14905 - Understanding the Super-Eddington phase in a Decade-long Tidal Disruption Event

Cycle: 24, 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?*
01	(1) J150052+015452	WFC3/UVIS	1	20-Jan-2017 21:00:51.0	yes

1 Total Orbits Used

ABSTRACT

We have discovered a decade-long X-ray tidal disruption candidate, which recent observations suggest to be still in the super-Eddington accretion phase but with sporadic dramatic spectral softening. We request three XMM-Newton monitorings in AO16 on this target, which is unique for study of the super-Eddington accretion onto supermassive black holes. The goals are to confirm its still being in the super-Eddington accretion phase and to measure the spectral softening occurrence rate, allowing us to determine whether the spectral softening is due to transient high-speed warm absorbers or state transition. We also request an HST orbit to help confirm the nuclear origin of the event and study its environment.

OBSERVING DESCRIPTION

The program will have one orbit observation of a decade-long tidal disruption event using two filters, F606W and F814W. F606W use a dither-box patterm, with 375 second per exposure (1500 s in total). F814W use a dither-line pattern with 351 second per exposure (702 s in total).

Visit

Proposal 14905, Visit 01, implementation Sat Jan 21 02:00:52 GMT 2017

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(2)
(3)	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)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J150052+015452	RA: 15 00 52.0700 (225.2169583d) Dec: +01 54 53.84 (1.91496d) Equinox: J2000		V=20.0	Reference Frame: ICRS

Comments: Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(901373)	(1) J150052+015452	WFC3/UVIS, ACCUM, UVIS	F606W			Pattern 3, Exps 1-1 in Visit 01 (3)	375 Secs (1500 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2	(901376)	(1) J150052+015452	WFC3/UVIS, ACCUM, UVIS	F814W	FLASH=4		Pattern 2, Exps 2-2 in Visit 01 (2)	351 Secs (702 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***

Orbit Structure