11683 - Intracluster star formation and galaxy transformation: ESO 137-001 in A3627

Cycle: 17, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Ming Sun (PI)	**Michigan State University**	**sunm@pa.msu.edu**
Dr. Megan Donahue (CoI)	Michigan State University	donahue@pa.msu.edu
Prof. Mark Voit (CoI)	Michigan State University	voit@pa.msu.edu
Dr. Christine Jones (CoI)	Smithsonian Institution Astrophysical Observatory	cjones@cfa.harvard.edu
Dr. William R. Forman (CoI)	Smithsonian Institution Astrophysical Observatory	wforman@cfa.harvard.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) ESO137-001-WFC3	ACS/WFC WFC3/UVIS	2	11-Nov-2008 21:14:39.0	yes

2 Total Orbits Used

ABSTRACT

ESO137-001 is a small starburst galaxy in the nearby massive cluster A3627. A 70 kpc long X-ray tail behind ESO 137-001 has been revealed by both Chandra and XMM data, which makes it the only known late-type galaxy with an X-ray tail in a Coma-like cluster.

Our SOAR observations also reveal a 40 kpc Halpha tail in the position of the X-ray tail, as well as ~ 30 intracluster HII regions in or around the tail. We propose HST observations of this unique galaxy to resolve the distorted galactic structures in transformation, and to search for yound star clusters in or around the tail, and to understand star formation in the galaxy and in the intracluster space. The results will be of general interest to galaxy transformation in clusters (e.g., "Butcher-Oemler" galaxies at z>0.3), starburst induced by ICM pressure, and intracluster star formation.

OBSERVING DESCRIPTION

We will use WFC3 and ACS to observe a nearby cluster galaxy and its gas tail region. We will observe with WFC3 in the F275W band in one orbit. We will also observe with ACS in the F475W and F814W bands in another orbit. If ACS is not available, we will use WFC3 to observe the target in the F438W and F814W bands.

Visit

Proposal 11683, Visit 01, implementation Wed Nov 12 02:14:44 GMT 2008

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFC3/UVIS

Special Requirements: ORIENT 240D TO 150 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.011 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.28 Angle Between Sides= Center Pattern=false		(1-2)
(5)	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=3 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true		(3)

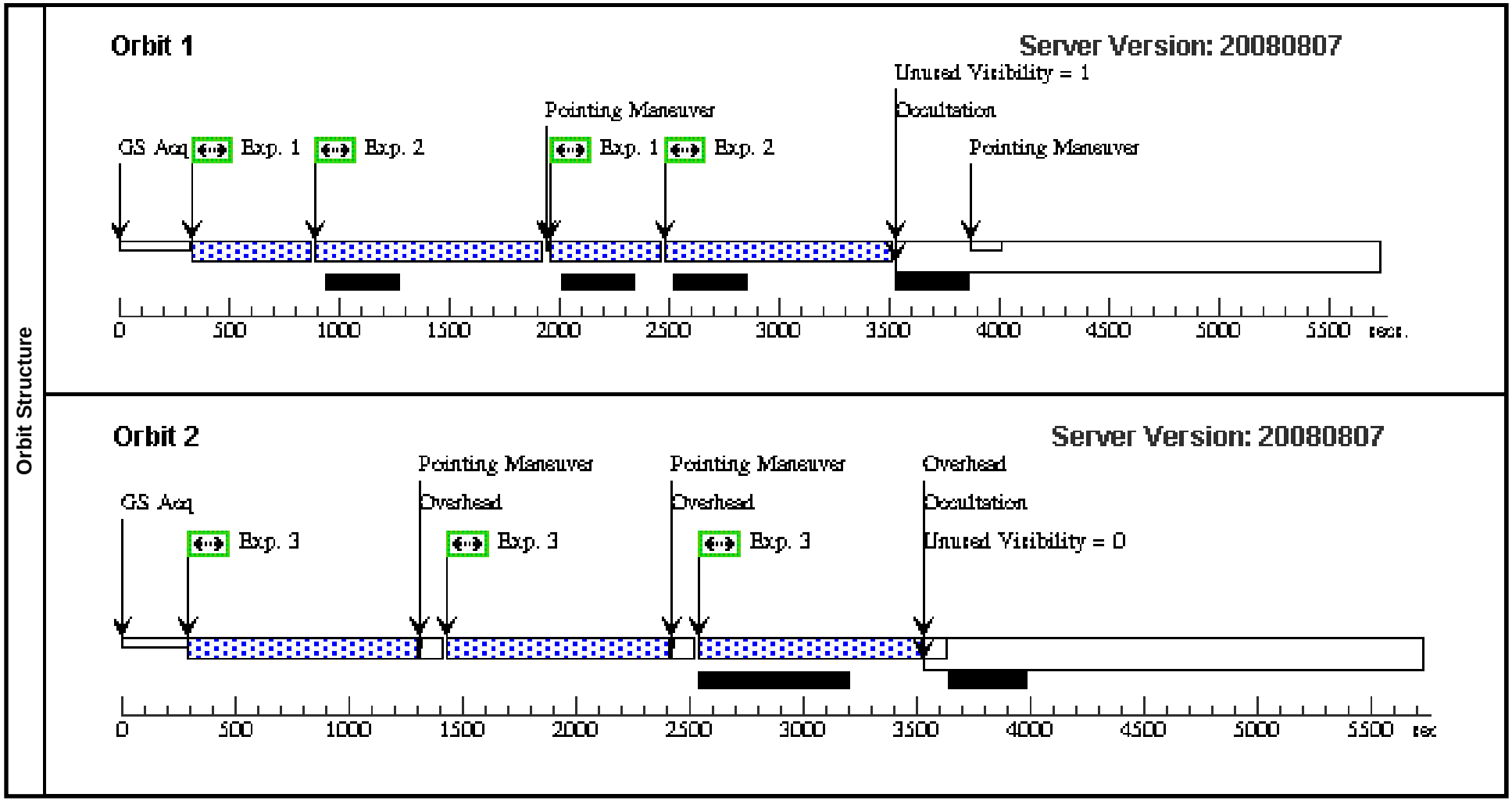
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	ESO137-001-WFC3	RA: 16 13 23.3040 (243.3471000d) Dec: -60 45 20.44 (-60.75568d) Equinox: J2000		V=14+/-0.5	Reference Frame: ICRS

Comments: measured from DSS2, offseted from the galaxy ESO137-001 to cover the gas tail range

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) ESO137-001-WFC3	ACS/WFC, ACCUM, WFC	F814W			Pattern 1-2 (4)	339 Secs *[==>339.0 Secs (Pattern 1)]* *[==>339.0 Secs (Pattern 2)]*	***[1]***
2		(1) ESO137-001-WFC3	ACS/WFC, ACCUM, WFC	F475W			Pattern 1-2 (4)	871 Secs *[==>871.0 Secs (Pattern 1)]* *[==>871.0 Secs (Pattern 2)]*	***[1]***
3		(1) ESO137-001-WFC3	WFC3/UVIS, ACCUM, UVIS	F275W	CR-SPLIT=NO		Pattern 3-3 (5)	978 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]*	***[2]***


Orbit Structure
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Server Version: 20080807
Unused Visibility = 1
Occultation
Pointing Maneuver
GS Acq
Exp. 1
Exp. 2
Exp. 1
Exp. 2
Pointing Maneuver
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec.
Orbit 2
Server Version: 20080807
Pointing Maneuver
Pointing Maneuver
Overhead
Overhead
Overhead
Occultation
GS Acq
Exp. 3
Exp. 3
Exp. 3
Unused Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec