12751 - The Spectral Energy Distribution of a Very Faint X-ray Transient

Cycle: 19, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(1) M15	WFC3/UVIS	1	18-Apr-2012 22:35:01.0	yes

1 Total Orbits Used

ABSTRACT

Very faint X-ray transient accretion states (peak L X < 10^36 ergs/s) are hard to explain with standard theories of disk instabilities. The unusual globular cluster transient M15 X-3 has only been seen at Lx~6e33 and at 2-6e31 ergs/s. We aim to determine the nature of the companion star through near-simultaneous Chandra and HST imaging, measuring its X-ray spectrum and optical colors.

OBSERVING DESCRIPTION

We plan to use our one HST orbit to obtain images of the central
region of M15 with the WFC3 camera in F438W (B), F606W (broad V) and
F814W (I), within 1 week before or after our Chandra observation, to

identify the nature of M15 X-3's secondary. To ensure the highest spatial resolution, we will take 4 observations in each filter, using a box dither pattern. We aim for a uniform SNR of 23 for M15 X-3 (F555W=22.2) in all filters. In order to fit the 12 exposures into a single orbit it is necessary to use the 1k*1k subarray. We note that this still gives us well-dithered deep imaging of the full core of M15, enabling a variety of ancillary science.

ADDITIONAL COMMENTS

We request that the HST observations be carried out within 1 week before or after our Chandra observation.

Visit

Proposal 12751, Visit 02 Thu Apr 19 02:35:09 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 346D TO 60 D; ORIENT 76D TO 150 D; ORIENT 166D TO 240 D; ORIENT 256D TO 330 D

Comments: This visit should be scheduled within one week before or after the Chandra observation for this joint Chandra/HST program. The Orient requirements ensure that the diffraction spikes of a nearby bright star do not fall on the key program star.

Revised following suggestion by Peter McCullough, April 16, 2012.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2), (3)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	M15	RA: 21 29 58.2000 (322.4925000d) Dec: +12 09 53.80 (12.16494d) Equinox: J2000		V=15+/-1	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) M15	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F438W			Pattern 1, Exps 1-1 in Visit 02 (1)	340 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) M15	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F606W			Pattern 1, Exps 2-2 in Visit 02 (1)	47 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
Comments: Increased by 1 s									
3		(1) M15	WFC3/UVIS, ACCUM, UVIS2-C1K1C-SUB	F814W			Pattern 1, Exps 3-3 in Visit 02 (1)	83 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***

Orbit Structure