



17244 - A New High Redshift, High Mass SZ-Selected Cluster

Cycle: 30, 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) ACT-CLJ1407+10.48	ACS/WFC	3	01-Nov-2022 09:00:15.0	yes

3 Total Orbits Used

ABSTRACT

We propose the first detailed X-ray spectral imaging observation of the intracluster medium in a newly identified high redshift ($z=0.836$), massive, SZ-selected cluster. The proposed target is the seventh highest signal-to-noise cluster in the recently published ACT sample of 4195 clusters, exceeded in its redshift range only by El Gordo. ACT-CL J1407.0+10.48 is the fifth highest mass cluster at its redshift or higher in this sample. The goal of the proposal is a comprehensive study of the hot gas and dark matter in this potentially exceptional system.

OBSERVING DESCRIPTION

We plan to obtain HST/ACS/WFC images of the central region of ACT-CLJ1407+10.48 in three filters: F606W, F774W, and F814W. A single pointing of the cluster will be done in each filter using the same four-point dither pattern designed to cover the gap between the chips and allow for efficient cosmic ray rejection. We will use the WFC aperture to ensure that the central brightest cluster galaxy does not fall within the CCD gap regardless of the actual orient of the observation. Each filter will be observed in a single orbit and a single visit is used to carry out the full observation (3 orbits).

Proposal 17244 - Visit 01 - A New High Redshift, High Mass SZ-Selected Cluster

Tue Nov 01 13:00:16 GMT 2022

Visit	Proposal 17244, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC Special Requirements: (none)									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
		(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=3.034 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.29 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.149 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=34.25 Angle Between Sides= Center Pattern=false	(1), (2), (3)			
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	ACT-CLJ1407+10.48	RA: 14 07 5.3000 (211.7720833d) Dec: +10 48 10.30 (10.80286d) Equinox: J2000		V=22	Reference Frame: ICRS				
	<i>Comments:</i> Category=CLUSTER OF GALAXIES Description=[GRAVITATIONAL LENS, HIGH REDSHIFT CLUSTER, RICH CLUSTER] Extended=YES									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	F606W	(1) ACT-CLJ1407+10.48	ACS/WFC, ACCUM, WFC	F606W			Pattern 3, Exps 1-1 in Visit 01 (3)	517 Secs (2068 Secs)	
									[==>(Pattern 1,1)] [==>(Pattern 1,2)] [==>(Pattern 2,1)] [==>(Pattern 2,2)]	[1]
	2	F775W	(1) ACT-CLJ1407+10.48	ACS/WFC, ACCUM, WFC	F775W			Pattern 3, Exps 2-2 in Visit 01 (3)	525 Secs (2100 Secs)	
								[==>(Pattern 1,1)] [==>(Pattern 1,2)] [==>(Pattern 2,1)] [==>(Pattern 2,2)]	[2]	
3	F814W	(1) ACT-CLJ1407+10.48	ACS/WFC, ACCUM, WFC	F814W			Pattern 3, Exps 3-3 in Visit 01 (3)	524 Secs (2096 Secs)		
								[==>(Pattern 1,1)] [==>(Pattern 1,2)] [==>(Pattern 2,1)] [==>(Pattern 2,2)]	[3]	



