10495 - The Nuclear Environment of the Galaxy Hosting the Largest Known Radio Outburst

Cycle: 14, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) MS0735.6+7421	ACS/HRC ACS/WFC	3	25-Jul-2005 21:00:46.0	yes

3 Total Orbits Used

ABSTRACT

We propose to image the cD galaxy host of the most powerful radio outburst known in the Universe. The outburst was identified in a Chandra image of a z=0.216 galaxy cluster which revealed a pair of enormous cavities, each 200 kpc in diameter, embedded in its X-ray halo. The outburst began approximately 100 Myr ago and has expended 6x10^61 ergs. It is apparently powered by accretion onto the cD's billion solar mass nuclear black hole, which grew heavier by roughly 1/3 during the outburst. We intend to examine the morphology and nuclear environment of the host galaxy to understand the conditions that created this remarkable event.

OBSERVING DESCRIPTION

We plan to take images of the cD galaxy using ACS/WFC through the 850LP filter for a duration of one orbit, and through the 330W filter using ACS/HRC with a two orbit duration. The exposures will be broken into two sub exposures using a line dither pattern corresponding to Pattern_Number 10. A total of six sub exposures is planned.

Visit

Proposal 10495, Visit 01 Tue Jul 26 01:00:51 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, ACS/HRC

Special Requirements: PCS MODE FINE

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.2 Angle Between Sides= Center Pattern=false		(1)
(2)	Pattern Type=ACS-HRC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.079 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=44.4 Angle Between Sides= Center Pattern=false		(2), (3)

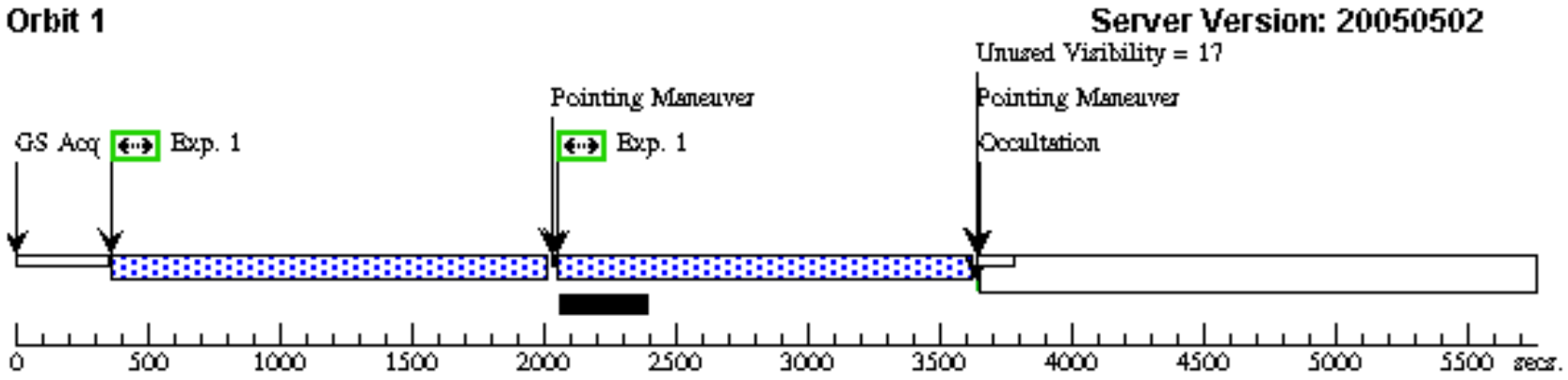
Fixed Targets

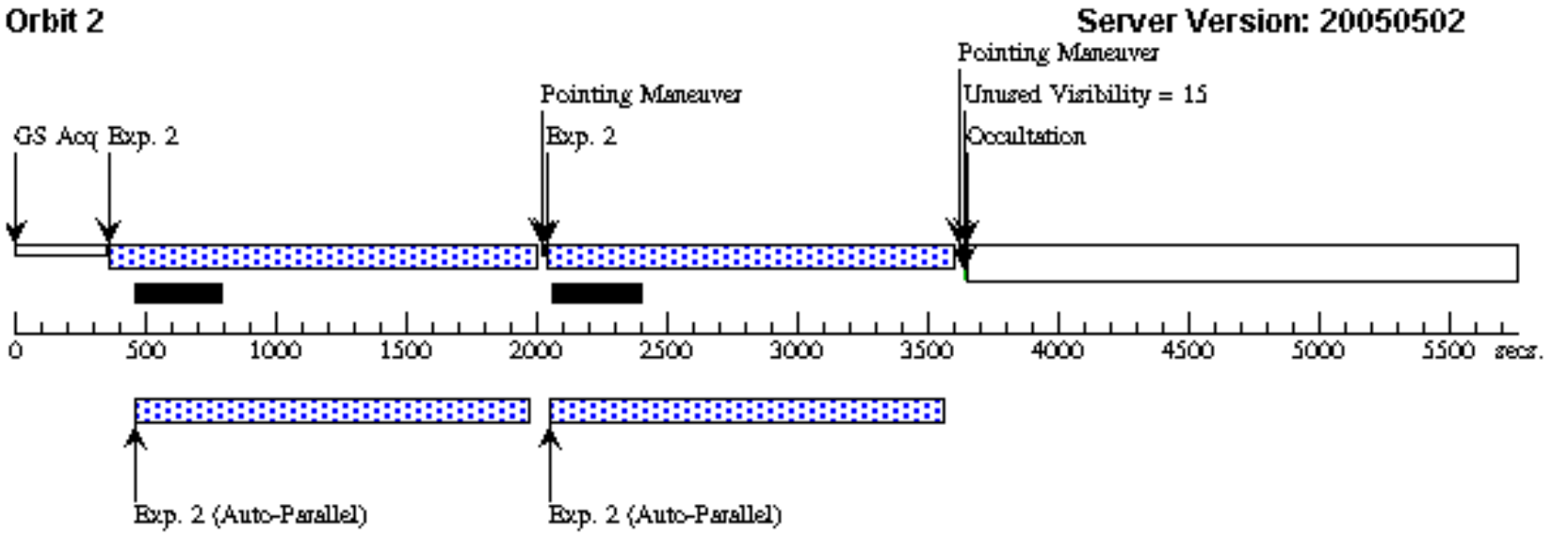
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	MS0735.6+7421	RA: 07 41 44.0000 (115.4333333d) Dec: +74 14 38.30 (74.24397d) Equinox: J2000 Plate Id: (?)		V=15.0	Coordinate Source: Chandra image

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) MS0735.6+7421	ACS/WFC, ACCUM, WFC	F850LP	CR-SPLIT=NO		Pattern 1-1 (1)	1450.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]*	***[1]***
2		(1) MS0735.6+7421	ACS/HRC, ACCUM, HRC	F330W	CR-SPLIT=NO		Pattern 2-2 (2)	1530.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]*	***[2]***
3		(1) MS0735.6+7421	ACS/HRC, ACCUM, HRC	F330W	CR-SPLIT=NO		Pattern 3-3 (2)	1585.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]*	***[3]***

Orbit Structure





Orbit Structure (continued)