Proposal for *Chandra* Observations

Cover Page

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Proposal Title
Why are Some Brightest Cluster Galaxies Forming Stars?

Subject Category
CLUSTERS OF GALAXIES

Proposal Type	**Linked Proposal**	**Distr. Medium**	**Proprietary Rights**
GO	N	WWW ONLY	S

Total Requested Time	**Number of Targets**		**Proposed Budget**
201.00	4		

Joint Proposal?		**XMM Time**	**RXTE Time**

HST Orbits	**HST Instruments:**

Spitzer Time	**Spitzer AOTs:**

NOAO Nights?	**NOAO Telescope/Instruments:**

NRAO/VLA Hours	**NRAO/VLA Array**	**NRAO/VLA Wavelength**

NRAO/VLBA Hours	**NRAO/VLBA Wavelength**

Abstract

Spitzer observations show that at least 25 percent of a sample of 63 Brightest
Cluster Galaxies (BCGs) with bright Halpha emission show a mid-IR-excess (MIRE).
The MIRE is found in high X-ray luminosity clusters and is consistent with star
formation at the level of several solar masses per year. Why is star formation
so common in BCGs? What causes it? What does it tell us about the process
of AGN feedback and the "final" mass accretion rate? . We propose to study
samples of ten MIRE and non-MIRE BCGs matched in X-ray luminosity. Since there
is already some archival data, we are requesting 6 additional BCGs - 3 of each
type. The combined dataset will establish a complete sample of the MIRE BCGs and
a well matched comparison sample with which to address these key questions.

Proposal Number	Date: 2007-03-15	
		Admin. use only

General Form

PI	Dr. Christopher P. O'Dea
Proposal Title	Why are Some Brightest Cluster Galaxies Forming Stars?

Co-Investigator(s)

First Name Last Name	E-Mail Institute	Country
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Are there additional Co-Is listed in the science justification?	N

Is the first Co-I doing observing, rather than the PI? N Telephone:

Institute Endorsement

Name of Administrator	Donald Boyd
Administrative Authority	Vice President for Research
Administrative Institute	Rochester Institute of Technology
Admin Signature:	**Date:**
PI Signature:	**Date:**

Target Summary

PI	Dr. Christopher P. O'Dea
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Tar No	Target Name / Solar System Object / Grid Name / Target Description (keywords)	(J2000) R.A. Dec.	**Offsets** Y Detector Z Detector SIM Trans	Optical Monitor V-Mag	Observ. Time (ksec)	Detector Grating HRC Timing	(c/s) Count Rate 1st Order Total Fld.	Time- Constr? Ext.Src?	**Grid** #Points MaxDist.
1	R1442+22 NONE COOLING FLOWS	14 42 19.4 +22 18 13.0		N	42.0000	ACIS-S NONE N	1.182000	N N	N
2	Z3179 NONE COOLING FLOWS	10 25 58.0 +12 41 09.0		N	47.0000	ACIS-S NONE N	1.053000	N N	N
3	A646 NONE COOLING FLOWS	08 22 09.6 +47 05 54.0		N	42.0000	ACIS-S NONE N	1.199000	N N	N
4	Z348 NONE COOLING FLOWS	01 06 49.3 +01 03 22.6		N	70.0000	ACIS-S NONE N	0.710000	N N	N

ACIS Parameters (Required, Pileup, Telemetry Parameters)

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Tar No.	Exposure Mode / Telemetry. Format	CCDs On I0 I1 I2 I3 / S0 S1 S2 S3 S4 S5										Most Eff. / CCD Time	Subarray Type	StartRow / No.Rows	Alternating Exp. Nbr. Rows Y/N	Exp.Time	Energy Filter Lower Thrsh. Y/N	Energy Range	Use Spatial Windows
1	TE		N	N	O1	O2						Y	NONE		N		N		N
	F	N	Y	Y	Y	Y	N												
2	TE		N	N	O1	O2						Y	NONE		N		N		N
	F	N	Y	Y	Y	Y	N												
3	TE		N	N	O1	O2						Y	NONE		N		N		N
	F	N	Y	Y	Y	Y	N												
4	TE		N	N	O1	O2						Y	NONE		N		N		N
	F	N	Y	Y	Y	Y	N												

ACIS Parameters (Custom:Telemetry Overflow Parameters)

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Tar No	Or- der	Chip	Type	Start Row	Start Col	Width	Height	Lower Threshold	Enery Range	Sample Rate	Additional Spatial Windows

Target Constraints

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Tar No	Window Constraint				Roll Constraints				Phase Dependent Observations			
	Flag	Start Time		Stop Time	Flag	180?	Angle (degrees)	Tolerance (degrees)	Flag	Epoch(MJD) Period(days)	Min.Phase Min.Error	Max.Phase Max.Error

Tar No	Monitoring Observations					Group Observations				Un-inter rupt?	Coord-inated Obs.?	Add. Con-straints
	Flag	No.	Geometric Factor	Interval (days)	Tolerance (%)	Flag	Group ID		Interval (days)			

TOO Details

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Tar No	Trig-ger?	Alternates		Response Window				Prob-ability	Initial Alloc.	Followup Observations				Obs.Params specified by
		Group Name	Nbr. Req.	Type (days)	Start	Stop				Order	Obs. Time	Interval (days)	Tolerance (%)	Target No.
										1				
										2				
										3				
										4				
										5				
										6				
										7				
										8				

TOO Trigger Criteria

TOO Followup Instructions

If this TOO is a resubmission of a proposal approved in the previous Cycle, should this TOO be canceled if the previous Cycle TOO is triggered?

Target Remarks

PI	Dr. Christopher P. O'Dea
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Tar No	Remarks
	Coordinated Observation: Observatories