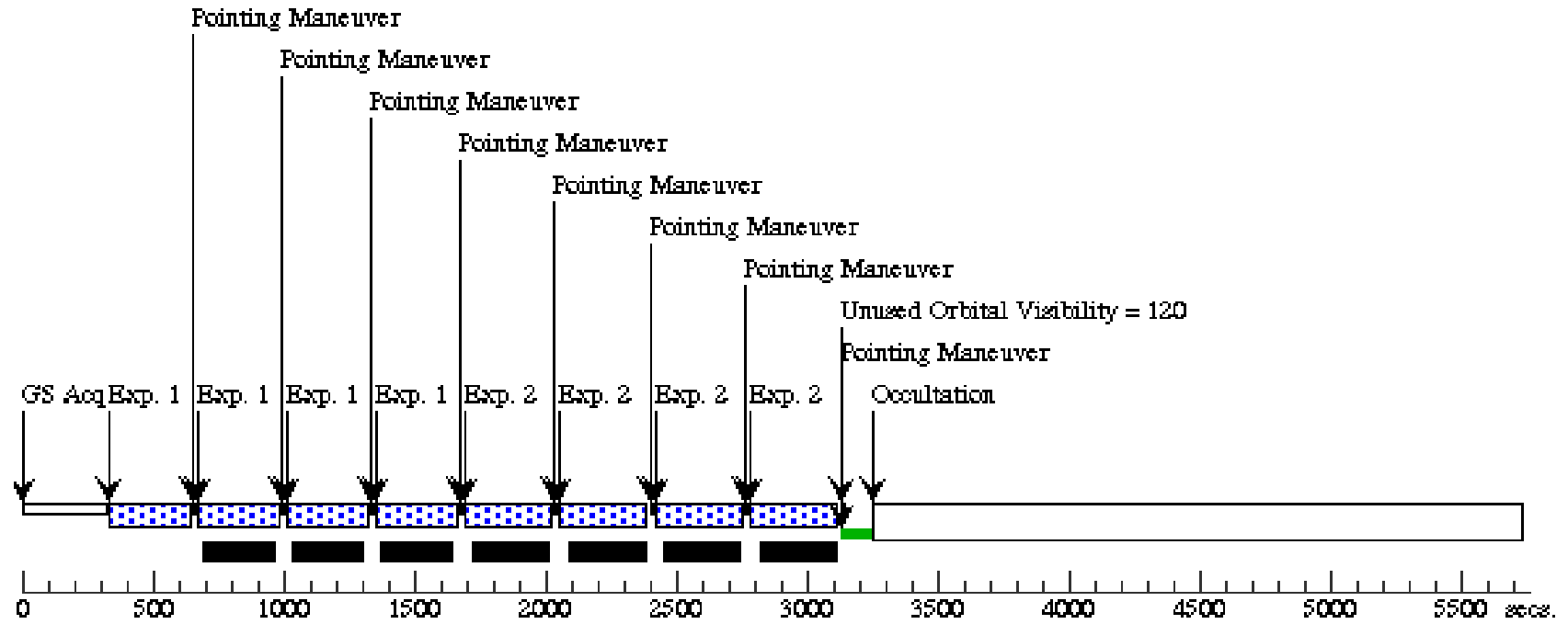
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=12		Pattern 1, Exps 1-1 i n Visit 02 (1)	277.937956 Secs (1111.752 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 2-2 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 3-3 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	4	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 4-4 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	5	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 5-5 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	6	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 6-6 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	7	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 7-7 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]
	8	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 8-8 i n Visit 02 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]

Proposal 13316 - Visit 02 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

9	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 9-9 in Visit 02 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]
10	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 10-10 in Visit 02 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]
11	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 11-11 in Visit 02 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[6]
12	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 12-12 in Visit 02 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[6]
13	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 13-13 in Visit 02 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[7]
14	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		302.938471 Secs (302.938 Secs) [==>]	[7]
15	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	POS TARG 0.542,0.182	302.938471 Secs (302.938 Secs) [==>]	[7]
16	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	POS TARG 0.339,0.485	302.938471 Secs (302.938 Secs) [==>]	[7]

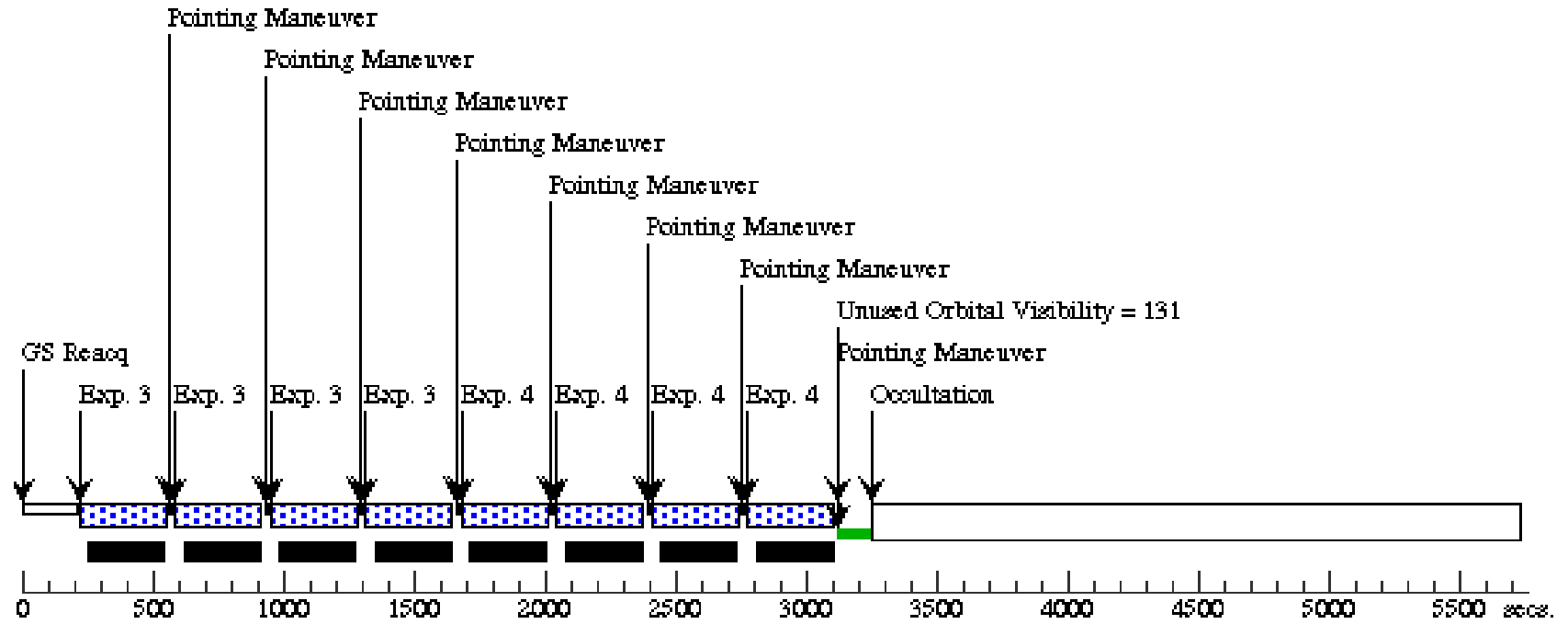
Orbit 1

Orbit Structure



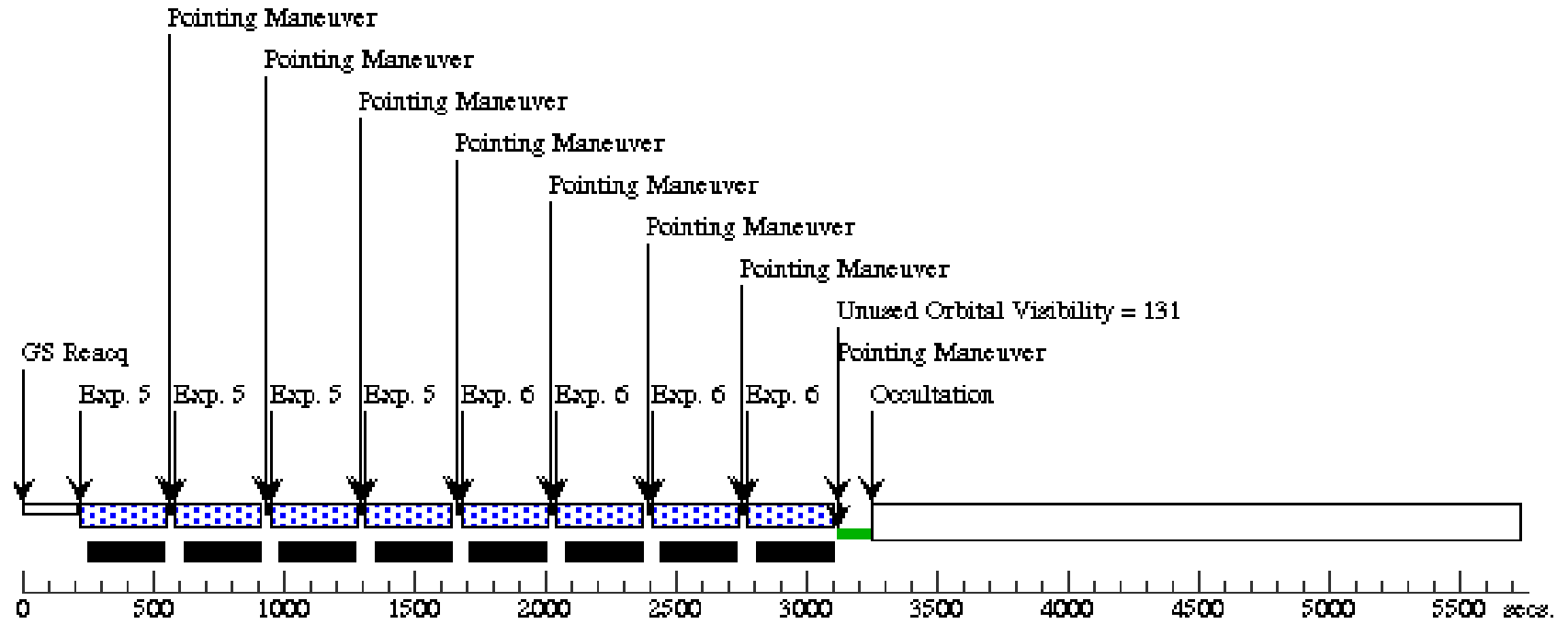
Orbit 2

Server Version: 20131031



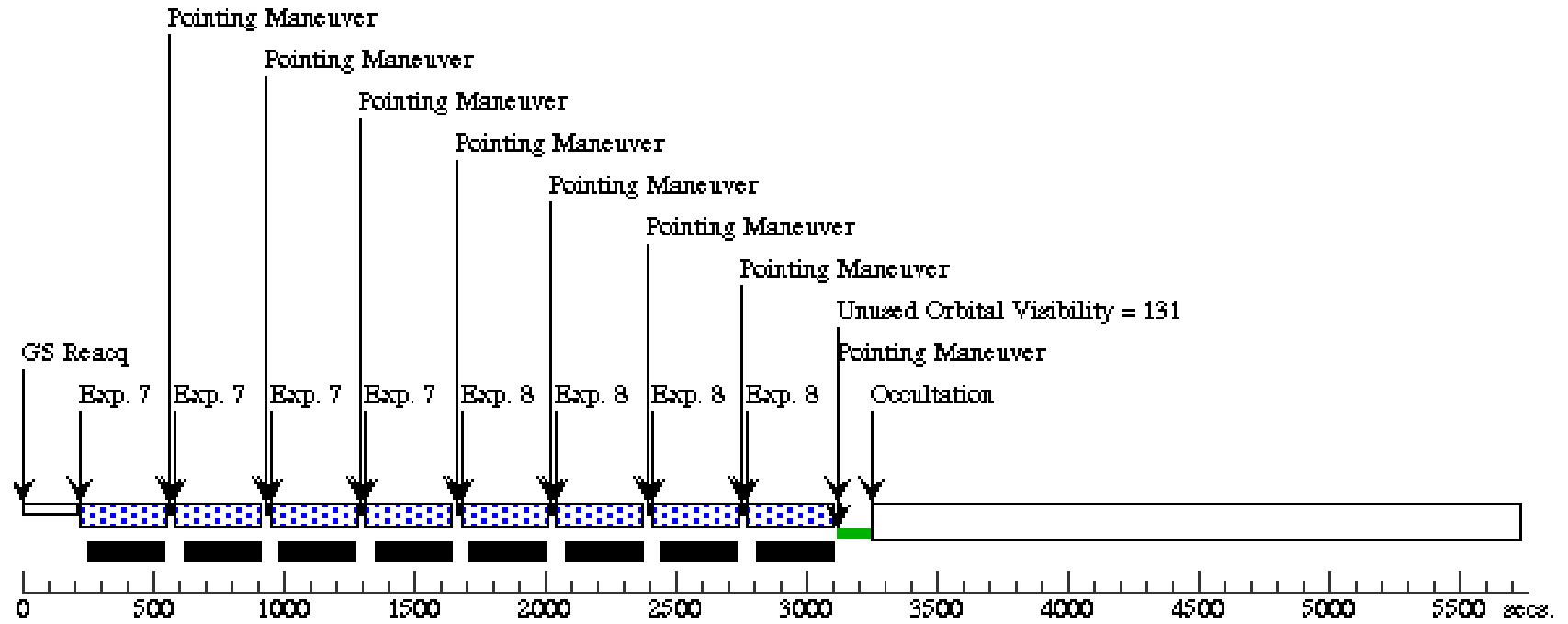
Orbit 3

Server Version: 20131031



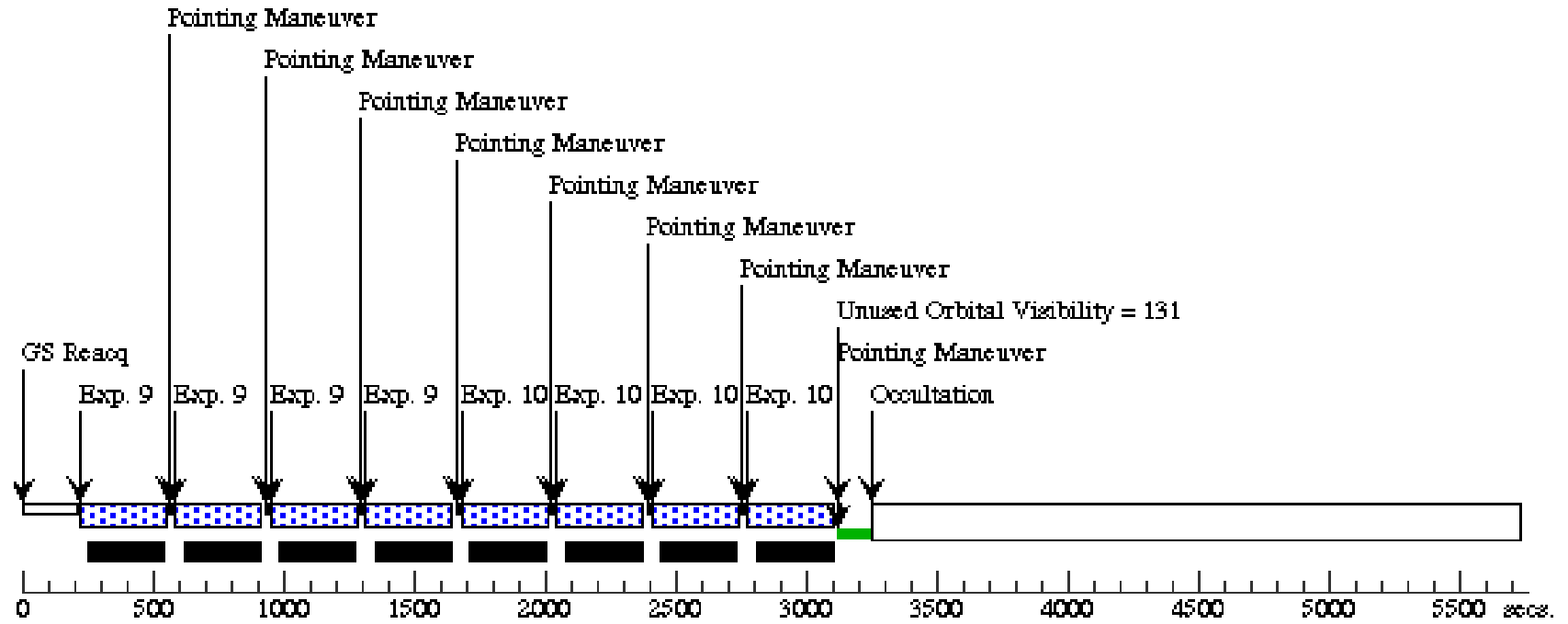
Orbit 4

Server Version: 20131031



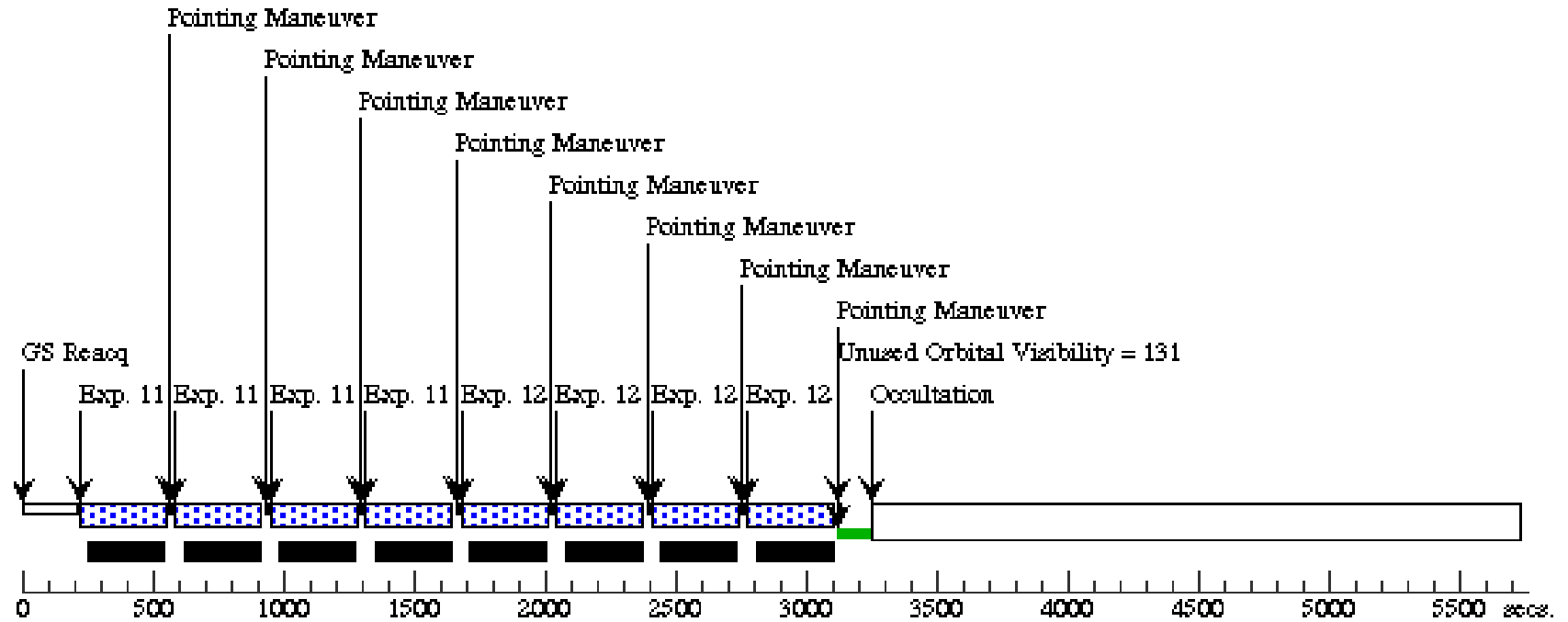
Orbit 5

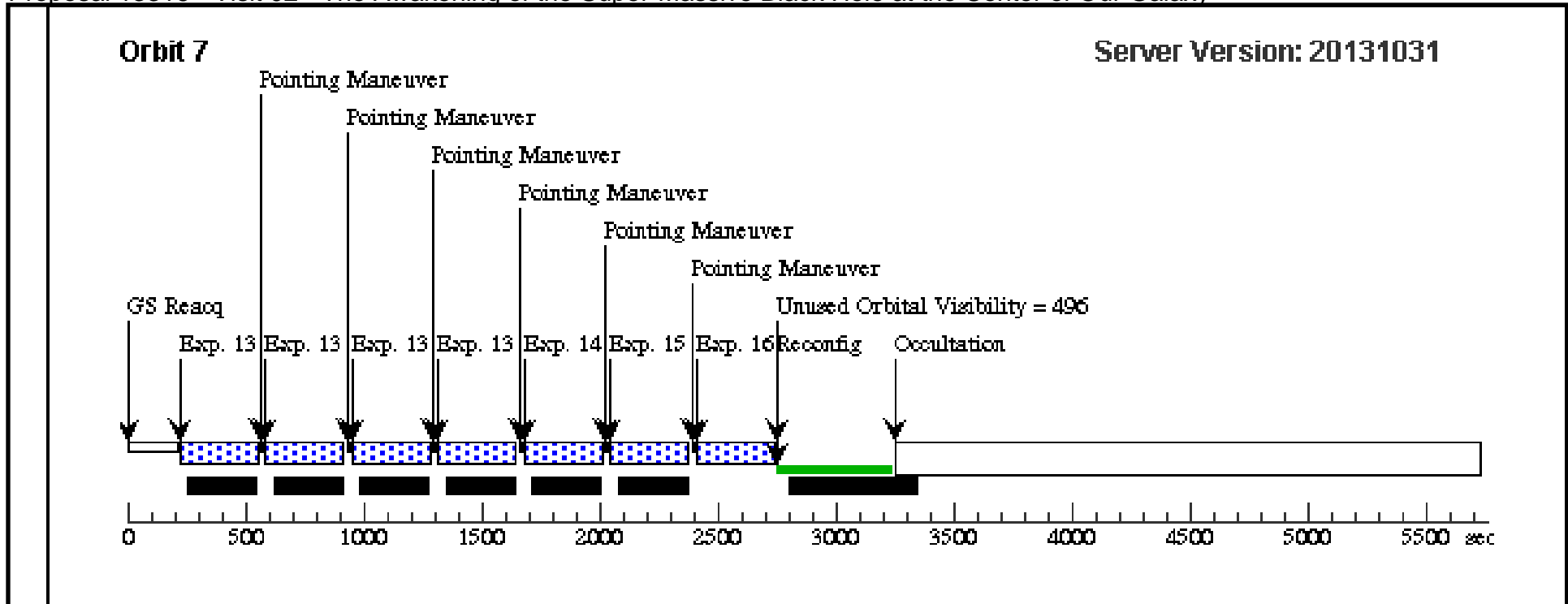
Server Version: 20131031



Orbit 6

Server Version: 20131031





Proposal 13316 - Visit 03 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Wed Mar 19 01:15:35 GMT 2014

Visit	Proposal 13316, Visit 03, scheduling Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: BETWEEN 02-APR-2014:02:57:00 AND 02-APR-2014:17:40:00					
	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), (3), (4), (5), (6), (7), (8), (9), (10)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SGR-A	RA: 17 45 40.0360 (266.4168167d) Dec: -29 00 28.17 (-29.00783d) Equinox: J2000		V=35 0.15 mJy in H-band	Reference Frame: ICRS

Proposal 13316 - Visit 03 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

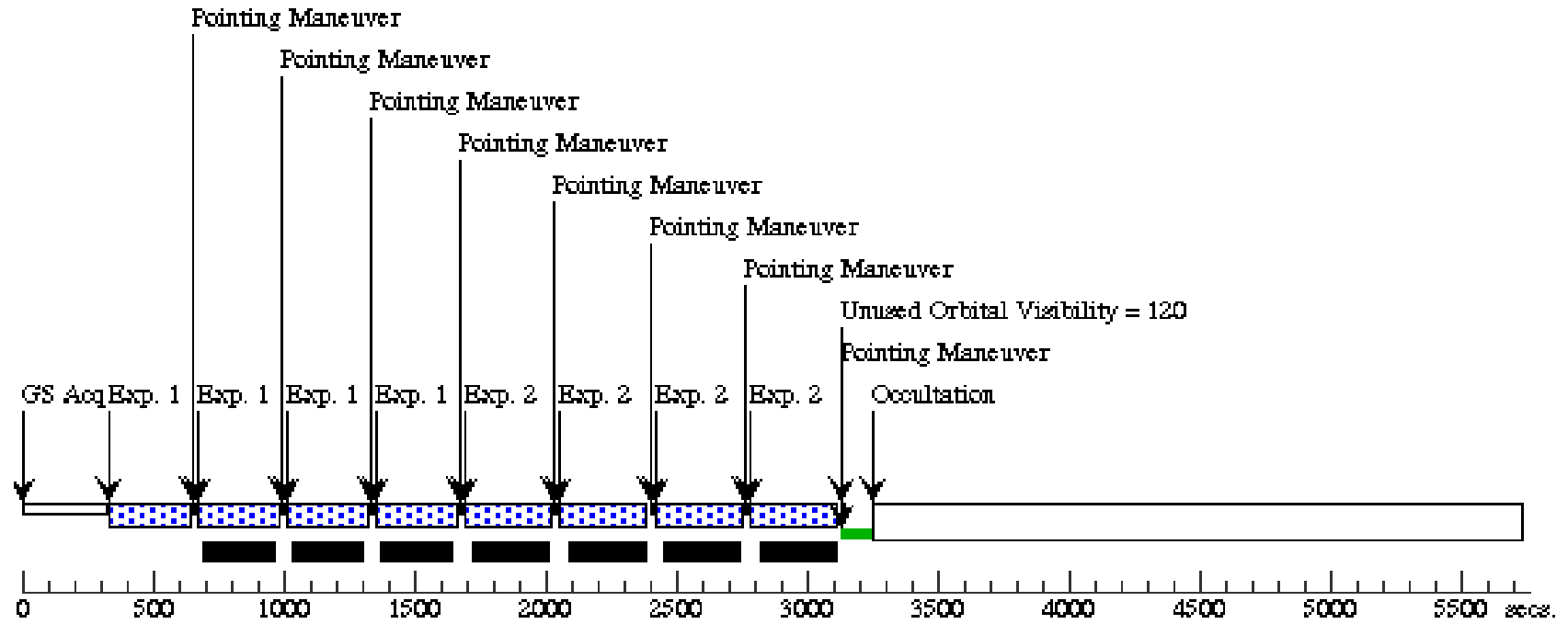
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=12		Pattern 1, Exps 1-1 i n Visit 03 (1)	277.937956 Secs (1111.752 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 2-2 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 3-3 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	4	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 4-4 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	5	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 5-5 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	6	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 6-6 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	7	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 7-7 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]
	8	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 8-8 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]

Proposal 13316 - Visit 03 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

9	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 9-9 i n Visit 03 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]
10	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 10-1 0 in Visit 03 (1)	302.938471 Secs (1211.754 Secs) [==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]

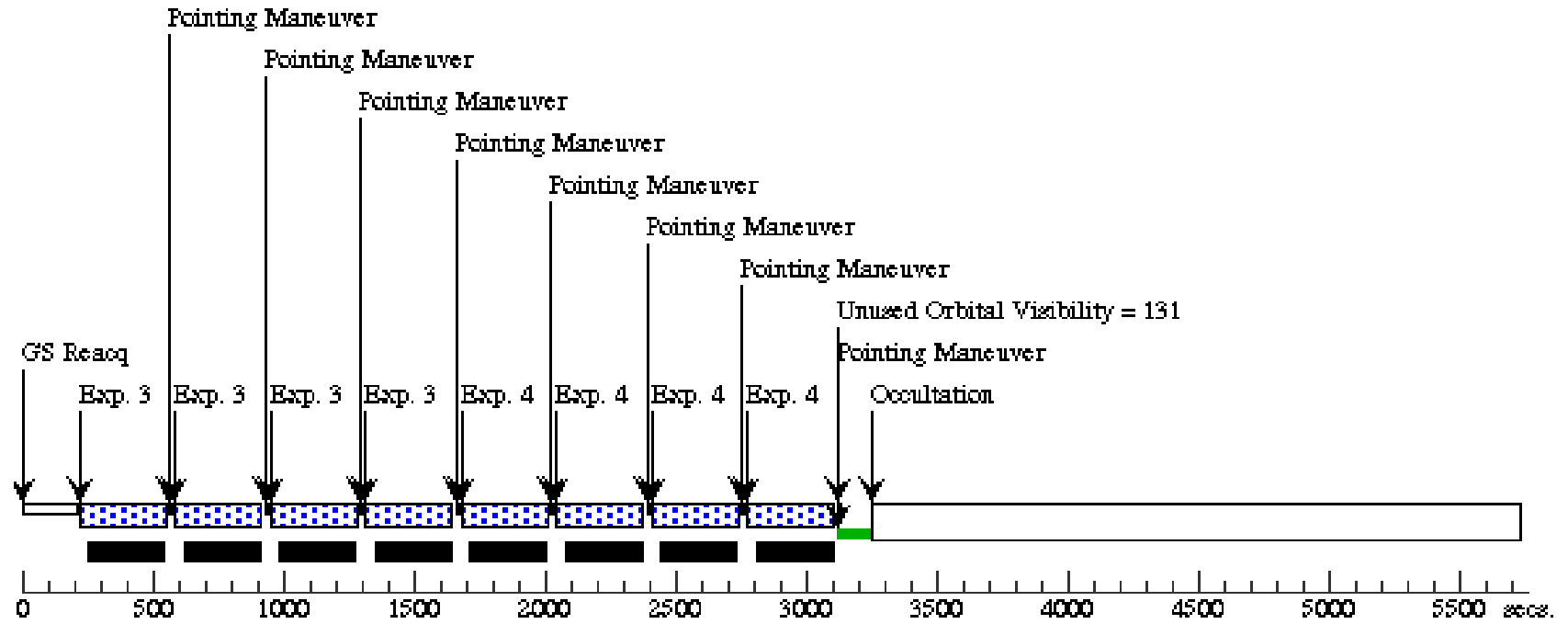
Orbit 1

Orbit Structure



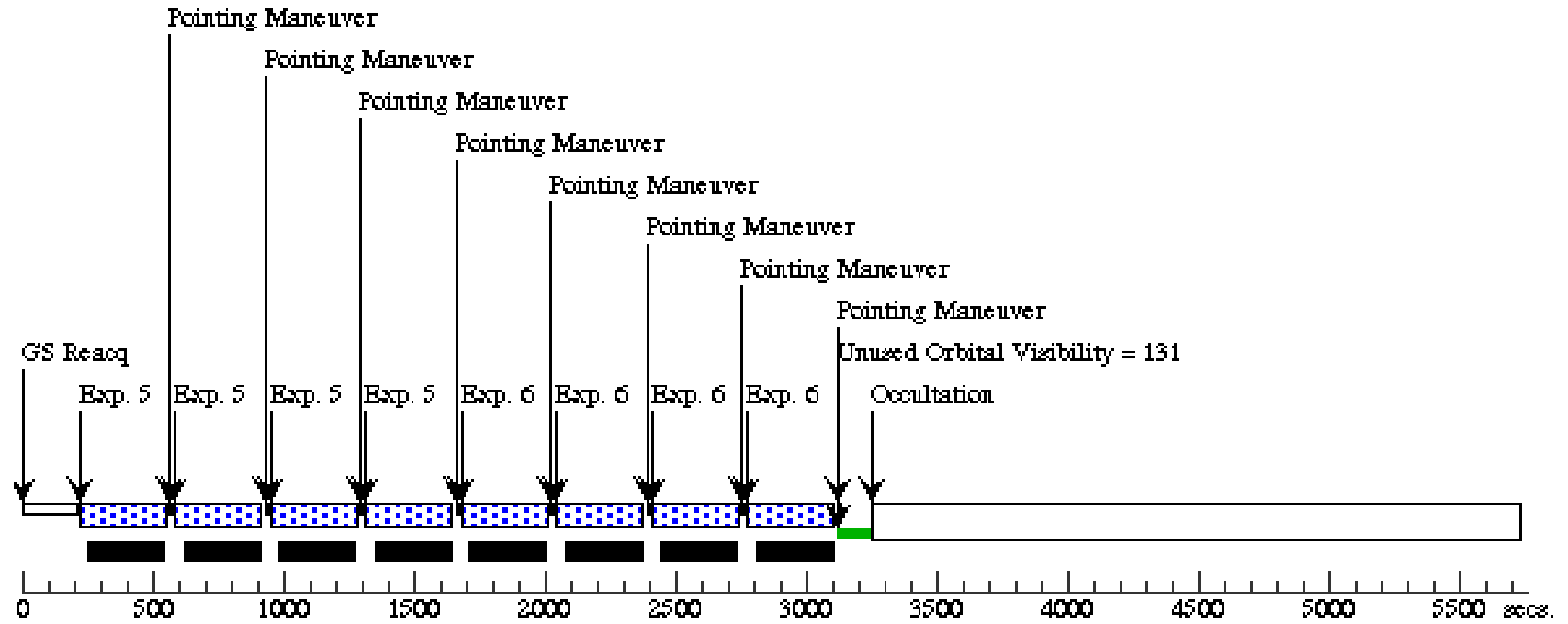
Orbit 2

Server Version: 20131031



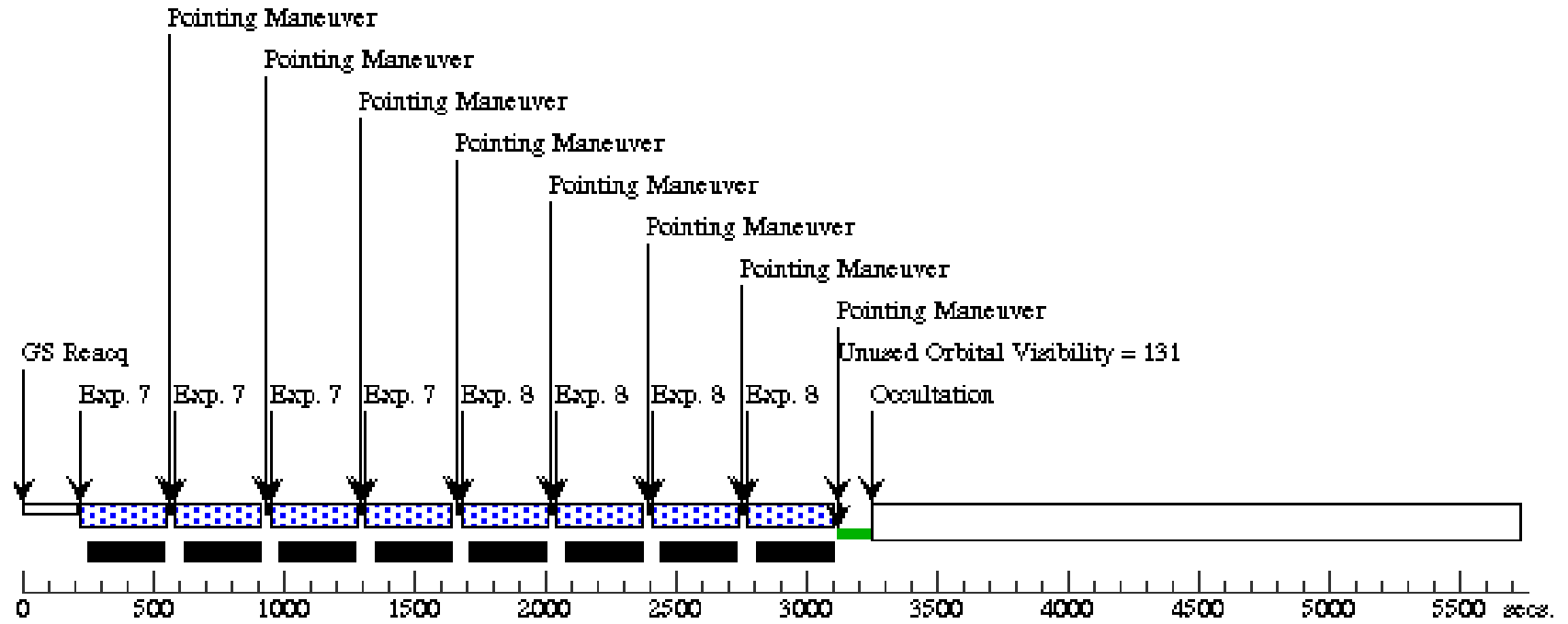
Orbit 3

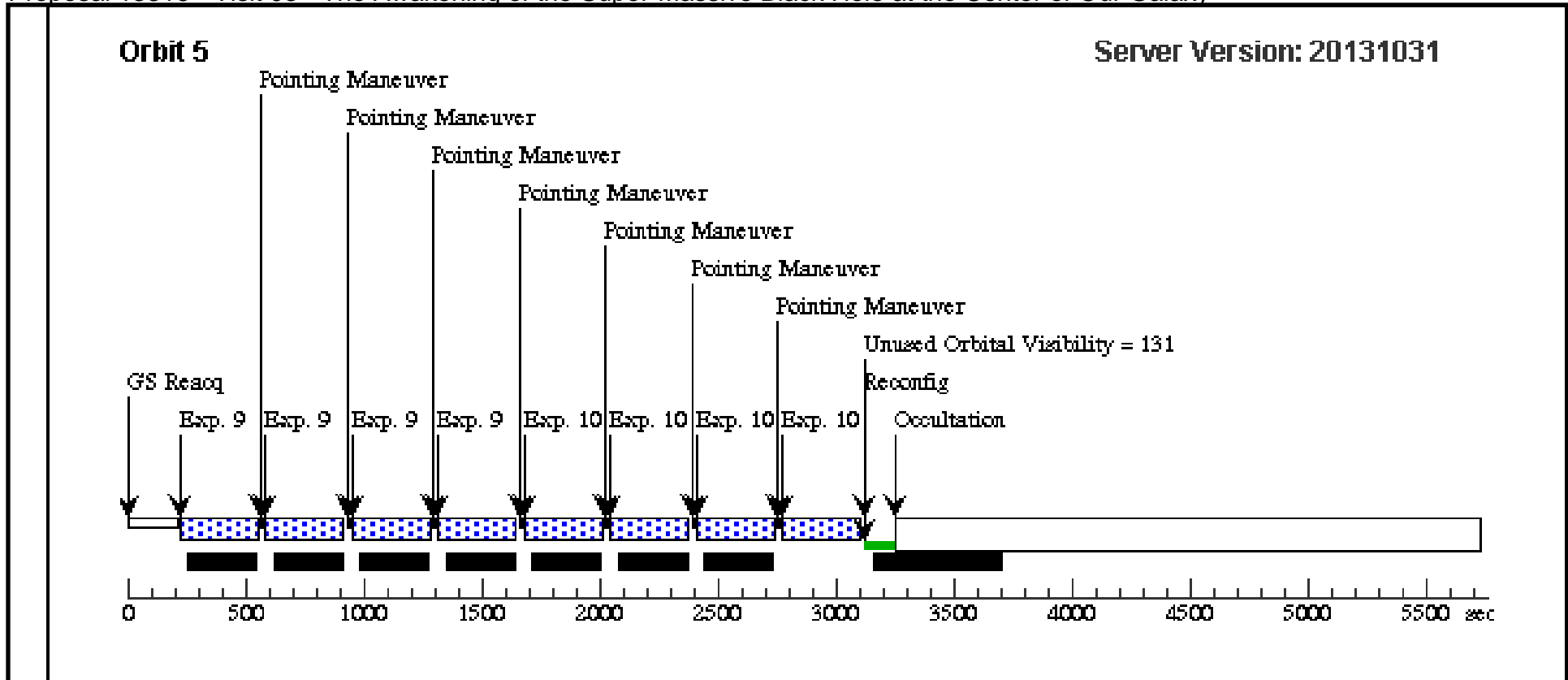
Server Version: 20131031



Orbit 4

Server Version: 20131031





Proposal 13316 - Visit 04 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Visit	Proposal 13316, Visit 04, implementation Wed Mar 19 01:15:38 GMT 2014 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: BETWEEN 02-APR-2014:02:57:00 AND 02-APR-2014:17:40:00					
	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), (3), (4), (5), (6), (7), (8), (9), (10)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SGR-A	RA: 17 45 40.0360 (266.4168167d) Dec: -29 00 28.17 (-29.00783d) Equinox: J2000		V=35 0.15 mJy in H-band	Reference Frame: ICRS

Proposal 13316 - Visit 04 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

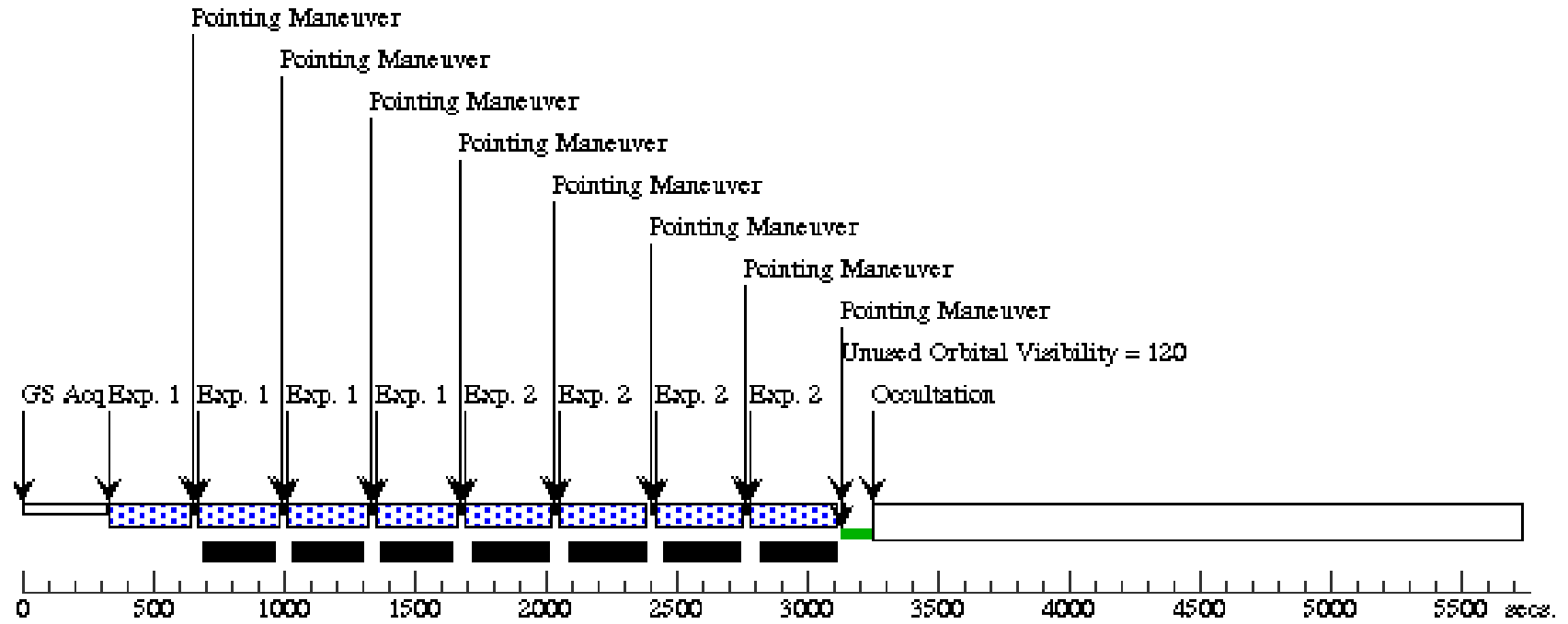
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=12		Pattern 1, Exps 1-1 i n Visit 04 (1)	277.937956 Secs (1111.752 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 2-2 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 3-3 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	4	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 4-4 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	5	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 5-5 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	6	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 6-6 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	7	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 7-7 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]
	8	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 8-8 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]

Proposal 13316 - Visit 04 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

9	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 9-9 i n Visit 04 (1)	302.938471 Secs (1211.754 Secs)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]
10	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13	Pattern 1, Exps 10-1 0 in Visit 04 (1)	302.938471 Secs (1211.754 Secs)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[5]

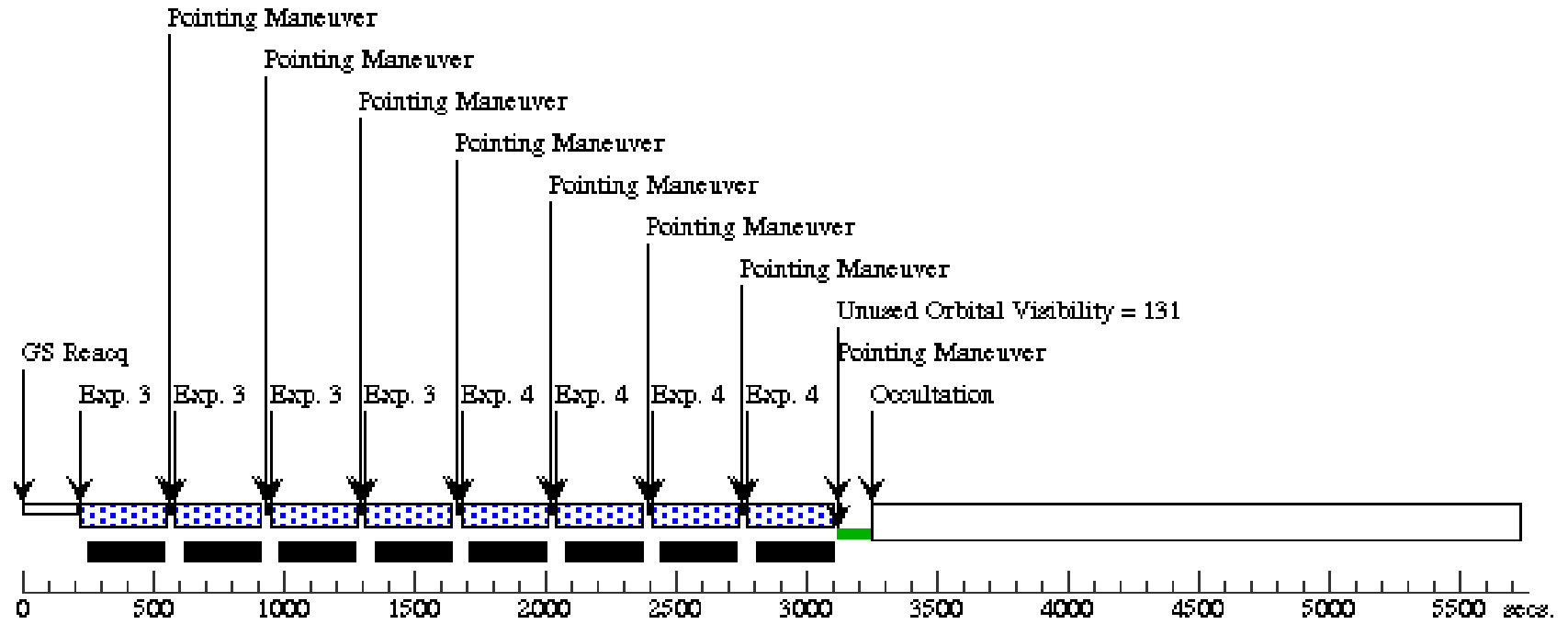
Orbit 1

Orbit Structure



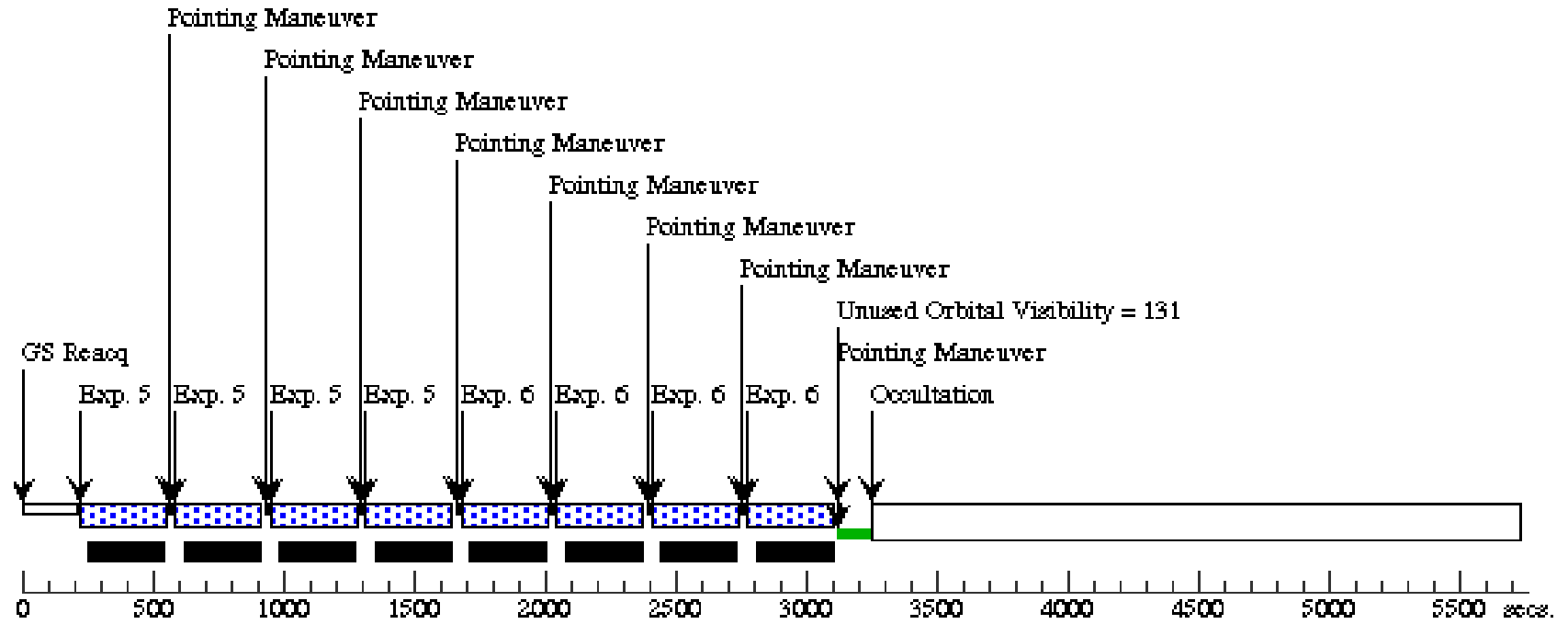
Orbit 2

Server Version: 20131031



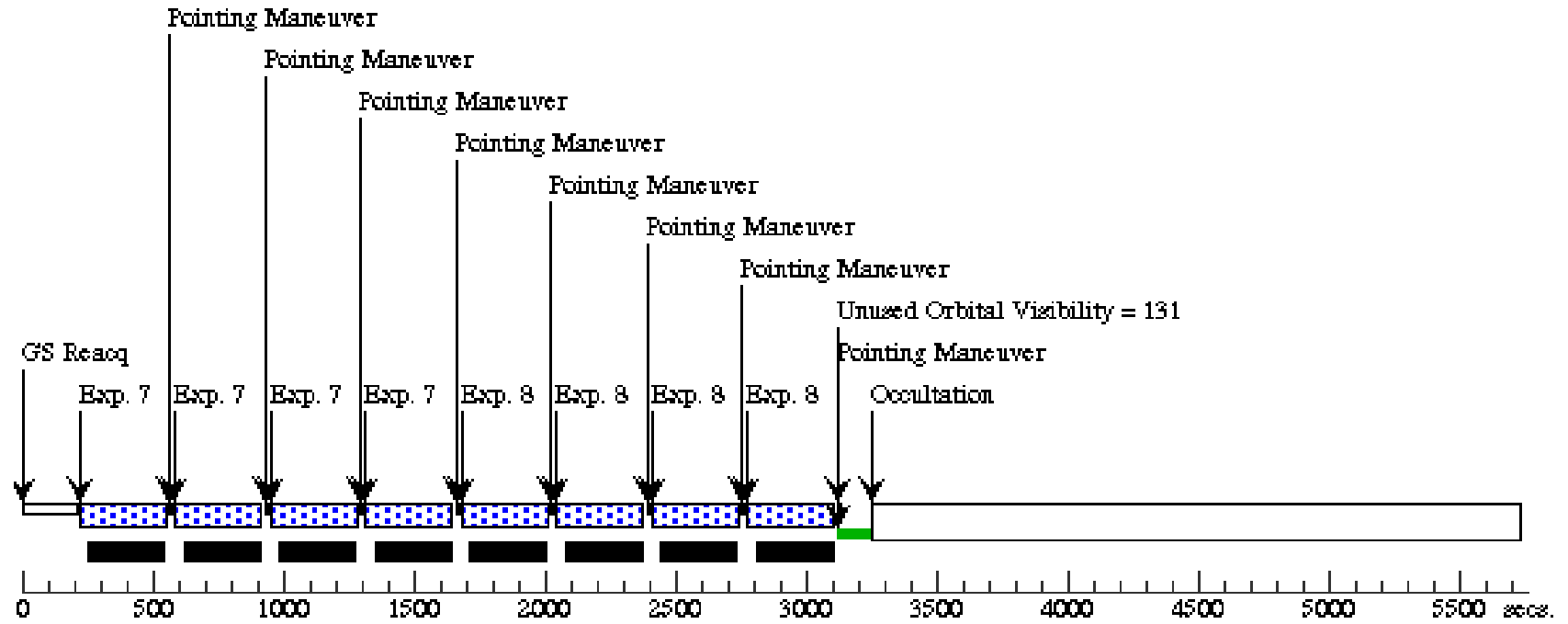
Orbit 3

Server Version: 20131031



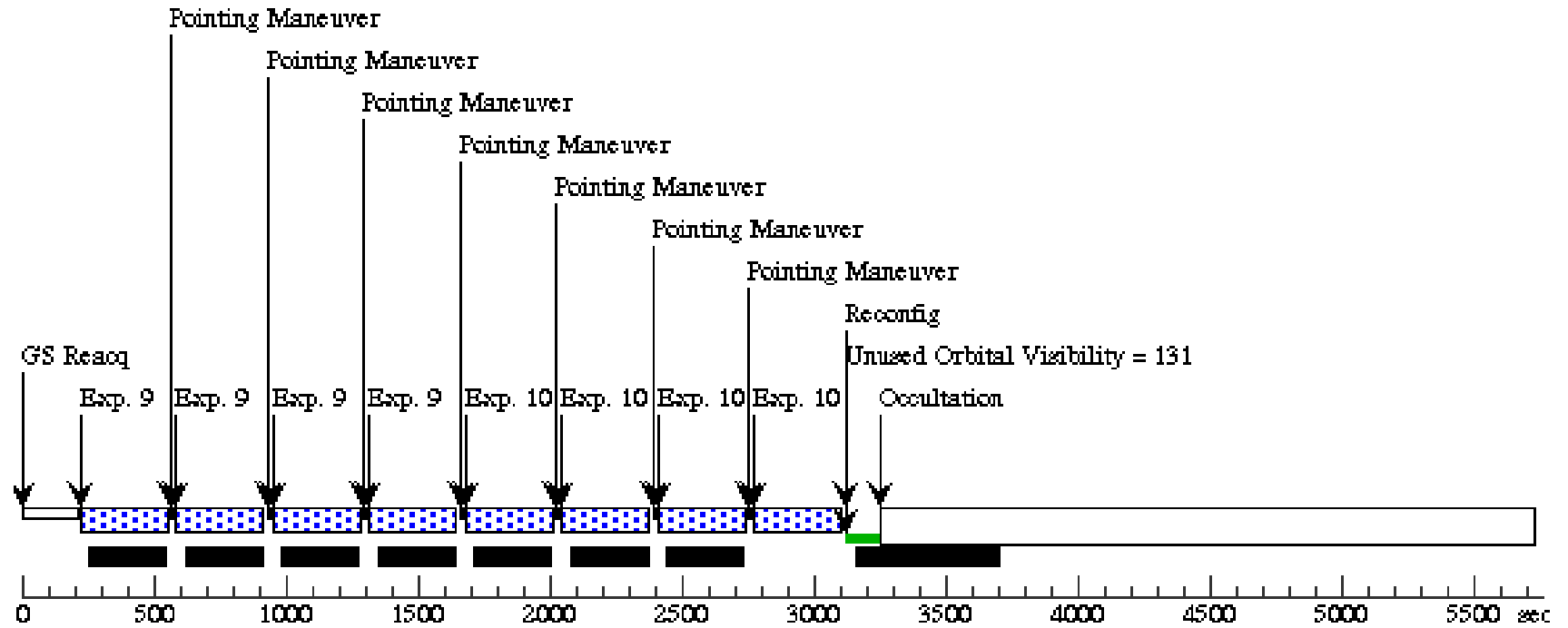
Orbit 4

Server Version: 20131031



Orbit 5

Server Version: 20131031



Proposal 13316 - Visit 05 - The Awakening of the Super-Massive Black Hole at the Center of Our Galaxy

Wed Mar 19 01:15:40 GMT 2014

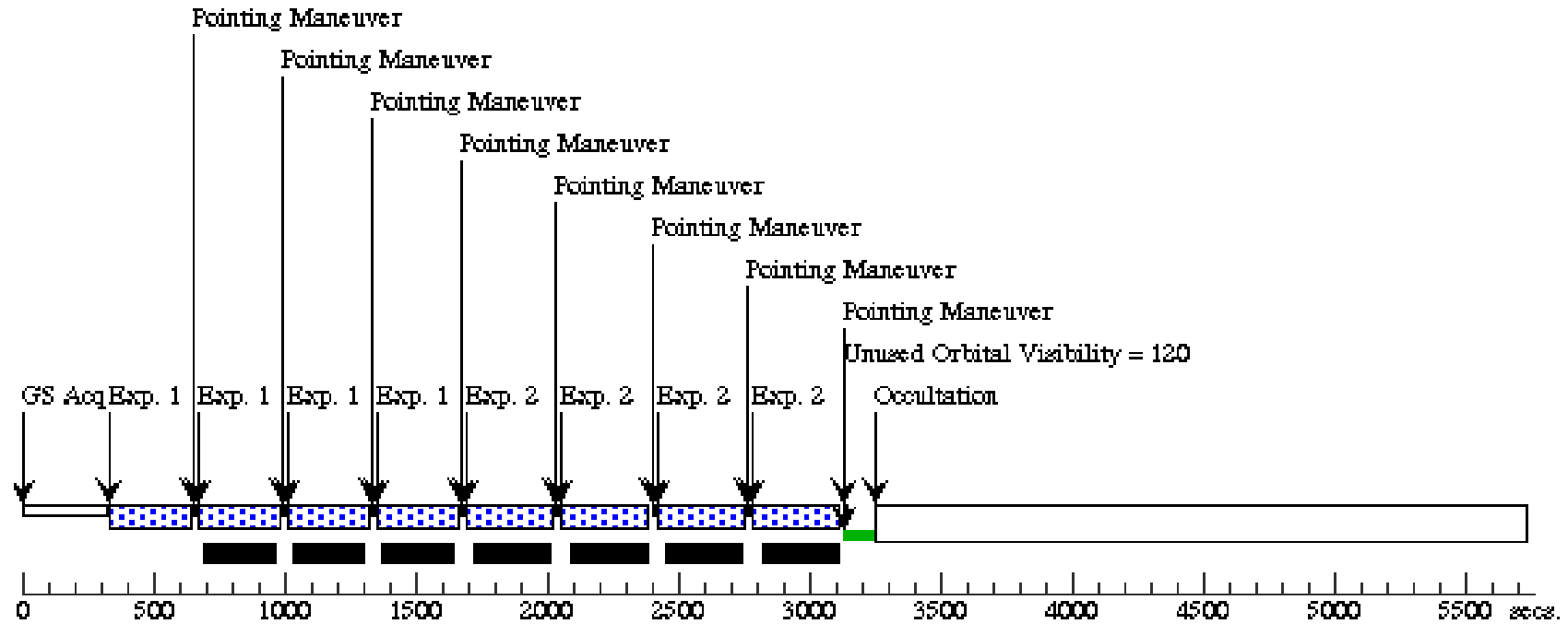
Visit	Proposal 13316, Visit 05, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR Special Requirements: BETWEEN 03-APR-2014:04:00:00 AND 03-APR-2014:12:00:00					
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures	
	(1)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER 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), (3), (4), (5), (6), (7), (8)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(1)	SGR-A	RA: 17 45 40.0360 (266.4168167d) Dec: -29 00 28.17 (-29.00783d) Equinox: J2000		V=35 0.15 mJy in H-band	Reference Frame: ICRS

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#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=12		Pattern 1, Exps 1-1 i n Visit 05 (1)	277.937956 Secs (1111.752 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	2	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 2-2 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[1]
	3	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 3-3 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	4	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 4-4 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[2]
	5	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 5-5 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	6	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 6-6 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[3]
	7	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 7-7 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]
	8	(1) SGR-A	WFC3/IR, MULTIACCUM, IR	F153M	SAMP-SEQ=SPARS 25; NSAMP=13		Pattern 1, Exps 8-8 i n Visit 05 (1)	302.938471 Secs (1211.754 Secs) [=>(Pattern 1)] [=>(Pattern 2)] [=>(Pattern 3)] [=>(Pattern 4)]	[4]

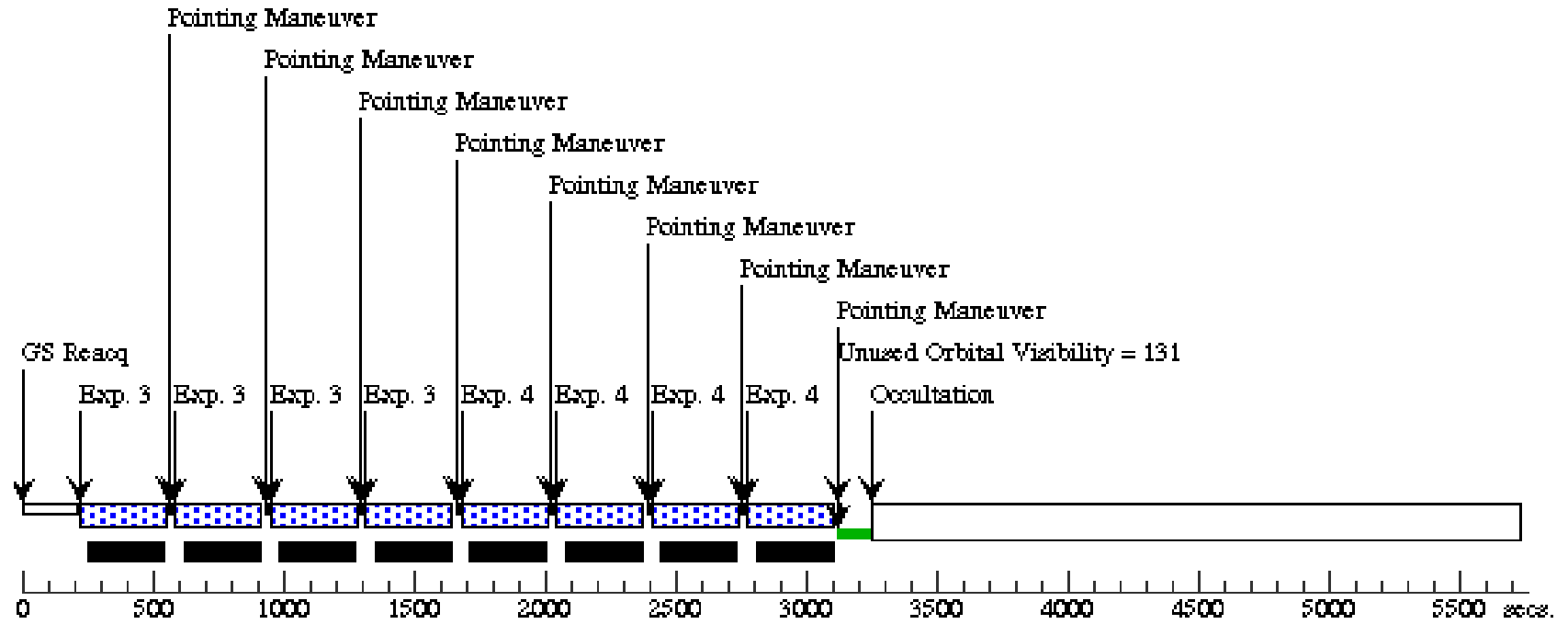
Orbit 1

Orbit Structure



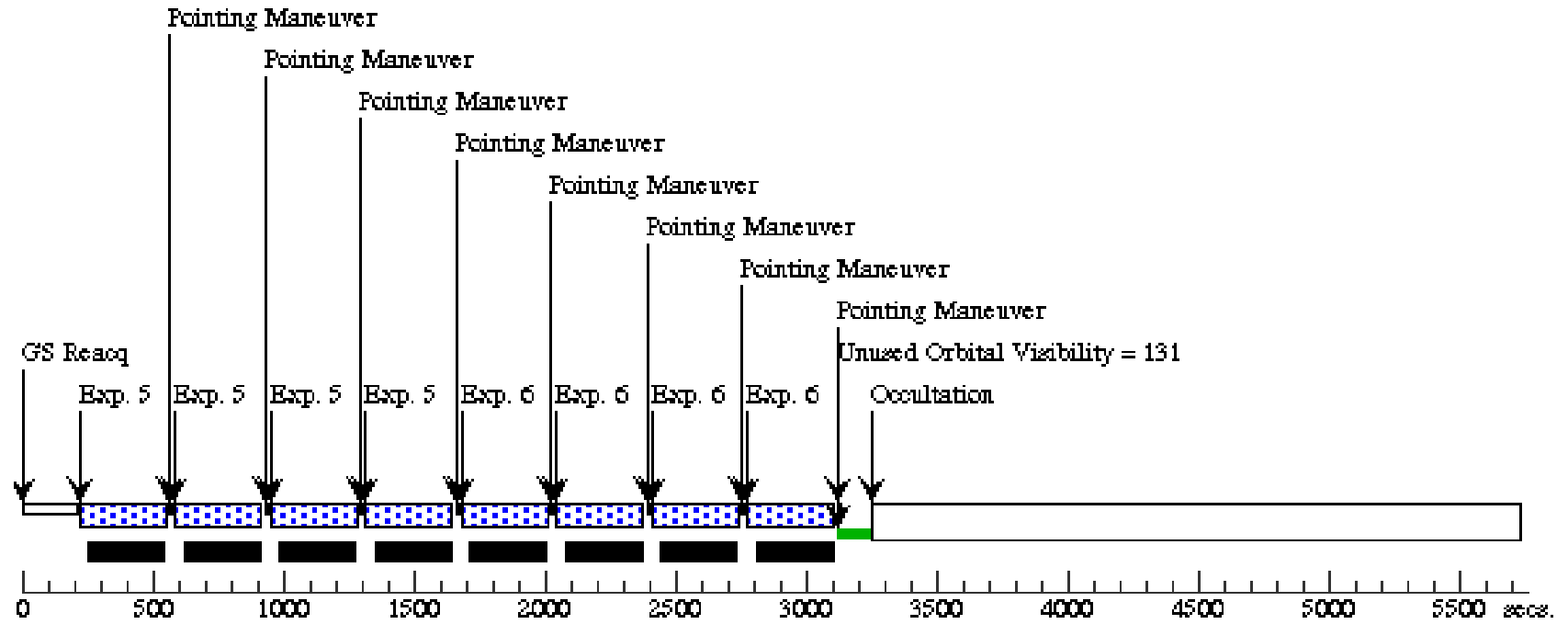
Orbit 2

Server Version: 20131031



Orbit 3

Server Version: 20131031



Orbit 4

Server Version: 20131031

