



13511 - CXOU J122518.6+144545: Type IIIn supernova or hyperluminous X-ray source?

Cycle: 21, 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) CXOU-J122518.6+144545	WFC3/UVIS	1	27-Sep-2013 21:00:57.0	yes

1 Total Orbits Used

ABSTRACT

In 2010 we reported the discovery of CXOU J122518.6+144545. A new Chandra observation in 2012 showed that it varies by more than a factor 10 in X-ray flux. This leaves us with two options: we either discovered a rare type IIIn SN, or the second most luminous HLX thus far. Deeper Chandra observations combined with a new HST visit will decide between these scenarios. If CXO J1225 was a supernova, with these new data we will be able to identify the progenitor star. This will be only the second type IIIn SN for which this is done. If instead the source is an HLX it is a strong candidate to contain an intermediate mass black hole. In this case the new Chandra data will give us information about its variability and the HST image will give us stronger constraints on the size of the optical source.

OBSERVING DESCRIPTION

We plan to take a deep image to observe the counterpart of the X-ray source CXO J122518.6+144545 using WFC3/UVIS. We use the F475W filter for consistency with a previous HST/ACS observation.

We use the standard WFC3/UVIS box dither pattern with four dither points to remove cosmic rays and bad pixels and to optimally sample the PSF. In one orbit we can fit four 628 s exposures and overheads, which gives us a total exposure time of 2512 seconds.

Proposal 13511 - Visit 01 - CXOU J122518.6+144545: Type II supernova or hyperluminous X-ray source?

Visit	Proposal 13511, Visit 01										Sat Sep 28 01:01:04 GMT 2013
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: WFC3/UVIS										
	Special Requirements: (none)										
Patterns	#	Primary Pattern					Secondary Pattern				Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Coordinate Frame=POS-TARG Pattern Orientation=23.884 Purpose=DITHER Angle Between Sides=81.785 Number Of Points=4 Center Pattern=false Point Spacing=0.173 Line Spacing=0.112									(1)
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	CXOU-J122518.6+144545	RA: 12 25 18.6500 (186.3277083d) Dec: +14 45 45.76 (14.76271d) Equinox: J2000				V=(?) g' = 26.4+/-0.1, g'-z' < 0.7, values from ACS obs in 2003, source can be fainter if it is a fading SN		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 (Total)/[Actual Dur.]		Orbit
	1		(1) CXOU-J122518.6+144545	WFC3/UVIS, ACCUM, UVIS	F475W			Pattern 1, Exps 1-1 in Visit 01 (1)	600 Secs (2512 Secs)		
									[==>628.0 Secs (Pattern 1)]		[1]
									[==>628.0 Secs (Pattern 2)]		
									[==>628.0 Secs (Pattern 3)]		
								[==>628.0 Secs (Pattern 4)]			

