15226 - Stellar Luminosity Profiles for Precision Measurements of Black Hole Mass in Early-Type Galaxies

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) NGC-1332	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:19.0	yes
02	(2) NGC-3268	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:21.0	yes
03	(3) NGC-3557	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:22.0	yes
04	(4) NGC-4697	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:24.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(5) NGC-4786	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:25.0	yes
06	(6) NGC-5838	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:27.0	yes
07	(7) NGC-6861	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:28.0	yes
56	(6) NGC-5838	WFC3/IR WFC3/UVIS	1	06-Dec-2018 19:03:29.0	yes

8 Total Orbits Used

ABSTRACT

We have obtained ALMA CO(2-1) data for a sample of nearby early-type galaxies, of which nine are detected in CO at high S/N and show rotation-dominated kinematics. We are in the process of modeling the kinematics of these molecular gas disks to derive accurate measurements of the black hole masses in these galaxies. Near-IR imaging is essential in order to measure the stellar luminosity profiles for these galaxies with dusty circumnuclear disks, and WFC3/IR imaging data is available or pending for only two of our CO disk galaxies. We propose to obtain WFC3/IR and UVIS data for the remaining seven galaxies. Gas mass measurements suggest that the dust extinction may reach ~1 mag in the H-band, and we are developing a modeling method to recover pixel-by-pixel extinction maps for these dust disks and produce dust-corrected stellar luminosity profiles using imaging in filters from the B to H bands. Using the dust-corrected stellar luminosity profiles together with the ALMA kinematic data, we will be able to determine black hole masses with precisions reaching ~10%. We request a single orbit for each of the seven galaxies.

OBSERVING DESCRIPTION

We propose to obtain WFC3/UVIS F438W or F555W observations, as well as WFC3/IR F110W and F160W observations to measure the stellar surface brightness profiles of seven early type galaxies possessing circumnuclear dust disks: NGC 1332, NGC 3268, NGC 3557, NGC 4697, NGC 4786, NGC 5838, and NGC 6861. We require a single orbit for each target to complete this imaging. These observations will complement existing optical broadband imaging, allowing us to model spatially resolved dust obscuration across optical to near-IR wavelengths. Based on their declinations, these galaxies have visibility periods between 53 and 56 minutes. The largest single overhead in each orbit will be six minutes for guide star acquisition, along with small telescope movements to dither the telescope and changes between WFC3 detectors/filters.

We will mosaic the field around each galaxy in the F160W filter using a 2x2 pattern with offsets of ~40 arcsec. This mosaic places the central bright region of the galaxy within the overlap region between all four pointings and covers a total 3.5x3.5 arcmin^2 field. The F160W images will be taken with NSAMP=10 in the STEP50 mode, providing sufficient integration times to map the stellar surface brightness profiles out to the mosaic edges as well as taking enough reads at early times (<30 seconds) to allow up-the-ramp sampling to avoid saturating on the galaxy nuclei as well as to reject cosmic rays. The resulting mosaics will have a total galaxy center integration time of 1000 s in the F160W filter. At the outskirts of the mosaic, these observations will probe down to a limiting H-band surface brightness of ~22.3 mag/arcsec^2 in a 5x5pixel region.

The F110W images will be obtained in a two-point WFC3-IR-DITHER-LINE pattern, centered on the nuclei, also with NSAMP=10 in the STEP50 mode, permitting a total of 500 s integration in the inner ~2x2 arcmin^2 field. As for the F160W images, these SAMP-SEQ and NSAMP values allow up-the-ramp sampling to reject cosmic rays and avoid nuclear saturation.

The final set of observations for each galaxy will be either F438W or F555W WFC3/UVIS images (depending on whether archival HST B or V data are already available) in a four-point WFC3-UVIS-BOX-MIN pattern centered on the nucleus. To avoid saturating the galaxy centers, these broadband images are intentionally short (~130 s at each dither location); the emergence of restrictive buffer dumps when utilizing the full array leads us to request only a subarray for these UVIS observations. If using the optimal subarray (UVIS2-C1K1C-SUB), the guide star needs to be reacquired between the WFC3/IR and UVIS patterns, regardless of the ordering of previous IR observations. Instead, we select the UVIS2-M1K1C-SUB subarray for these F438W/F555W observations. Sufficient FLASH is included in each observation to mitigate CTE losses when using this subarray. As the stellar surface brightness profiles for each galaxy will be derived from their F160W mosaics, and the additional broadband imaging is needed to model the dust obscuration in the <5 arcsec radius dust disks, the smaller field of view and slightly worse CTE of this WFC3/UVIS subarray will not negatively impact this project. This UVIS pattern leads to ~500 s total integration in a ~50x50 arcsec^2 region about each galaxy center.

Visit

Proposal 15226, NGC 1332 (01), completed Fri Dec 07 00:03:30 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 1332 (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

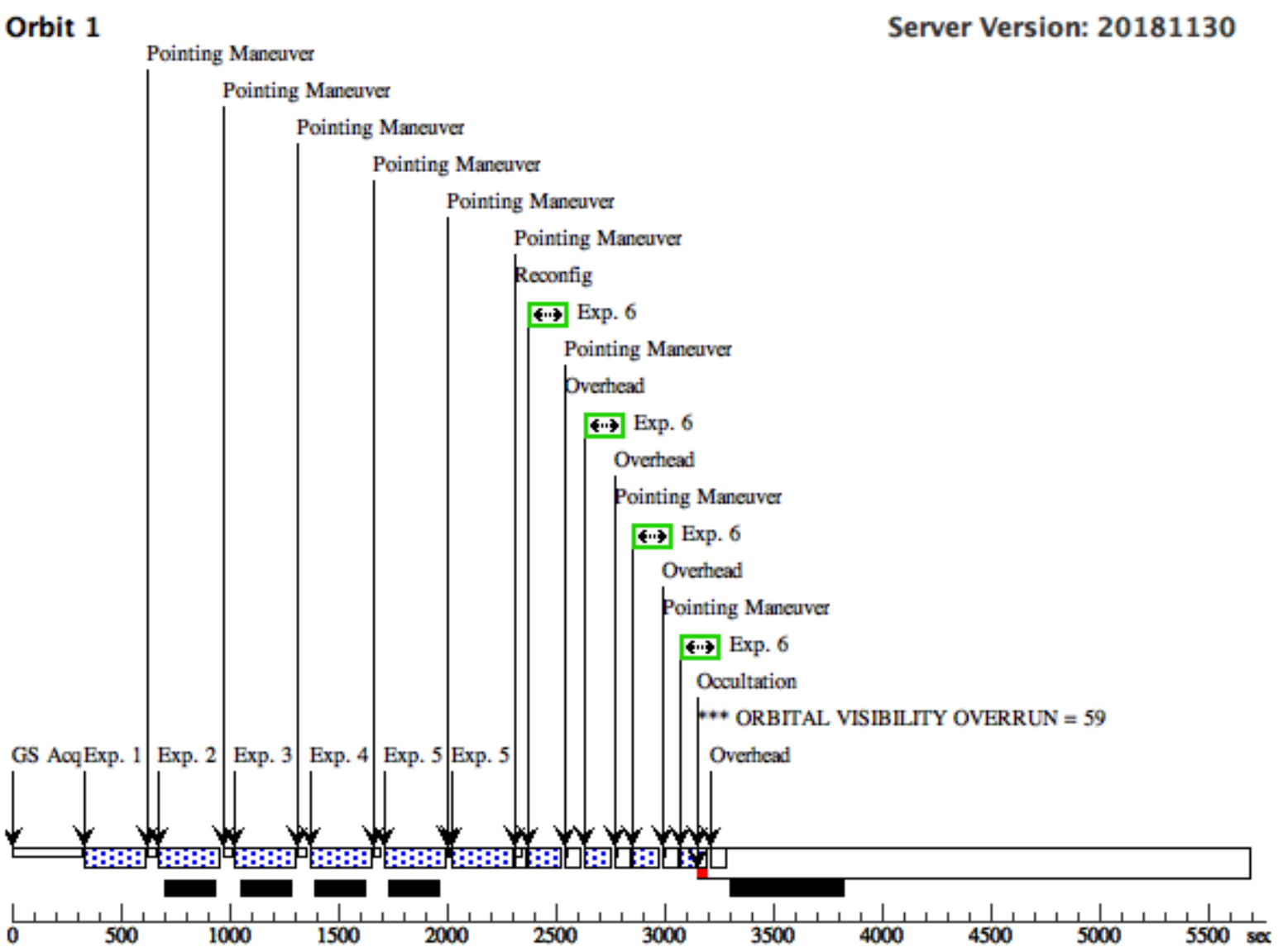
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC-1332	RA: 03 26 17.3210 (51.5721708d) Dec: -21 20 7.33 (-21.33537d) Equinox: J2000		V=10.24+/-0.08	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, LENTICULAR, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(1) NGC-1332	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(1) NGC-1332	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(1) NGC-1332	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(1) NGC-1332	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(1) NGC-1332	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 1332 (01) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F438W-1/4	(1) NGC-1332	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F438W	FLASH=11		Pattern 3, Exps 6-6 in NGC 1332 (01) (3)	123 Secs (492 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 3268 (02), completed Fri Dec 07 00:03:30 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 3268 (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

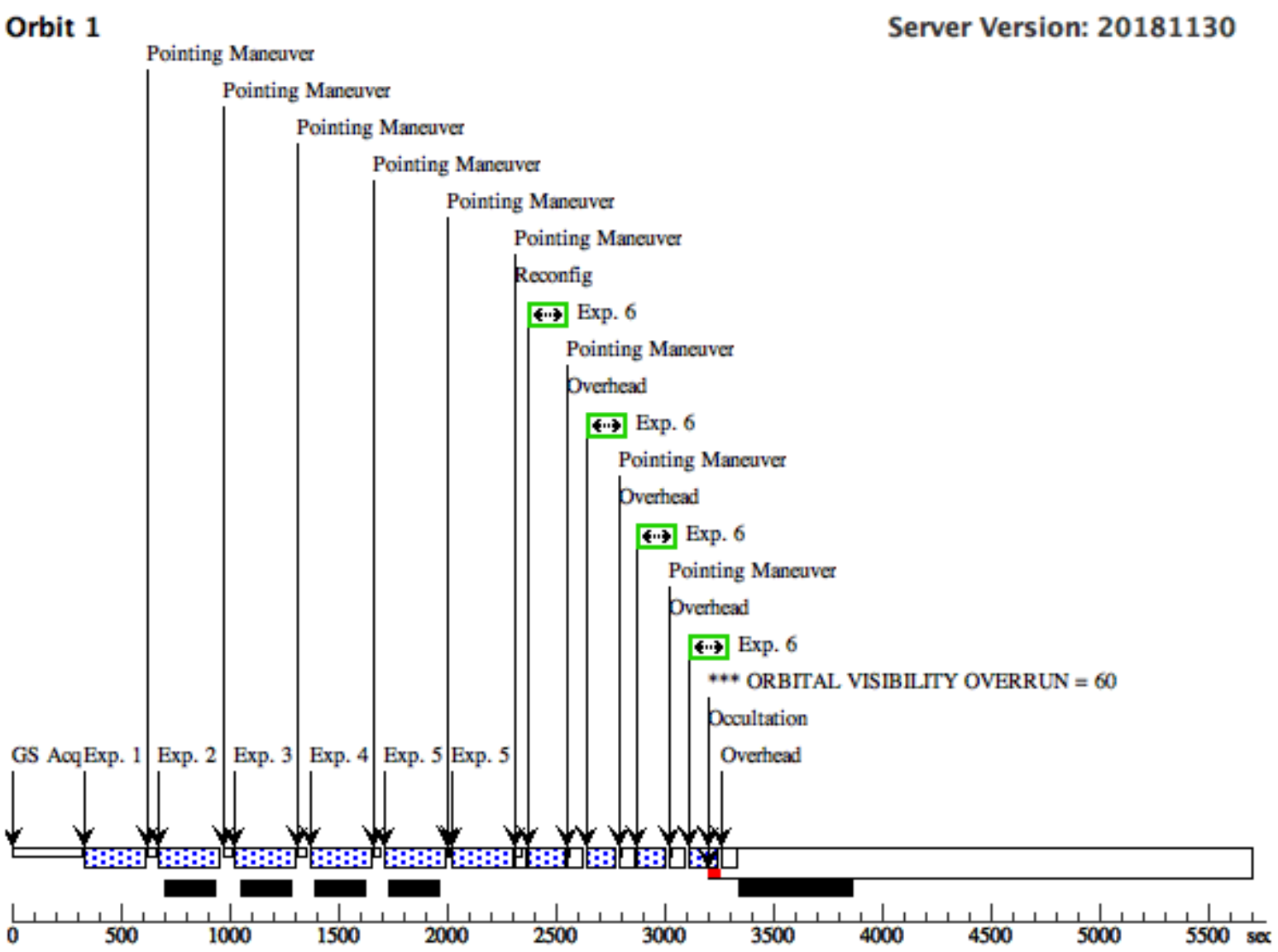
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC-3268	RA: 10 30 0.6550 (157.5027292d) Dec: -35 19 31.83 (-35.32551d) Equinox: J2000		V=11.77	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, ELLIPTICAL, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(2) NGC-3268	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(2) NGC-3268	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(2) NGC-3268	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(2) NGC-3268	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(2) NGC-3268	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 3268 (02) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F555W-1/4	(2) NGC-3268	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F555W	FLASH=11		Pattern 3, Exps 6-6 in NGC 3268 (02) (3)	134 Secs (536 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 3557 (03), completed Fri Dec 07 00:03:30 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 3557 (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

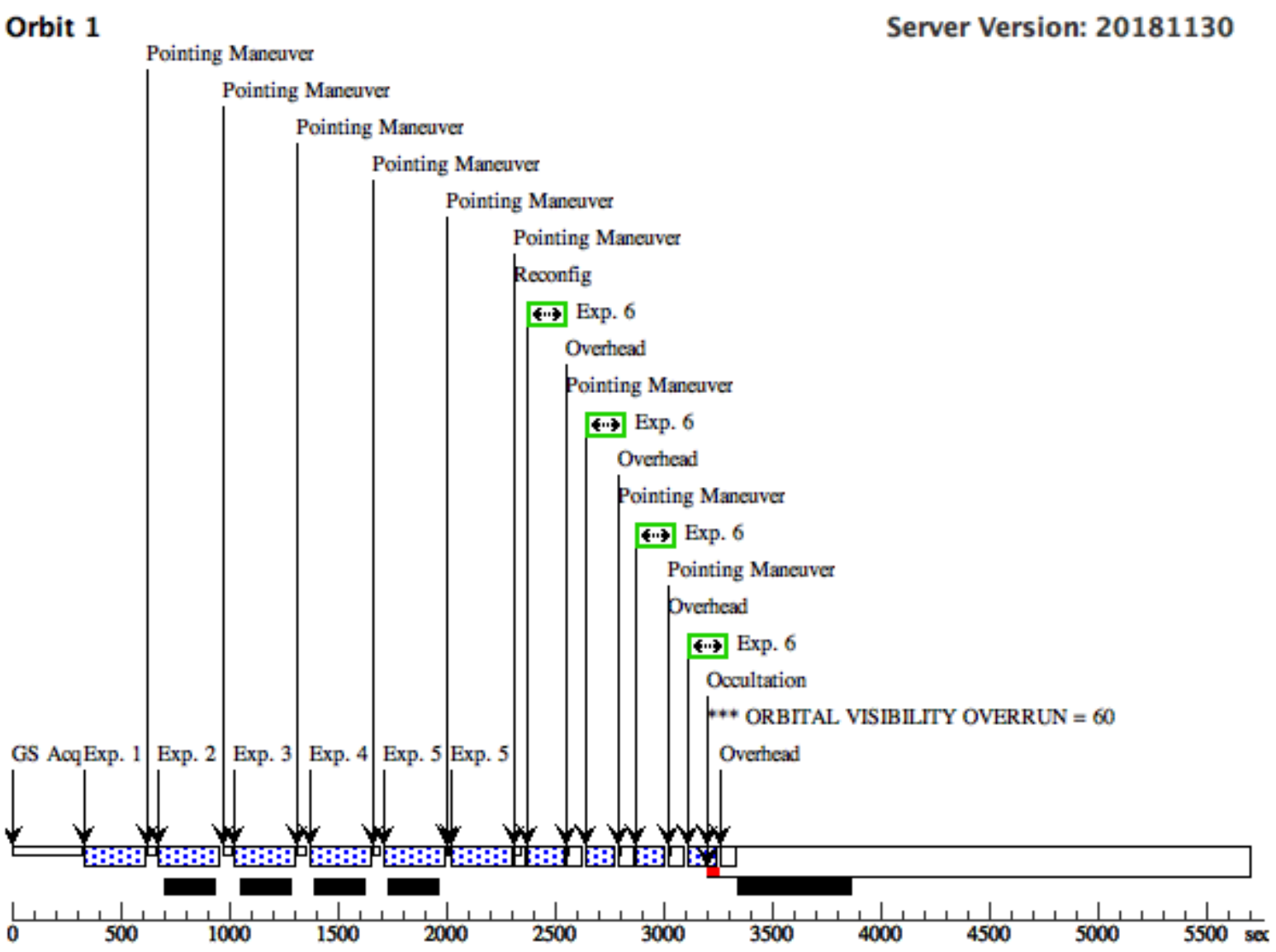
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	NGC-3557	RA: 11 09 57.6530 (167.4902208d) Dec: -37 32 21.02 (-37.53917d) Equinox: J2000		V=10.4	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, ELLIPTICAL, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(3) NGC-3557	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(3) NGC-3557	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(3) NGC-3557	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(3) NGC-3557	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(3) NGC-3557	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 3557 (03) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F438W-1/4	(3) NGC-3557	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F438W	FLASH=11		Pattern 3, Exps 6-6 in NGC 3557 (03) (3)	134 Secs (536 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 4697 (04), implementation Fri Dec 07 00:03:30 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

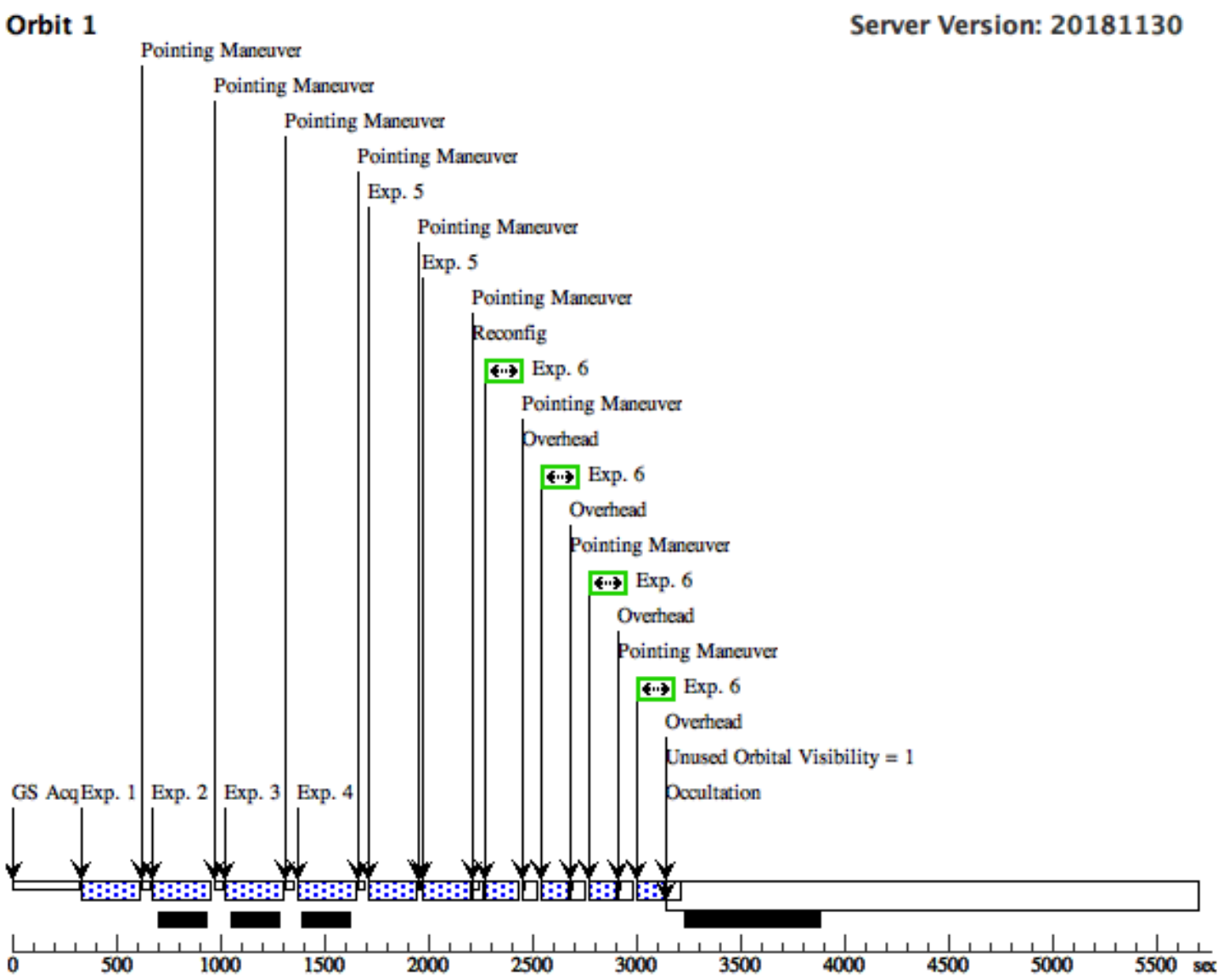
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	NGC-4697	RA: 12 48 35.9070 (192.1496125d) Dec: -05 48 3.06 (-5.80085d) Equinox: J2000		V=11.0	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, ELLIPTICAL, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(4) NGC-4697	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
2	F160W-2	(4) NGC-4697	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
3	F160W-3	(4) NGC-4697	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
4	F160W-4	(4) NGC-4697	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
5	F110W-1/2	(4) NGC-4697	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 5-5 in NGC 4697 (04) (2)	199.231 Secs (398.462 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	*[1]*
6	F555W-1/4	(4) NGC-4697	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F555W	FLASH=11		Pattern 3, Exps 6-6 in NGC 4697 (04) (3)	130 Secs (520 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure



Visit

Proposal 15226, NGC 4786 (05), completed Fri Dec 07 00:03:30 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 4786 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

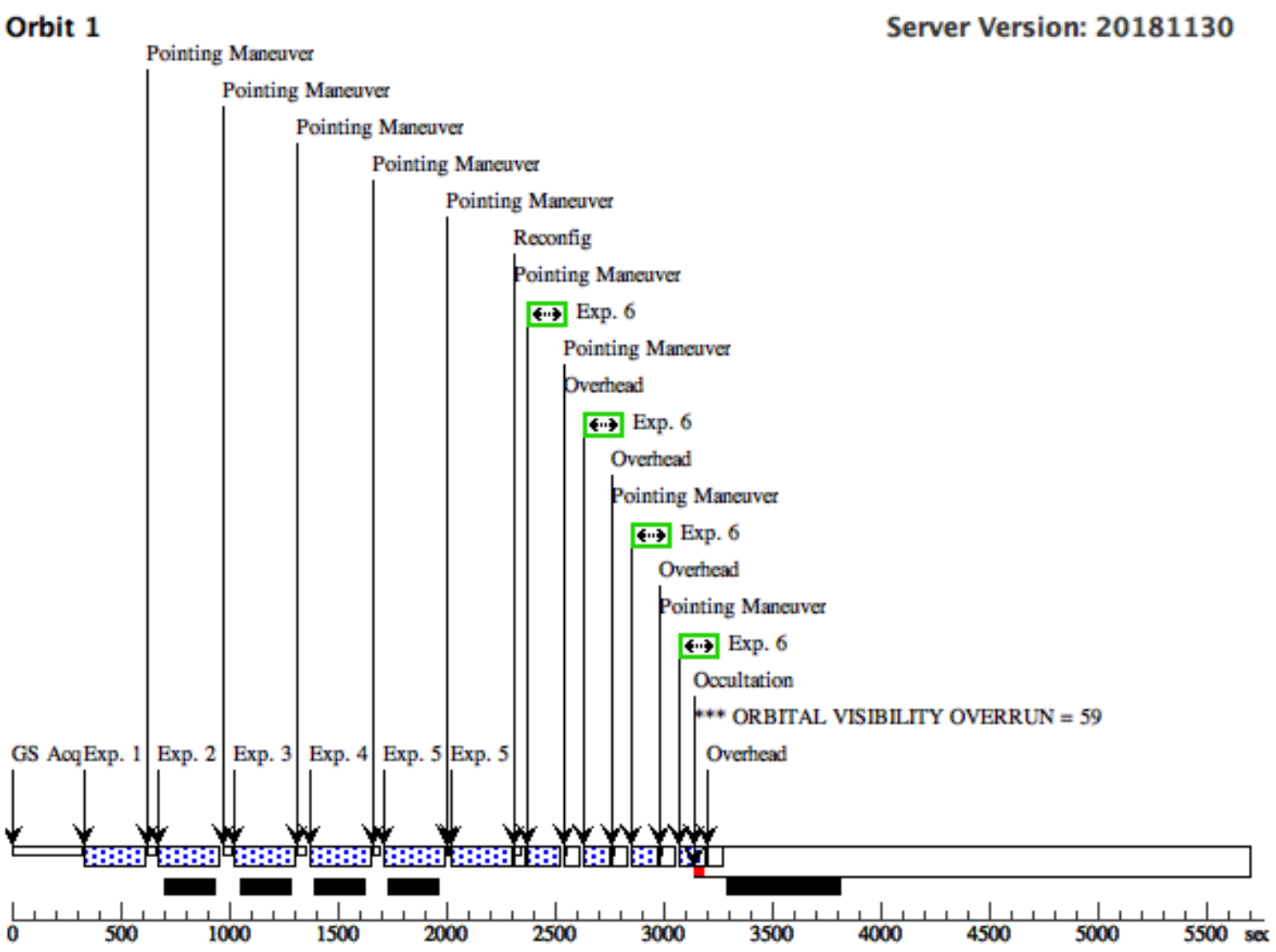
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	NGC-4786	RA: 12 54 32.4210 (193.6350875d) Dec: -06 51 33.98 (-6.85944d) Equinox: J2000		V=12.5	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, ELLIPTICAL, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(5) NGC-4786	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(5) NGC-4786	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(5) NGC-4786	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(5) NGC-4786	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(5) NGC-4786	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 4786 (05) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F438W-1/4	(5) NGC-4786	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F438W	FLASH=11		Pattern 3, Exps 6-6 in NGC 4786 (05) (3)	120 Secs (480 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 5838 (06), failed Fri Dec 07 00:03:31 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 5838 (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

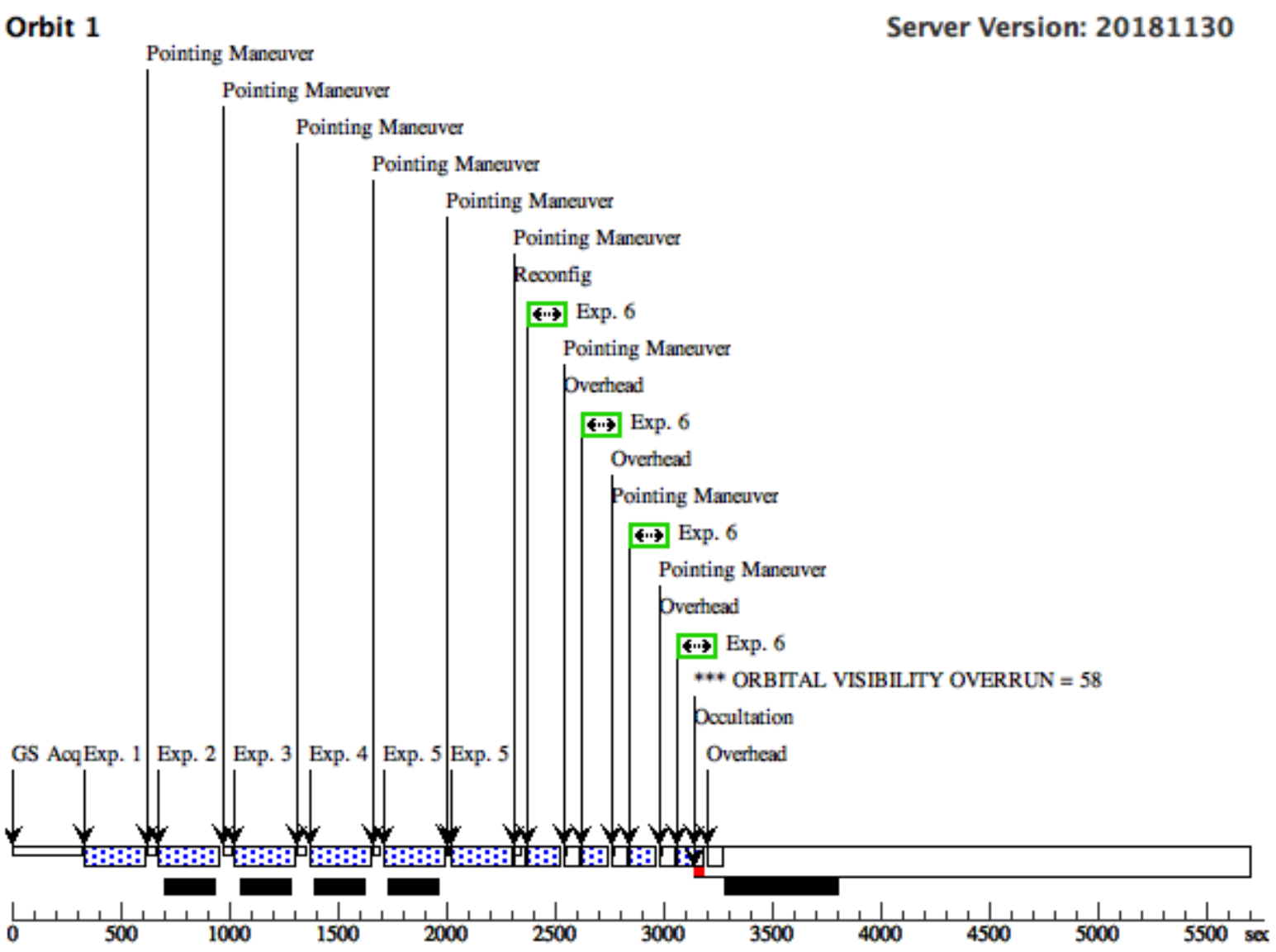
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	NGC-5838	RA: 15 05 26.2720 (226.3594667d) Dec: +02 05 57.68 (2.09936d) Equinox: J2000		V=11.5	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, LENTICULAR, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 5838 (06) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F555W-1/4	(6) NGC-5838	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F555W	FLASH=11		Pattern 3, Exps 6-6 in NGC 5838 (06) (3)	119 Secs (476 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 6861 (07), completed Fri Dec 07 00:03:31 GMT 2018

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Diagnostics

(NGC 6861 (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

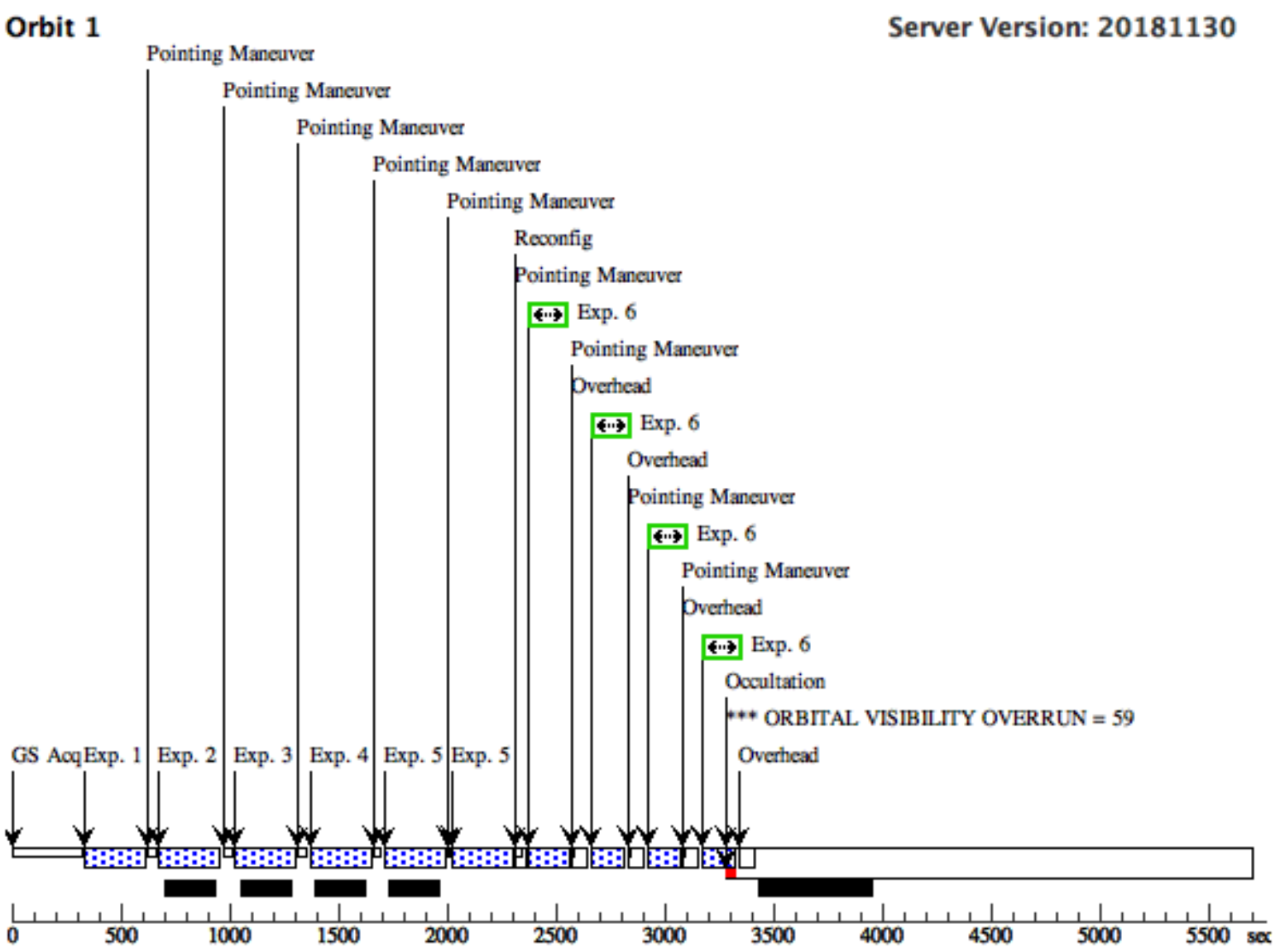
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	NGC-6861	RA: 20 07 19.4820 (301.8311750d) Dec: -48 22 12.94 (-48.37026d) Equinox: J2000		V=11.1	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, LENTICULAR, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(7) NGC-6861	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
2	F160W-2	(7) NGC-6861	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
3	F160W-3	(7) NGC-6861	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
4	F160W-4	(7) NGC-6861	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	 ***[1]***
5	F110W-1/2	(7) NGC-6861	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=10; SAMP-SEQ=STEP50		Pattern 2, Exps 5-5 in NGC 6861 (07) (2)	249.23203 Secs (498.464 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	 ***[1]***
6	F438W-1/4	(7) NGC-6861	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F438W	FLASH=11		Pattern 3, Exps 6-6 in NGC 6861 (07) (3)	155 Secs (620 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	 ***[1]***

Orbit Structure



Visit

Proposal 15226, NGC 5838 (56), implementation Fri Dec 07 00:03:31 GMT 2018

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, WFC3/UVIS

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(5)
(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		(6)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	NGC-5838	RA: 15 05 26.2720 (226.3594667d) Dec: +02 05 57.68 (2.09936d) Equinox: J2000		V=11.5	Reference Frame: SIMBAD

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[DUST LANE, LENTICULAR, NUCLEUS]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F160W-1	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.635, -38.747		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
2	F160W-2	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG -38.828, 38.554		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
3	F160W-3	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.656,38.747		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
4	F160W-4	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=10; SAMP-SEQ=STEP50	POS TARG 38.828,-38.554		249.23203 Secs (249.232 Secs) *[==>]*	*[1]*
5	F110W-1/2	(6) NGC-5838	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=8; SAMP-SEQ=STEP100		Pattern 2, Exps 5-5 in NGC 5838 (56) (2)	199.231 Secs (398.462 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]*	*[1]*
6	F555W-1/4	(6) NGC-5838	WFC3/UVIS, ACCUM, UVIS2-M1K1C-SUB	F555W	FLASH=11		Pattern 3, Exps 6-6 in NGC 5838 (56) (3)	129 Secs (516 Secs) *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	*[1]*

Orbit Structure