12752 - M31*: A Resolved Low-Luminosity Accretion Flow Around a Murmuring Monster

Cycle: 19, 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) M31-NUCLEUS	COS/FUV COS/NUV	2	09-Jul-2012 21:01:00.0	yes
02	(1) M31-NUCLEUS	COS/FUV COS/NUV	2	09-Jul-2012 21:01:08.0	yes

4 Total Orbits Used

ABSTRACT

We propose a moderately long ACIS-S observation of the nucleus of M31 in order to measure the structure of the only Bondi flow well resolved by Chandra, to search for eclipses in point X-ray sources, and to carry out a sensitive study of the structure of the diffuse gas and x-ray binary/SNR population in the core of M31. M31* recently entered a period of enhanced activity akin to Sgr A* flares, motivating our request for EVLA and HST/UV coverage. The proximity, high mass, and low ISM gas temperature of M31* give it the largest angular Bondi radius of of any SMBH. Thus it is the premier object for studies of SMBH sub-Eddington accretion.

OBSERVING DESCRIPTION

We will observe M31* using the COS/FUV/G140L grating. A total of four orbits will be divided in two epochs (visits), each with two orbits. In each epoch, simultaneous Chandra (50 ks with ACIS-S) and EVLA (20 hours with A-configuration) observations will be performed.

Proposal 12752 - Visit 01 - M31*: A Resolved Low-Luminosity Accretion Flow Around a Murmuring Monster

Visit

Proposal 12752, Visit 01, completed Tue Jul 10 01:01:14 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: ORIENT 247D TO 248 D; BETWEEN 30-JUN-2012:00:00:00 AND 09-JUL-2012:00:00:00

Diagnostics

(Visit 01) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

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

(Visit 01) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

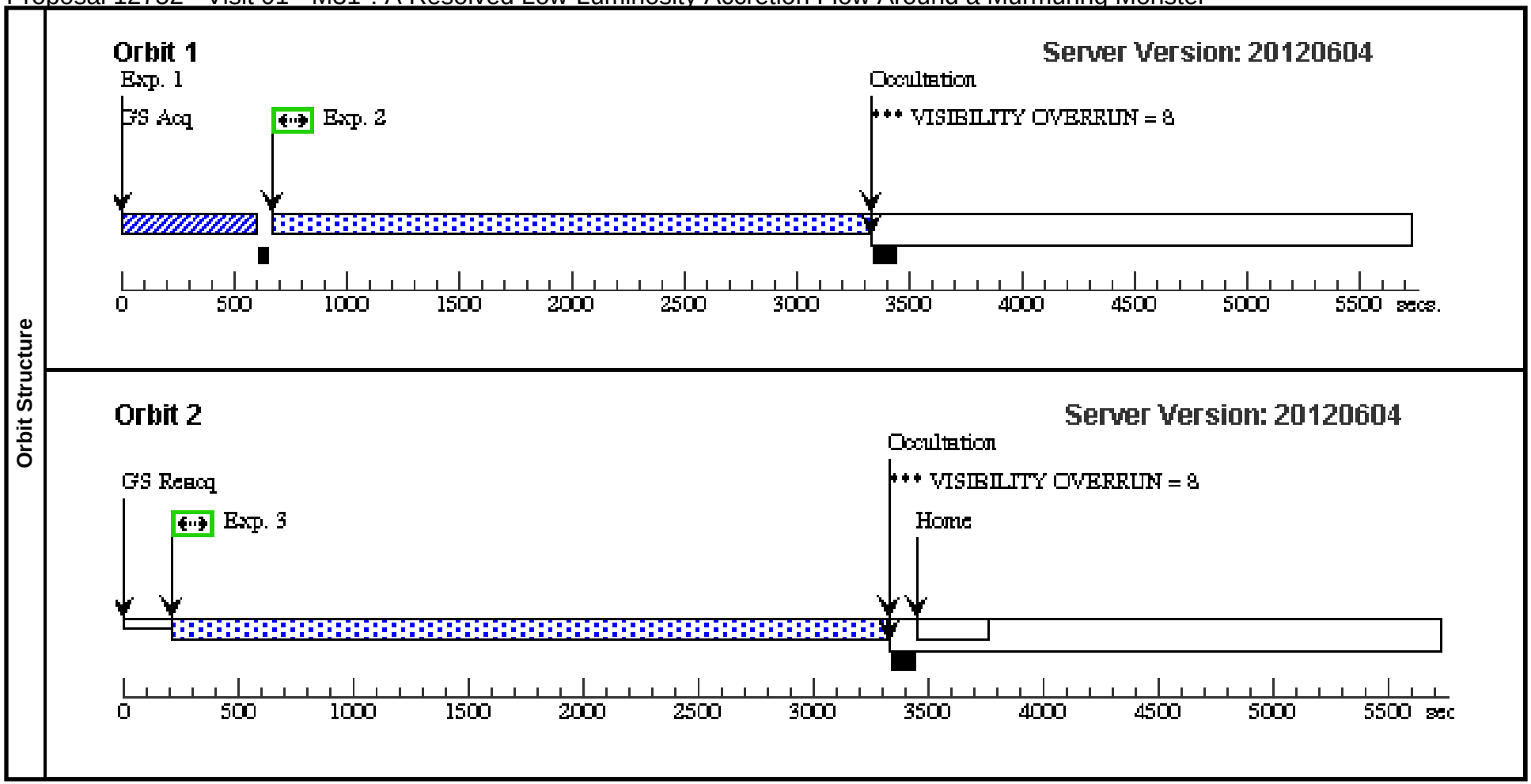
(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M31-NUCLEUS	RA: 00 42 44.3540 (10.6848083d) Dec: +41 16 8.11 (41.26892d) Equinox: J2000	Radial Velocity: -300 km/sec	V=3.44	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	(60.8)	(1) M31-NUCLEUS	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	***[1]***
2	(2481)	(1) M31-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=2481; FP-POS=1; EXTENDED=YES			2481 Secs *[==>]*	***[1]***
3	(3055)	(1) M31-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=3055; EXTENDED=YES; FP-POS=4			3055 Secs *[==>]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20120604
Exp. 1
GS Acq
Exp. 2
Occultation
*** VISIBILITY OVERRUN = 8
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20120604
GS Reacq
Exp. 3
Occultation
*** VISIBILITY OVERRUN = 8
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12752, Visit 02, implementation Tue Jul 10 01:01:17 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: ORIENT 245D TO 245 D; BETWEEN 13-AUG-2012:00:00:00 AND 20-AUG-2012:00:00:00

Diagnostics

(Visit 02) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

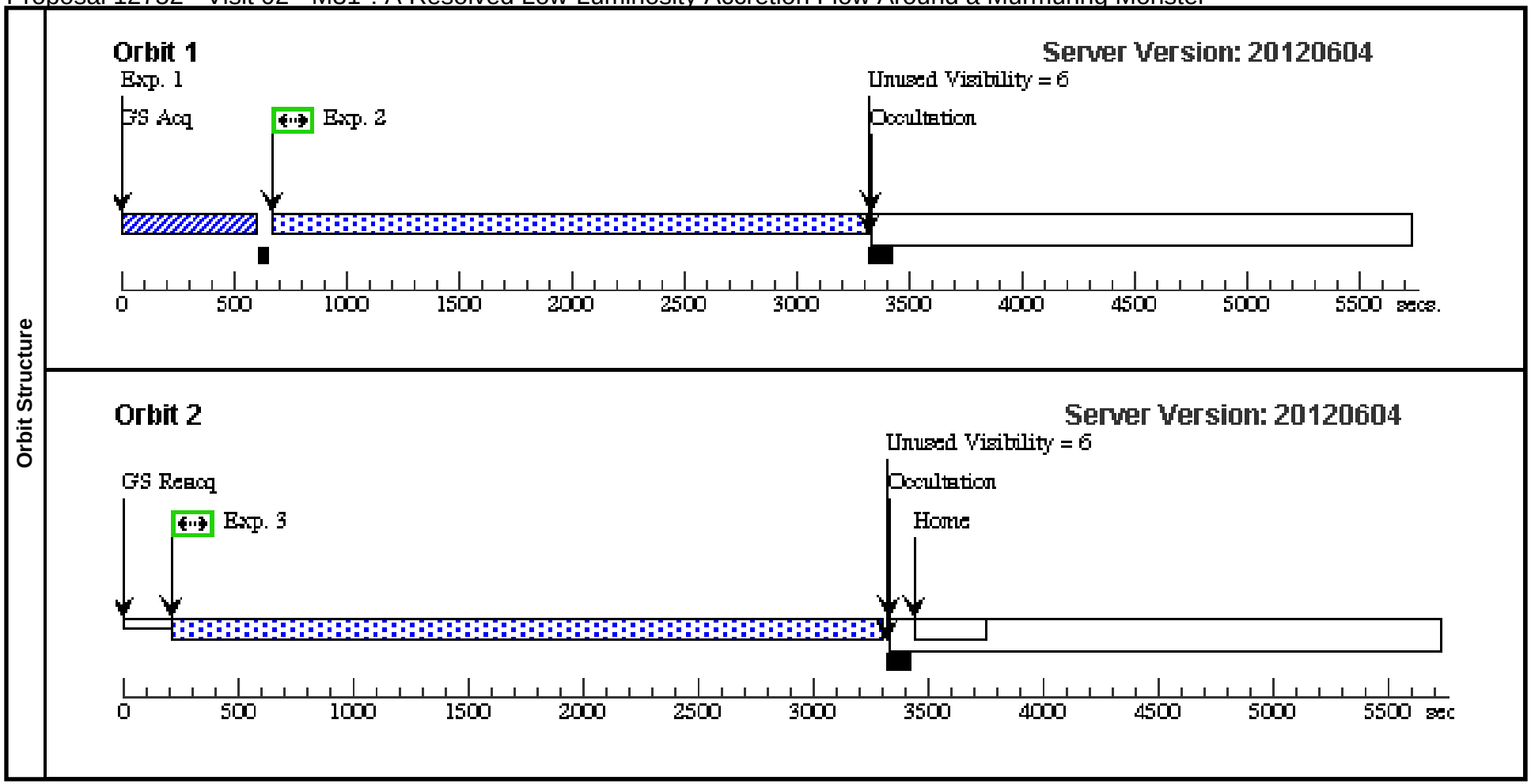
(Visit 02) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M31-NUCLEUS	RA: 00 42 44.3540 (10.6848083d) Dec: +41 16 8.11 (41.26892d) Equinox: J2000	Radial Velocity: -300 km/sec	V=3.44	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	(66.9)	(1) M31-NUCLEUS	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	***[1]***
2	(2481)	(1) M31-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=2467; EXTENDED=YES; FP-POS=1			2467 Secs *[==>]*	***[1]***
3	(3055)	(1) M31-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=3041; EXTENDED=YES; FP-POS=4			3041 Secs *[==>]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20120604
Exp. 1
GS Acq
Exp. 2
Unused Visibility = 6
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20120604
GS Reacq
Exp. 3
Unused Visibility = 6
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec