17919 - A legacy epoch for Hubble's optical jets: a reference for the future

Cycle: 32, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
Dr. Eileen T Meyer (PI) (Contact)	**University of Maryland Baltimore County**
Dr. Onic I. Shuvo (CoI)	University of Maryland Baltimore County
Dr. Roeland P. van der Marel (CoI)	Space Telescope Science Institute
Dr. William B. Sparks (CoI)	SETI Institute
Prof. Eric S. Perlman (CoI)	Florida Institute of Technology
Dr. Markos Georganopoulos (CoI)	University of Maryland Baltimore County
Dr. Marco Chiaberge (CoI) (ESA Member)	Space Telescope Science Institute - ESA - JWST
Dr. Jay Anderson (CoI)	Space Telescope Science Institute

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) 3C15	ACS/WFC	1	14-Mar-2025 19:00:14.0	yes
02	(2) 3C66B	ACS/WFC	1	14-Mar-2025 19:00:15.0	yes
03	(3) 3C78	ACS/WFC	1	14-Mar-2025 19:00:16.0	yes
04	(4) 3C346	ACS/WFC	1	14-Mar-2025 19:00:16.0	yes
05	(5) 3C264	ACS/WFC	1	14-Mar-2025 19:00:17.0	yes
06	(6) 4C04.77	ACS/WFC	1	14-Mar-2025 19:00:18.0	yes
07	(7) PKS0521-365	ACS/WFC	1	14-Mar-2025 19:00:19.0	yes
08	(8) M87	ACS/WFC	1	14-Mar-2025 19:00:19.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
09	(9) 4C00.58	ACS/WFC	1	14-Mar-2025 19:00:20.0	yes
10	(10) 3C371	ACS/WFC	1	14-Mar-2025 19:00:21.0	yes
11	(11) 3C273	ACS/WFC	1	14-Mar-2025 19:00:21.0	yes
12	(12) 3C403.0	ACS/WFC	1	14-Mar-2025 19:00:22.0	yes

12 Total Orbits Used

ABSTRACT

While we have long known that jets from super-massive black holes exhibit highly relativistic speeds on parsec scales from radio interferometry, it is not generally known how the jet evolves on kpc to Mpc scales, where the jet leaves the host galaxy and begins to interact with the intergalactic medium, with implications for our understanding of jet structure and quantifying the energy carried by the jet into the external environment. With the development of state-of-the-art astrometry techniques and new data from the Gaia mission, it is now possible register images of nearby jets first observed by HST in the 1990s to extremely high precision, reaching accuracies on proper motions of better than 0.3 mas/year. This enabled the dramatic finding of colliding superluminal knots in the jet of 3C264 and helical motions of plasma on kpc scales in M87. We propose a new epoch of joint HST/JWST observations on the 12 nearby optical jets which are essentially a legacy sample of monitored sources with observations spanning nearly 3 decades. This sample is an extremely unique one, and only HST and JWST can provide the precision astrometry and sensitivity needed to track the motion of plasma in jets on kpc scales.

OBSERVING DESCRIPTION

This is a proposal to re-observe the most well-known and well-observed of the optical synchrotron jets, many of which were first discovered/observed by Hubble in the 1990s. The very fast bulk motion of the plasma, near the speed of light, causes "superluminal" motion which can be traced in repeated HST observations over only a few years. The 12 targets in this study have most recently been observed with ACS/WFC in the F606W filter, and this bridge program will obtain a new observation in the coming HST cycle, roughly concurrent (within ~ 1 year) of matching JWST optical/R-band imaging of the same targets.

Here, we are essentially repeating an observation that has been carried out 1-3 times in the recent past with identical instrument setups to minimize systematic variability in the measurements. Most targets host bright cores embedded in a giant elliptical galaxy. Because these cores are variable and have been known to saturate the detector in a high state, we have specified orient constraints in most cases, to keep bright saturation spikes from

overrunning the jet since this would severely impact the science. However there are no time constraints on the observations, and we have been careful to maximize the ORIENT windows to ease the effects on scheduling.

Visit

Proposal 17919, 3c15 (01), implementation Fri Mar 14 23:00:22 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 3C 15 is an optical jet hosted by an elliptical galaxy. The core is sufficiently dim that saturation of the core is not a risk.

Fixed Targets

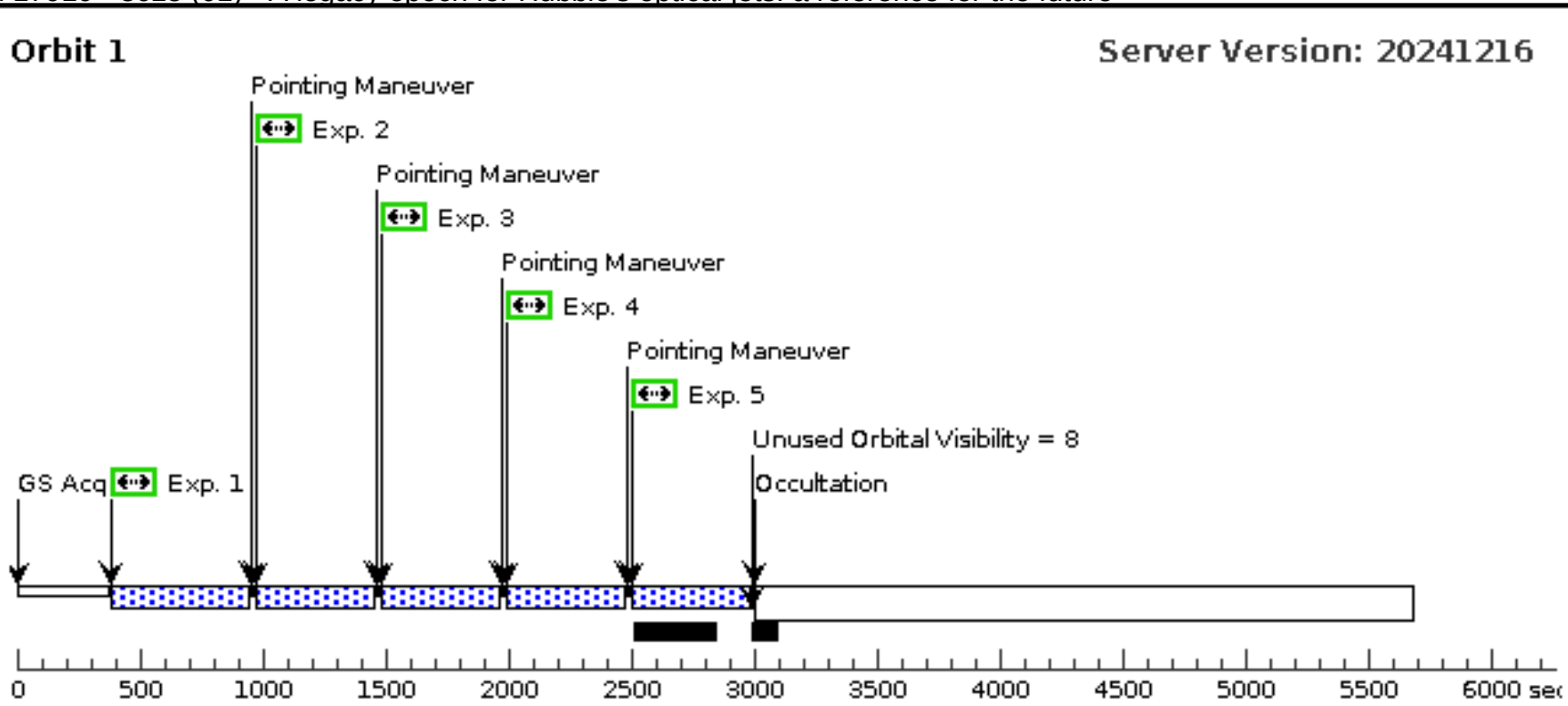
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	3C15	RA: 00 37 4.1107 (9.2671279d) Dec: -01 09 8.41 (-1.15234d) Equinox: J2000	Epoch of Position: 2000	V=16	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(1) 3C15	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		352 Secs (352 Secs)	
								[==>]	***[1]***
2		(1) 3C15	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.15914, 0.23969		352 Secs (352 Secs)	
								[==>]	***[1]***
3		(1) 3C15	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.31641, 0.08319		352 Secs (352 Secs)	
								[==>]	***[1]***
4		(1) 3C15	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.07990, 0.19413		352 Secs (352 Secs)	
								[==>]	***[1]***
5		(1) 3C15	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.28771, 0.28896		352 Secs (352 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c66B (02), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: The appearance of the target in the optical is mainly dominated by the host elliptical galaxy which is moderately bright (Vmag=15). The jet itself runs to the northwest (PA approx 45 deg N->W) and is about 10" arcseconds long.

Fixed Targets

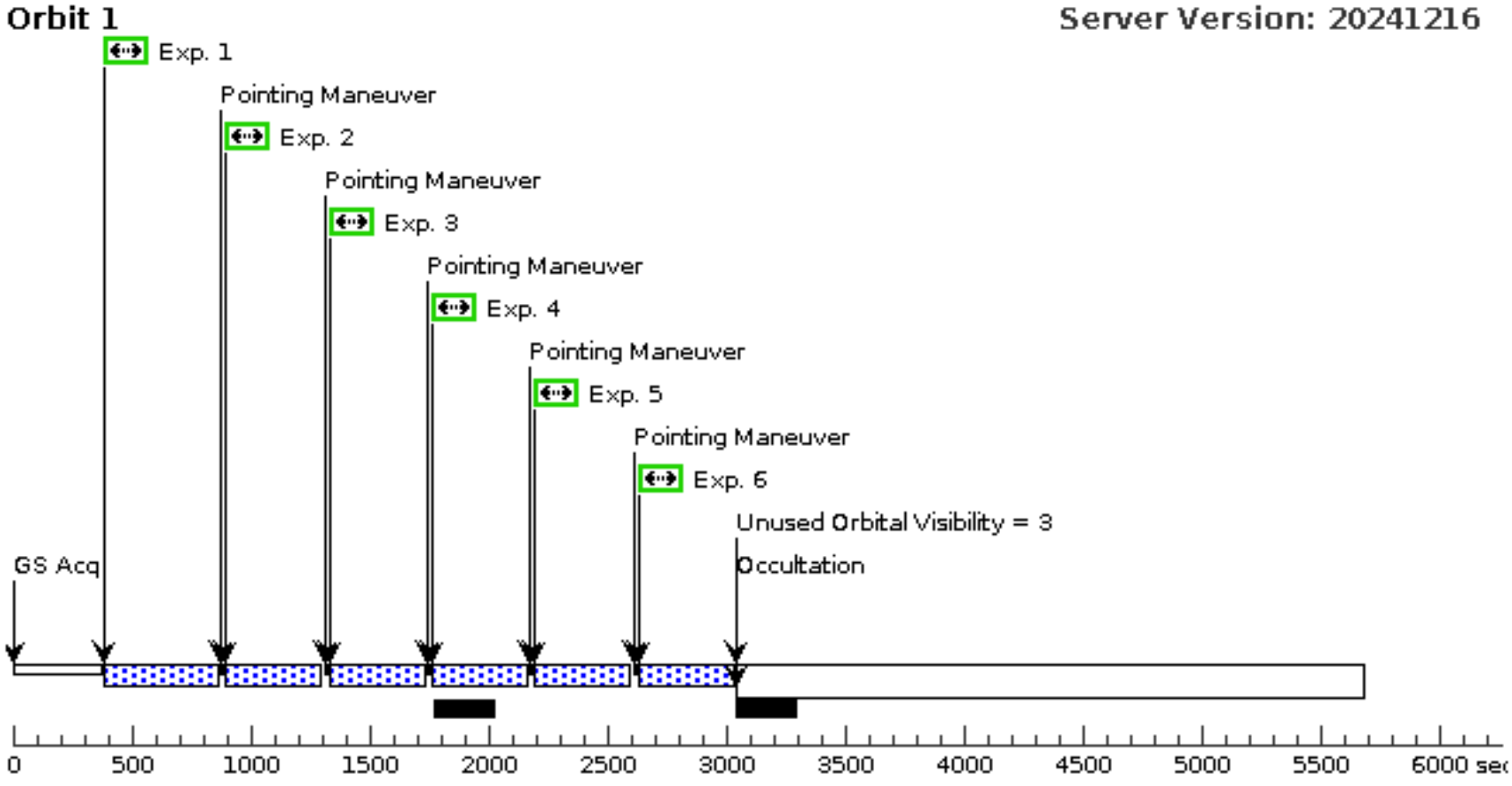
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	3C66B	RA: 02 23 11.4112 (35.7975467d) Dec: +42 59 31.39 (42.99205d) Equinox: J2000	Epoch of Position: 2000	V=14.81	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		275 Secs (275 Secs)	
								[==>]	***[1]***
2		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.20646, 0.14754		275 Secs (275 Secs)	
								[==>]	***[1]***
3		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.41257, 0.24554		275 Secs (275 Secs)	
								[==>]	***[1]***
4		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.12505, 0.34768		275 Secs (275 Secs)	
								[==>]	***[1]***
5		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.33111, 0.42753		275 Secs (275 Secs)	
								[==>]	***[1]***
6		(2) 3C66B	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.53746 ,0.56020		275 Secs (275 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c78 (03), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: The target is an optical jet hosted by a Vmag=13.8 elliptical galaxy. The field is relatively empty with no major nearby bright sources to require any special considerations. Orent constraints are specified to ensure that the bright core of the galaxy does not produce any saturation spikes which could over run the jet. We are using a subarray to enable shorter exposures to reduce saturation in the bright core.

Fixed Targets

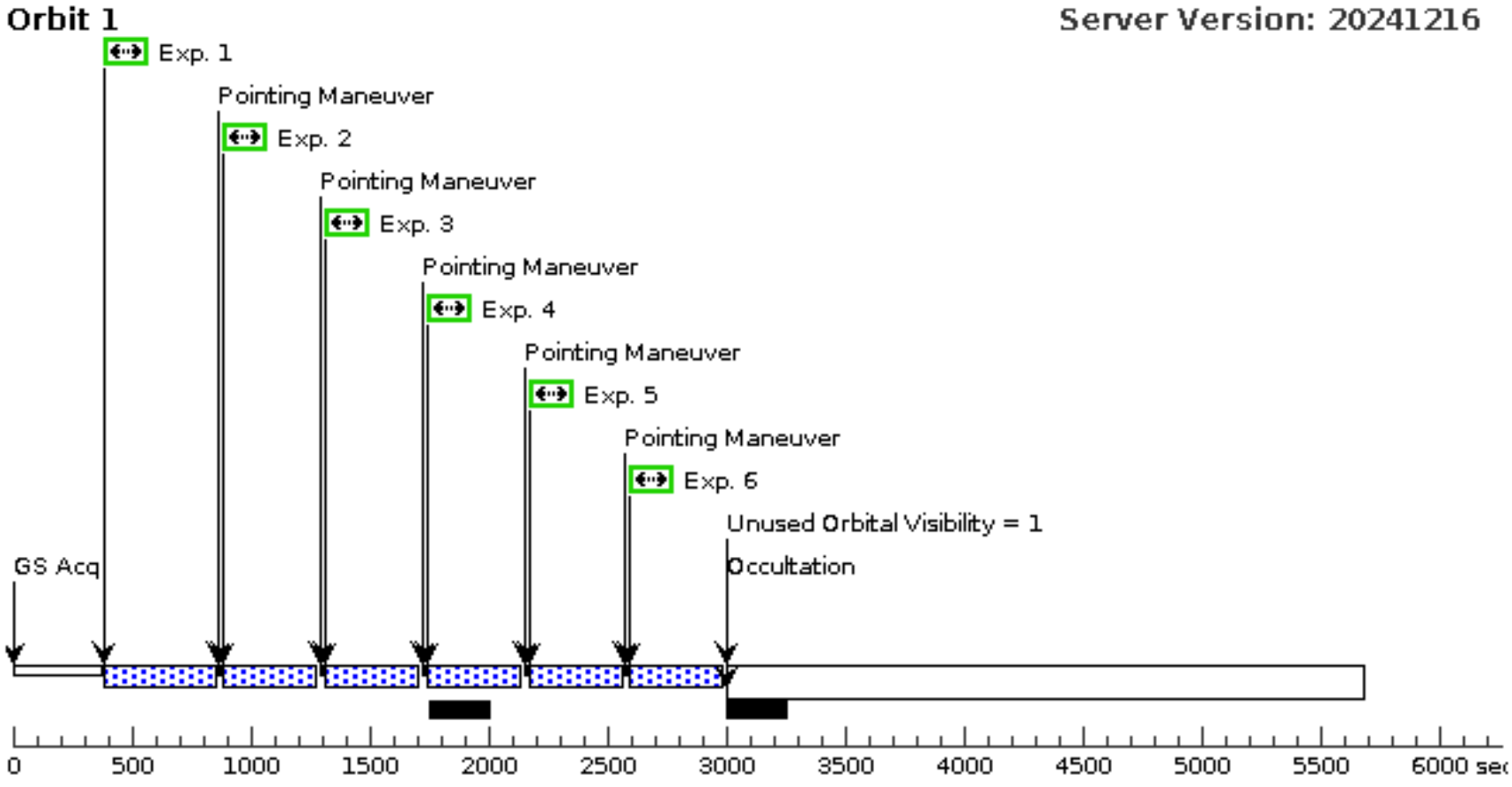
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	3C78	RA: 03 08 26.2238 (47.1092658d) Dec: +04 06 39.30 (4.11092d) Equinox: J2000	Parallax: 3.472E-4" Epoch of Position: 2000	V=16	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		268 Secs (268 Secs)	
								[==>]	***[1]***
2		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.20646, 0.14754		268 Secs (268 Secs)	
								[==>]	***[1]***
3		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.41257, 0.24554		268 Secs (268 Secs)	
								[==>]	***[1]***
4		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.12505, 0.34768		268 Secs (268 Secs)	
								[==>]	***[1]***
5		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.33111, 0.42753		268 Secs (268 Secs)	
								[==>]	***[1]***
6		(3) 3C78	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.53746, 0.56020		268 Secs (268 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c346 (04), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: The target is an optical jet hosted by one of two merging elliptical galaxies. The core is sufficiently dim in the most recent epoch of imaging to allay concerns about saturation and diffraction spikes over-running the jet so no orient constraints are given.

Fixed Targets

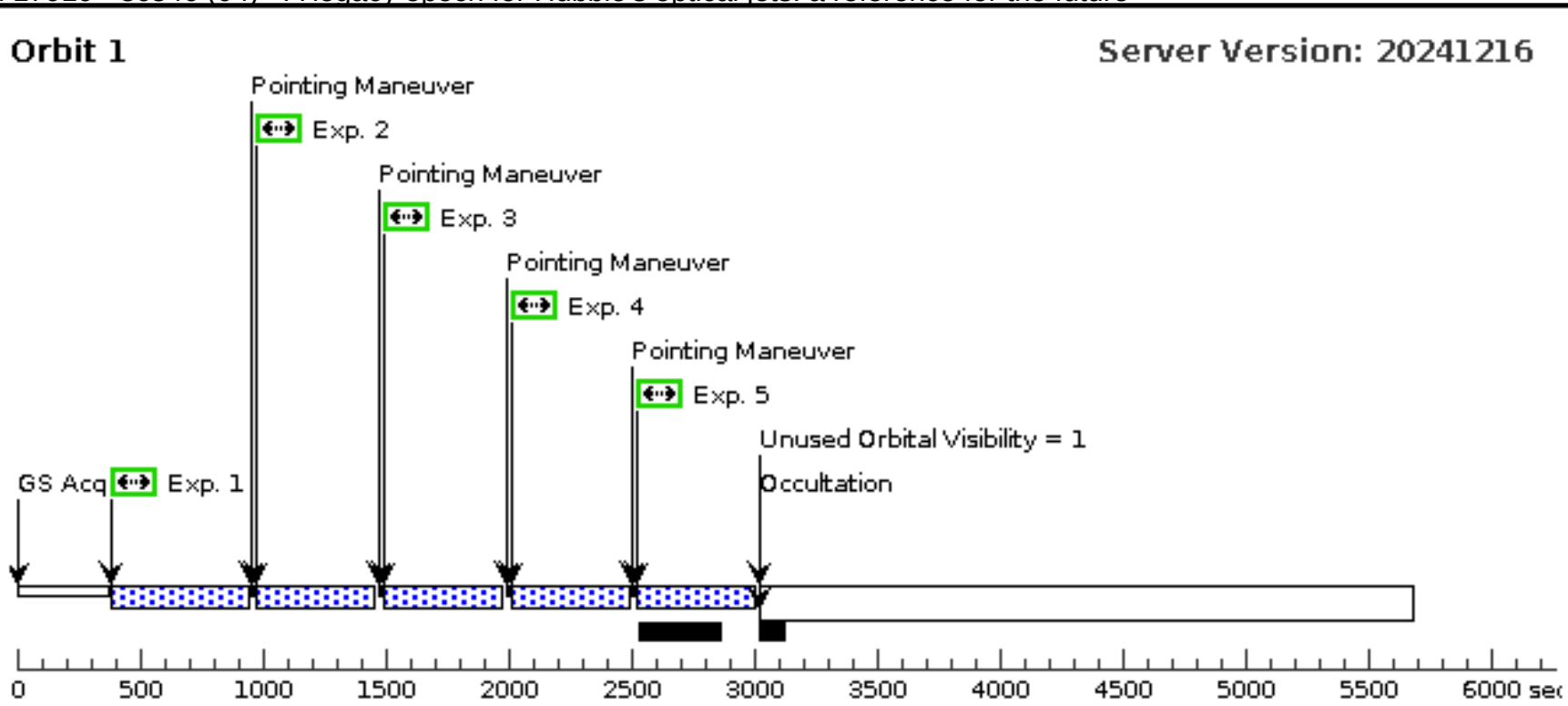
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	3C346	RA: 16 43 48.6050 (250.9525208d) Dec: +17 15 49.43 (17.26373d) Equinox: J2000	Epoch of Position: 2000	V=14	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(4) 3C346	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		357 Secs (357 Secs)	
								[==>]	***[1]***
2		(4) 3C346	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.07990, 0.19413		357 Secs (357 Secs)	
								[==>]	***[1]***
3		(4) 3C346	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.15914, 0.23969		357 Secs (357 Secs)	
								[==>]	***[1]***
4		(4) 3C346	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.31641, 0.08319		357 Secs (357 Secs)	
								[==>]	***[1]***
5		(4) 3C346	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.28771, 0.28896		357 Secs (357 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c264 (05), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 340D TO 360 D; ORIENT 248D TO 275 D; ORIENT 153D TO 186 D; ORIENT 72D TO 97 D

Comments: The target is an optical jet hosted by a Vmag=13.8 elliptical galaxy. The field is relatively empty with no major nearby bright sources to require any special considerations. Orent constraints are specified to ensure that the bright core of the galaxy does not produce any saturation spikes which could over run the jet. We are using a subarray to enable shorter exposures to reduce saturation in the bright core.

Fixed Targets

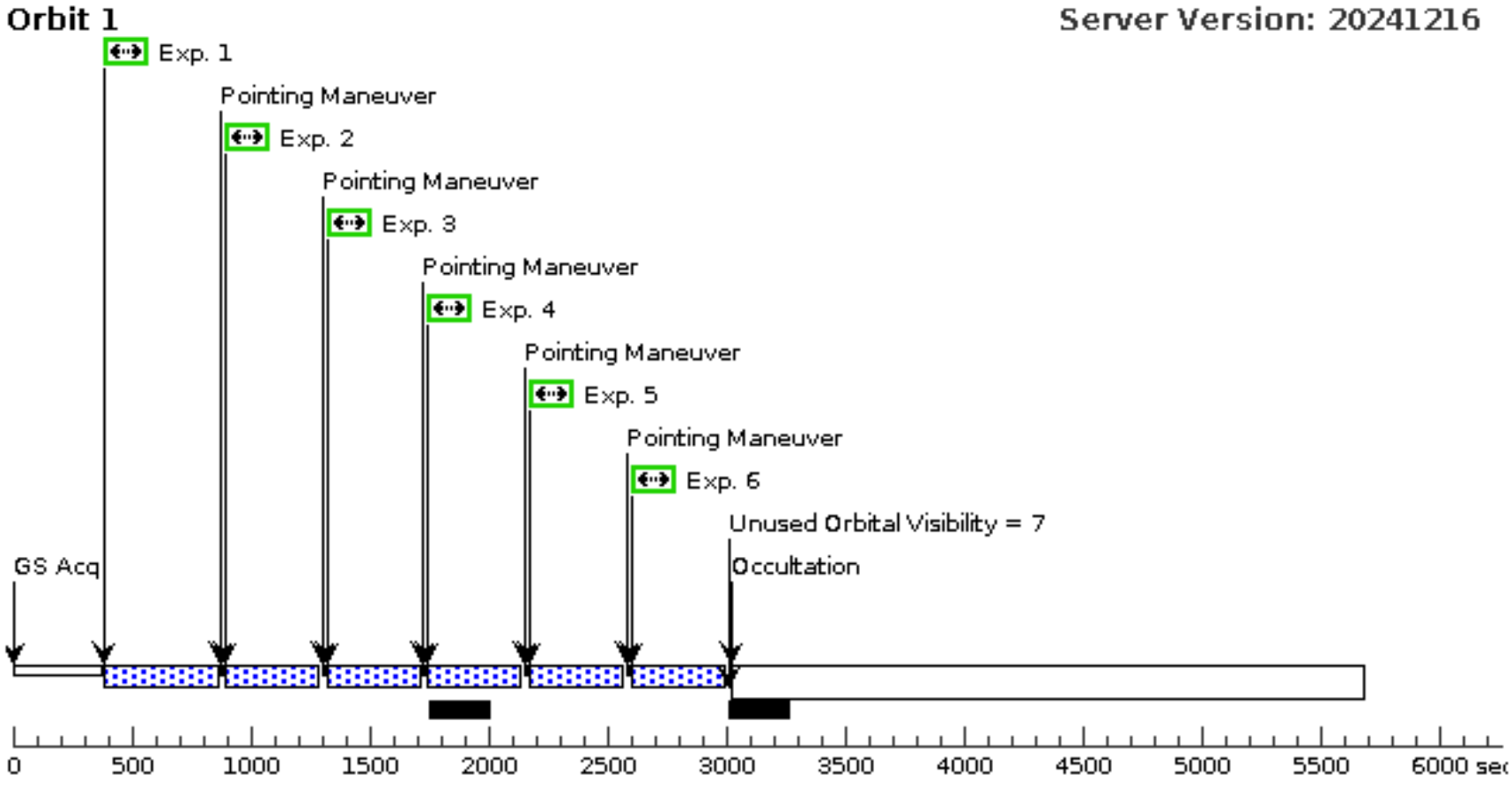
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	3C264	RA: 11 45 5.0090 (176.2708708d) Dec: +19 36 22.74 (19.60632d) Equinox: J2000	Epoch of Position: 2000	V=13.97	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		270 Secs (270 Secs)	
								[==>]	***[1]***
2		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.20646, 0.14754		270 Secs (270 Secs)	
								[==>]	***[1]***
3		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.41257, 0.24554		270 Secs (270 Secs)	
								[==>]	***[1]***
4		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.12505, 0.34768		270 Secs (270 Secs)	
								[==>]	***[1]***
5		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.33111, 0.42753		270 Secs (270 Secs)	
								[==>]	***[1]***
6		(5) 3C264	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.53746, 0.56020		270 Secs (270 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 4c04.77 (06), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 80D TO 95 D; ORIENT 173D TO 185 D; ORIENT 250D TO 278 D; ORIENT 357D TO 5 D

Comments: The target is an optical jet, of several arcseconds length pointed in the northwest direction. The host galaxy is an elliptical with a bright core. We have used orient constraints to avoid having the diffraction spikes run over the jet, also taking into account other nearby bright sources.

Fixed Targets

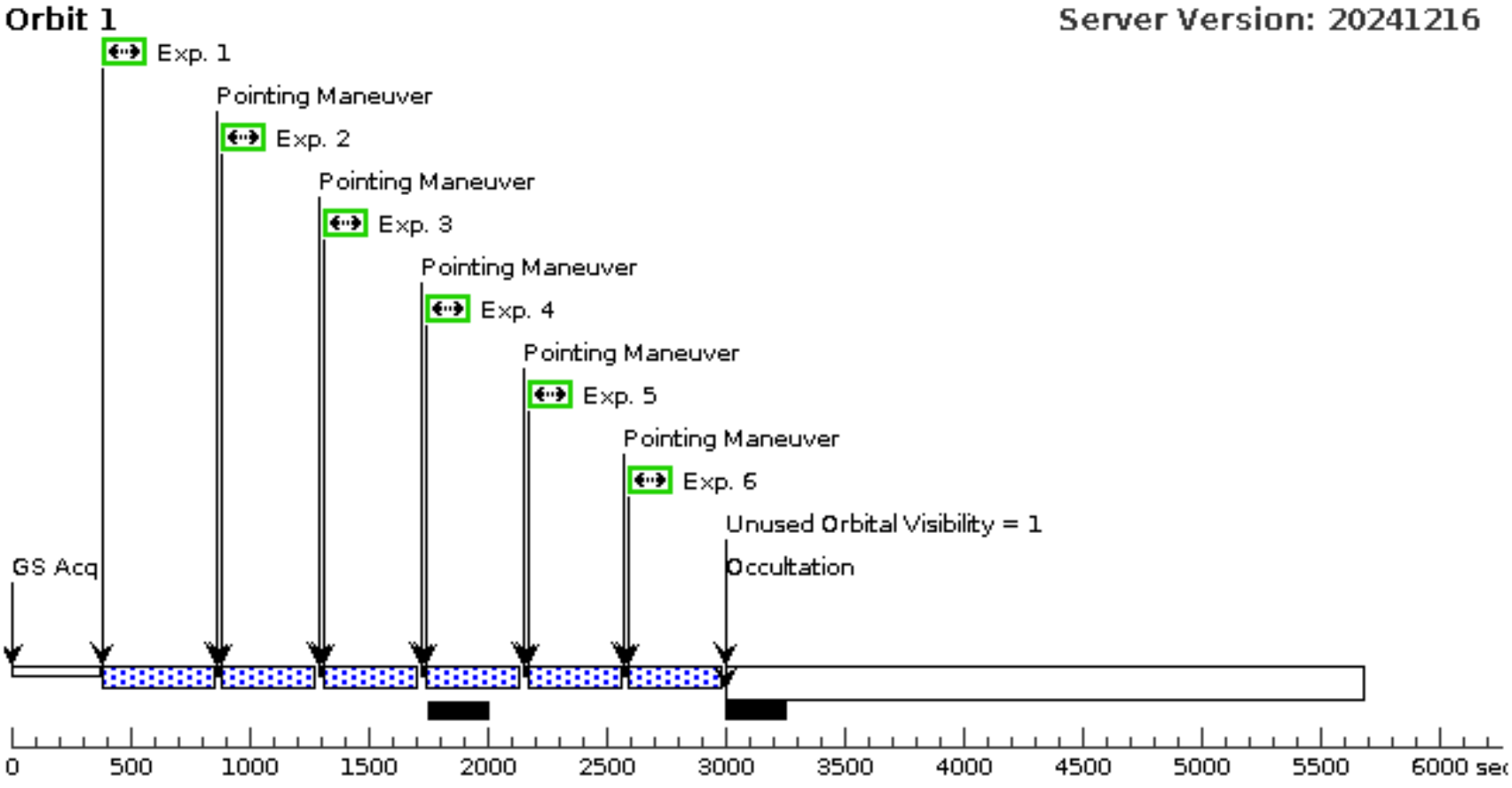
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	4C04.77	RA: 22 04 17.6523 (331.0735513d) Dec: +04 40 2.02 (4.66723d) Equinox: J2000	Epoch of Position: 2000	V=15.2	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3,3		268 Secs (268 Secs)	
								[==>]	***[1]***
2		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3.20646, 3.14754		268 Secs (268 Secs)	
								[==>]	***[1]***
3		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3.41257, 3.24554		268 Secs (268 Secs)	
								[==>]	***[1]***
4		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3.12505, 3.34768		268 Secs (268 Secs)	
								[==>]	***[1]***
5		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3.33111, 3.42753		268 Secs (268 Secs)	
								[==>]	***[1]***
6		(6) 4C04.77	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 3.53746, 3.56020		268 Secs (268 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, pks0521-365 (07), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 350D TO 360 D; ORIENT 80D TO 85 D; ORIENT 255D TO 272 D; ORIENT 172D TO 180 D

Comments: Target is an optical jet approximately 45 degrees south of west. The host elliptical has a bright core - Vmag = 13. We have thus adopted relatively short exposures, and orient constraints to avoid diffraction spikes over the jet.

Fixed Targets

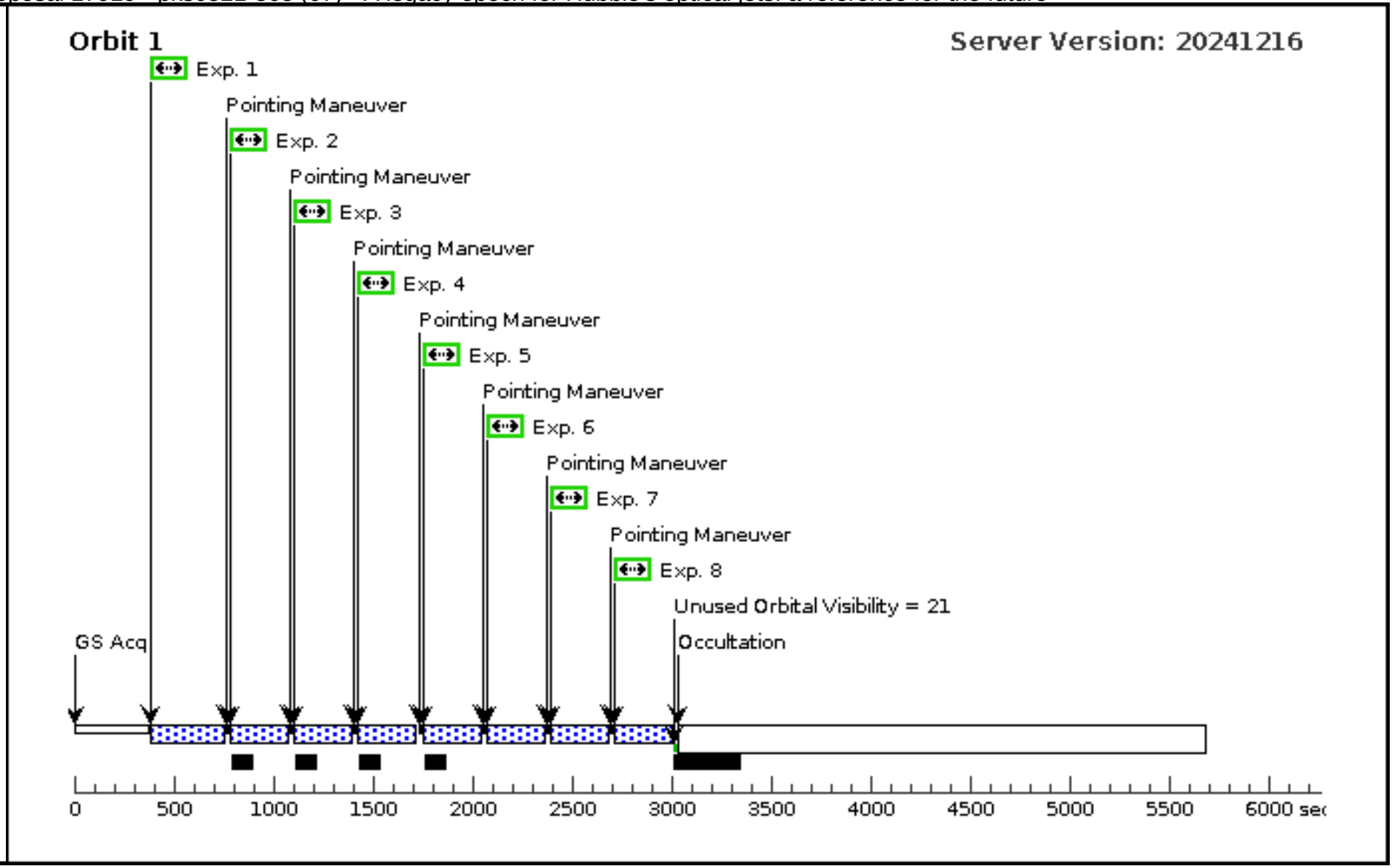
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	PKS0521-365	RA: 05 22 57.9844 (80.7416017d) Dec: -36 27 30.85 (-36.45857d) Equinox: J2000	Parallax: 9.17E-5" Epoch of Position: 2000	V=14.62	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		159 Secs (159 Secs) *[==>]*	 ***[1]***
2		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.07478, 0.15414		159 Secs (159 Secs) *[==>]*	 ***[1]***
3		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.11257, 0.31787		159 Secs (159 Secs) *[==>]*	 ***[1]***
4		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.18557, 0.07583		159 Secs (159 Secs) *[==>]*	 ***[1]***
5		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.19863, 0.23771		159 Secs (159 Secs) *[==>]*	 ***[1]***
6		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.27337, 0.39184		159 Secs (159 Secs) *[==>]*	 ***[1]***
7		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.30935, 0.15940		159 Secs (159 Secs) *[==>]*	 ***[1]***
8		(7) PKS0521-365	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.38408, 0.31353		159 Secs (159 Secs) *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 17919, m87 (08), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 18.5D TO 88.5 D; ORIENT 118.5D TO 173.5 D; ORIENT 198.5D TO 268.5 D; ORIENT 298.5D TO 353.5 D

Comments: Orient constraints are specified to avoid the bright core from producing diffraction spikes over the jet. POS TARGS and ORIENT constraints are used both for dithering and to place the target near to the WFC1 readouts to lessen CTE and to avoid having bright sources too near to the chip edge.

Fixed Targets

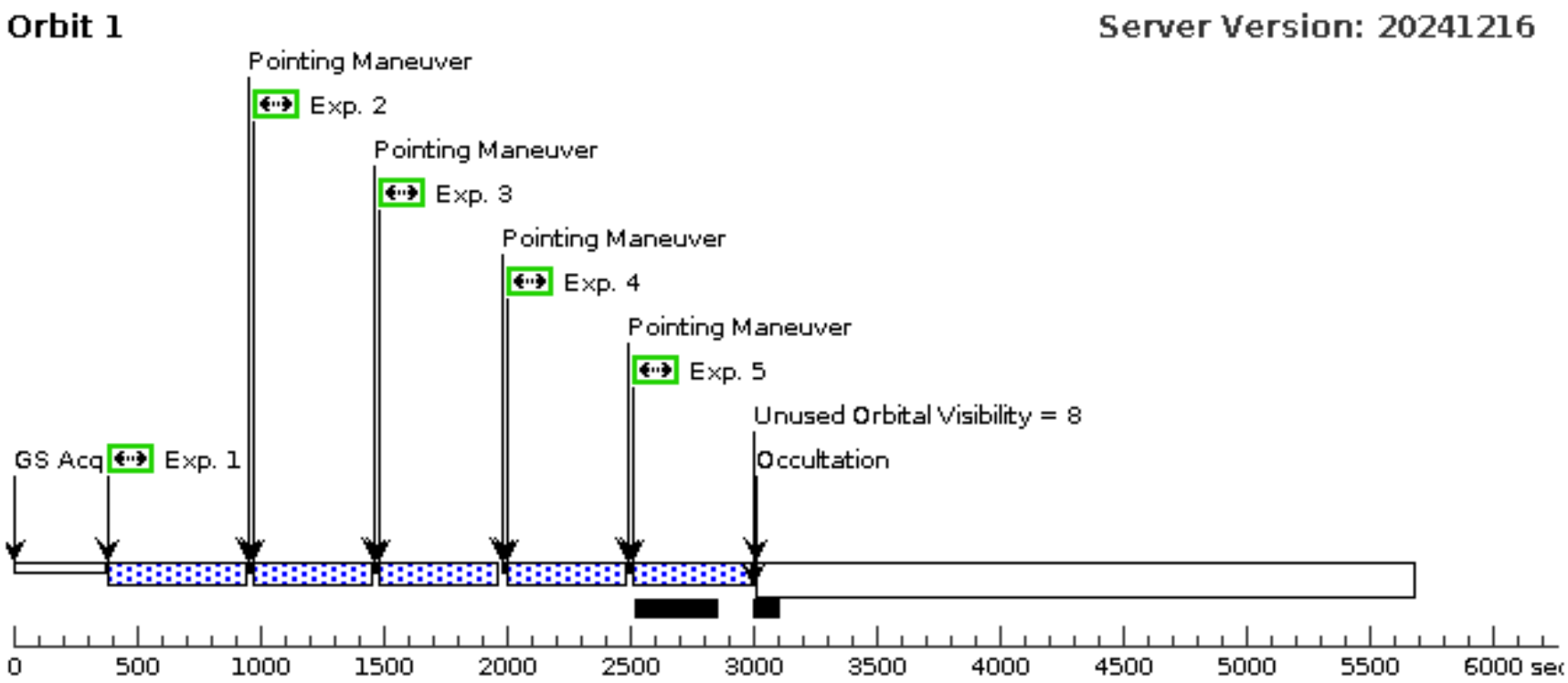
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	M87	RA: 12 30 50.2413 (187.7093388d) Dec: +12 23 28.00 (12.39111d) Equinox: J2000	Epoch of Position: 2000	V=8.63	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(8) M87	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 9,9		354 Secs (354 Secs)	
								[==>]	***[1]***
2		(8) M87	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 9.07990, 9.19413		354 Secs (354 Secs)	
								[==>]	***[1]***
3		(8) M87	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 9.15914, 9.23969		354 Secs (354 Secs)	
								[==>]	***[1]***
4		(8) M87	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 9.31641, 9.08319		354 Secs (354 Secs)	
								[==>]	***[1]***
5		(8) M87	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 9.28771, 9.28896		354 Secs (354 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 4C00.58 (09), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 4C 00.58 is an optical jet hosted by an elliptical galaxy. The core is sufficiently dim that saturation of the core is not a risk.

Fixed Targets

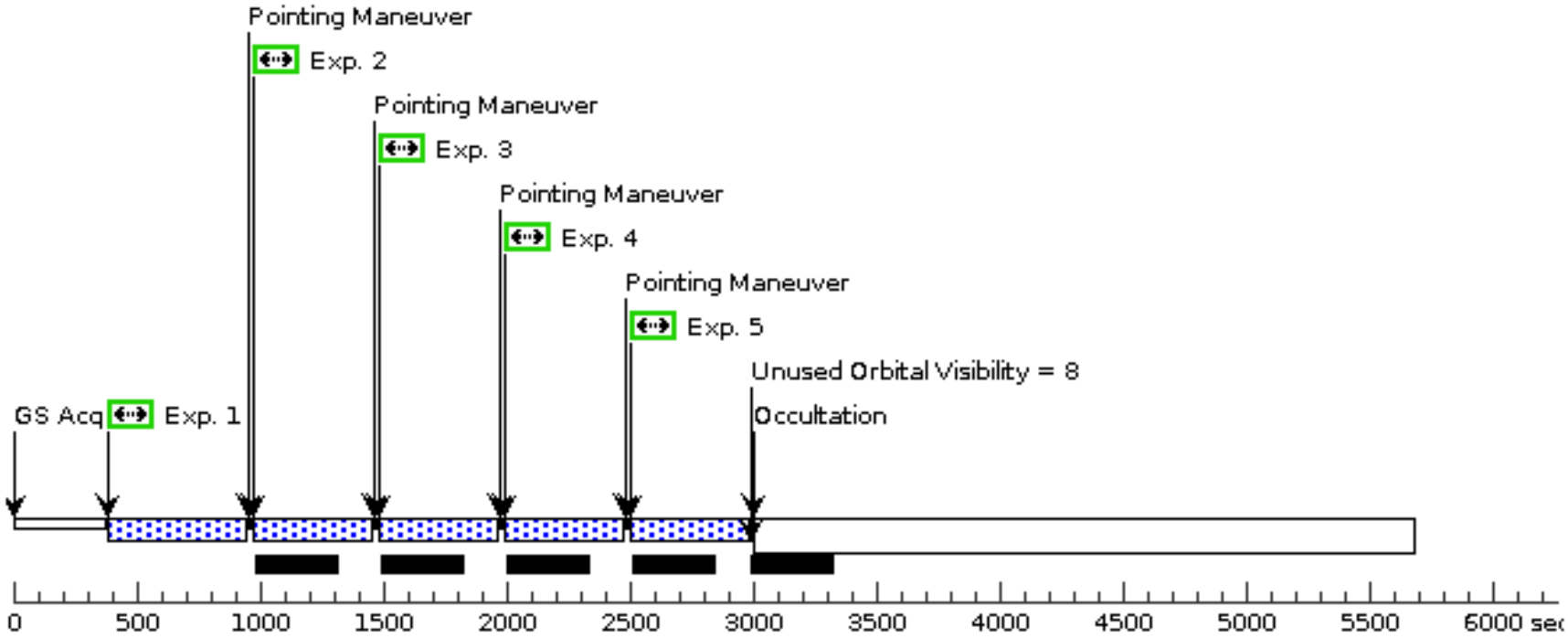
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	4C00.58	RA: 16 06 12.7300 (241.5530417d) Dec: +00 00 27.36 (.00760d) Equinox: J2000	Epoch of Position: 2000	V=16.5	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(9) 4C00.58	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0,0		352 Secs (352 Secs)	
								[==>]	***[1]***
2		(9) 4C00.58	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.15914, 0.23969		352 Secs (352 Secs)	
								[==>]	***[1]***
3		(9) 4C00.58	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.31641, 0.08319		352 Secs (352 Secs)	
								[==>]	***[1]***
4		(9) 4C00.58	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.07990, 4.19413		352 Secs (352 Secs)	
								[==>]	***[1]***
5		(9) 4C00.58	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.28771, 4.28896		352 Secs (352 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c371 (10), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 18D TO 37 D; ORIENT 115D TO 133 D; ORIENT 200D TO 220 D; ORIENT 292D TO 300 D

Comments: The target is an optical jet pointed towards the southwest, approximately 6 arcseconds long. The host galaxy and central nucleus are very bright (V-mag 12) and saturated in the previous imaging, so we have opted for relatively short exposures ~220 seconds, to lessen the diffraction spikes/core saturation. Orient constraints are specified to avoid the bright core from producing diffraction spikes over the jet.

Fixed Targets

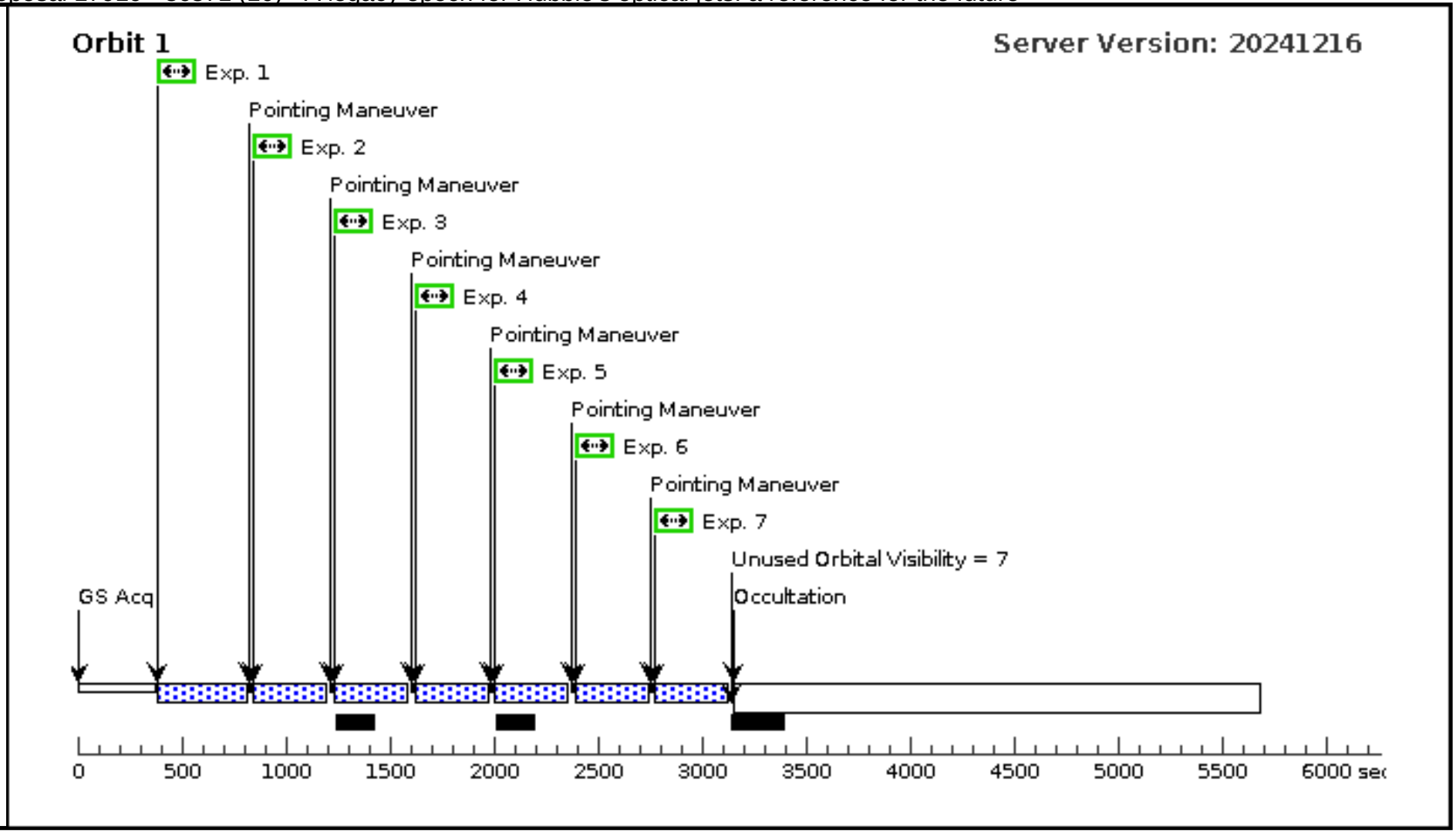
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	3C371	RA: 18 06 50.6805 (271.7111688d) Dec: +69 49 28.11 (69.82447d) Equinox: J2000	Parallax: 0.0031" Epoch of Position: 2000	V=14.22	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		227 Secs (227 Secs)	
								[==>]	***[1]***
2		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.1740,0.1850		227 Secs (227 Secs)	
								[==>]	***[1]***
3		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.3232,0.1325		227 Secs (227 Secs)	
								[==>]	***[1]***
4		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.1005,0.3305		227 Secs (227 Secs)	
								[==>]	***[1]***
5		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.5075,0.0505		227 Secs (227 Secs)	
								[==>]	***[1]***
6		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.6815,0.2855		227 Secs (227 Secs)	
								[==>]	***[1]***
7		(10) 3C371	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.8300,0.1735		227 Secs (227 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3c273 (11), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: ORIENT 324.7D TO 29.7 D; ORIENT 59.7D TO 114.7 D; ORIENT 144.7D TO 209.7 D; ORIENT 239.7D TO 294.7 D

Fixed Targets

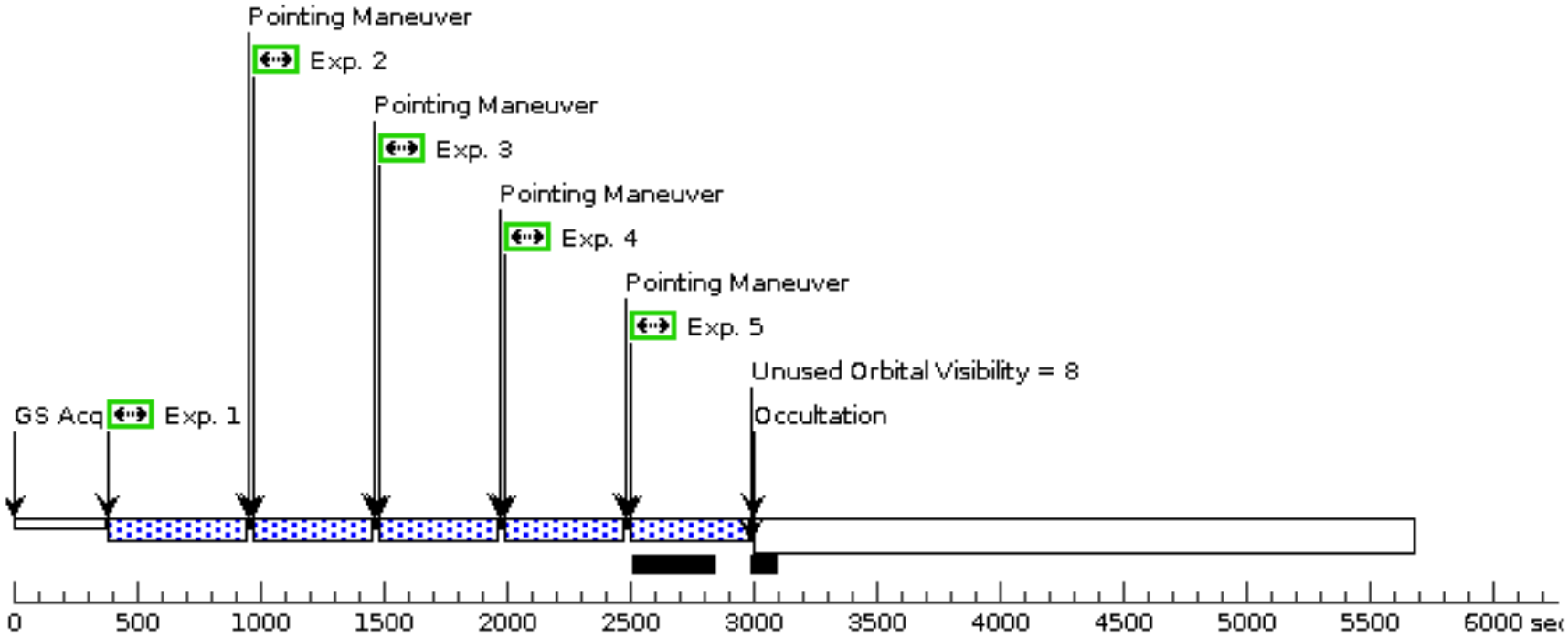
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	3C273	RA: 12 29 6.6998 (187.2779158d) Dec: +02 03 8.60 (2.05239d) Equinox: J2000	Parallax: 1.08E-5" Epoch of Position: 2000	V=14.83	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) 3C273	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0,0		352 Secs (352 Secs)	
								[==>]	***[1]***
2		(11) 3C273	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.15914 ,0.23969		352 Secs (352 Secs)	
								[==>]	***[1]***
3		(11) 3C273	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.31641, 0.08319		352 Secs (352 Secs)	
								[==>]	***[1]***
4		(11) 3C273	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.07990, 0.19413		352 Secs (352 Secs)	
								[==>]	***[1]***
5		(11) 3C273	ACS/WFC, ACCUM, WFC1B-2K	F606W		POS TARG 0.28771, 0.28896		352 Secs (352 Secs)	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 17919, 3C403 (12), implementation Fri Mar 14 23:00:23 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	3C403.0	RA: 19 52 15.7997 (298.0658321d) Dec: +02 30 24.24 (2.50673d) Equinox: J2000	Epoch of Position: 2000	V=16.5	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[JET, RADIO GALAXY]

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) 3C403.0	ACS/WFC, ACCUM, WFC1	F606W				352 Secs (352 Secs)	
								[==>]	***[1]***
2		(12) 3C403.0	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.15914 , 0.23969		352 Secs (352 Secs)	
								[==>]	***[1]***
3		(12) 3C403.0	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.31641 ,0.08319		352 Secs (352 Secs)	
								[==>]	***[1]***
4		(12) 3C403.0	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.07990 , 0.19413		352 Secs (352 Secs)	
								[==>]	***[1]***
5		(12) 3C403.0	ACS/WFC, ACCUM, WFC1	F606W		POS TARG 0.28771 ,0.28896		352 Secs (352 Secs)	
								[==>]	***[1]***

Orbit Structure