15890 - Supermassive Black Hole Winds in X-rays (SUBWAYS): Building the HST Line with FUV Spectroscopy

Cycle: 27, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Gerard A. Kriss (PI) (Contact)	**Space Telescope Science Institute**	**gak@stsci.edu**
Dr. Smita Mathur (CoI)	The Ohio State University	smita@astronomy.ohio-state.edu
Steven B. Kraemer (CoI)	Catholic University of America	kraemer@cua.edu
Dr. Marcella Brusa (CoI) (ESA Member)	Universita di Bologna	marcella.brusa3@unibo.it
Prof. Stefano Bianchi (CoI) (ESA Member)	Universita' degli Studi Roma Tre	bianchi@fis.uniroma3.it
Dr. Andrea Comastri (CoI) (ESA Member)	INAF, Osservatorio di Astrofisica e Scienza dello Spazio	andrea.comastri@inaf.it
Dr. Elisa Costantini (CoI) (ESA Member)	Space Research Organization Netherlands	e.costantini@sron.nl
Dr. Giovanni Cresci (CoI) (ESA Member)	Osservatorio Astrofisico di Arcetri	gcresci@arcetri.astro.it
Dr. Barbara De Marco (CoI) (ESA Member)	Nicolaus Copernicus Astronomical Center	bdemarco@camk.edu.pl
Dr. Chiara Feruglio (CoI) (ESA Member)	INAF, Osservatorio Astronomico di Trieste	feruglio@oats.inaf.it
Massimo Gaspari (CoI)	Princeton University	mgaspari@astro.princeton.edu
Dr. Jelle Kaastra (CoI) (ESA Member)	Space Research Organization Netherlands	j.kaastra@sron.nl
Dr. Yair Krongold (CoI)	Universidad Nacional Autonoma de Mexico (UNAM)	yair@astro.unam.mx
Dr. Anna Lia Longinotti (CoI)	Instituto Nacional de Astrofisica, Optica y Elecronica	annalia@inaoep.mx
Prof. Alessandro Marconi (CoI) (ESA Member)	Universita di Firenze	marconi@arcetri.astro.it
Dr. Giovanni Miniutti (CoI) (ESA Member)	Centro de Astrobiologia (CSIC/INTA) Inst. Nac. de Tec. Aero.	gminiutti@cab.inta-csic.es
Dr. Emanuele Nardini (CoI) (ESA Member)	Osservatorio Astrofisico di Arcetri	enardini@arcetri.astro.it
Dr. Michele Perna (CoI) (ESA Member)	INAF, Osservatorio Astrofisico di Arcetri, Firenze	michele.perna4@unibo.it

Name	*Institution*	*E-Mail*
Dr. Francesco Tombesi (CoI)	University of Maryland	ftombesi@astro.umd.edu
Prof. Cristian Vignali (CoI) (ESA Member)	Universita di Bologna	cristian.vignali@unibo.it
Prof. James Mclellan Stone (CoI)	Institute For Advanced Study	jstone@astro.princeton.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) PG-0052+251	COS/FUV COS/NUV	1	28-Aug-2020 11:00:27.0	yes
02	(2) PG-0953+414	COS/FUV	1	28-Aug-2020 11:00:28.0	yes
03	(3) PG-1626+554	COS/FUV COS/NUV	1	28-Aug-2020 11:00:29.0	yes
04	(4) PG-1202+281	COS/FUV COS/NUV	2	28-Aug-2020 11:00:30.0	yes
05	(5) PG-1435-067	COS/FUV COS/NUV	1	28-Aug-2020 11:00:31.0	yes
06	(6) SDSS-J14441467+0633067	COS/FUV COS/NUV	1	28-Aug-2020 11:00:32.0	yes
08	(8) PG-1216+069	COS/FUV COS/NUV	2	28-Aug-2020 11:00:33.0	yes
09	(9) PG-0947+396	COS/FUV COS/NUV	2	28-Aug-2020 11:00:35.0	yes
11	(11) HB89-1529+050	COS/FUV COS/NUV	3	28-Aug-2020 11:00:37.0	yes
12	(12) PG-1307+085	COS/FUV COS/NUV	1	28-Aug-2020 11:00:38.0	yes
13	(13) PG-1425+267	COS/FUV COS/NUV	2	28-Aug-2020 11:00:39.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
14	(14) PG-1352+183	COS/FUV COS/NUV	1	28-Aug-2020 11:00:40.0	yes
16	(16) 2MASX-J02201453-0728593	COS/FUV COS/NUV	2	28-Aug-2020 11:00:41.0	yes
17	(17) LBQS-1338-0038	COS/FUV COS/NUV	2	28-Aug-2020 11:00:42.0	yes
18	(18) 2MASS-J14025120+2631175	COS/FUV COS/NUV	2	28-Aug-2020 11:00:43.0	yes
19	(19) PG-1427+480	COS/FUV COS/NUV	3	28-Aug-2020 11:00:44.0	yes

27 Total Orbits Used

ABSTRACT

Winds powered by accretion onto the supermassive black holes at the centers of galaxies can have a profound impact on their hosts. These outflows may provide the feedback necessary to regulate star formation and the accretion of gas onto the host galaxy, thereby establishing a link for the co-evolution of the central black hole and its host. These winds are present on all scales, from the accretion disk around the black hole to the outskirts of the galaxy itself, and at multiple wavelengths, from the X-ray to the radio. As part of a multiwavelength program, this proposal will characterize the UV spectra and associated UV absorption of a well defined sample of moderate redshift AGN that are the hub of an approved XMM-Newton large program (1.5 Ms), designed to constrain the X-ray manifestations of AGN outflows. The proposed HST+COS spectra will cover the wavelength range from 1125 A to 2150 A, and include all strong UV resonance lines in the sample: OVI+Ly beta, Ly alpha, N V, Si IV, and C IV. These spectra form an essential ingredient to explore the UV counterparts of X-ray winds and to characterize the spectral energy distribution, line luminosities, and any outflows during the current epoch of the X-ray observations. The UV perspective on outflows is critical for understanding all phases of an outflow's components and of its energetics. This in turn will provide a more comprehensive view of the feeding and feedback cycle, and it will help to refine theoretical models for outflows from nuclear to galaxy-scales. Observations of the SUBWAYS sample will be a reference for AGN wind studies at intermediate redshift for years to come.

OBSERVING DESCRIPTION

Far-UV spectra of the SUBWAYS sample will be obtained using COS. Grating G140L/1105 covers the broadest possible wavelength range in a single exposure, allowing the continuum shape to be measured from 1125 A to 2000 A, as well as the primary spectral features associated with Ly beta, O VI, Ly alpha, N V, Si IV, and C IV. The R~3,000 resolving power of the G140L/1105 grating is well matched to detecting the 100 km/s widths of typical narrow UV absorption components, and fully resolving broad UV outflow components that have widths of 1000-3000 km/s. This resolution is adequate to resolve even complex assortments of narrow absorption lines, optical depths, and covering factors in all the observed troughs. For uniformity, all targets i nthe program will be observed with G140L/1105. For some objects, the redshift is high enough that NUV exposures are required to cover C IV, and in one case, we take advantage of the target's brightness and redshift to obtain higher resolution observations with G130M and G160M. The observations are summarize in the Table 1 below. The flux at 1516 A, obtained using GalexView or HST archival observations, is given in units of 1e-15 erg/s/cm2/A. (See the Phase 1 proposal for more details on each object in the program.)

Target	z	f1516	Gratings	Orbits
PG0052+251	0.154	20.3	G140L/1105	1
2MASXJ0220-0728	0.213	2.2	G140L/1105	2
PG0947+396	0.205	16.9	G140L/1105,G130M/1222,G160M/1600,G185M/1953	2
PG0953+414	0.234	20.0	G140L/1105	1
PG1202+281	0.164	4.5	G140L/1105,G130M/1327	2
PG1216+069	0.331	17.2	G140L/1105,G185M/1953	2
PG1307+085	0.154	19.6	G140L/1105	1
LBQS1338-0038	0.237	2.2	G140L/1105	2
PG1352+183	0.151	10.3	G140L/1105	1
2MASXJ140251+2631	0.188	1.8	G140L/1105	2
PG1425+267	0.364	3.9	G140L/1105,G230L/3360	2
PG1427+480	0.221	6.5	G140L/1105,G185M/1864	3
PG1435-067	0.126	11.5	G140L/1105	1
SDSSJ144414+0633	0.207	3.0	G140L/1105	1
HB891529+050	0.218	0.44	G140L/1105	3
PG1626+554	0.133	16.6	G140L/1105	1

Table 2 below again gives the FUV fluxes. These observations pose no bright object concerns. All flux levels lie well below the bright object limits for COS, and checks of the surrounding fields using the GALEX and SDSS catalogs rule out nearby bright objects. Pointers to the ETC calculations for our targets are given here. For all estimates we used the FOS-based QSO spectrum, assumed E(B-V)=0.0, and used the tabulated redshift of the object. To calculate buffer times, we used the listed flux at 1516 A. All targets are sufficiently faint to use imaging target acquisitions with Mirror B. Only the faintest target, HB891529+050, uses Mirror A. For Target Acq calculations, to be conservative, we used a flux value that is half that given in the table, and then rounded the result up to the next whole integer.

Name	RA	Dec	z	f1516	COS_ETC_Pointer	BufTime	COS_TA	ExpTime(s)
PG0052+251	00 54 52.10	+25 25 37.99	0.154	2.04E-14	COS.sp.1369753	2255	COS.ta.1369729	5.2
PG0953+414	09 56 52.40	+41 15 22.00	0.234	2.00E-14	COS.sp.1369752	4348	COS.ta.1369728	11.2
PG1626+554	16 27 56.10	+55 22 32.02	0.133	1.66E-14	COS.sp.1369754	2583	COS.ta.1369734	6.2
PG1202+281	12 04 42.12	+27 54 12.11	0.164	4.48E-15	COS.sp.1369399	6592	COS.ta.1369401	24.6
PG1435-067	14 38 16.10	-06 58 21.00	0.126	1.15E-14	COS.sp.1369756	3405	COS.ta.1369735	9
SDSSJ144414+0633	14 44 14.6	+06 33 06.77	0.207	3.04E-15	COS.sp.1369757	8812	COS.ta.1369717	36
PG1216+069	12 19 20.90	+06 38 39.01	0.331	1.72E-14	COS.sp.1369759	2831	COS.ta.1369736	5.5
PG0947+396	09 50 48.42	+39 26 50.64	0.205	1.69E-14	COS.sp.1369760	3317	COS.ta.1369737	8
HB891529+050	15 32 28.79	+04 53 58.46	0.219	8.86E-16	COS.sp.1369761	11975	COS.ta.1369408	7.2
PG1307+085	13 09 47.00	+08 19 48.22	0.154	1.96E-14	COS.sp.1369762	2322	COS.ta.1369738	5.4
PG1425+267	14 27 35.61	+26 32 14.63	0.364	3.94E-15	COS.sp.1369763	7326	COS.ta.1369739	24.2
PG1352+183	13 54 35.72	+18 05 18.05	0.151	1.03E-14	COS.sp.1369764	3762	COS.ta.1369740	10.3
2MASXJ0220-0728	02 20 14.58	-07 28 59.23	0.213	2.21E-15	COS.sp.1369765	9947	COS.ta.1369725	70
LBQS1338-0038	13 41 13.94	-00 53 14.97	0.237	2.18E-15	COS.sp.1369766	11078	COS.ta.1369741	115
2MASXJ140251+2631	14 02 51.19	+26 31 17.63	0.187	1.77E-15	COS.sp.1369767	9616	COS.ta.1369748	63.7
PG1427+480	14 29 43.10	+47 47 26.02	0.21	6.48E-15	COS.sp.1369768	6433	COS.ta.1369749	22.2

The proposed observations should be coordinated in a broad sense with the planned XMM-Newton observations. Ideally this would be within the 40-day XMM observing window for each target, but observations within 1 - 2 months can be considered acceptable.

Visit

Proposal 15890, Visit 01, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

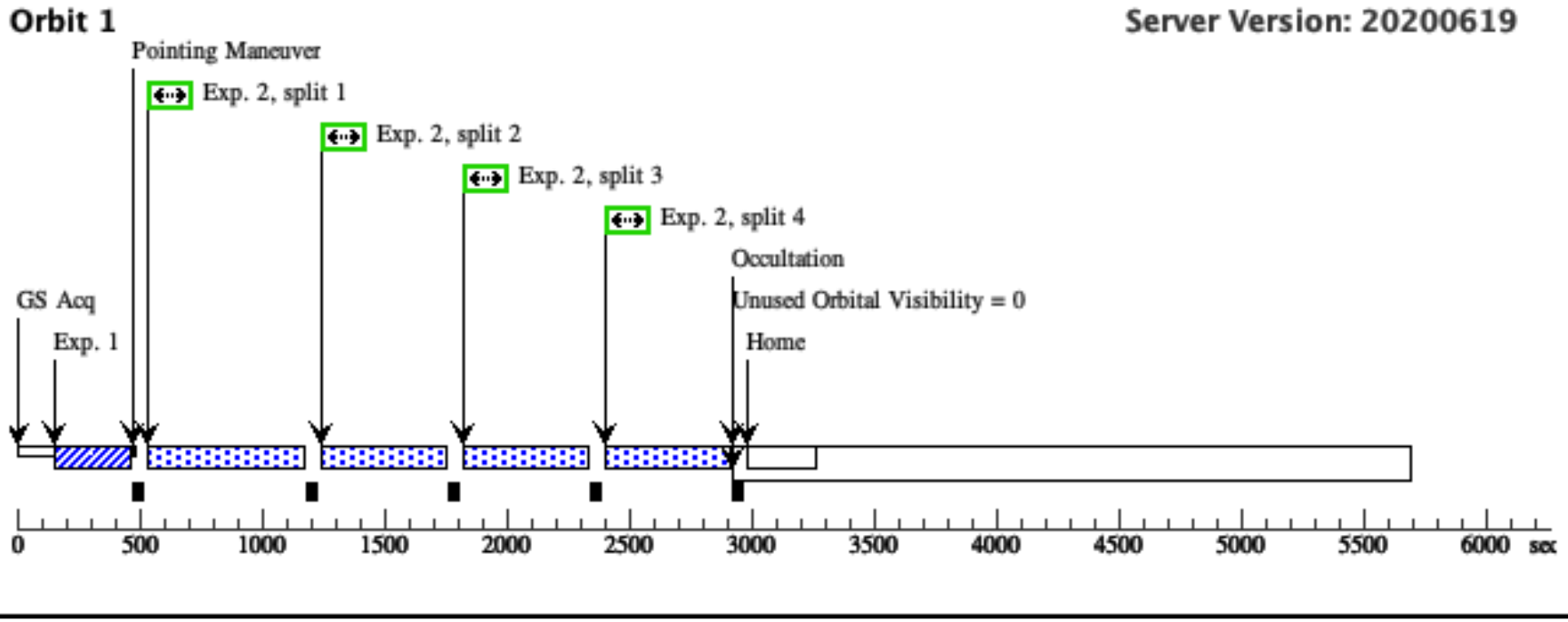
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	PG-0052+251	RA: 00 54 52.1182 (13.7171592d) Dec: +25 25 38.98 (25.42749d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=15.42+/-0.5 Galex FUV 2.03e-14	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369729)	(1) PG-0052+251	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				6 Secs (6 Secs) *[==>]*	*[1]*
2	(COS.sp.1369753)	(1) PG-0052+251	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1500; FP-POS=ALL			400 Secs (1828 Secs) *[==>457.0 Secs (Split 1)]* *[==>457.0 Secs (Split 2)]* *[==>457.0 Secs (Split 3)]* *[==>457.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15890, Visit 02, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

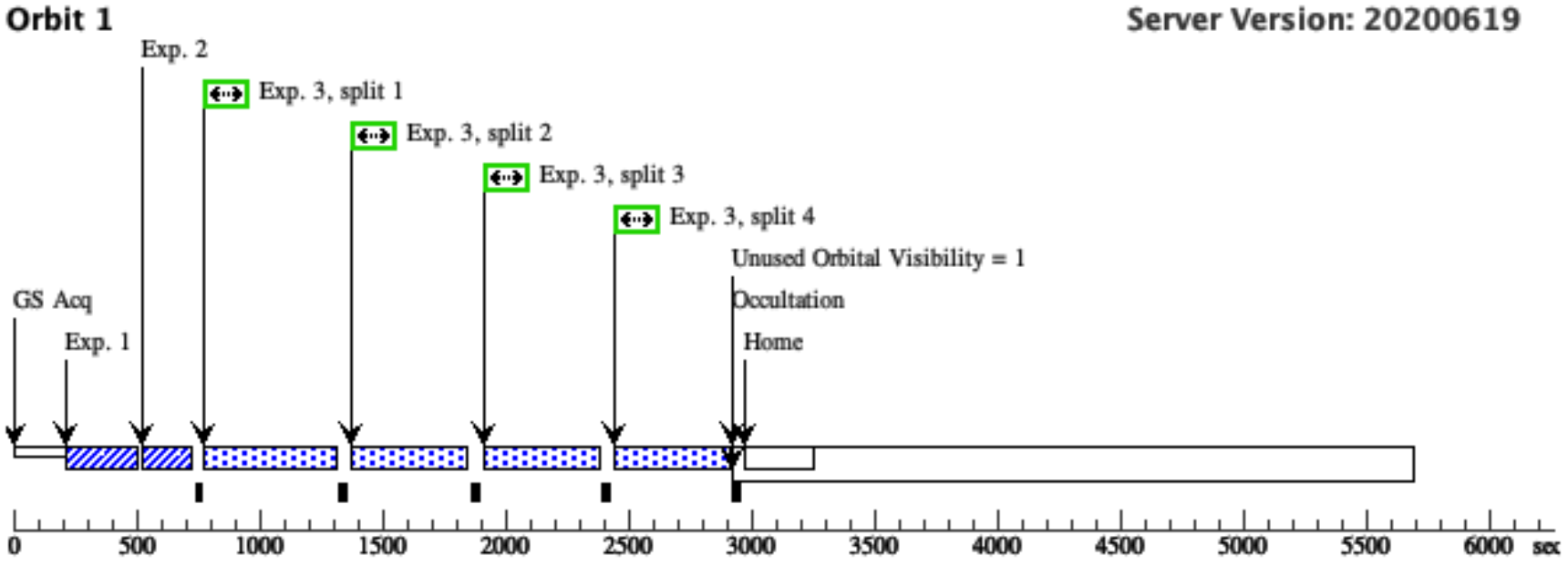
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	PG-0953+414	RA: 09 56 52.3640 (149.2181833d) Dec: +41 15 22.55 (41.25626d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=16.8+/-0.5 F(1370)=2.0e-14	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.sa.1394127)	(2) PG-0953+414	COS/FUV, ACQ/PEAKXD, PSA	G140L 1105 A				10 Secs (10 Secs) *[==>]*	***[1]***
Comments: Increased ETC exposure time from 7.5 s to allow some margin if the target happens to be fainter.									
2	(COS.sa.1394127)	(2) PG-0953+414	COS/FUV, ACQ/PEAKD, PSA	G140L 1105 A	NUM-POS=5; STEP-SIZE=0.9; CENTER=FLUX-WT-FLR			10 Secs (10 Secs) *[==>]*	***[1]***
Comments: Increased ETC exposure time from 7.5 s to allow some margin if the target happens to be fainter.									
3	(COS.sp.1369752)	(2) PG-0953+414	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1900; FP-POS=ALL			425 Secs (1672 Secs) *[==>418.0 Secs (Split 1)]* *[==>418.0 Secs (Split 2)]* *[==>418.0 Secs (Split 3)]* *[==>418.0 Secs (Split 4)]*	***[1]***

Orbit Structure



Visit

Proposal 15890, Visit 03, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

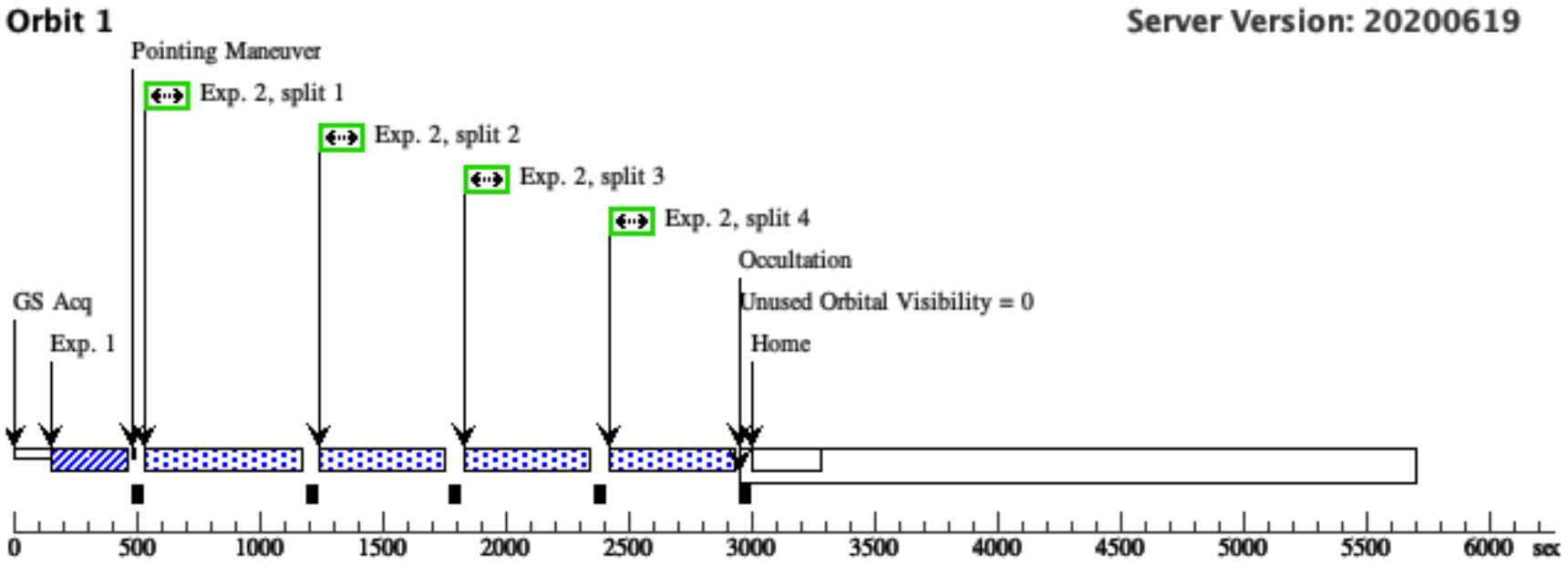
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	PG-1626+554	RA: 16 27 56.1123 (246.9838012d) Dec: +55 22 31.56 (55.37543d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=15.68+/-0.5 F(1500)=2.0e-14	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369734)	(3) PG-1626+554	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				7 Secs (7 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1369754)	(3) PG-1626+554	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1720; FP-POS=ALL			425 Secs (1848 Secs) *[==>462.0 Secs (Split 1)]* *[==>462.0 Secs (Split 2)]* *[==>462.0 Secs (Split 3)]* *[==>462.0 Secs (Split 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15890, Visit 04, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 04) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 3 (Visit 04)) Warning (Form): At LP4 SEGMENT=B is OFF by default for some G130M configurations. See "Errors and Warnings" for more details.

Fixed Targets

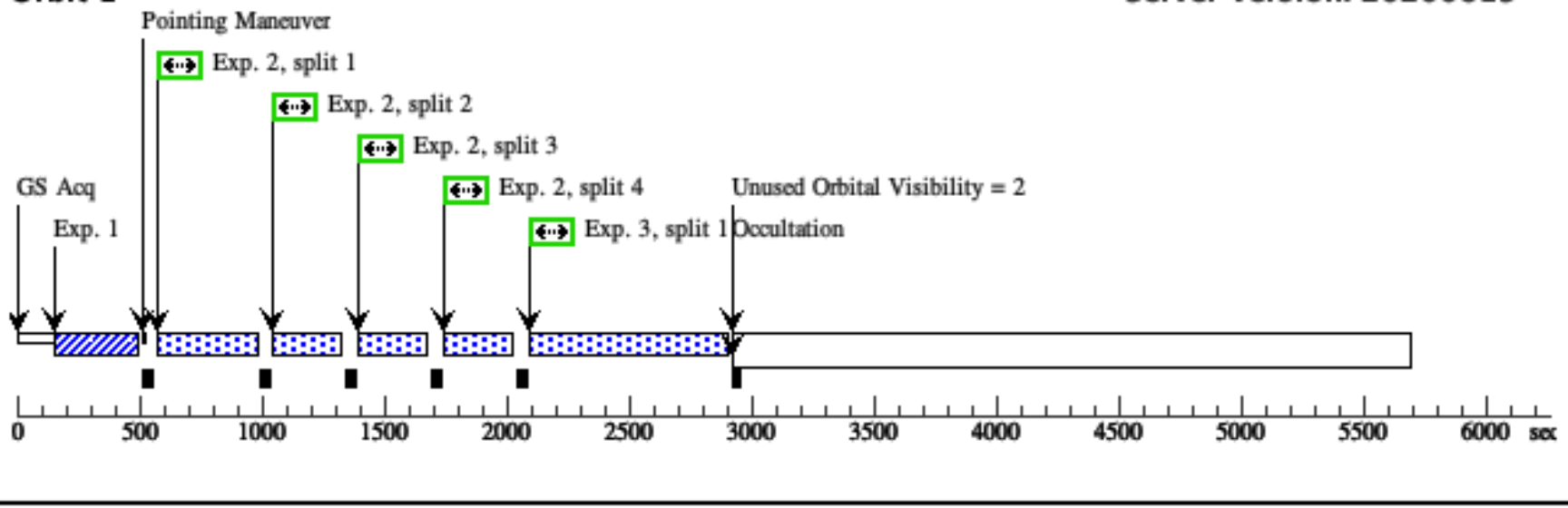
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	PG-1202+281	RA: 12 04 42.1098 (181.1754575d) Dec: +27 54 11.87 (27.90330d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=15.6+/-0.5 Galex FUV = 4.48e-15	Reference Frame: ICRS

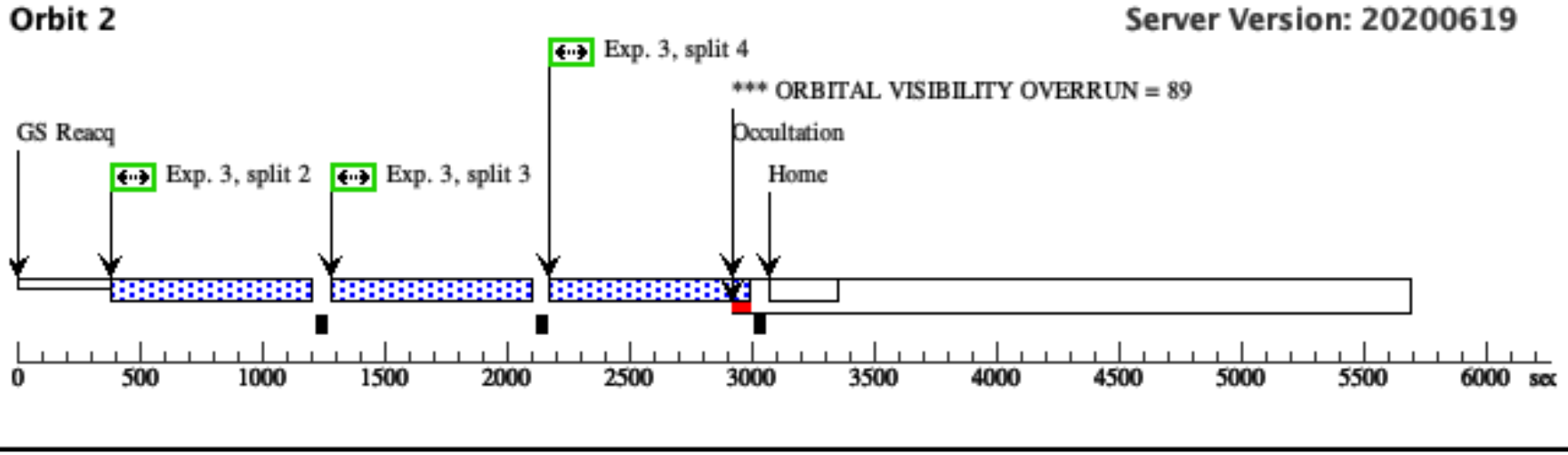
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369401)	(4) PG-1202+281	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1369399)	(4) PG-1202+281	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=9600; FP-POS=ALL			240 Secs (904 Secs) *[==>226.0 Secs (Split 1)]* *[==>226.0 Secs (Split 2)]* *[==>226.0 Secs (Split 3)]* *[==>226.0 Secs (Split 4)]*	 ***[1]***
3	(COS.sp.1369405)	(4) PG-1202+281	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=3200; FP-POS=ALL			600 Secs (2899 Secs) *[==>586.0 Secs (Split 1)]* *[==>771.0 Secs (Split 2)]* *[==>771.0 Secs (Split 3)]* *[==>771.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 05, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

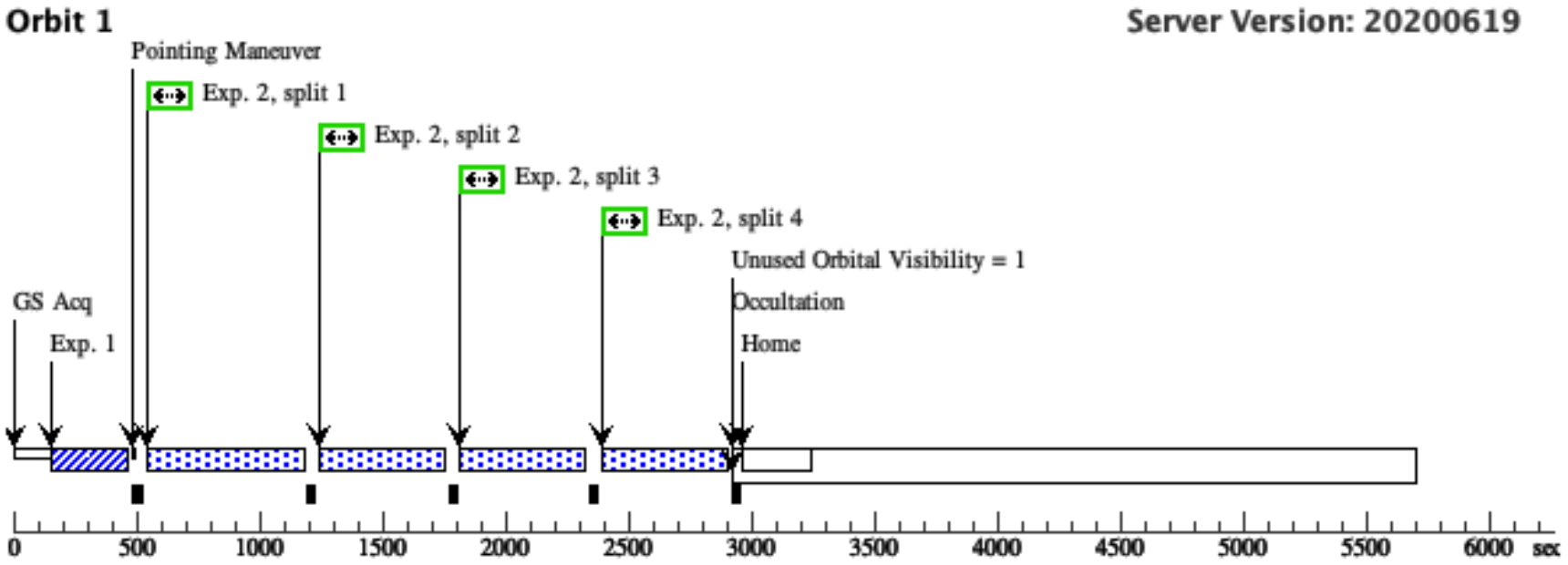
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	PG-1435-067	RA: 14 38 16.1631 (219.5673462d) Dec: -06 58 20.66 (-6.97241d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=16.01+/-0.5 Galex FUV = 1.15e-14	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369735)	(5) PG-1435-067	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				10 Secs (10 Secs) *[==>]*	*[1]*
2	(COS.sp.1369756)	(5) PG-1435-067	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=2260; FP-POS=ALL			460 Secs (1840 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15890, Visit 06, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

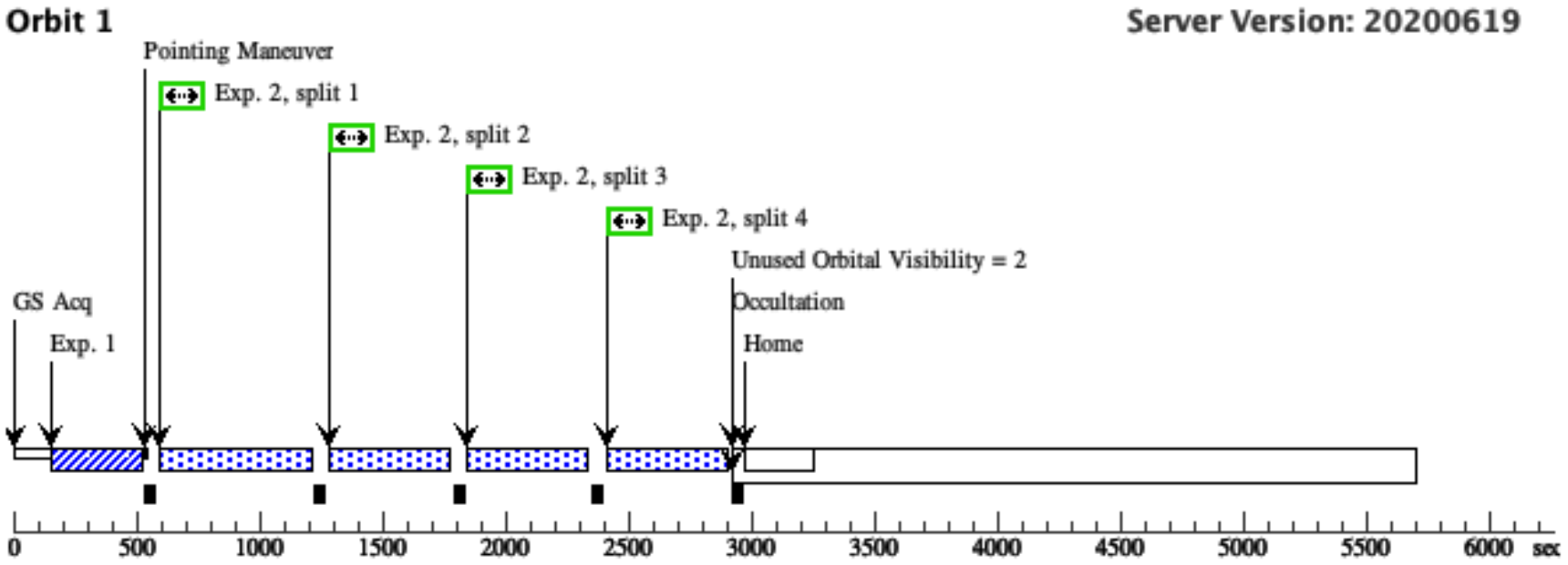
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	SDSS-J14441467+0633067	RA: 14 44 14.6655 (221.0611062d) Dec: +06 33 6.70 (6.55186d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=17.02+/-0.5 Galex FUV = 3.04e-15	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369717)	(6) SDSS-J14441467+0633067	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				36 Secs (36 Secs) *[==>]*	*[1]*
2	(COS.sp.1369757)	(6) SDSS-J14441467+0633067	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1816; FP-POS=ALL			440 Secs (1760 Secs) *[==>440.0 Secs (Split 1)]* *[==>440.0 Secs (Split 2)]* *[==>440.0 Secs (Split 3)]* *[==>440.0 Secs (Split 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15890, Visit 08, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 08) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

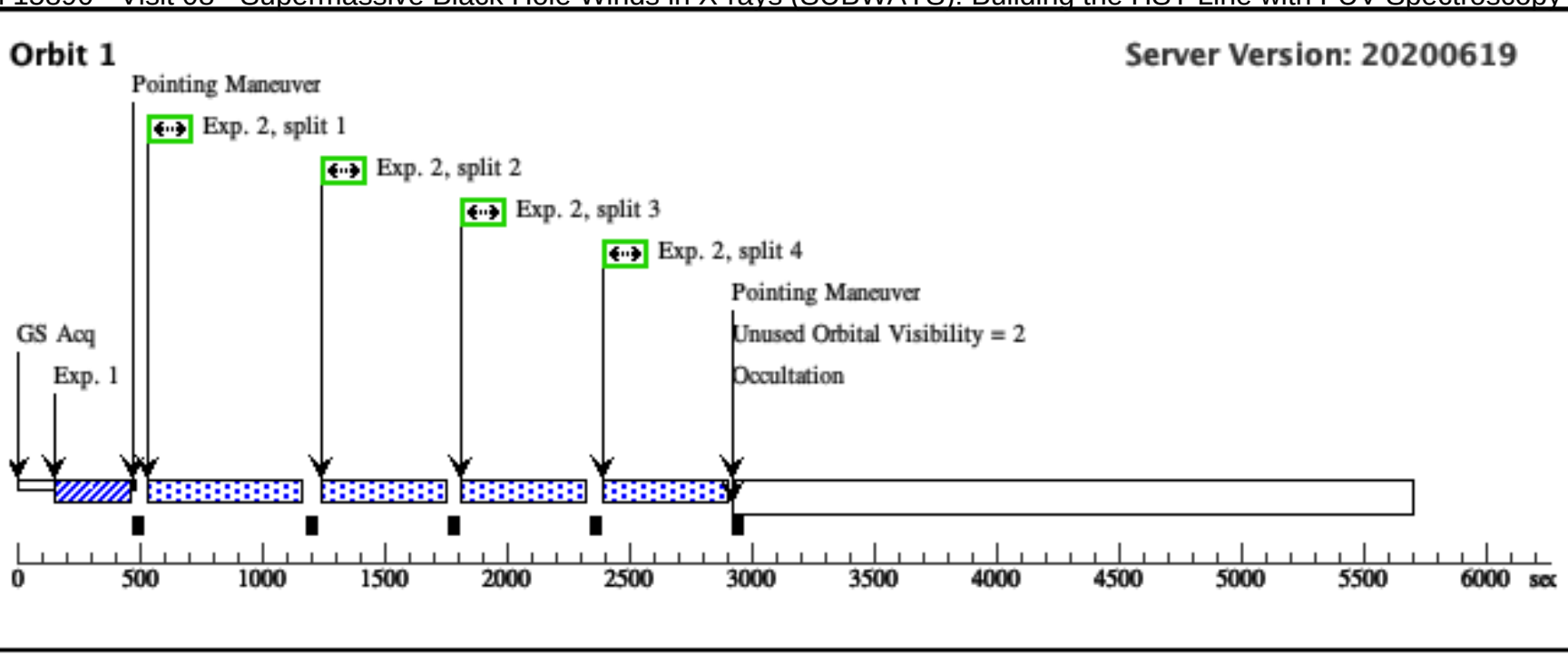
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	PG-1216+069	RA: 12 19 20.9317 (184.8372154d) Dec: +06 38 38.47 (6.64402d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=15.65+/-0.5 Galex FUV=1.72e-14	Reference Frame: ICRS

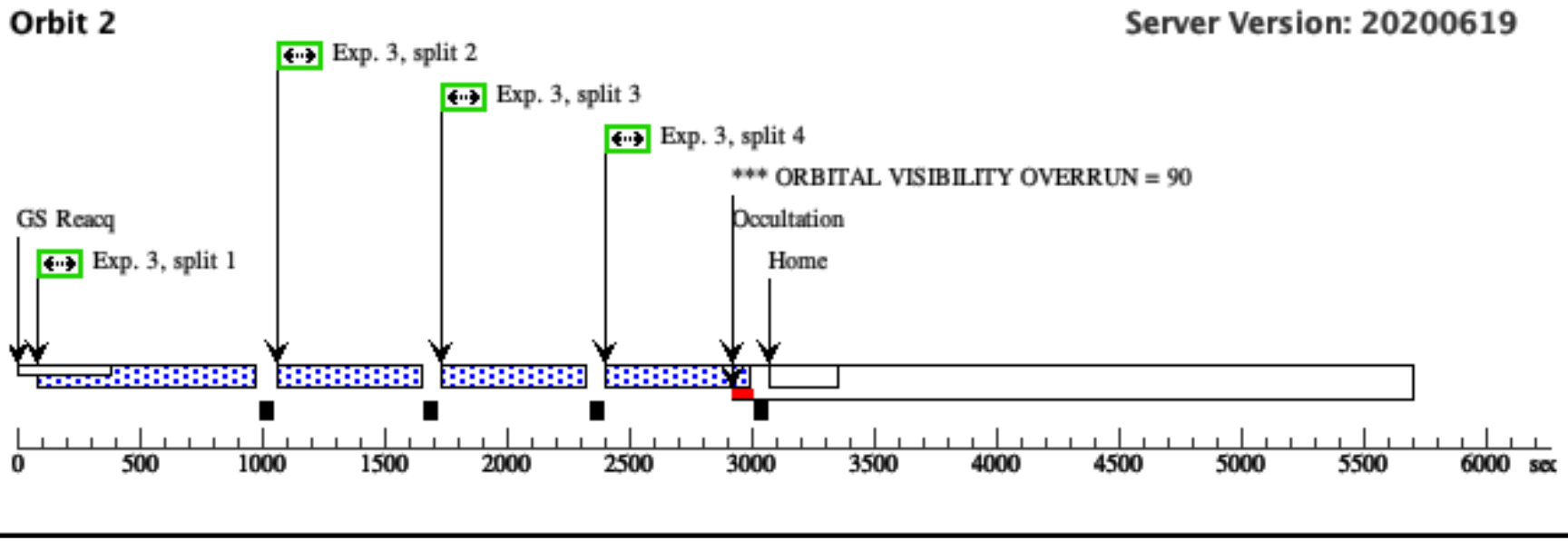
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369736)	(8) PG-1216+069	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				6 Secs (6 Secs)	
								[==>]	***[1]***
2	(COS.sp.1369759)	(8) PG-1216+069	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1880; FP-POS=ALL			400 Secs (1820 Secs)	
								[==>455.0 Secs (Split 1)] *[==>455.0 Secs (Split 2)]* *[==>455.0 Secs (Split 3)]* *[==>455.0 Secs (Split 4)]*	***[1]***
3	(COS.sp.1369773)	(8) PG-1216+069	COS/NUV, TIME-TAG, PSA	G185M 1953 A	BUFFER-TIME=1520; FP-POS=ALL			500 Secs (2300 Secs)	
								[==>575.0 Secs (Split 1)] *[==>575.0 Secs (Split 2)]* *[==>575.0 Secs (Split 3)]* *[==>575.0 Secs (Split 4)]*	***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 09, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 09) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

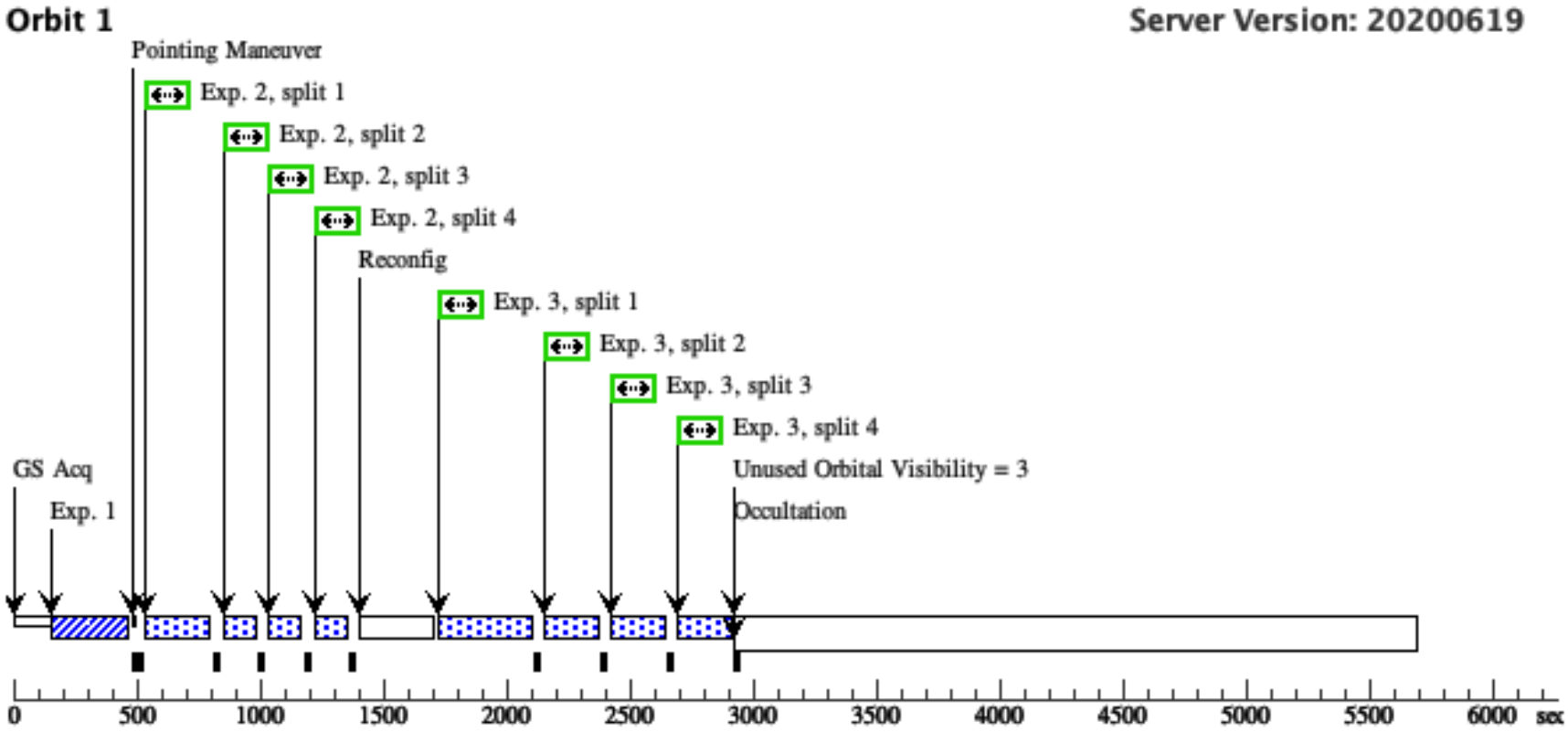
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	PG-0947+396	RA: 09 50 48.3804 (147.7015850d) Dec: +39 26 50.47 (39.44735d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=16.73+/-0.5 Galex FUV = 1.69e-14	Reference Frame: ICRS

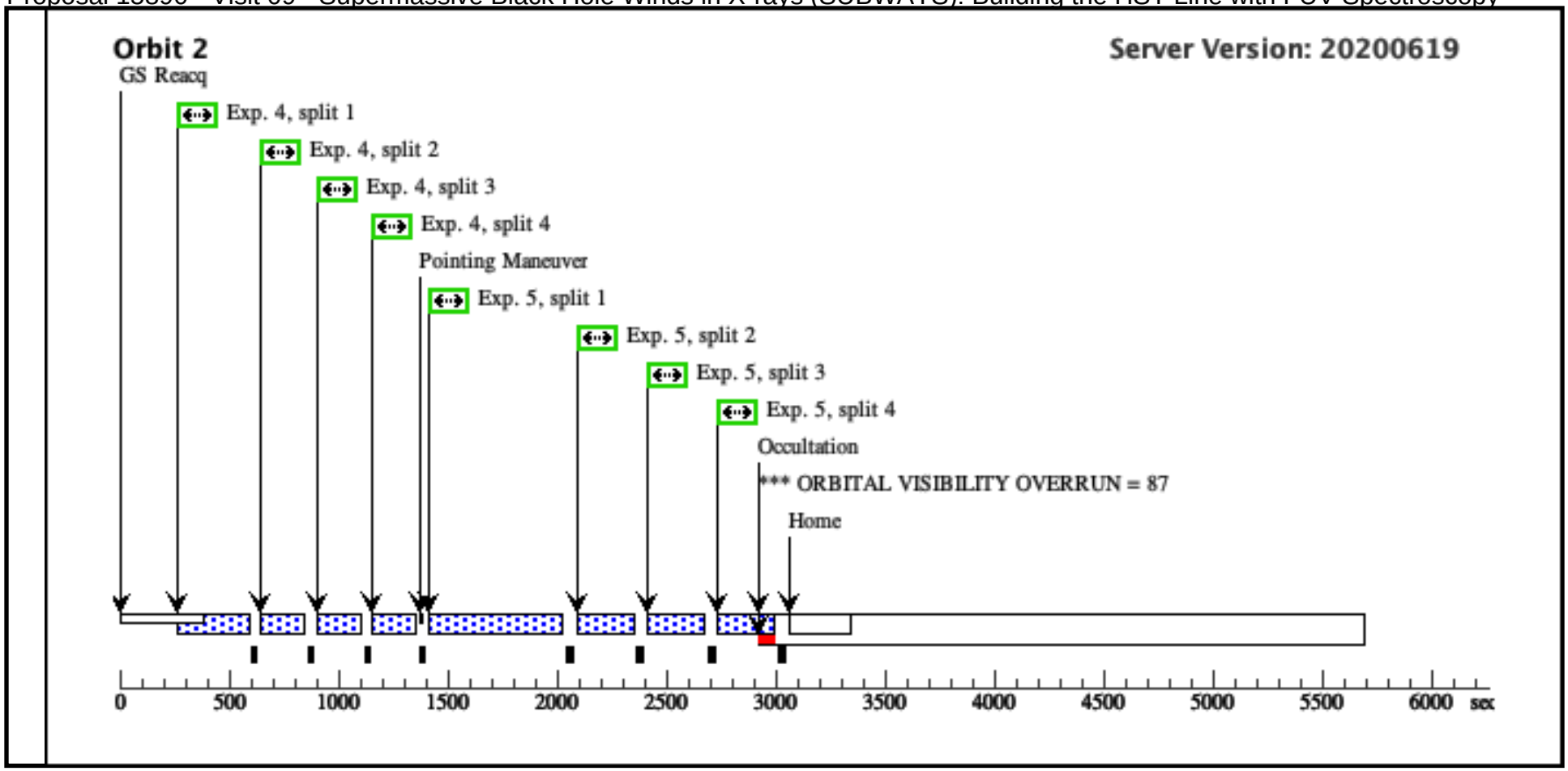
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369737)	(9) PG-0947+396	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				8 Secs (8 Secs) *[==>]*	*[1]*
2	(COS.sp.1369760)	(9) PG-0947+396	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=2200; FP-POS=ALL			80 Secs (320 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	(COS.sp.1369775)	(9) PG-0947+396	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=3000; FP-POS=ALL			165 Secs (660 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
4	(COS.sp.1369779)	(9) PG-0947+396	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1800; FP-POS=ALL			150 Secs (604 Secs) *[==>151.0 Secs (Split 1)]* *[==>151.0 Secs (Split 2)]* *[==>151.0 Secs (Split 3)]* *[==>151.0 Secs (Split 4)]*	*[2]*
5	(COS.sp.1369780)	(9) PG-0947+396	COS/NUV, TIME-TAG, PSA	G185M 1953 A	BUFFER-TIME=1560; FP-POS=ALL			245 Secs (984 Secs) *[==>246.0 Secs (Split 1)]* *[==>246.0 Secs (Split 2)]* *[==>246.0 Secs (Split 3)]* *[==>246.0 Secs (Split 4)]*	*[2]*

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
Pointing Maneuver
Exp. 5, split 1
Exp. 5, split 2
Exp. 5, split 3
Exp. 5, split 4
Occultation
*** ORBITAL VISIBILITY OVERRUN = 87
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15890, Visit 11, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 11) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 11) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

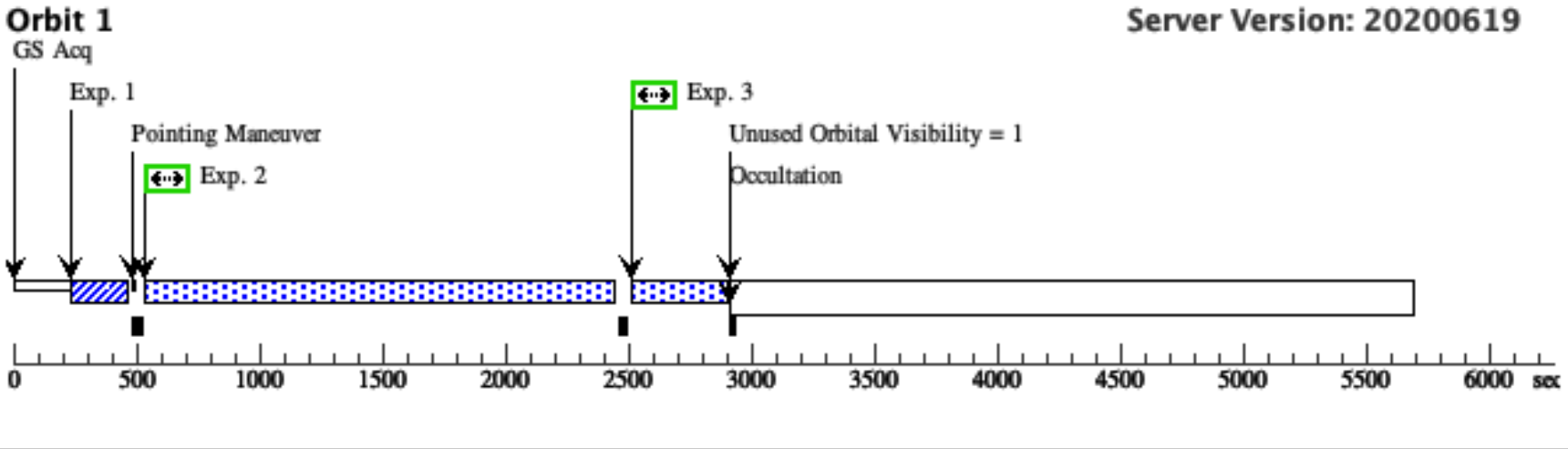
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	HB89-1529+050	RA: 15 32 28.8001 (233.1200004d)	Proper Motion RA: 0. sec of time/yr	V=17.91+/-0.5	Reference Frame: ICRS
		Dec: +04 53 58.41 (4.89956d)	Proper Motion Dec: 0. arcsec/yr	Galex FUV = 8.86e-16	
		Equinox: J2000	Epoch of Position: 2015.5		

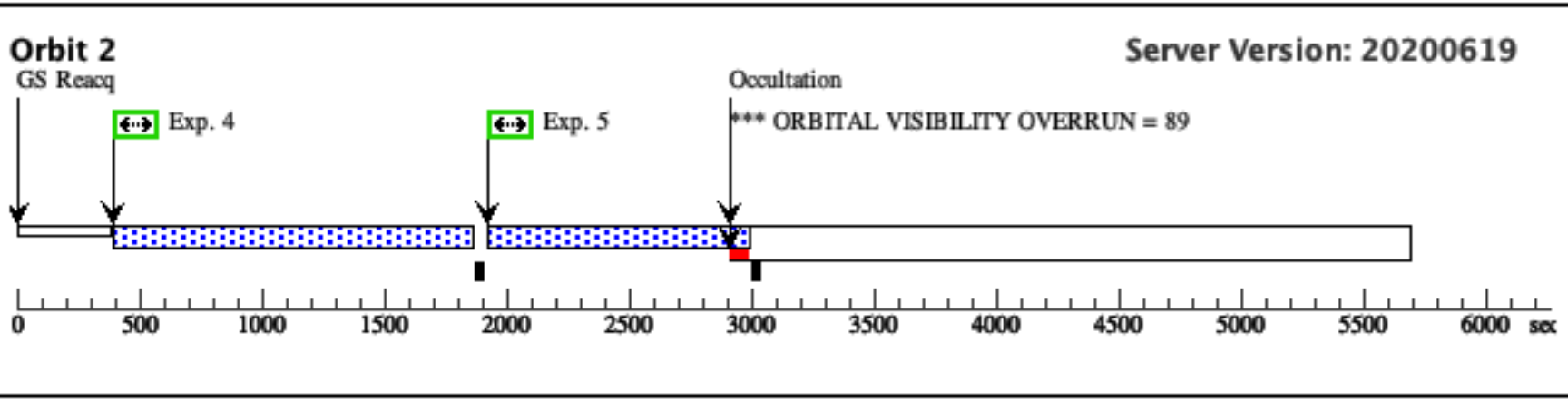
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

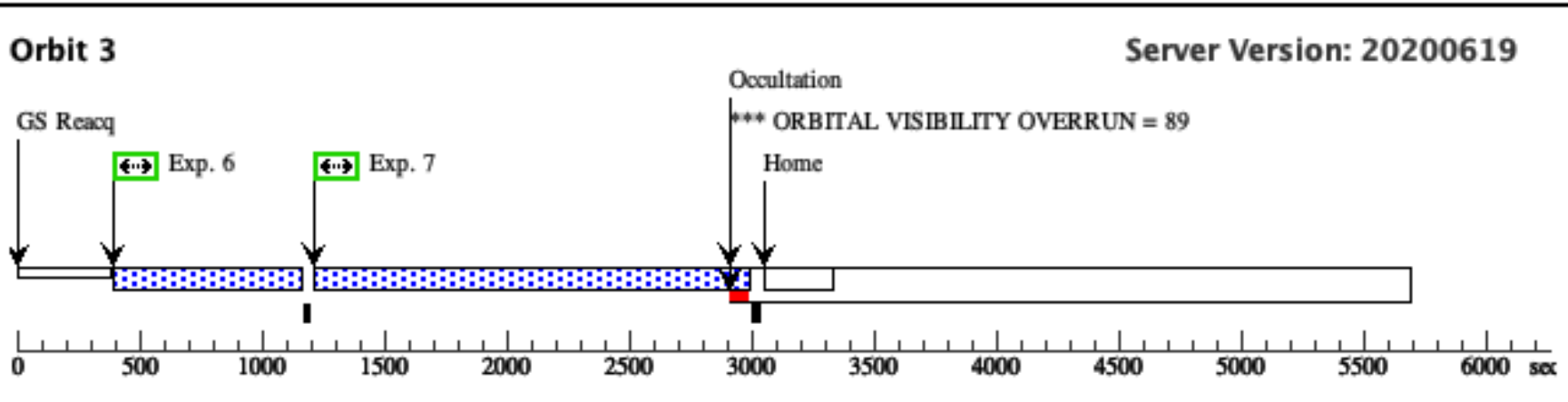
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369408)	(11) HB89-1529+050	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				8 Secs (8 Secs) *[==>]*	*[1]*
2	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=1			1700 Secs (1735 Secs) *[==>1735.0 Secs]*	*[1]*
3	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=2			300 Secs (335 Secs) *[==>335.0 Secs]*	*[1]*
4	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=2			1400 Secs (1418 Secs) *[==>1418.0 Secs]*	*[2]*
5	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=3			1000 Secs (1018 Secs) *[==>1018.0 Secs]*	*[2]*
6	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=3			700 Secs (723 Secs) *[==>723.0 Secs]*	*[3]*
7	(COS.sp.1369761)	(11) HB89-1529+050	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8000; FP-POS=4			1700 Secs (1723 Secs) *[==>1723.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 15890, Visit 12, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

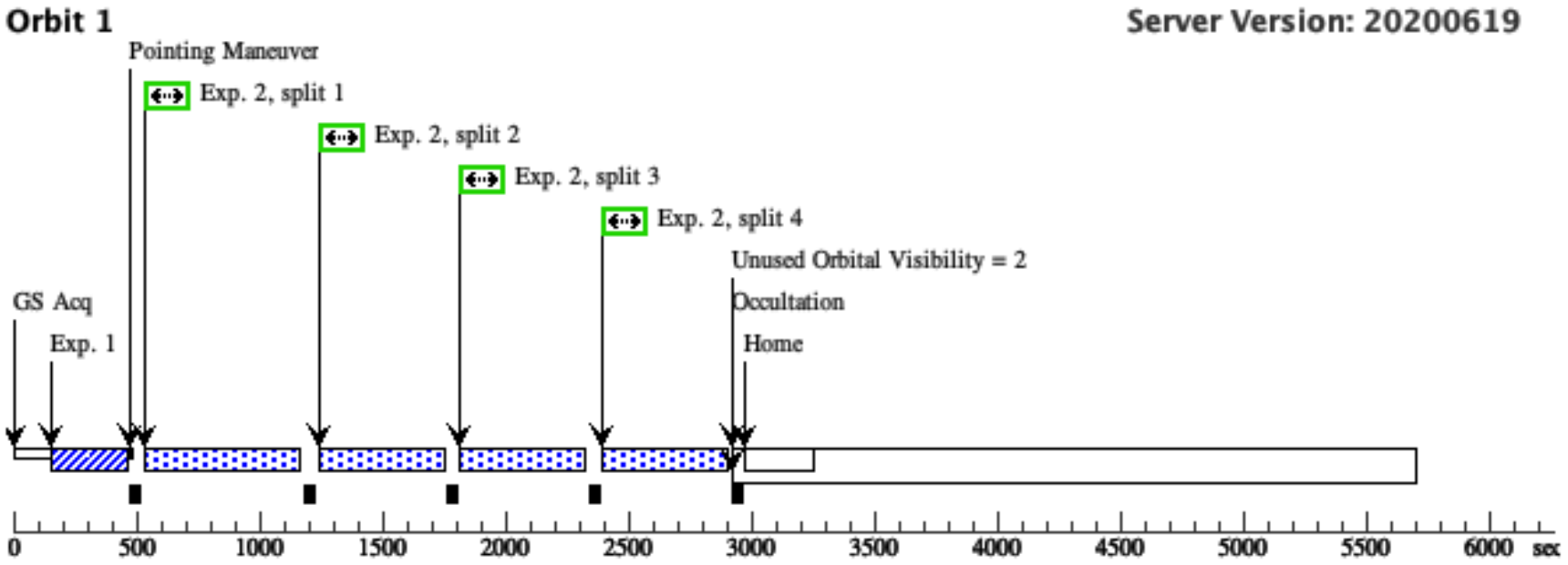
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	PG-1307+085	RA: 13 09 47.0031 (197.4458462d)	Proper Motion RA: 0. sec of time/yr	V=15.89+/-0.5	Reference Frame: ICRS
		Dec: +08 19 48.21 (8.33006d)	Proper Motion Dec: 0. arcsec/yr	Galex FUV=1.96e-14	
		Equinox: J2000	Epoch of Position: 2015.5		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369738)	(12) PG-1307+085	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				6 Secs (6 Secs)	
								[==>]	***[1]***
2	(COS.sp.1369762)	(12) PG-1307+085	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=1440; FP-POS=ALL			425 Secs (1820 Secs)	
								[==>455.0 Secs (Split 1)]	***[1]***
								[==>455.0 Secs (Split 2)]	
								[==>455.0 Secs (Split 3)]	
								[==>455.0 Secs (Split 4)]	

Orbit Structure



Visit

Proposal 15890, Visit 13, completed Fri Aug 28 15:00:45 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 13) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

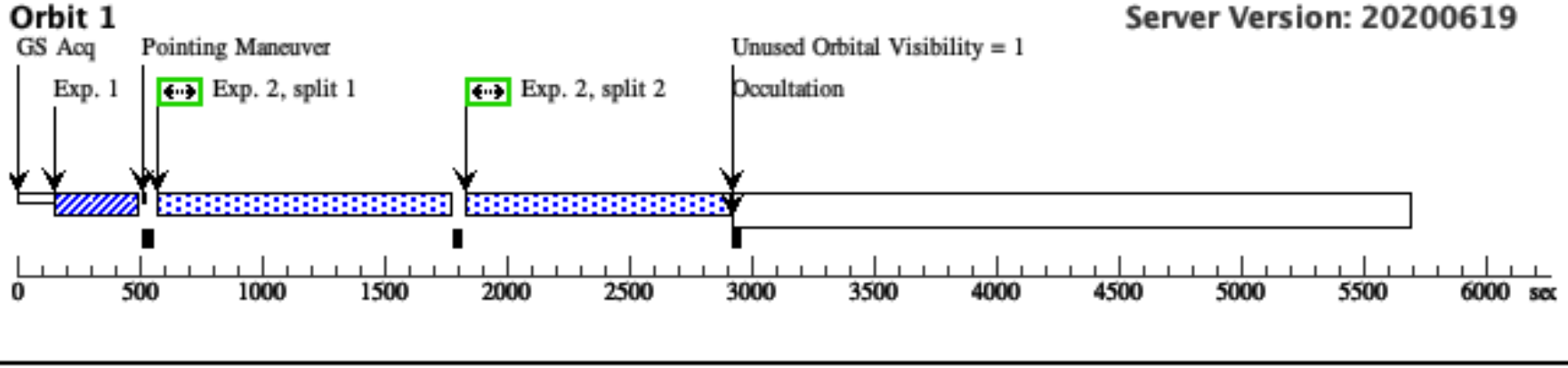
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	PG-1425+267	RA: 14 27 35.6075 (216.8983646d) Dec: +26 32 14.54 (26.53737d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=16.0+/-0.5 Galex FUV=3.94e-15	Reference Frame: ICRS

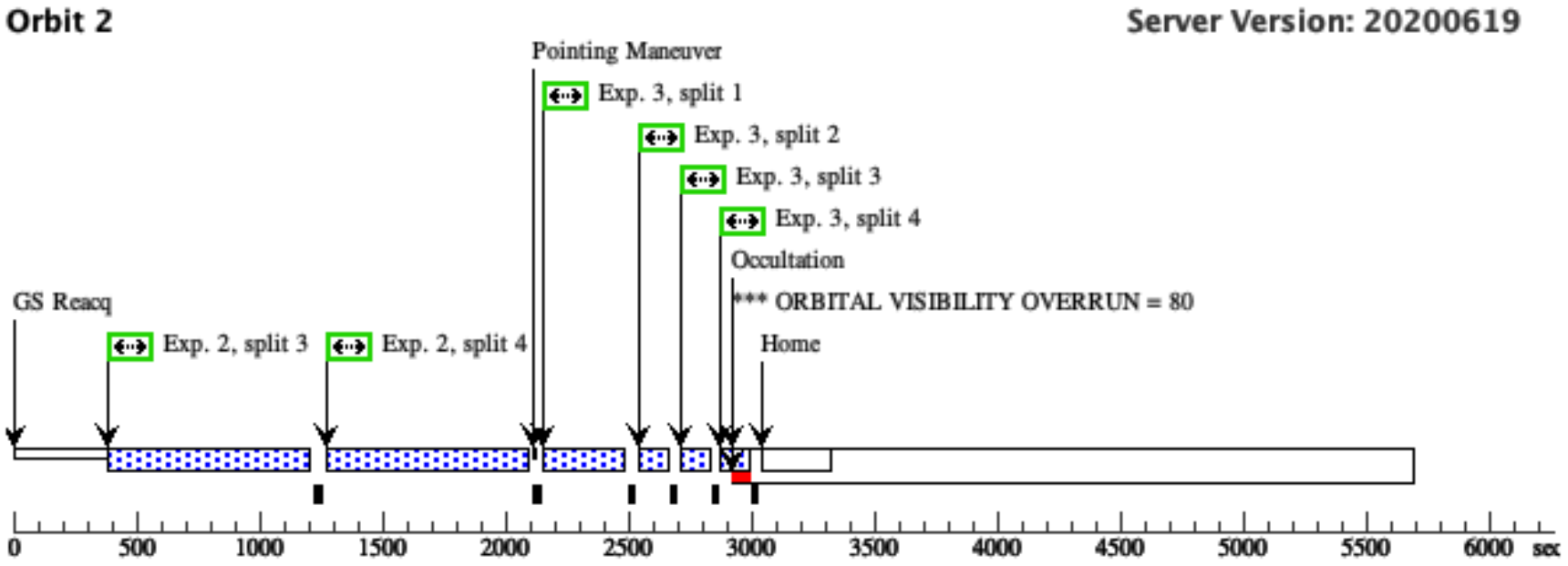
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369739)	(13) PG-1425+267	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs)	
								[==>]	***[1]***
2	(COS.sp.1369763)	(13) PG-1425+267	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=4800; FP-POS=ALL			770 Secs (3586 Secs)	
								[==>1023.0 Secs (Split 1)] *[==>1023.0 Secs (Split 2)]*	***[1]***
								[==>(Split 3)] *[==>(Split 4)]*	***[2]***
3	(COS.sp.1306947)	(13) PG-1425+267	COS/NUV, TIME-TAG, PSA	G230L 3360 A	BUFFER-TIME=1480; FP-POS=ALL			100 Secs (400 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 14, completed Fri Aug 28 15:00:46 GMT 2020

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Fixed Targets

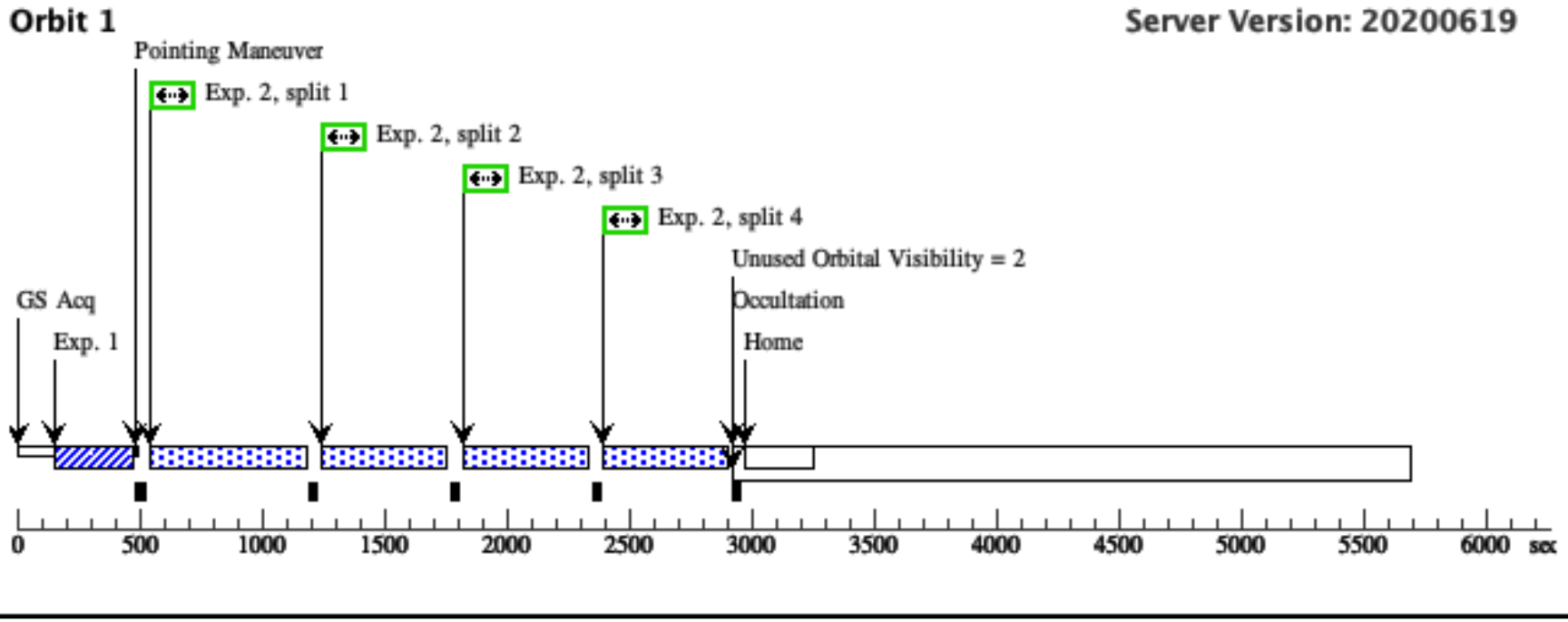
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	PG-1352+183	RA: 13 54 35.6873 (208.6486971d) Dec: +18 05 17.50 (18.08819d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=16.68+/-0.5 F(1560) = 1.03e-14	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369740)	(14) PG-1352+183	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				11 Secs (11 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1369764)	(14) PG-1352+183	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=2400; FP-POS=ALL			425 Secs (1844 Secs) *[==>461.0 Secs (Split 1)]* *[==>461.0 Secs (Split 2)]* *[==>461.0 Secs (Split 3)]* *[==>461.0 Secs (Split 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15890, Visit 16, completed Fri Aug 28 15:00:46 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 16) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

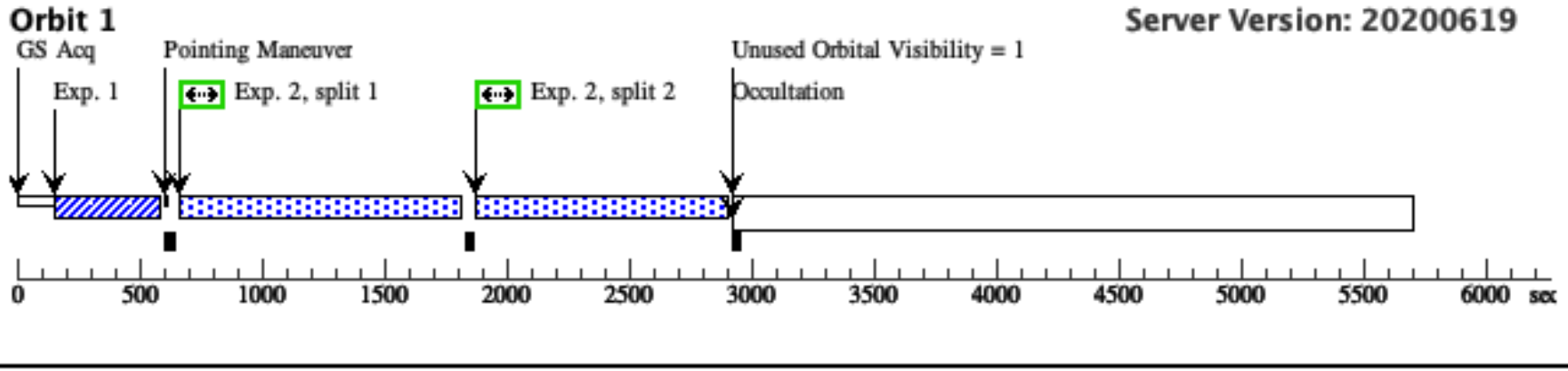
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	2MASX-J02201453-0728593	RA: 02 20 14.5754 (35.0607308d) Dec: -07 28 59.28 (-7.48313d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=18.81+/-0.5 Galex FUV=2.21e-15	Reference Frame: ICRS

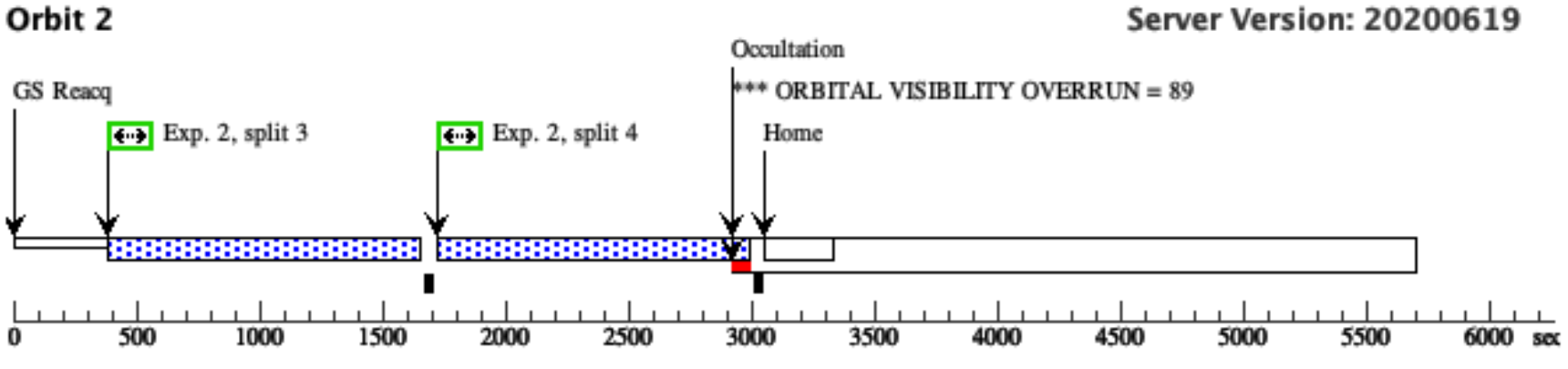
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369725)	(16) 2MASX-J02201453-0728593	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				70 Secs (70 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1369765)	(16) 2MASX-J02201453-0728593	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=6500; FP-POS=ALL			970 Secs (4390 Secs) *[==>975.0 Secs (Split 1)]* *[==>975.0 Secs (Split 2)]* *[==>1220.0 Secs (Split 3)]* *[==>1220.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 17, completed Fri Aug 28 15:00:46 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 17) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

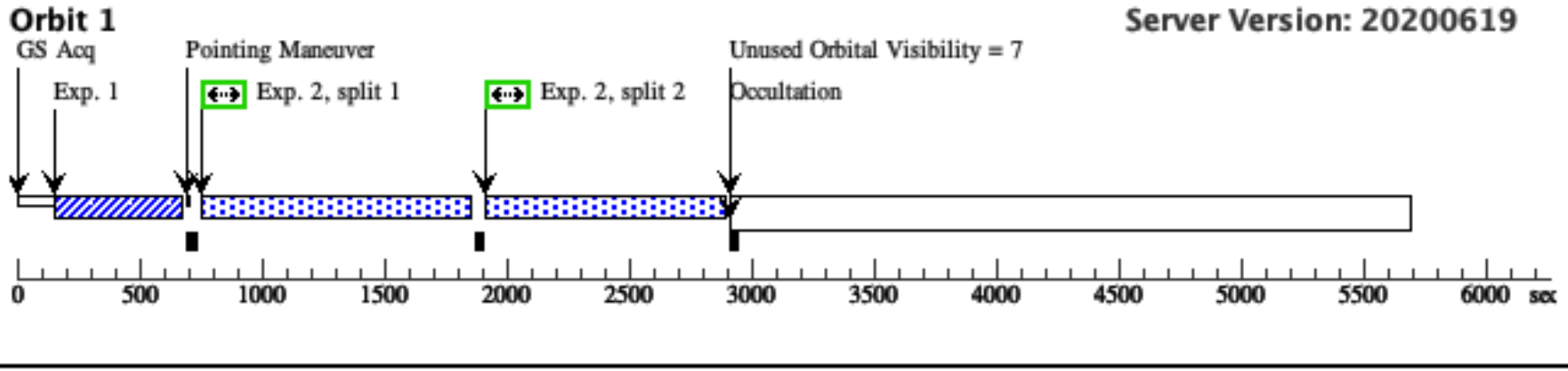
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(17)	LBQS-1338-0038	RA: 13 41 13.9355 (205.3080646d) Dec: -00 53 15.03 (-.88751d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=17.68+/-0.5 Galex FUV = 2.18e-15	Reference Frame: ICRS

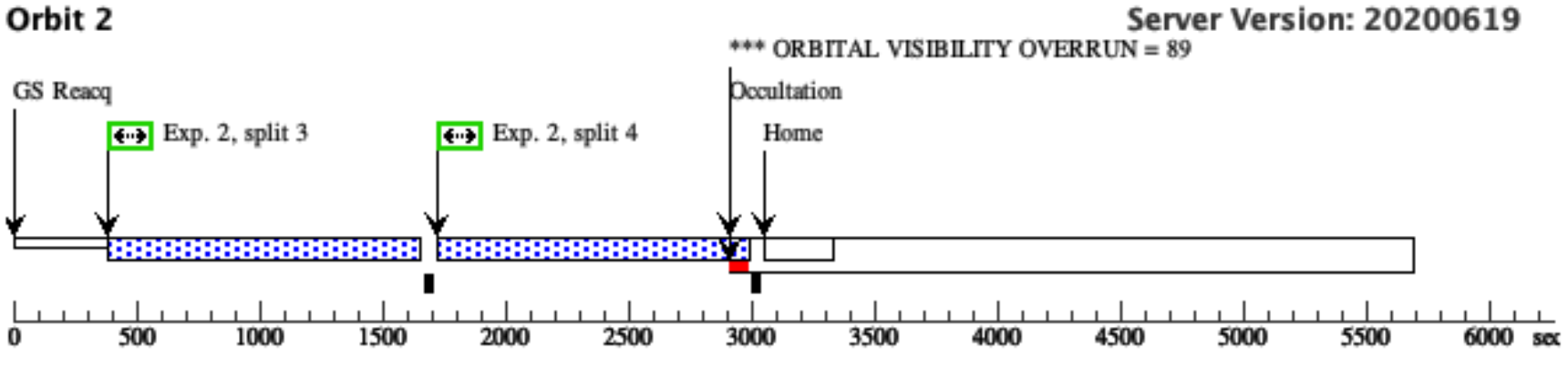
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369741)	(17) LBQS-1338-0038	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				115 Secs (115 Secs) *[==>]*	***[1]***
2	(COS.sp.1369766)	(17) LBQS-1338-0038	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7500; FP-POS=ALL			925 Secs (4286 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>1218.0 Secs (Split 3)]* *[==>1218.0 Secs (Split 4)]*	***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 18, completed Fri Aug 28 15:00:46 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 18) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

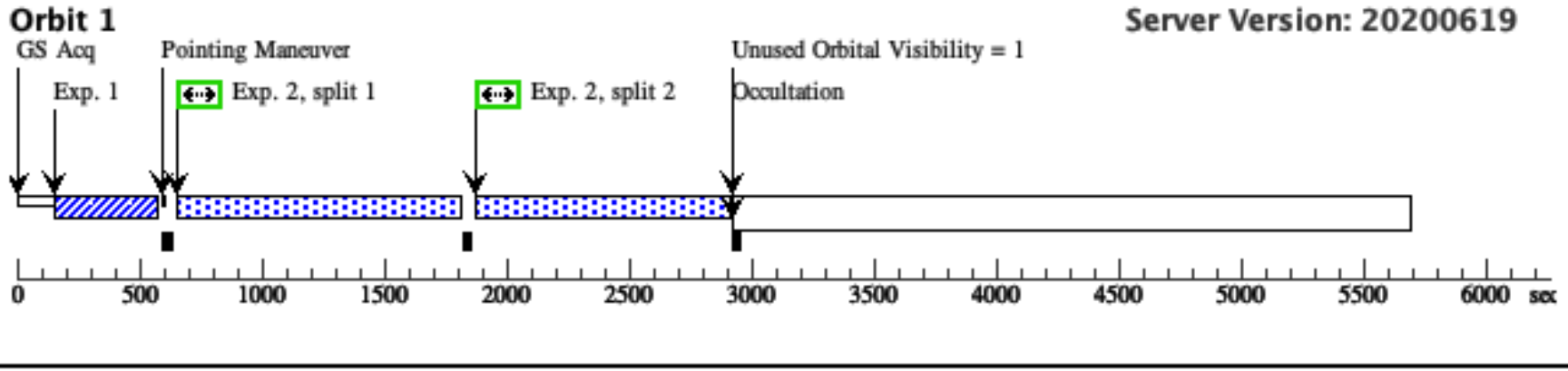
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(18)	2MASS-J14025120+2631175	RA: 14 02 51.1985 (210.7133271d) Dec: +26 31 17.55 (26.52154d) Equinox: J2000	Proper Motion RA: 0. sec of time/yr Proper Motion Dec: 0. arcsec/yr Epoch of Position: 2015.5	V=17.15+/-0.5 Galex FUV 1.77e-15	Reference Frame: ICRS

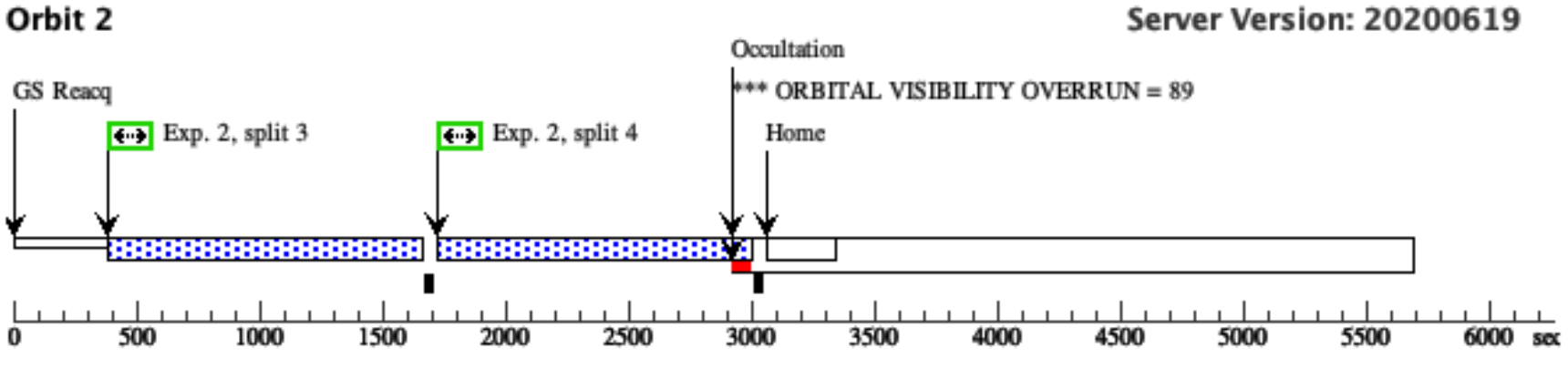
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369748)	(18) 2MASS-J14025120+2631175	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				64 Secs (64 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1369767)	(18) 2MASS-J14025120+2631175	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=6400; FP-POS=ALL			960 Secs (4414 Secs) *[==>984.0 Secs (Split 1)]* *[==>984.0 Secs (Split 2)]* *[==>1223.0 Secs (Split 3)]* *[==>1223.0 Secs (Split 4)]*	 ***[1]*** ***[2]***

Orbit Structure





Visit

Proposal 15890, Visit 19, completed Fri Aug 28 15:00:46 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: Coordinate with XMM-Newton within their 40-day scheduling window, if possible, but at least within +-1 to 2 months with XMM.

Diagnostics

(Visit 19) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 19) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

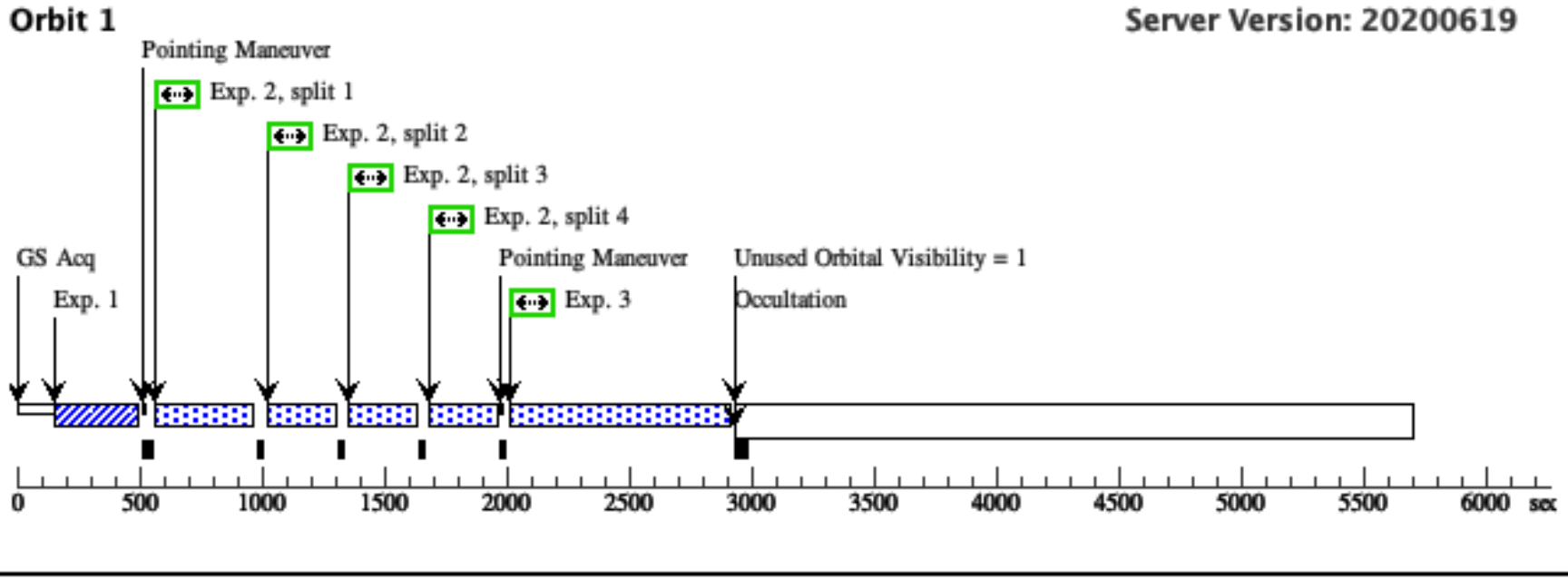
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(19)	PG-1427+480	RA: 14 29 43.0740 (217.4294750d)	Proper Motion RA: 0. sec of time/yr	V=16.97+/-0.5	Reference Frame: ICRS
		Dec: +47 47 26.22 (47.79062d)	Proper Motion Dec: 0. arcsec/yr	Galex FUV 6.48e-15	
		Equinox: J2000	Epoch of Position: 2015.5		

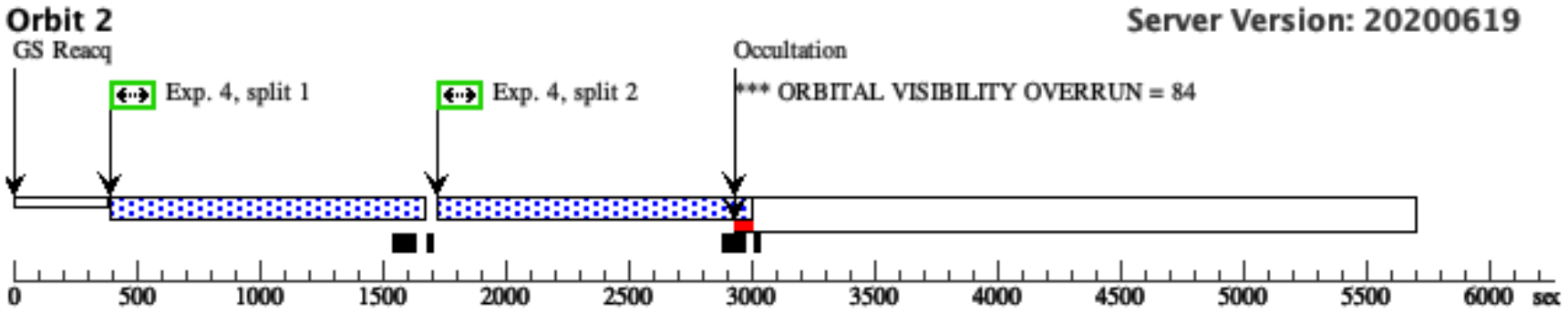
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[ACCRETION DISK, BLR, NLR, QSO, WIND]
Extended=NO

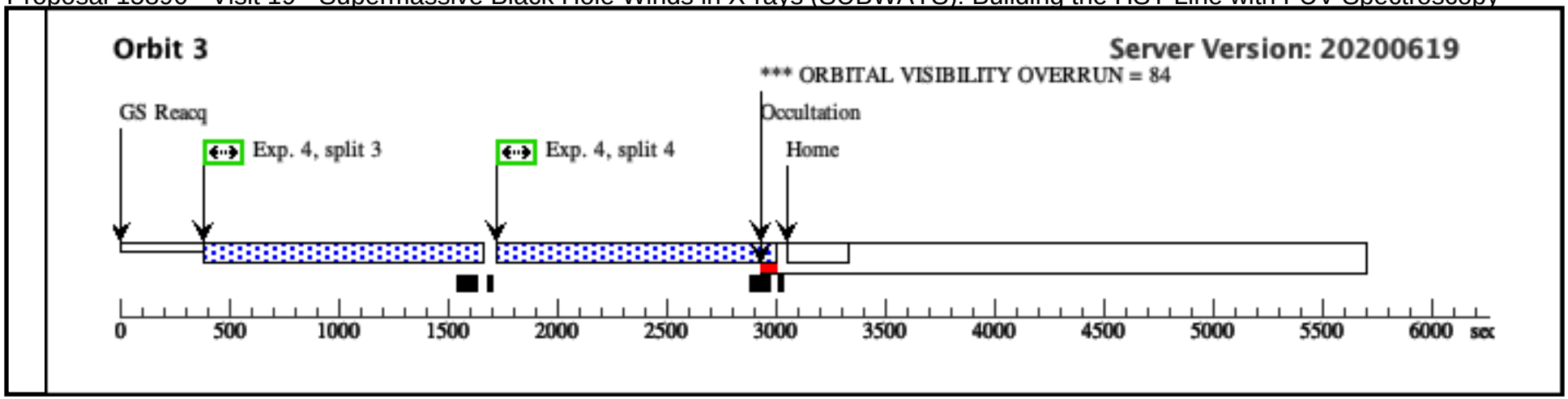
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1369749)	(19) PG-1427+480	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				23 Secs (23 Secs)	
								[==>]	***[1]***
2	(COS.sp.1369768)	(19) PG-1427+480	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=4200; FP-POS=ALL			225 Secs (900 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
3	(COS.sp.1306947)	(19) PG-1427+480	COS/NUV, TIME-TAG, PSA	G185M 1864 A	BUFFER-TIME=1650; FP-POS=1			585 Secs (585 Secs)	
								[==>]	***[1]***
4	(COS.sp.1306947)	(19) PG-1427+480	COS/NUV, TIME-TAG, PSA	G185M 1864 A	BUFFER-TIME=1155; FP-POS=ALL			1265 Secs (5060 Secs)	
								[==>(Split 1)] *[==>(Split 2)]*	***[2]***
								[==>(Split 3)] *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20200619
*** ORBITAL VISIBILITY OVERRUN = 84
GS Reacq
Exp. 4, split 3
Exp. 4, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec