10597 - Resolving the Connection Between Globular Clusters and Low-Mass X-ray Binaries

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) NGC5128-FIELD1	ACS/WFC	1	27-Apr-2005 17:34:48.0	yes
02	(2) NGC5128-FIELD2	ACS/WFC	1	27-Apr-2005 17:34:52.0	yes
03	(3) NGC5128-FIELD3	ACS/WFC	?	?	yes
04	(4) NGC5128-FIELD4	ACS/WFC	1	27-Apr-2005 17:14:12.0	yes
05	(5) NGC5128-FIELD5	ACS/WFC	1	27-Apr-2005 17:14:16.0	yes

Visit	*Targets*	*Configurations*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(6) NGC5128-FIELD6	ACS/WFC	1	27-Apr-2005 17:14:21.0	yes
07	(7) NGC5128-FIELD7	ACS/WFC	?	?	yes
08	(8) NGC5128-FIELD8	ACS/WFC	1	20-Jun-2005 11:37:22.0	yes
09	(9) NGC5128-FIELD9	ACS/WFC	1	27-Apr-2005 17:14:35.0	yes

ABSTRACT

Because of their high central densities, globular clusters (GCs) are efficient producers of low-mass X-ray binaries (LMXBs). To shed light on the detailed formation mechanism of LXMBs in GCs, we propose to measure accurate structural parameters for hundreds of GCs in NGC 5128: the only giant elliptical galaxy within 5 Mpc of the Milky Way. We will carry out the first complete survey of GCs in the inner region of NGC 5128, measure GC structural parameters of unprecedented acccuracy, and derive GC luminosity profiles in the cluster cores. These measurement will allow us to determine precisely which GC structural properties control the presence of an X-ray source and thus probe the details of the LXMB formation process in GCs. We will additionally use the measured structural parameters to perform the most comprehensive study of the fundamental plane of GCs in early-type galaxies, a fundamental set of correlations which holds key information on GC formation and evolution.

OBSERVING DESCRIPTION

We will observe 9 fields in the inner ~8 kpc of NGC5128 with ACS/WFC in order to detect and determine structural parameters of globular clusters in the fields. We will observe the fields in a single filter, F606W, using a four point dither pattern (the UDF pattern) in order to increase the sampling, and repair cosmic rays and defects. Each exposure in the pattern has 525 sec. Additionally, we will obtain a 58 sec exposure in order to guard against possible saturation for bright and compact globular clusters.

Visit

Proposal 10597, Visit 01 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; ORIENT 130.0D TO 135.0 D; ORIENT 310.0D TO 315.0 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC5128-FIELD1	RA: 13 25 12.4270 (201.3017792d) Dec: -42 56 38.53 (-42.94404d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) NGC5128-FIELD1	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(1) NGC5128-FIELD1	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 02 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; SAME ORIENT AS 01

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC5128-FIELD2	RA: 13 25 18.2549 (201.3260621d) Dec: -42 53 50.84 (-42.89746d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) NGC5128-FIELD2	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(2) NGC5128-FIELD2	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 03 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: Error

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; ORIENT 295.0D TO 305.0 D; ORIENT 115.0D TO 125.0 D

Diagnostics

(Visit 03) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	NGC5128-FIELD3	RA: 13 25 56.2561 (201.4844004d) Dec: -43 05 38.19 (-43.09394d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) NGC5128-FIELD3	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(3) NGC5128-FIELD3	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 04 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; ORIENT 295.0D TO 305.0 D; ORIENT 115.0D TO 125.0 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	NGC5128-FIELD4	RA: 13 25 28.7420 (201.3697583d) Dec: -42 58 5.74 (-42.96826d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC5128-FIELD4	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(4) NGC5128-FIELD4	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 05 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; SAME ORIENT AS 04

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC5128-FIELD5	RA: 13 25 39.9664 (201.4165267d) Dec: -42 55 22.66 (-42.92296d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) NGC5128-FIELD5	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(5) NGC5128-FIELD5	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 06 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; SAME ORIENT AS 04

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	NGC5128-FIELD6	RA: 13 25 46.0513 (201.4418804d) Dec: -42 59 5.00 (-42.98472d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) NGC5128-FIELD6	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(6) NGC5128-FIELD6	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 07 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: Error

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; ORIENT 295.0D TO 305.0 D; ORIENT 115.0D TO 125.0 D

Diagnostics

(Visit 07) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
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(Visit 07) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 07) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	NGC5128-FIELD7	RA: 13 24 56.5477 (201.2356154d) Dec: -43 02 18.72 (-43.03853d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) NGC5128-FIELD7	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(7) NGC5128-FIELD7	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 08 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: Error

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; SAME ORIENT AS 07

Diagnostics

(Visit 08) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 08) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 08) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 08) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 08) Error: INTERNAL INCONSISTENCY IN MERGING PROCESS
(Visit 08) Warning: FIXED TARGET USED IN PARALLEL VISIT

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	NGC5128-FIELD8	RA: 13 25 0.0843 (201.2503512d) Dec: -43 05 1.93 (-43.08387d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical glo bular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(8) NGC5128-FIELD8	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO	POS TARG 0,0		58.0 Secs	
								[==>]	***[1]***
2		(8) NGC5128-FIELD8	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Visit

Proposal 10597, Visit 09 Mon Jun 20 15:37:29 GMT 2005

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; SAME ORIENT AS 07

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.2 Angle Between Sides=145.8 Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	NGC5128-FIELD9	RA: 13 25 12.6245 (201.3026021d) Dec: -43 07 9.98 (-43.11944d) Equinox: J2000 Plate Id: 00AK		V=20.5 magnitude is that of a typical globular cluster in NGC 5128	Coordinate Source: GSC_SURVEY_PLATE

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(9) NGC5128-FIELD9	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO			58.0 Secs	
								[==>]	***[1]***
2		(9) NGC5128-FIELD9	ACS/WFC, ACCUM, WFCENTER	F606W	CR-SPLIT=NO		Pattern 2-2 (1)	525.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***