15440 - X-ray and UV monitoring of the extraordinary changing-look AGN Mrk 1018

Cycle: 25, 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) MRK-1018	COS/FUV COS/NUV	2	14-Dec-2018 10:00:15.0	yes
02	(1) MRK-1018	COS/FUV COS/NUV	2	14-Dec-2018 10:00:17.0	yes

4 Total Orbits Used

ABSTRACT

We propose two quasi-simultaneous observations of XMM (each 65 ks) and HST (each 2 orbits) to understand the ongoing changes of changing-look AGN Mrk 1018. Optical monitoring revealed that the dramatic dimming phase stopped, suggesting that the accretion disk is in a major reconfiguration phase. The combined deep exposure will reveal which spectral components have changed since a high S/N XMM spectrum was taken during the bright phase a few years ago. Comparing the two AO17 observations will allow us to look for spectral changes on half-year timescales. These two XMM observations will fill the gaps of our already accepted low S/N Chandra monitoring program on Mrk 1018. The joint HST observations will allow us to establish the states of the accretion disk and how this connects to the X-ray corona.

OBSERVING DESCRIPTION

These COS-FUV observations are part of a coordinated multi-wavelength monitoring program combining X-rays (XMM-Newton) and optical observations of the changing-look AGN Mrk1018. Each epoch we obtain a 2 orbit long FUV spectrum with the G140L grating to cover the FUV continuum at high S/N as well as the flux and shape of broad emission lines such as Lya and CIV.

Visit

Proposal 15440, FUV-COS Mrk1018 (01), completed Fri Dec 14 15:00:17 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 50%; BETWEEN 11-JUL-2018:00:00:00 AND 09-AUG-2018:00:00:00

Diagnostics

(FUV-COS Mrk1018 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(FUV-COS Mrk1018 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

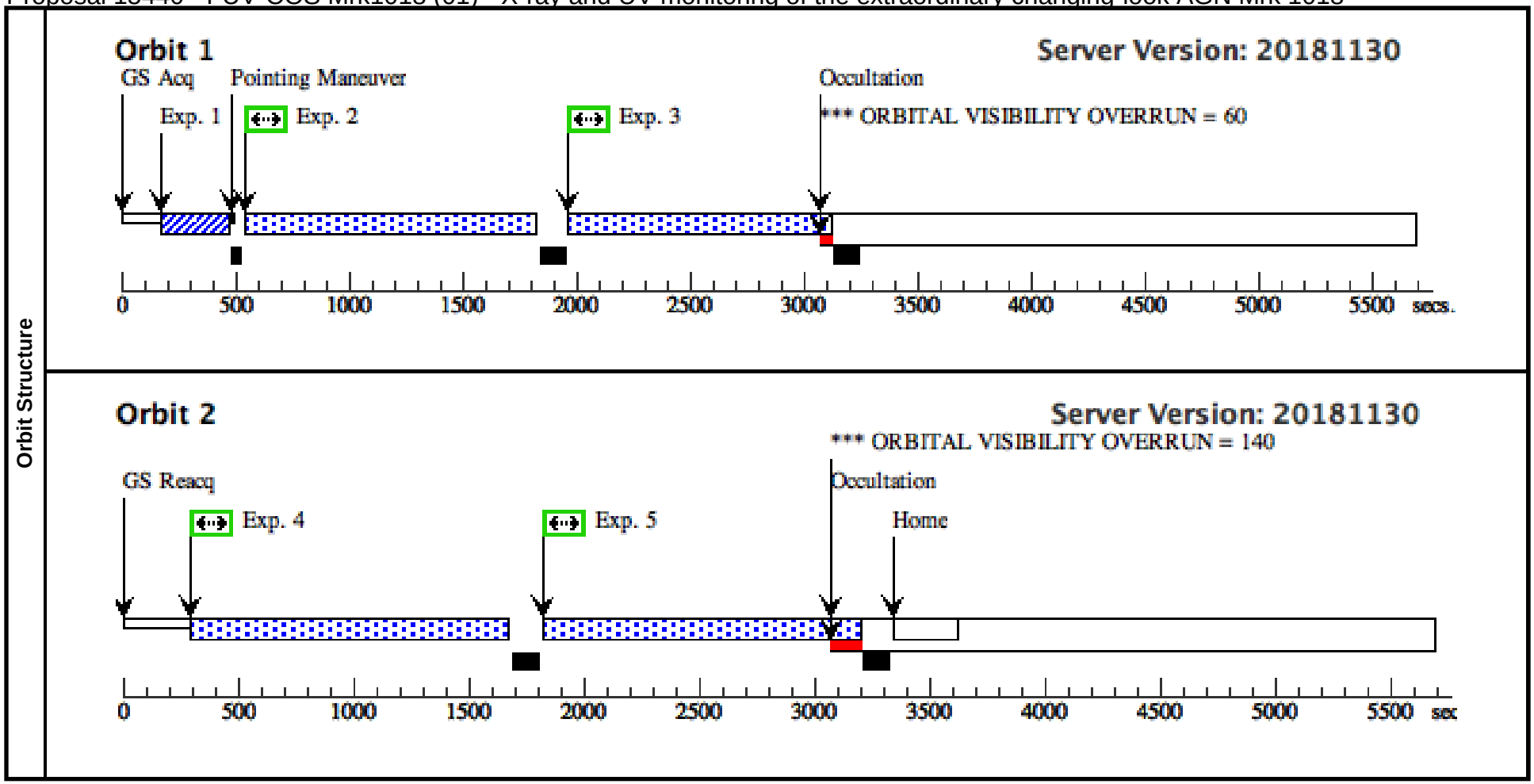
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	MRK-1018	RA: 02 06 15.9888 (31.5666200d) Dec: -00 17 29.18 (-.29144d) Equinox: J2000		V=15.0+/-0.5 300 counts/s in the 4s long COS NUV (PSA and MIRRORA) acq uisition images from Feb 2017	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Coordinates were then slightly adjusted on subarcsec scale to match the coordinates of previous successfull observations
Category=GALAXY
Description=[ACCRETION DISK, BLR, NUCLEUS, SEYFERT]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Acquisition Exposure (1036530)	(1) MRK-1018	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				40 Secs (40 Secs) *[==>]*	***[1]***
2	Science Exposure 1 (FP-POS1) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1070; FLASH=YES; FP-POS=1; SEGMENT=A			1180 Secs (1105 Secs) *[==>1105.0 Secs]*	***[1]***
3	Science Exposure 2 (FP-POS2) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1070; FLASH=YES; FP-POS=2; SEGMENT=A			1180 Secs (1105 Secs) *[==>1105.0 Secs]*	***[1]***
4	Science Exposure 3 (FP-POS3) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1300; FLASH=YES; FP-POS=3; SEGMENT=A			1350 Secs (1330 Secs) *[==>1330.0 Secs]*	***[2]***
5	Science Exposure 4 (FP-POS4) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1300; FLASH=YES; FP-POS=4; SEGMENT=A			1350 Secs (1330 Secs) *[==>1330.0 Secs]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20181130
GS Acq
Pointing Maneuver
Occultation
Exp. 1
Exp. 2
Exp. 3
*** ORBITAL VISIBILITY OVERRUN = 60
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20181130
*** ORBITAL VISIBILITY OVERRUN = 140
GS Reacq
Occultation
Exp. 4
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 15440, FUV-COS Mrk1018 (02), implementation Fri Dec 14 15:00:17 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 50%; BETWEEN 27-DEC-2018:00:00:00 AND 14-JAN-2019:00:00:00

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	MRK-1018	RA: 02 06 15.9888 (31.5666200d) Dec: -00 17 29.18 (-.29144d) Equinox: J2000		V=15.0+/-0.5 300 counts/s in the 4s long COS NUV (PSA and MIRRORA) acq uisition images from Feb 2017	Reference Frame: ICRS

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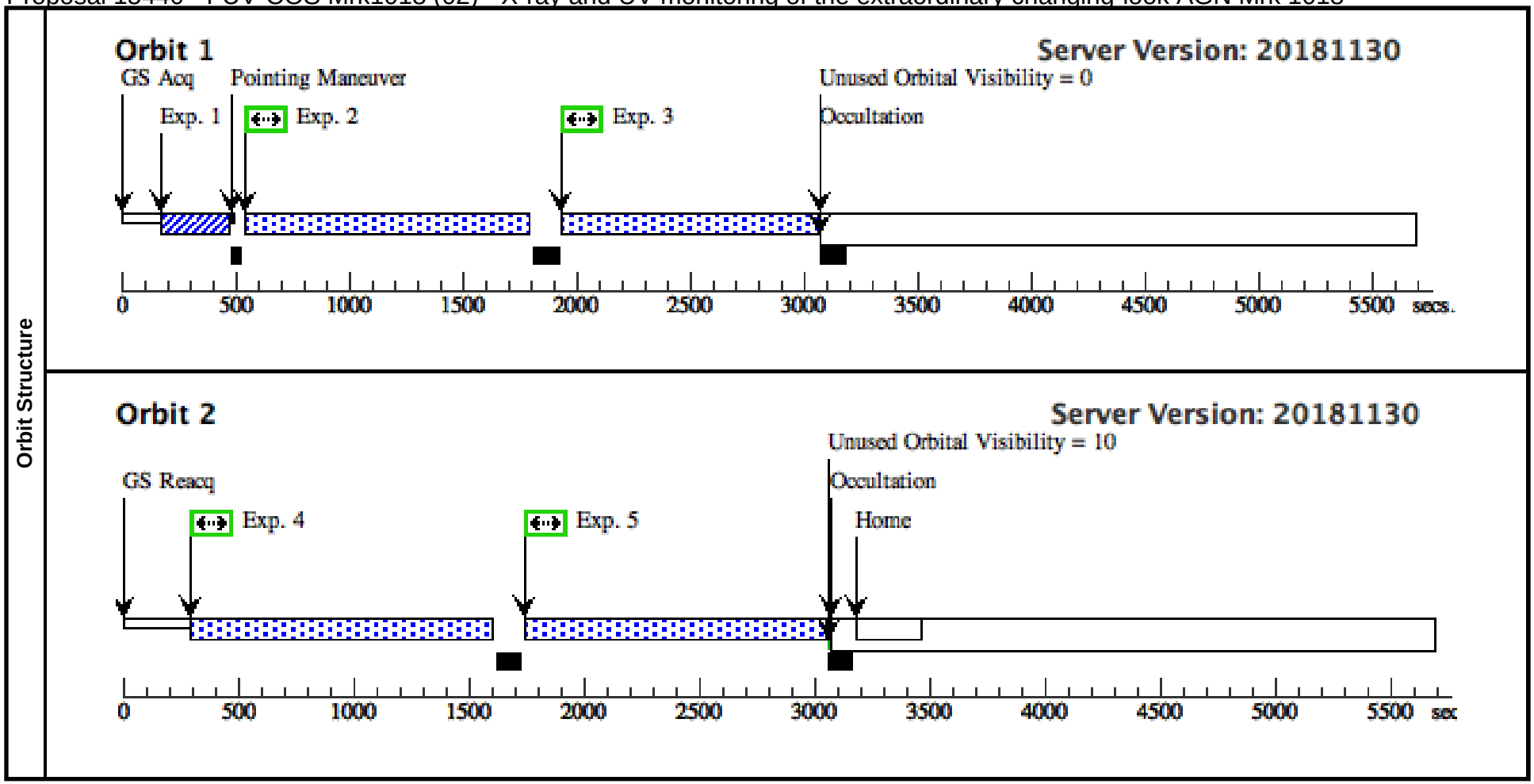
Description=[ACCRETION DISK, BLR, NUCLEUS, SEYFERT]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Acquisition Exposure (1036530)	(1) MRK-1018	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				40 Secs (40 Secs) *[==>]*	*[1]*
2	Science Exposure 1 (FP-POS1) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1070; FLASH=YES; FP-POS=1; SEGMENT=A			1180 Secs (1075 Secs) *[==>1075.0 Secs]*	*[1]*
3	Science Exposure 2 (FP-POS2) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1070; FLASH=YES; FP-POS=2; SEGMENT=A			1180 Secs (1075 Secs) *[==>1075.0 Secs]*	*[1]*
4	Science Exposure 3 (FP-POS3) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1300; FLASH=YES; FP-POS=3; SEGMENT=A			1350 Secs (1260 Secs) *[==>1260.0 Secs]*	*[2]*
5	Science Exposure 4 (FP-POS4) (839387)	(1) MRK-1018	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1300; FLASH=YES; FP-POS=4; SEGMENT=A			1350 Secs (1260 Secs) *[==>1260.0 Secs]*	*[2]*


Orbit Structure
Orbit 1
Server Version: 20181130
GS Acq
Pointing Maneuver
Unused Orbital Visibility = 0
Exp. 1
Exp. 2
Exp. 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 2
Server Version: 20181130
Unused Orbital Visibility = 10
GS Reacq
Occultation
Exp. 4
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec