11833 - Monitoring M31 for BHXNe

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
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Dr. Benjamin F. Williams (CoI)	University of Washington	ben@astro.washington.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
15	(1) M31-BH	ACS/WFC	2	28-Dec-2009 21:04:09.0	yes
20	(1) M31-BH	ACS/WFC	2	28-Dec-2009 21:04:14.0	yes

4 Total Orbits Used

ABSTRACT

During A01-8 we found ~20 Black Hole X-ray Novae (BHXNe) in M31 using Chandra,
and with HST follow-up have estimated orbital periods for 8 of these.
Observations are underway with HST to attempt to estimate additional periods.

We propose to continue this program concentrating our scarce HST resources on a single transient which exceeds 1e38 erg/s. Only uninterrupted monitoring can yield the duty cycles and long-term light curves of BHXNe (and other variables) in M31. Our GO+GTO programs will have accumulated 790ks (ACIS+HRC) near the M31 bulge by the end of AO9, and total Chandra exposure on M31 is now 940ks. By continuing our monitoring program through AO12 we will reach ~950ks on the bulge and >1Msec total Chandra M31 exposure.

OBSERVING DESCRIPTION

TBD

Visit

Proposal 11833, Visit 15, implementation Tue Dec 29 02:04:18 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: BETWEEN 18-JAN-2010:12:00:00 AND 24-JAN-2010:11:59:00

Patterns

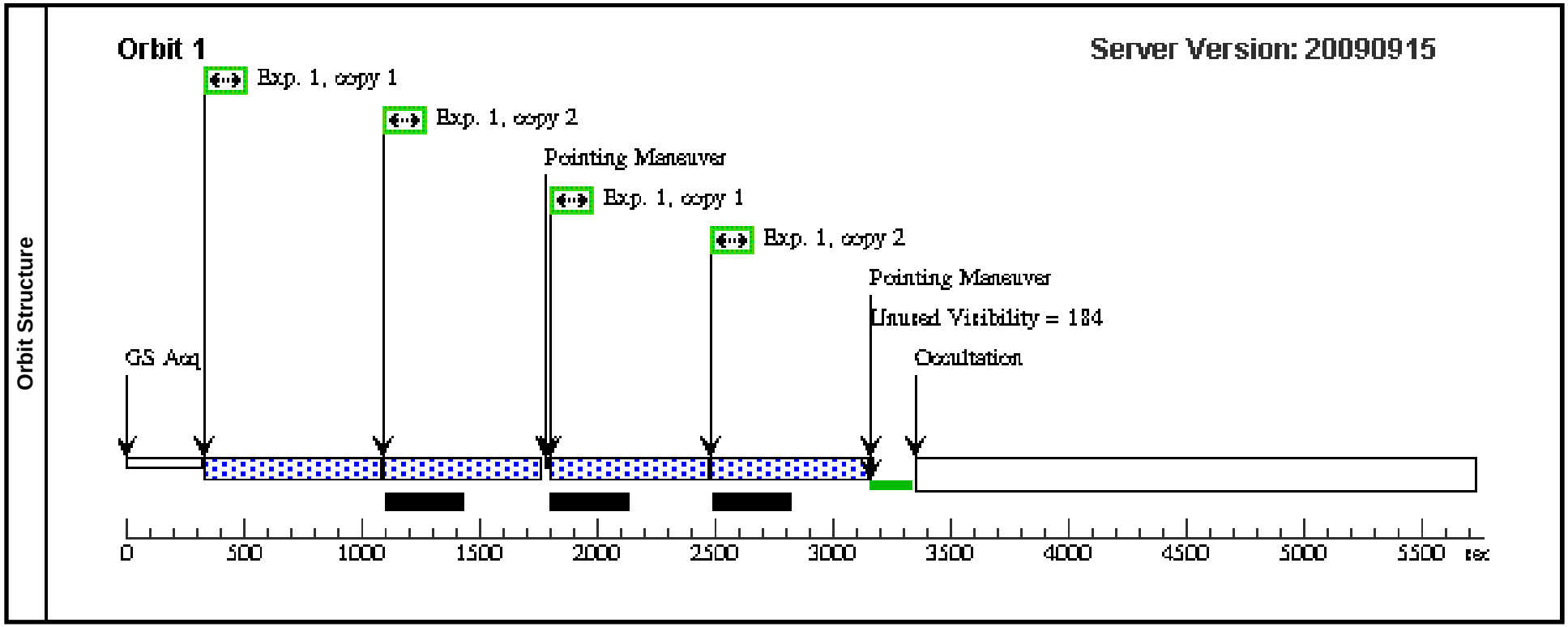
#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false		(1)

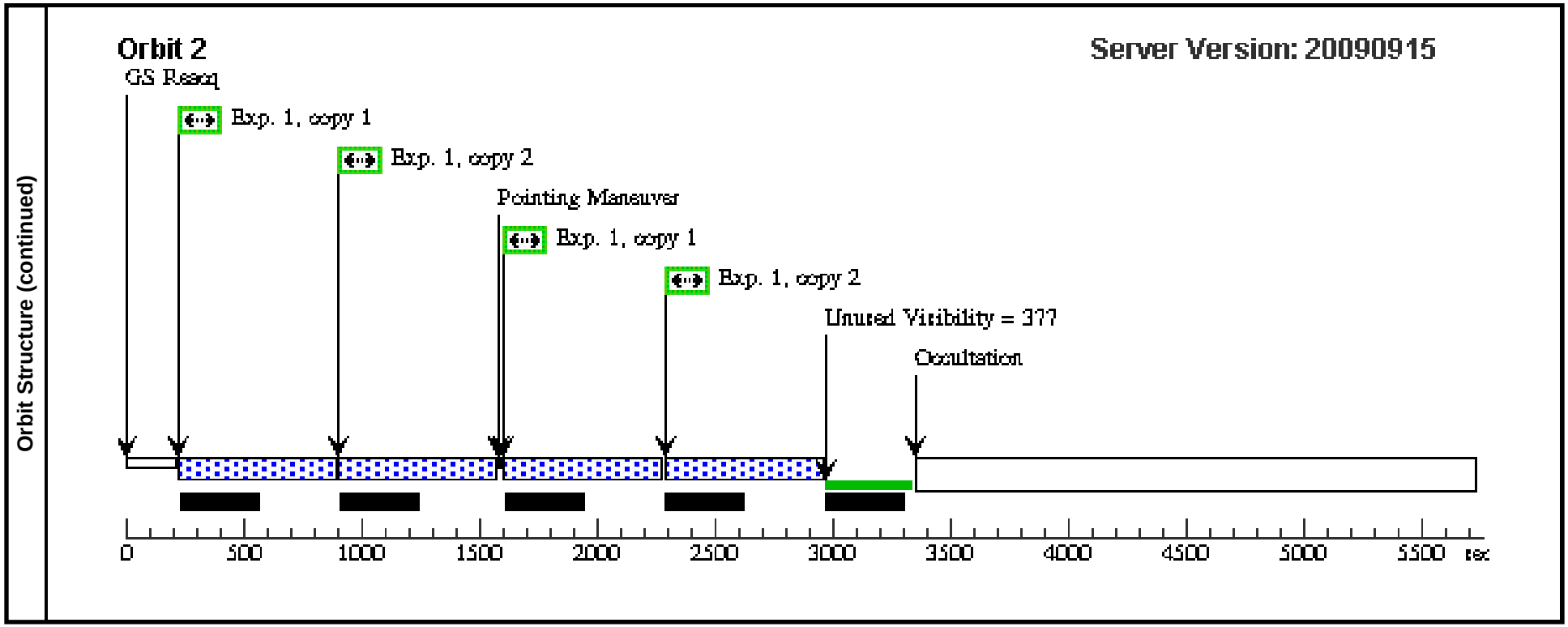
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M31-BH	RA: 00 42 53.1500 (10.7214583d) Dec: +41 14 22.90 (41.23969d) Equinox: J2000		V=25+/-5	Reference Frame: Chandra Observation

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	BH5-on	(1) M31-BH	ACS/WFC, ACCUM, WFC	F435W	GAIN=2.0; CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	545 Secs X 2	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]*	***[1]***
								[==>(Pattern 3, Copy 1)] *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20090915
Exp. 1, copy 1
Exp. 1, copy 2
Pointing Maneuver
Exp. 1, copy 1
Exp. 1, copy 2
Pointing Maneuver
Unused Visibility = 184
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 1, copy 1
Exp. 1, copy 2
Pointing Maneuver
Exp. 1, copy 1
Exp. 1, copy 2
Unused Visibility = 377
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11833, Visit 20, implementation Tue Dec 29 02:04:19 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: AFTER 15 BY 180.0 D TO 210.0 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false		(1)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
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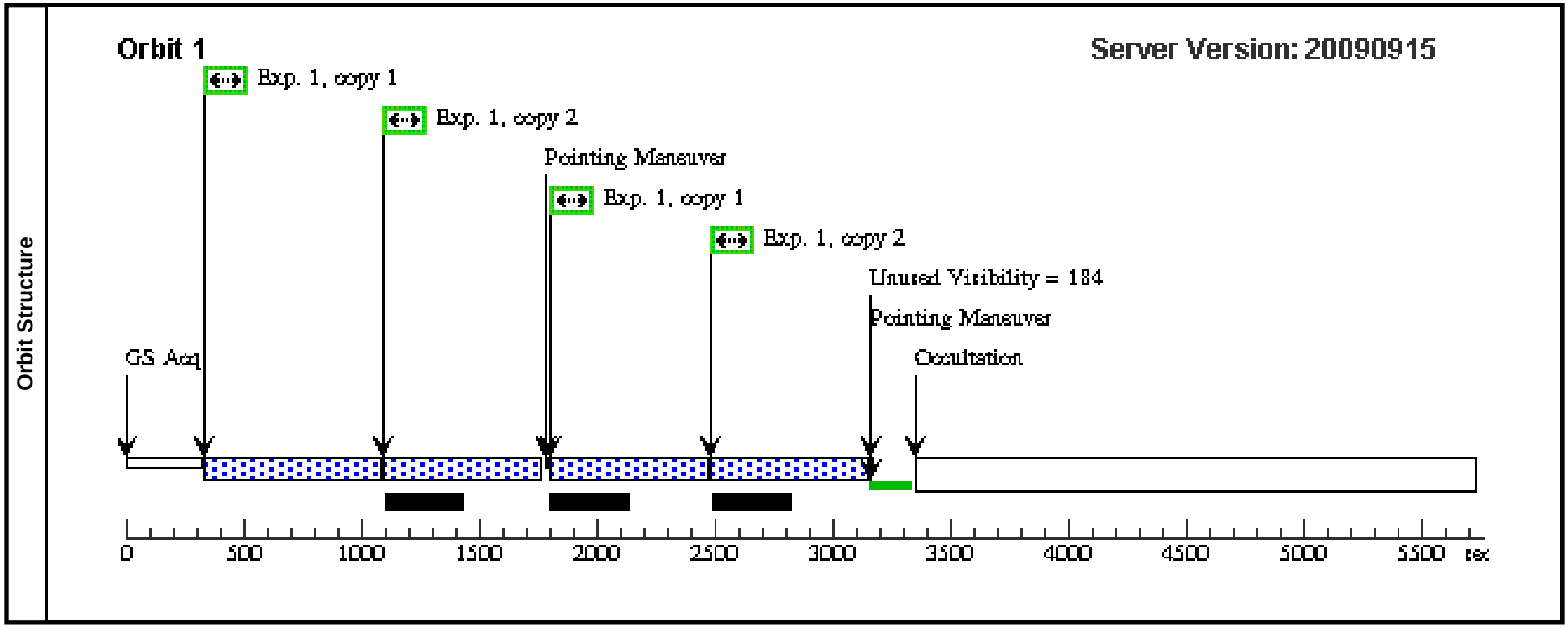
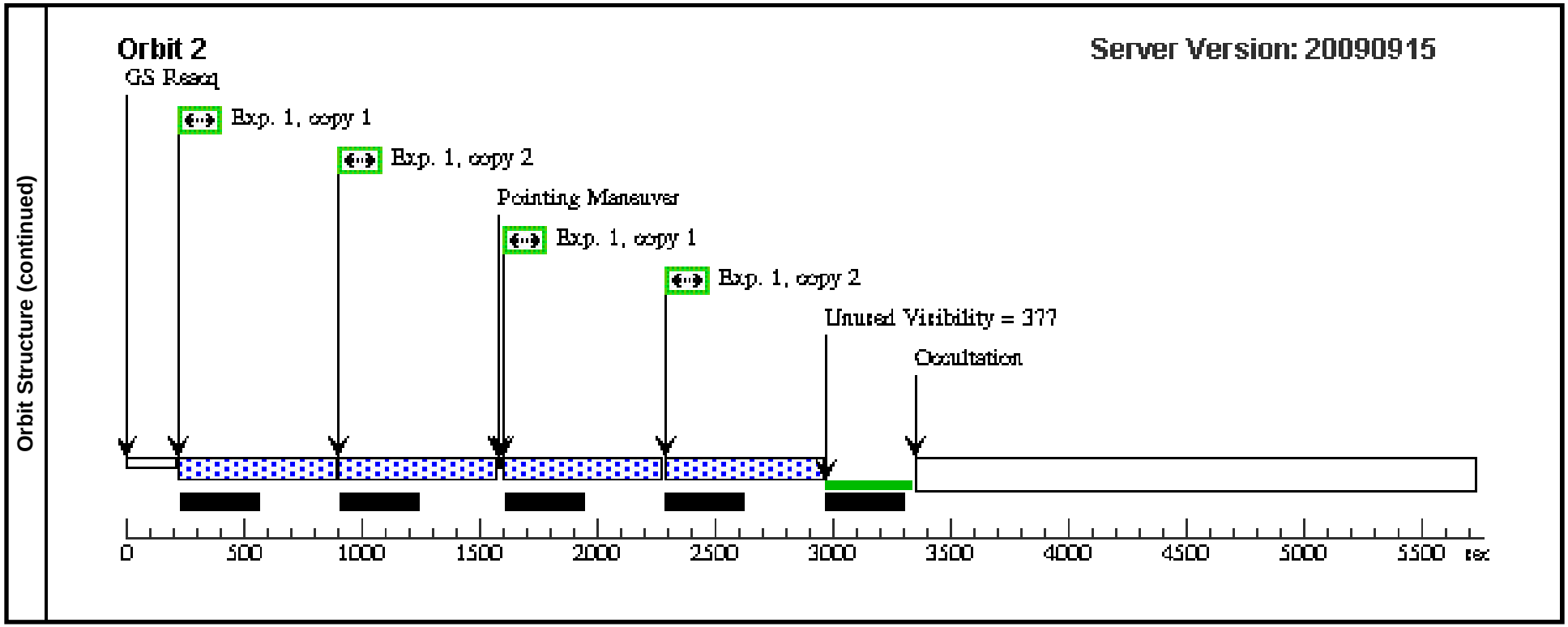
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	BH5-off	(1) M31-BH	ACS/WFC, ACCUM, WFC	F435W	GAIN=2.0; CR-SPLIT=NO		Pattern 1, Exps 1-1 (1)	545 Secs X 2	
								[==>(Pattern 1, Copy 1)] *[==>(Pattern 1, Copy 2)]* *[==>(Pattern 2, Copy 1)]* *[==>(Pattern 2, Copy 2)]*	***[1]***
								[==>(Pattern 3, Copy 1)] *[==>(Pattern 3, Copy 2)]* *[==>(Pattern 4, Copy 1)]* *[==>(Pattern 4, Copy 2)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20090915
Exp. 1, copy 1
Exp. 1, copy 2
Pointing Maneuver
Exp. 1, copy 1
Exp. 1, copy 2
Unused Visibility = 184
Pointing Maneuver
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 1, copy 1
Exp. 1, copy 2
Pointing Maneuver
Exp. 1, copy 1
Exp. 1, copy 2
Unused Visibility = 377
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec