17146 - A High-Definition View of the Baryon Cycle in Massive Galaxies

Cycle: 30, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*
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Dr. Dylan Nelson (CoI) (ESA Member)	Universitat Heidelberg

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) B1152+199AB	STIS/CCD STIS/FUV-MAMA	2	15-Dec-2025 21:00:14.0	yes
02	(2) J0158-4325AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:15.0	yes
03	(3) HE2149-2745AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:15.0	yes
04	(3) HE2149-2745AB	STIS/CCD STIS/NUV-MAMA	2	15-Dec-2025 21:00:16.0	yes

Visit	***Targets used in Visit***	***Configurations used in Visit***	***Orbits Used***	***Last Orbit Planner Run***	***OP Current with Visit?***
08	(5) J1355-2257AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:17.0	yes
09	(5) J1355-2257AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:17.0	yes
10	(6) J0246-0825AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:18.0	yes
11	(6) J0246-0825AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:19.0	yes
12	(6) J0246-0825AB	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	15-Dec-2025 21:00:20.0	yes
13	(6) J0246-0825AB	STIS/CCD STIS/NUV-MAMA	2	15-Dec-2025 21:00:20.0	yes
14	(4) J1206+4322A	STIS/CCD STIS/FUV-MAMA	2	15-Dec-2025 21:00:21.0	yes
15	(4) J1206+4322A (7) J1206+4322B-OFFSET	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:22.0	yes
16	(4) J1206+4322A (7) J1206+4322B-OFFSET	STIS/CCD STIS/NUV-MAMA	4	15-Dec-2025 21:00:22.0	yes
17	(6) J0246-0825AB	STIS/CCD STIS/NUV-MAMA	2	15-Dec-2025 21:00:23.0	yes
18	(6) J0246-0825AB	STIS/CCD STIS/NUV-MAMA	2	15-Dec-2025 21:00:24.0	yes
19	(6) J0246-0825AB	STIS/CCD STIS/FUV-MAMA	3	15-Dec-2025 21:00:25.0	yes
20	(4) J1206+4322A (7) J1206+4322B-OFFSET	STIS/CCD STIS/FUV-MAMA	2	15-Dec-2025 21:00:25.0	yes

45 Total Orbits Used

ABSTRACT

Multiply lensed QSOs provide a powerful means to spatially and spectrally resolve gas flows in galaxies and answer outstanding questions on the baryon cycle and its impact on galaxy evolution. They probe multiple locations in the inner regions (d<10 kpc) of the massive lensing galaxies, unveiling the complex properties of diffuse gas from interstellar to circumgalatic space. While most massive galaxies are quiescent, recent studies reveal that they can harbor significant cool (T~1E4 K) gas in their halos. Such findings challenge the notion that their lack of star formation is caused by an absence of gas, and imply that complex feedback/environmental processes are at play. We have identified a sample of 8 massive (M_star>1E11 M_sun) lens galaxies at z=0.3-0.8, with 16 lensed QSO images suitable for UV spectroscopy (two per galaxy) situated at d<10 kpc. Two lensed QSOs have UV spectra available in the HST archive. We propose new STIS/UV spectroscopy with the G140L/G230L gratings for the remaining six QSOs. The wide spectral coverage enables detection of the full HI Lyman series, necessary to probe the bulk of the gas content, and various ionic metals tracing multiple gas ionization states. The main objectives are to (1) map N(HI) and its spatial variations on <10 kpc scales, (2) constrain the multiphase gas properties and explore their implications for feedback, and (3) characterize the chemical abundances and resolve the physical origin of the gas (aided by high-resolution spectra from the ground). Our program will provide critical insights into massive galaxy evolution and quadruple the number of massive galaxies at z>0 with spatially resolved multiphase gas properties.

OBSERVING DESCRIPTION

We will obtain low-resolution (R~1000) FUV and NUV spectra of six doubly imaged lensed QSOs using the MAMA detector of the Space Telescope Imaging Spectrograph (STIS). The primary goals of the proposed FUV spectroscopic observations are(1) determine N(HI) and its spatial variations in the ISM of the massive elliptical lens galaxies, and (2) constrain the chemical enrichment and physical origins of multiphase gas in massive quiescent galaxies.

Depending on the redshift of the lens galaxy (between z=0.31 and z=0.75), we will obtain STIS observations with either (1) the G140L grating or (2) a combination of the G140L and G230L gratings. In each case, the chosen STIS configuration will guarantee full coverage of the entire HI Lyman series and additional ionic metal species for two sightlines per lens galaxy. Because the six gravitationally lensed QSOs have images that are separated by between 1.1" and 3.0", the available long-slit mode on STIS allows both QSO images in each system to be observed simultaneously, thereby maximizing observing efficiency (with the exception of target J106+4322AB, for which each of the two images will be observed individually due to scheduling constraints)

Observing Strategy:

The observations will be performed in a series of individual visits, each consisting of between two and three HST orbits. As we plan to observe both images of each lensed QSO simultaneously, we require the STIS long slit (52"x0.2") to be aligned along the line connecting the two QSO images on the sky. This slit alignment corresponds to HST orientation (ORIENT) angles of between 45 and 298 degrees, using an offset angle of 45.35 degrees listed on Table 11.2 of the STIS Instrumental Hand Book. Additionally We also specify the alternate +180-deg rotated ORIENT values for the six lensed systems, in case it would help with schedulability. We allow a range of +/-0.5 degree (1-degree range) in the ORIENT angles. Given the 0.2"-wide long slit, the 1.1" to 3" separation of each pair, and the known PSF profile of the MAMA detector, our chosen range should still include a large majority (>80-90%) of the light from both QSO images in the slit while also allowing for flexibility in scheduling.

We note that for two of our targets, B1152+199AB and J0246-0825AB, we have imposed a special requirement "SCHEDULABILITY 70%" to ensure schedulability within the cycle 30 observing period. While this choice results in a modest decrease in orbital visibility (a few minutes per orbit), its impact on the expected data quality is minimal.

Onboard target acquisition of the brighter QSO image (image A) of each pair will be performed using STIS/CCD and the F28X50LP filter in the first orbit of each visit. We have confirmed that there is no brighter point source within a 5" radius from each of our target. Following guide star acquisition and target acquisition (or guide star reacquisition for subsequent orbits), we request 2 sub-exposures for each orbit, corresponding to 2 dither positions of the STIS-ALONG-SLIT dither pattern. To ensure that all spectra taken in different orbits will fall on different areas of the FUV-MAMA detector, we will employ a four- (for two-orbit visits) or six-point (for three-orbit visits) dither pattern with a separation of 0.3" between successive steps.
Note that for target 7 (image B of J1206+4332), we will acquire the target by first acquiring the brighter image A, and then applying a small (~3") offset to reach image B.

We have also confirmed that all bright sources within the aperture are safe for observations with the MAMA detector using the Bright Object Tool on APT.

Visit

Proposal 17146, Visit 01, completed — Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: SCHED 70%; ORIENT 188.17D TO 189.17 D; ORIENT 8.17D TO 9.17 D

Diagnostics

(Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

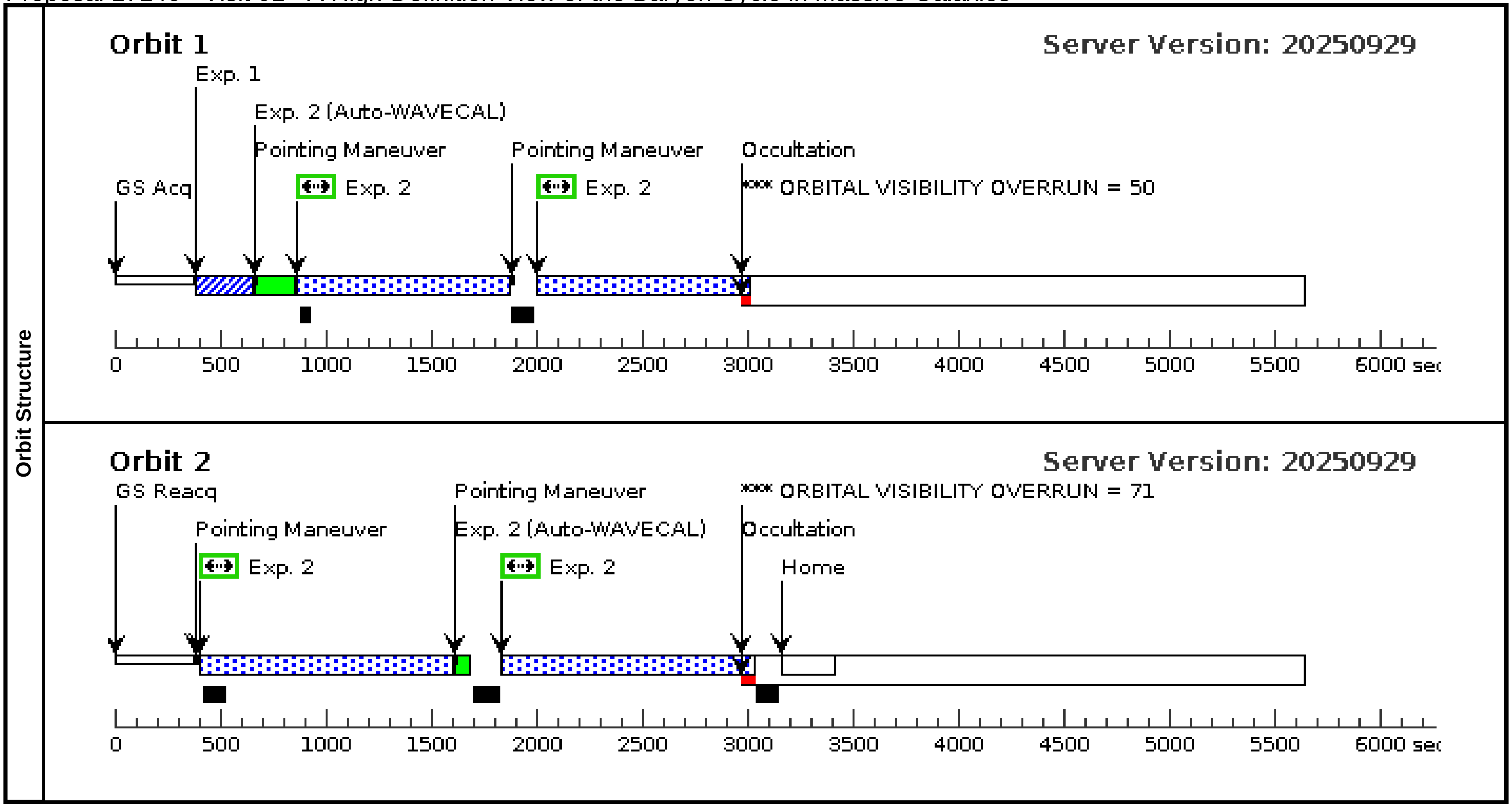
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	B1152+199AB	RA: 11 55 18.2900 (178.8262083d) Dec: +19 39 42.21 (19.66172d) Equinox: J2000	Redshift: 1.02	V=17.7 GALEX FUV(AB) = 18.87; NUV(AB) = 17.57	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1810886)	(1) B1152+199AB	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			10 Secs (10 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1810888)	(1) B1152+199AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 1, Exps 2-2 in Visit 01 (1)	4600 Secs (4370 Secs)	
								[==>998.0 Secs (Pattern 1)] *[==>998.0 Secs (Pattern 2)]*	***[1]***
								[==>1187.0 Secs (Pattern 3)] *[==>1187.0 Secs (Pattern 4)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20250929
Exp. 1
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Exp. 2
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 50
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 71
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Occultation
Exp. 2
Exp. 2
Home
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Visit

Proposal 17146, Visit 02, completed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 116.47D TO 117.47 D; ORIENT 296.47D TO 297.47 D

Diagnostics

(Visit 02) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 02) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 02) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

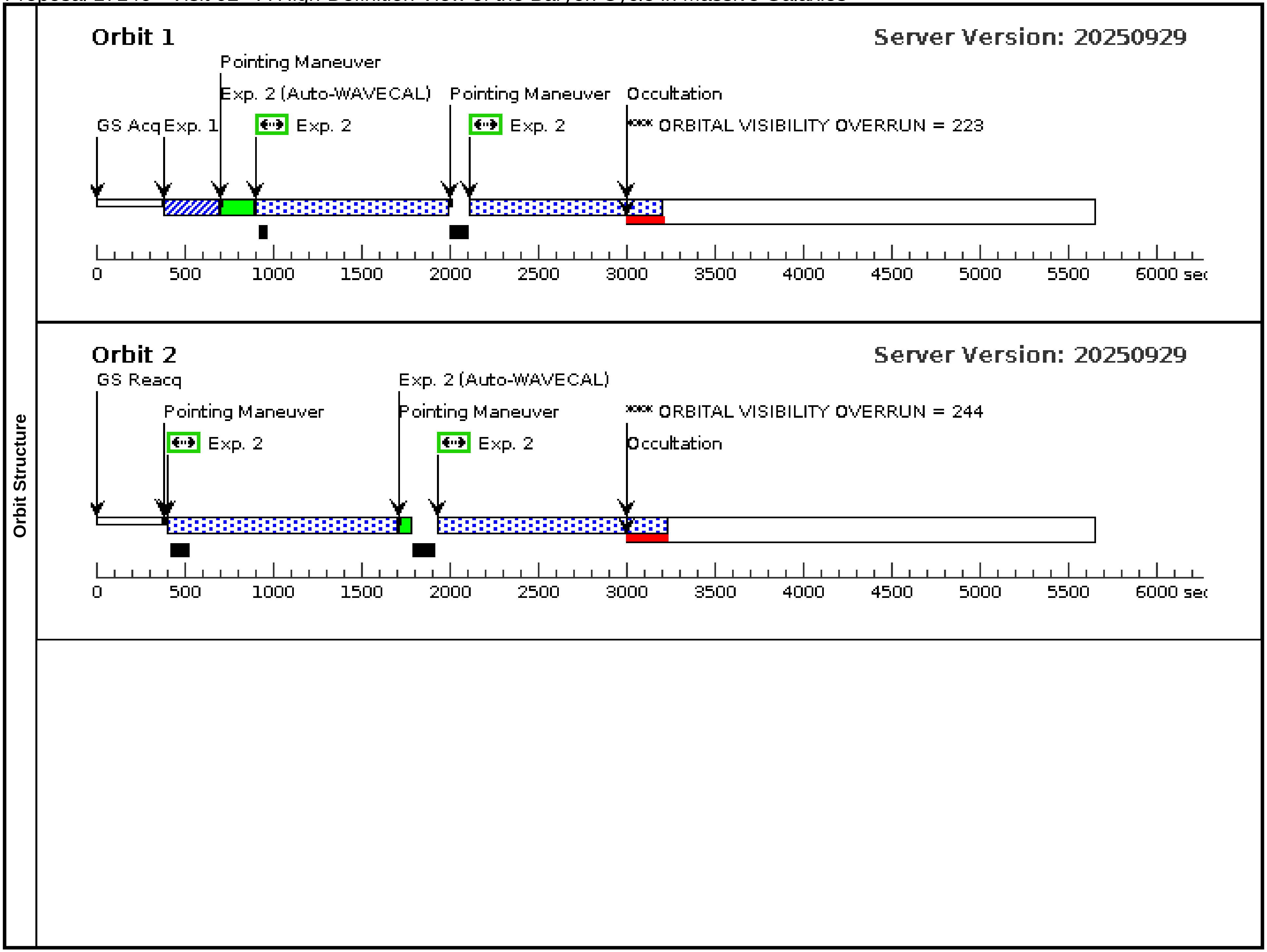
Fixed Targets

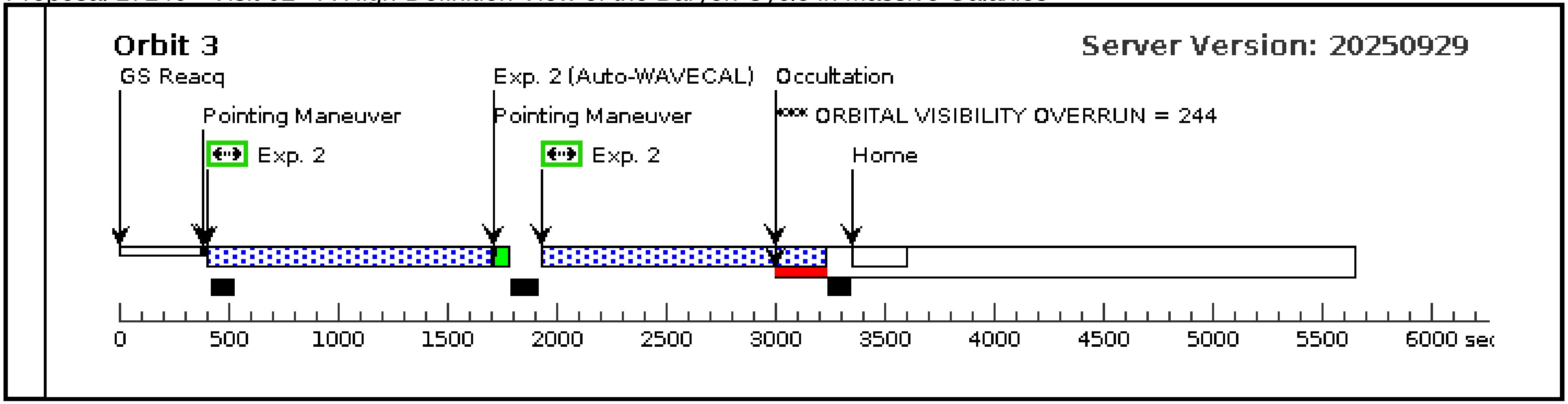
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J0158-4325AB	RA: 01 58 41.4300 (29.6726250d) Dec: -43 25 3.40 (-43.41761d) Equinox: J2000		V=18.2 GALEX FUV(AB) = 19.64; NUV(AB) = 18.66 (FUV (AB)~20.0 for A)	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1810897)	(2) J0158-4325AB	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			20 Secs (20 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1810901)	(2) J0158-4325AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 02 (2)	7000 Secs (7298 Secs)	
								[==>1077.0 Secs (Pattern 1)] *[==>1077.0 Secs (Pattern 2)]*	***[1]***
								[==>1286.0 Secs (Pattern 3)] *[==>1286.0 Secs (Pattern 4)]*	***[2]***
								[==>1286.0 Secs (Pattern 5)] *[==>1286.0 Secs (Pattern 6)]*	***[3]***


Orbit Structure
Orbit 1
Server Version: 20250929
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Occultation
GS Acq
Exp. 1
Exp. 2
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 223
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 244
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Exp. 2
Occultation
*** ORBITAL VISIBILITY OVERRUN = 244
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 03, completed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 76.27D TO 77.27 D; ORIENT 256.27D TO 257.27 D

Diagnostics

(Visit 03) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 03) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 03) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

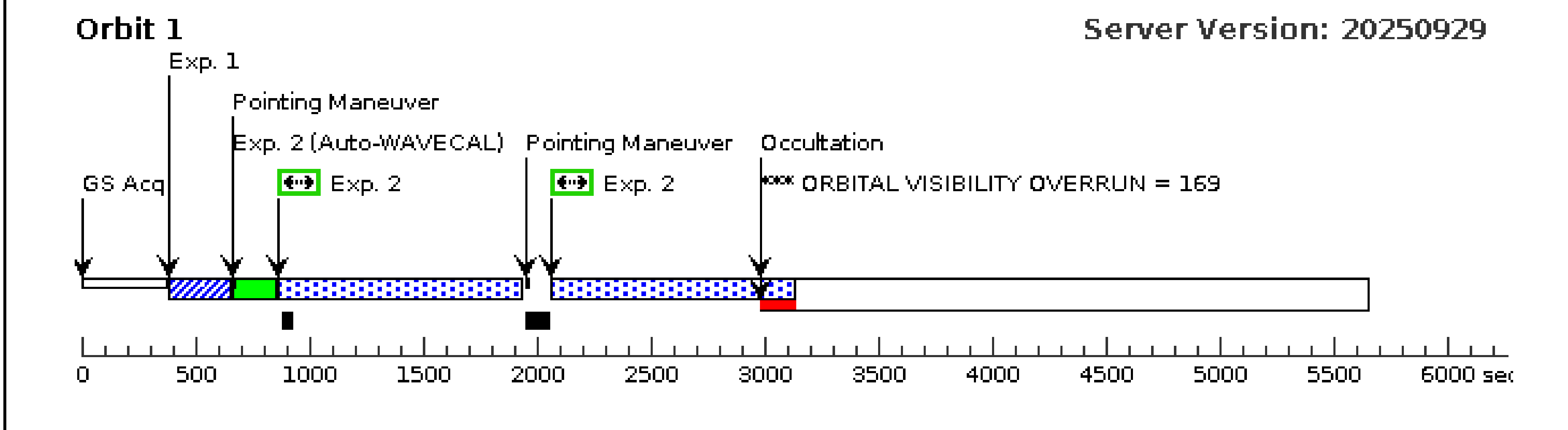
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HE2149-2745AB	RA: 21 52 7.4500 (328.0310417d) Dec: -27 31 50.20 (-27.53061d) Equinox: J2000		V=16.82 GALEX NUV(AB)=18.76	Reference Frame: ICRS

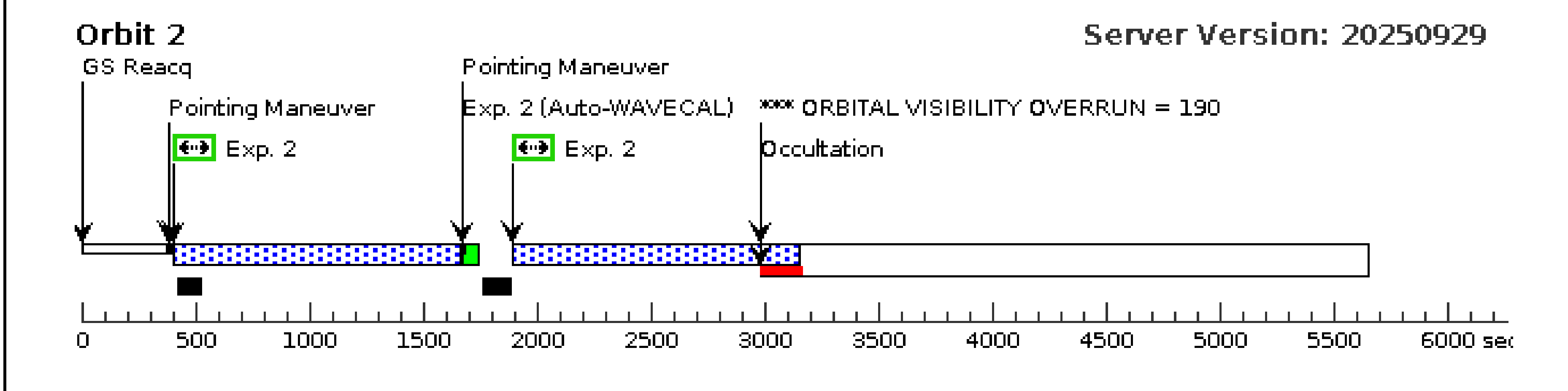
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

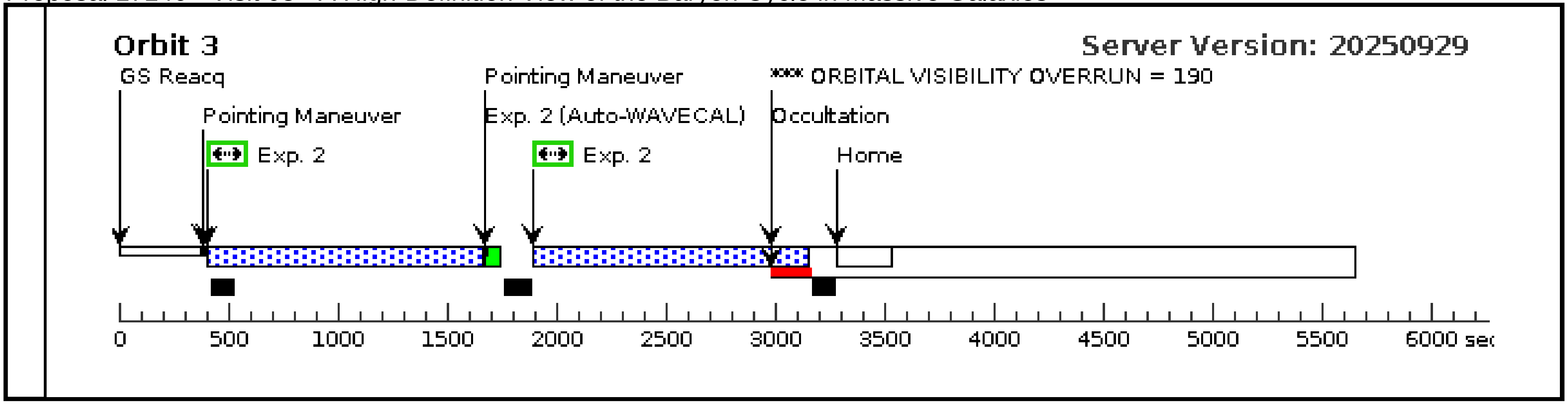
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1170)	(3) HE2149-2745AB	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			10 Secs (10 Secs)	
								[==>]	***[1]***
2	(STIS.sp.18 11173)	(3) HE2149-2745AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 03 (2)	7200 Secs (7122 Secs)	
								[==>1061.0 Secs (Pattern 1)] *[==>1061.0 Secs (Pattern 2)]*	***[1]***
								[==>1250.0 Secs (Pattern 3)] *[==>1250.0 Secs (Pattern 4)]*	***[2]***
								[==>1250.0 Secs (Pattern 5)] *[==>1250.0 Secs (Pattern 6)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 190
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 04, completed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: ORIENT 76.27D TO 77.27 D; ORIENT 256.27D TO 257.27 D

Diagnostics

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

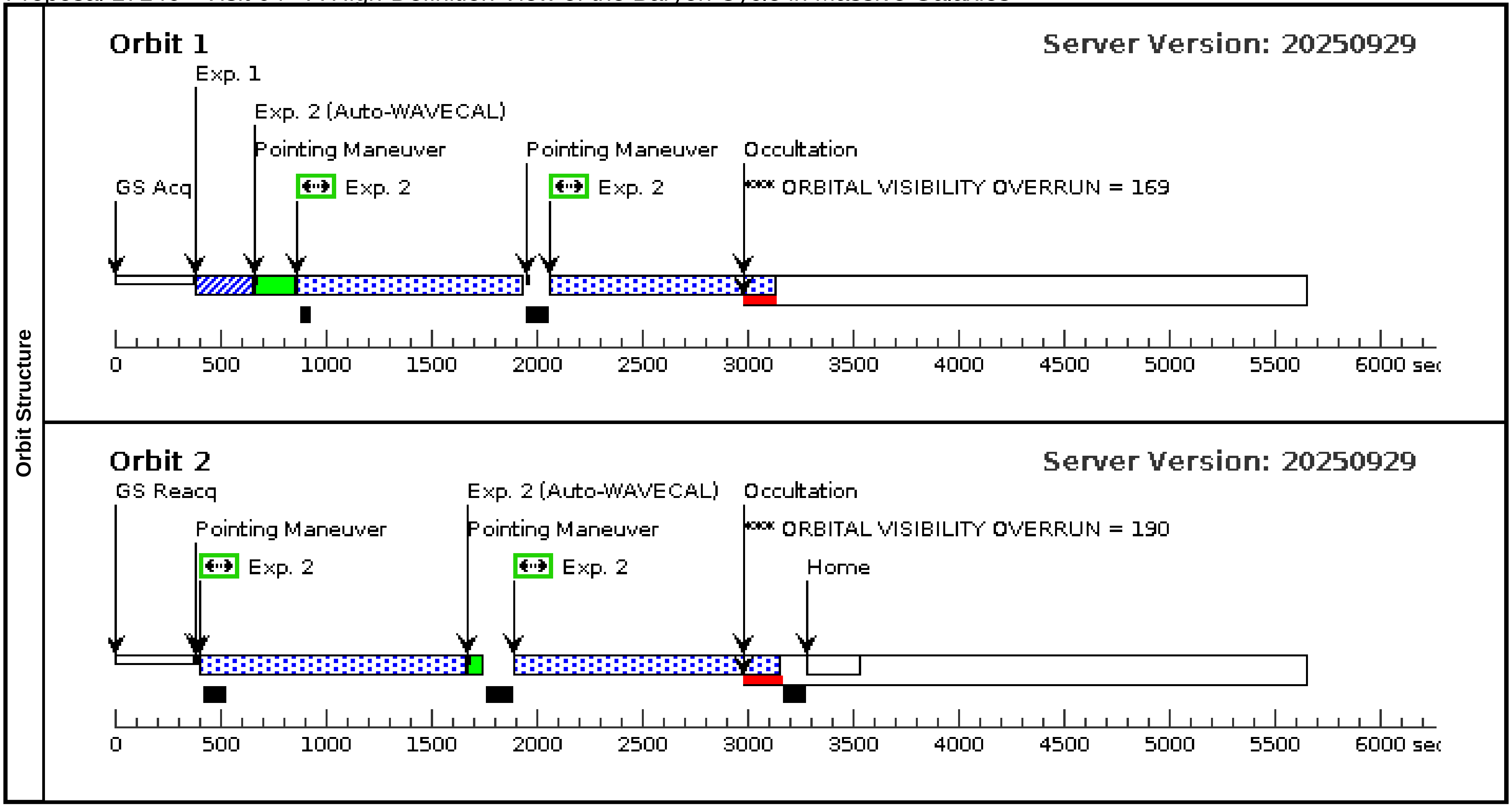
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HE2149-2745AB	RA: 21 52 7.4500 (328.0310417d) Dec: -27 31 50.20 (-27.53061d) Equinox: J2000		V=16.82 GALEX NUV(AB)=18.76	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1170)	(3) HE2149-2745AB	STIS/CCD, ACQ, F28X50LP	MIRROR				10 Secs (10 Secs)	
								[==>]	***[1]***
2	(STIS.sp.18 11174)	(3) HE2149-2745AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit 04 (1)	1100 Secs (4622 Secs)	
								[==>1061.0 Secs (Pattern 1)] *[==>1061.0 Secs (Pattern 2)]*	***[1]***
								[==>1250.0 Secs (Pattern 3)] *[==>1250.0 Secs (Pattern 4)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20250929
Exp. 1
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Exp. 2
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 169
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Exp. 2 (Auto-WAVECAL)
Occultation
Pointing Maneuver
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 190
Exp. 2
Exp. 2
Home
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Visit

Proposal 17146, Visit 08, completed

Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 298.34D TO 299.34 D; ORIENT 118.34D TO 119.34 D

Diagnostics

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

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

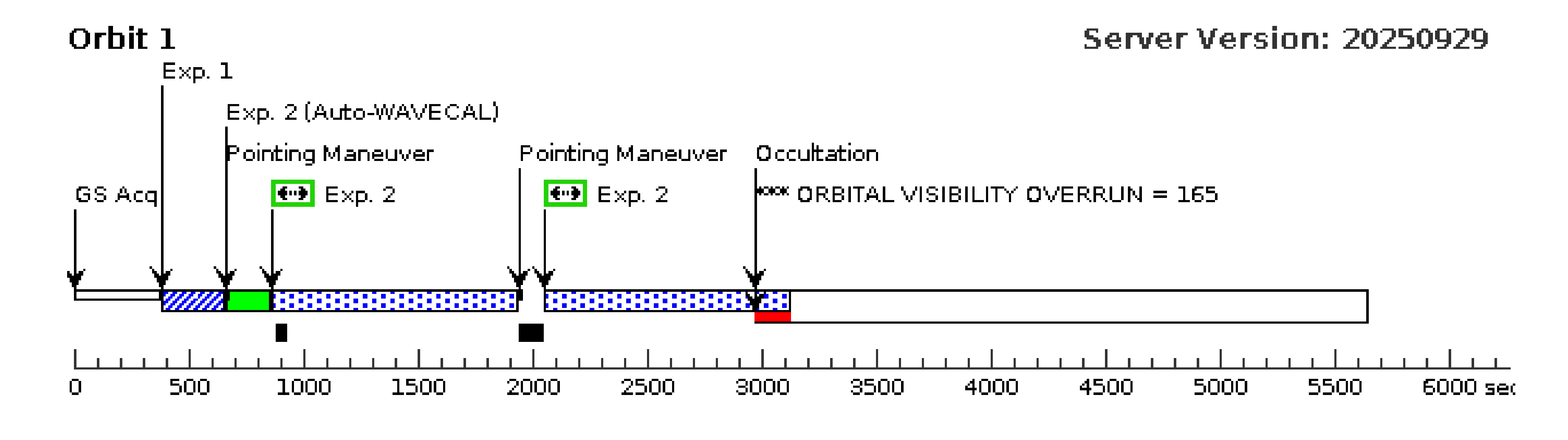
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1355-2257AB	RA: 13 55 43.4400 (208.9310000d) Dec: -22 57 23.00 (-22.95639d) Equinox: J2000		V=18.2 GALEX FUV(AB)= 19.42; NU V(AB)=18.15	Reference Frame: ICRS

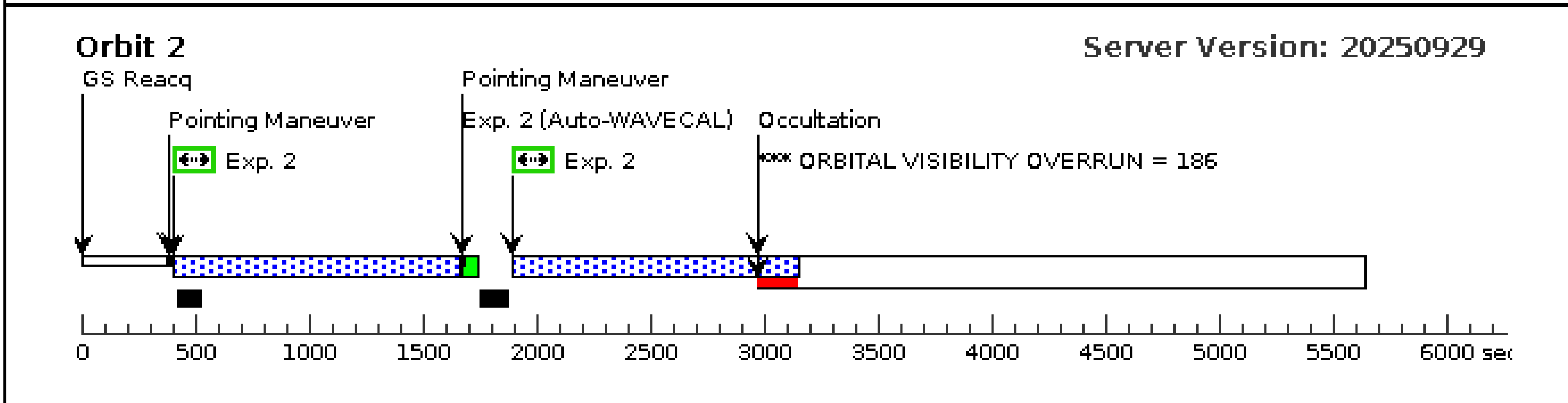
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

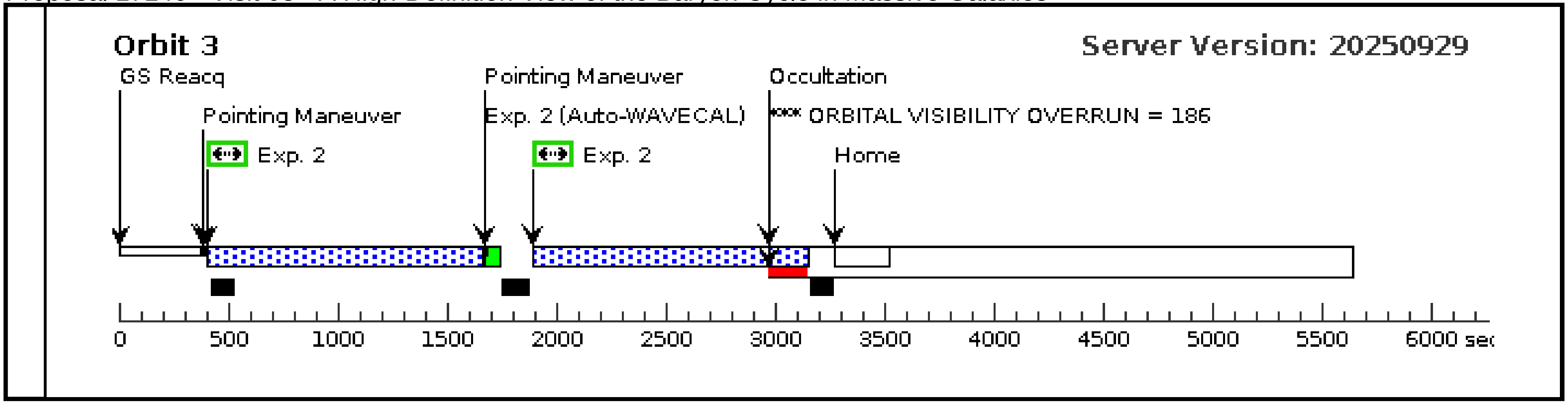
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1220)	(5) J1355-2257AB	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			10 Secs (10 Secs)	
								[==>]	***[1]***
2	(STIS.sp.18 11230)	(5) J1355-2257AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 08 (2)	7200 Secs (7098 Secs)	
								[==>1057.0 Secs (Pattern 1)] *[==>1057.0 Secs (Pattern 2)]*	***[1]***
								[==>1246.0 Secs (Pattern 3)] *[==>1246.0 Secs (Pattern 4)]*	***[2]***
								[==>1246.0 Secs (Pattern 5)] *[==>1246.0 Secs (Pattern 6)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Exp. 2
Occultation
*** ORBITAL VISIBILITY OVERRUN = 186
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Proposal 17146 - Visit 09 - A High-Definition View of the Baryon Cycle in Massive Galaxies

Visit

Proposal 17146, Visit 09, completed

Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: ORIENT 298.34D TO 299.34 D; ORIENT 118.34D TO 119.34 D

Diagnostics

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

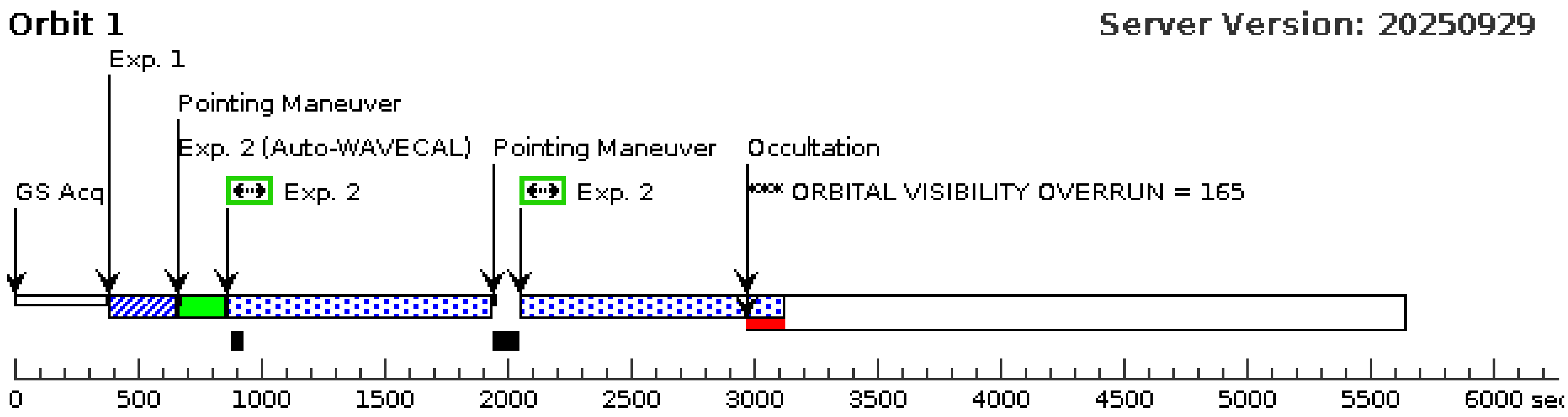
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1355-2257AB	RA: 13 55 43.4400 (208.9310000d) Dec: -22 57 23.00 (-22.95639d) Equinox: J2000		V=18.2 GALEX FUV(AB)= 19.42; NUV(AB)=18.15	Reference Frame: ICRS

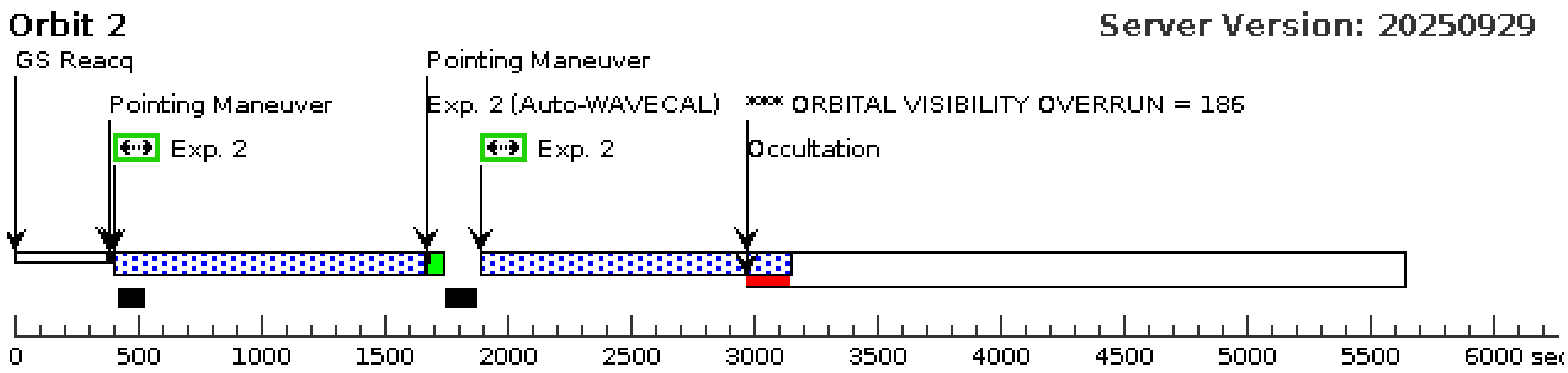
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

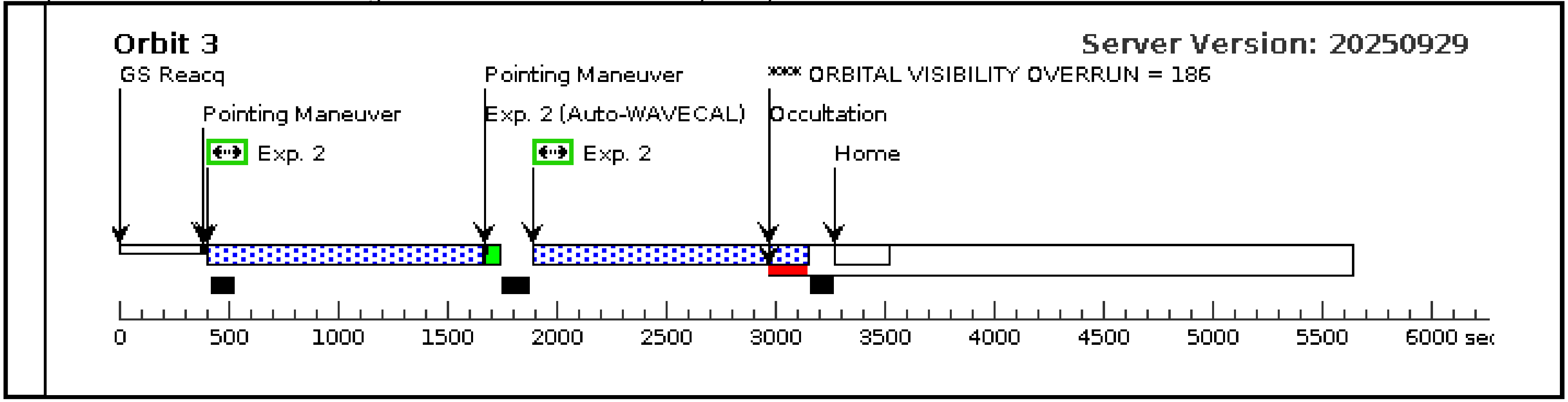
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811220)	(5) J1355-2257AB	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			10 Secs (10 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1811230)	(5) J1355-2257AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 09 (2)	7200 Secs (7098 Secs)	
								[==>1057.0 Secs (Pattern 1)] *[==>1057.0 Secs (Pattern 2)]*	***[1]***
								[==>1246.0 Secs (Pattern 3)] *[==>1246.0 Secs (Pattern 4)]*	***[2]***
								[==>1246.0 Secs (Pattern 5)] *[==>1246.0 Secs (Pattern 6)]*	***[3]***

Orbit Structure







Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Exp. 2
**** ORBITAL VISIBILITY OVERRUN = 186
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 10, failed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

(Visit 10) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 10) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 10) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

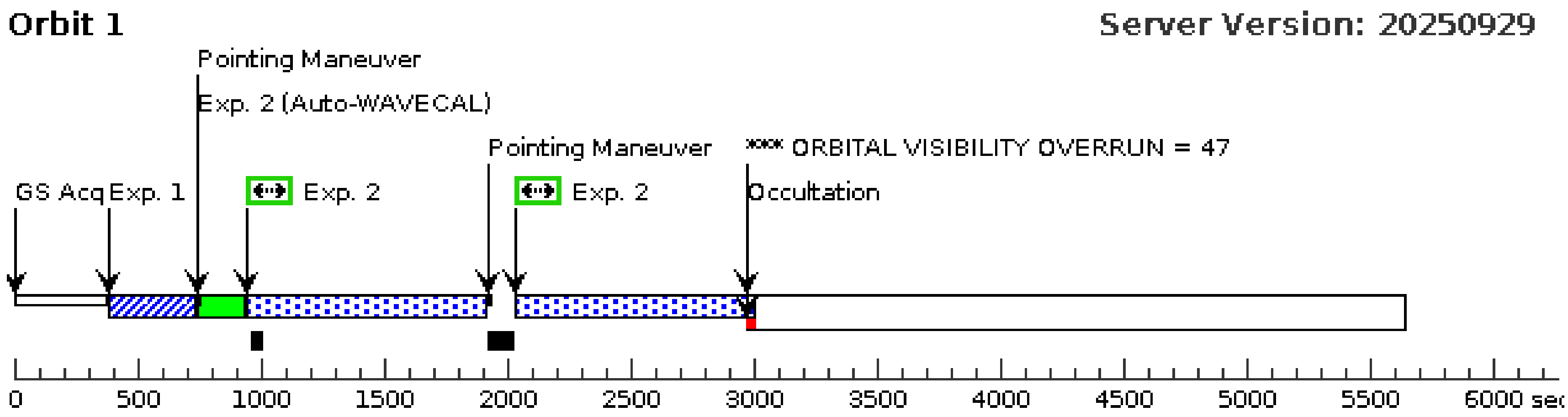
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

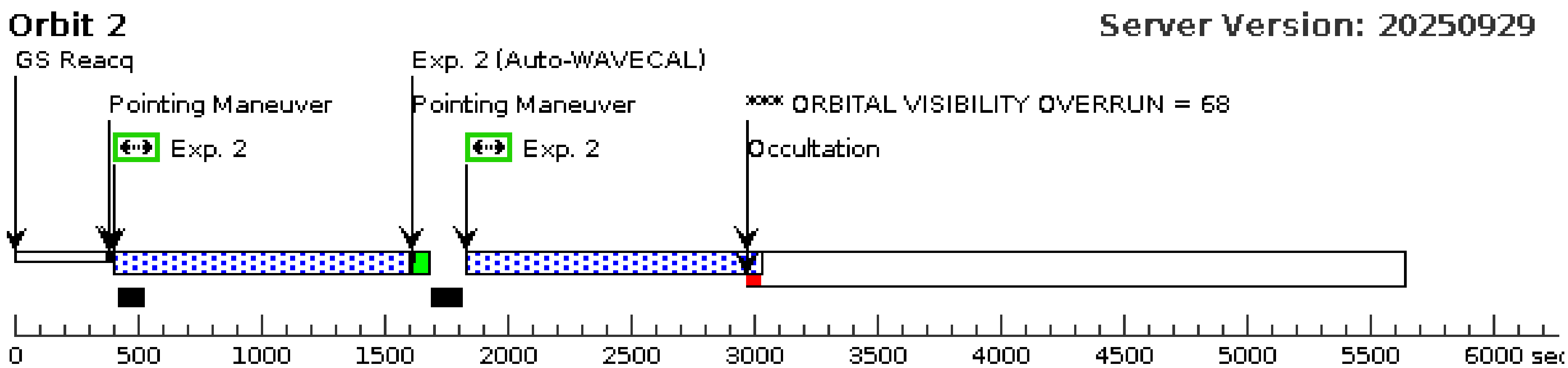
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

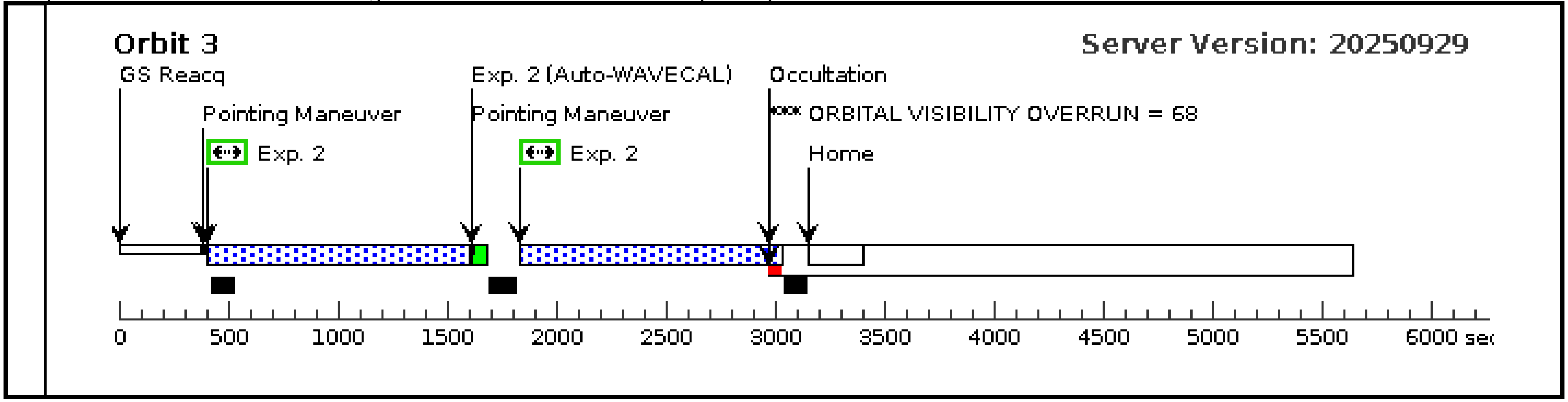
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs) *[==>]*	***[1]***
2	(STIS.sp.1811263)	(6) J0246-0825AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 10 (2)	7200 Secs (6658 Secs)	
								[==>957.0 Secs (Pattern 1)] *[==>957.0 Secs (Pattern 2)]*	***[1]***
								[==>1186.0 Secs (Pattern 3)] *[==>1186.0 Secs (Pattern 4)]*	***[2]***
								[==>1186.0 Secs (Pattern 5)] *[==>1186.0 Secs (Pattern 6)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Exp. 2
Occultation
*** ORBITAL VISIBILITY OVERRUN = 68
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Proposal 17146 - Visit 11 - A High-Definition View of the Baryon Cycle in Massive Galaxies

Visit

Proposal 17146, Visit 11, failed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

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

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

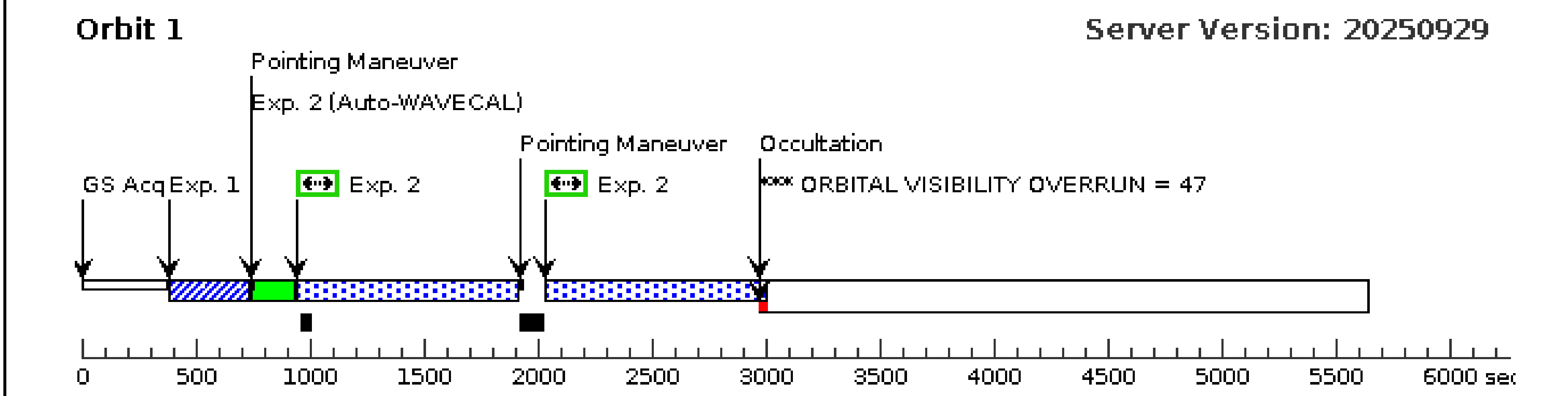
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

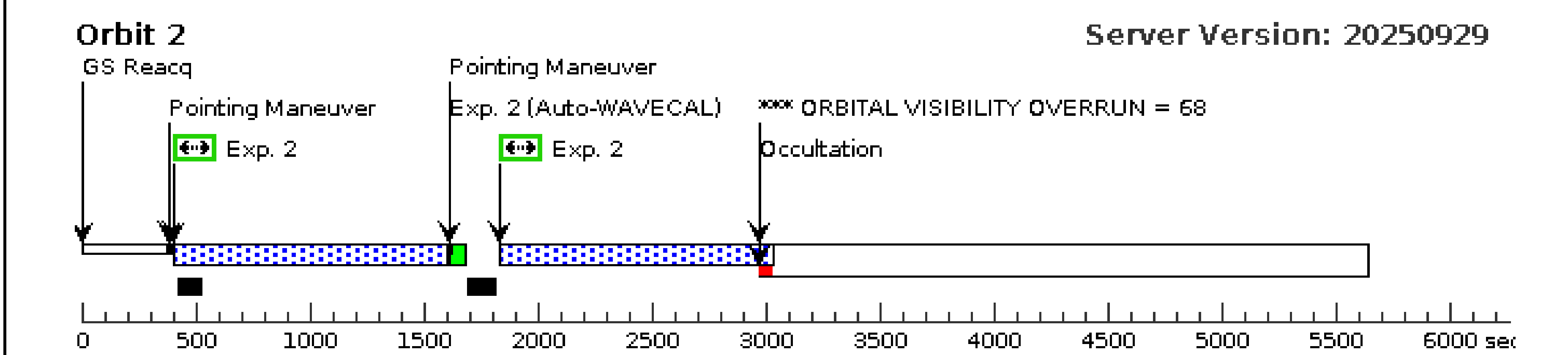
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

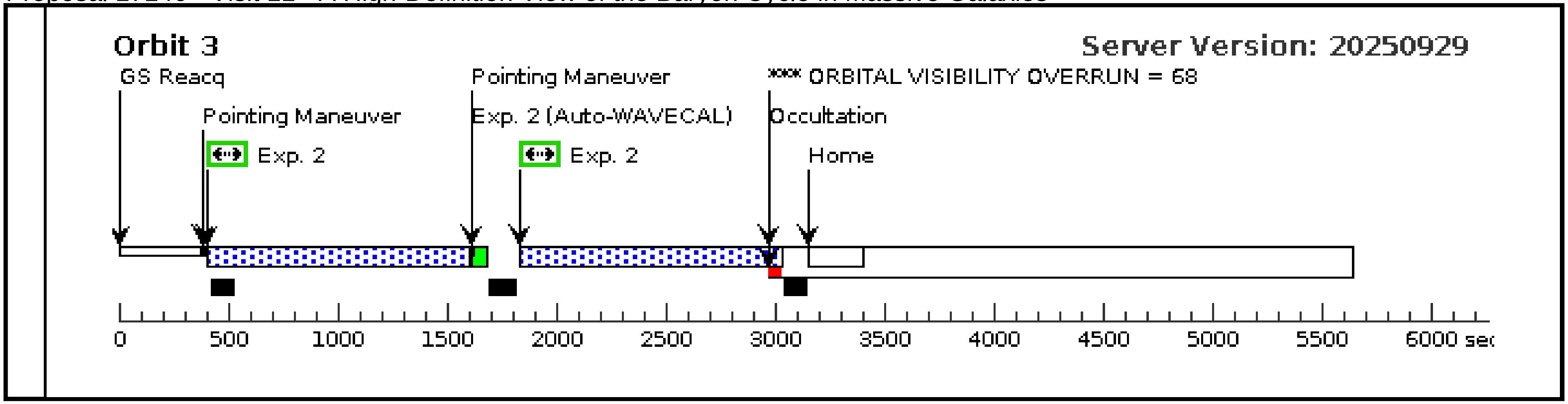
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs) *[==>]*	***[1]***
2	(STIS.sp.18 11263)	(6) J0246-0825AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 11 (2)	7200 Secs (6658 Secs)	
								[==>957.0 Secs (Pattern 1)] *[==>957.0 Secs (Pattern 2)]*	***[1]***
								[==>1186.0 Secs (Pattern 3)] *[==>1186.0 Secs (Pattern 4)]*	***[2]***
								[==>1186.0 Secs (Pattern 5)] *[==>1186.0 Secs (Pattern 6)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Exp. 2
**** ORBITAL VISIBILITY OVERRUN = 68
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 12, failed Tue Dec 16 02:00:26 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD, STIS/FUV-MAMA

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

(Visit 12) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 12) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 12) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)
(3)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)

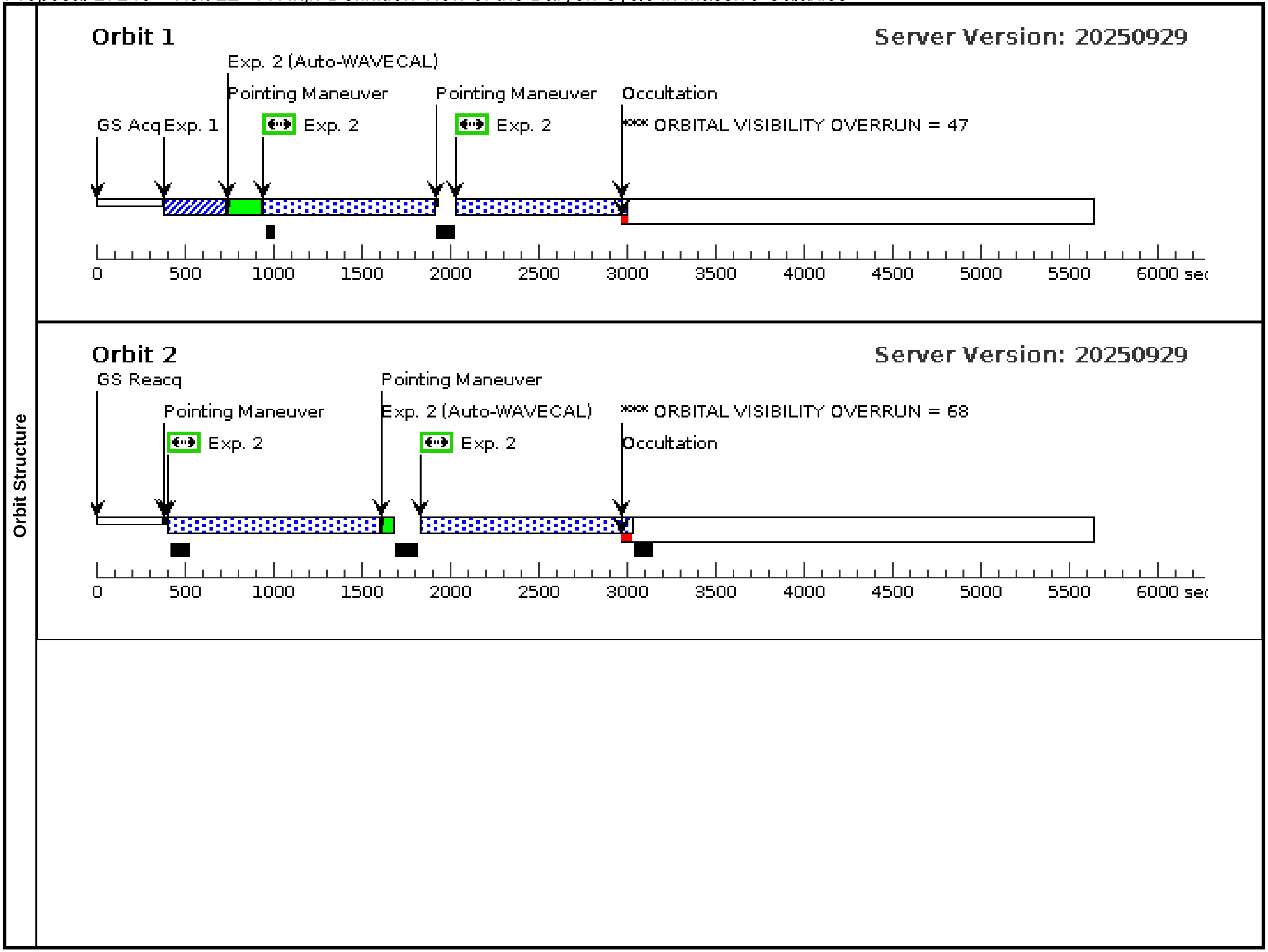
Fixed Targets

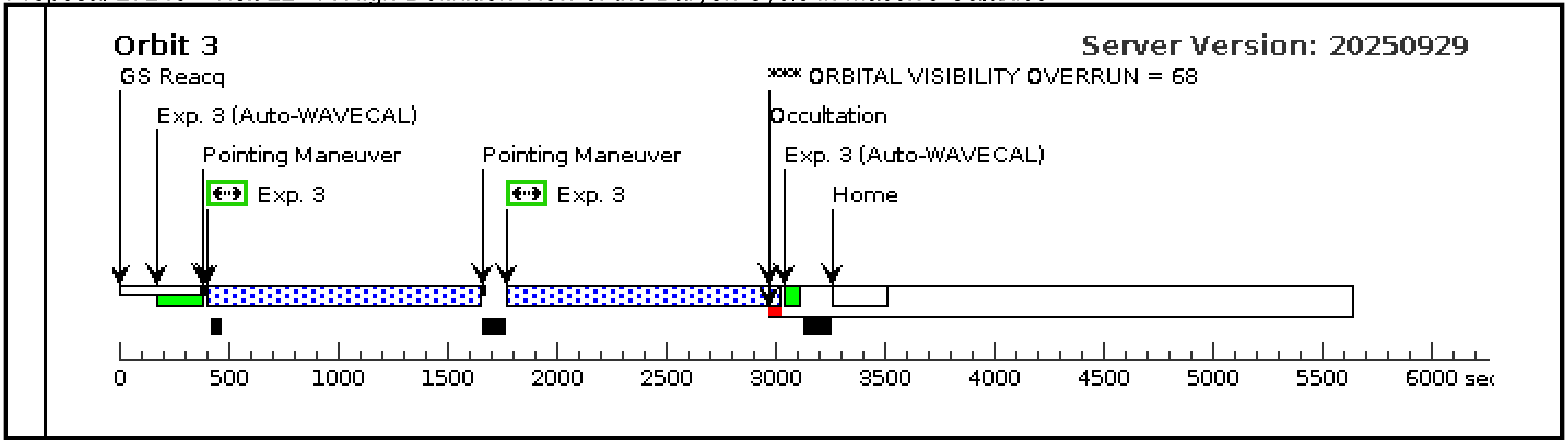
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs) *[==>]*	***[1]***
2	(STIS.sp.18 11610)	(6) J0246-0825AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit 12 (1)	8800 Secs (4286 Secs) *[==>957.0 Secs (Pattern 1)]* *[==>957.0 Secs (Pattern 2)]*	***[1]***
								[==>1186.0 Secs (Pattern 3)] *[==>1186.0 Secs (Pattern 4)]*	***[2]***
3	(STIS.sp.18 11263)	(6) J0246-0825AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 3, Exps 3-3 in Visit 12 (3)	7200 Secs (2476 Secs) *[==>1238.0 Secs (Pattern 1)]* *[==>1238.0 Secs (Pattern 2)]*	***[3]***


Orbit Structure
Orbit 1
Server Version: 20250929
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Exp. 1
Exp. 2
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 47
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Pointing Maneuver
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
*** ORBITAL VISIBILITY OVERRUN = 68
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20250929
GS Reacq
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 3
**** ORBITAL VISIBILITY OVERRUN = 68
Occultation
Exp. 3 (Auto-WAVECAL)
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 13, failed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

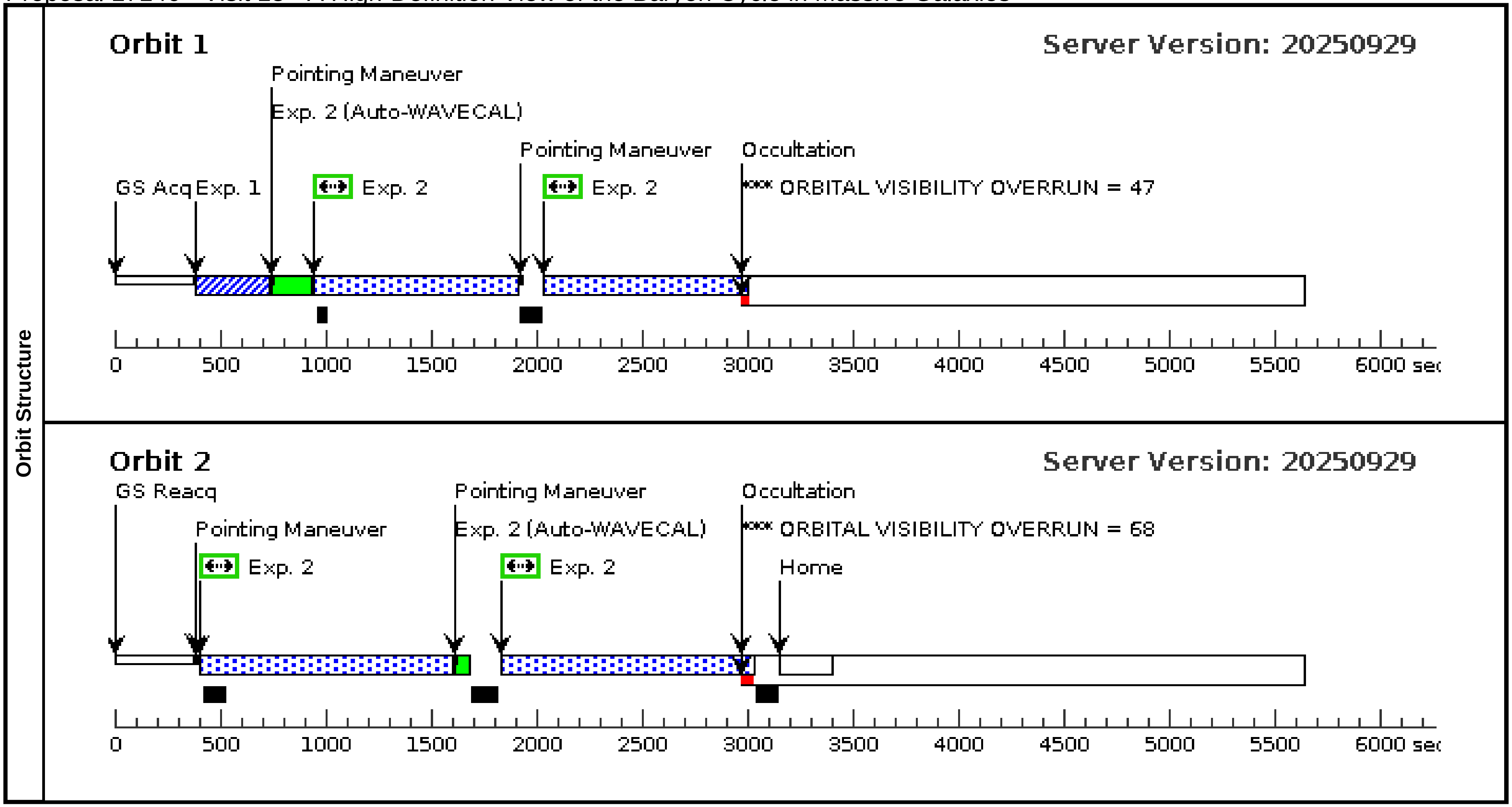
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1811610)	(6) J0246-0825AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit 13 (1)	8800 Secs (4286 Secs)	
								[==>957.0 Secs (Pattern 1)] *[==>957.0 Secs (Pattern 2)]*	***[1]***
								[==>1186.0 Secs (Pattern 3)] *[==>1186.0 Secs (Pattern 4)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20250929
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Occultation
GS Acq
Exp. 1
Exp. 2
Exp. 2
*** ORBITAL VISIBILITY OVERRUN = 47
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Pointing Maneuver
Occultation
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
*** ORBITAL VISIBILITY OVERRUN = 68
Exp. 2
Exp. 2
Home
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Visit

Proposal 17146, Visit 14, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: (none)

Diagnostics

(Visit 14) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 14) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

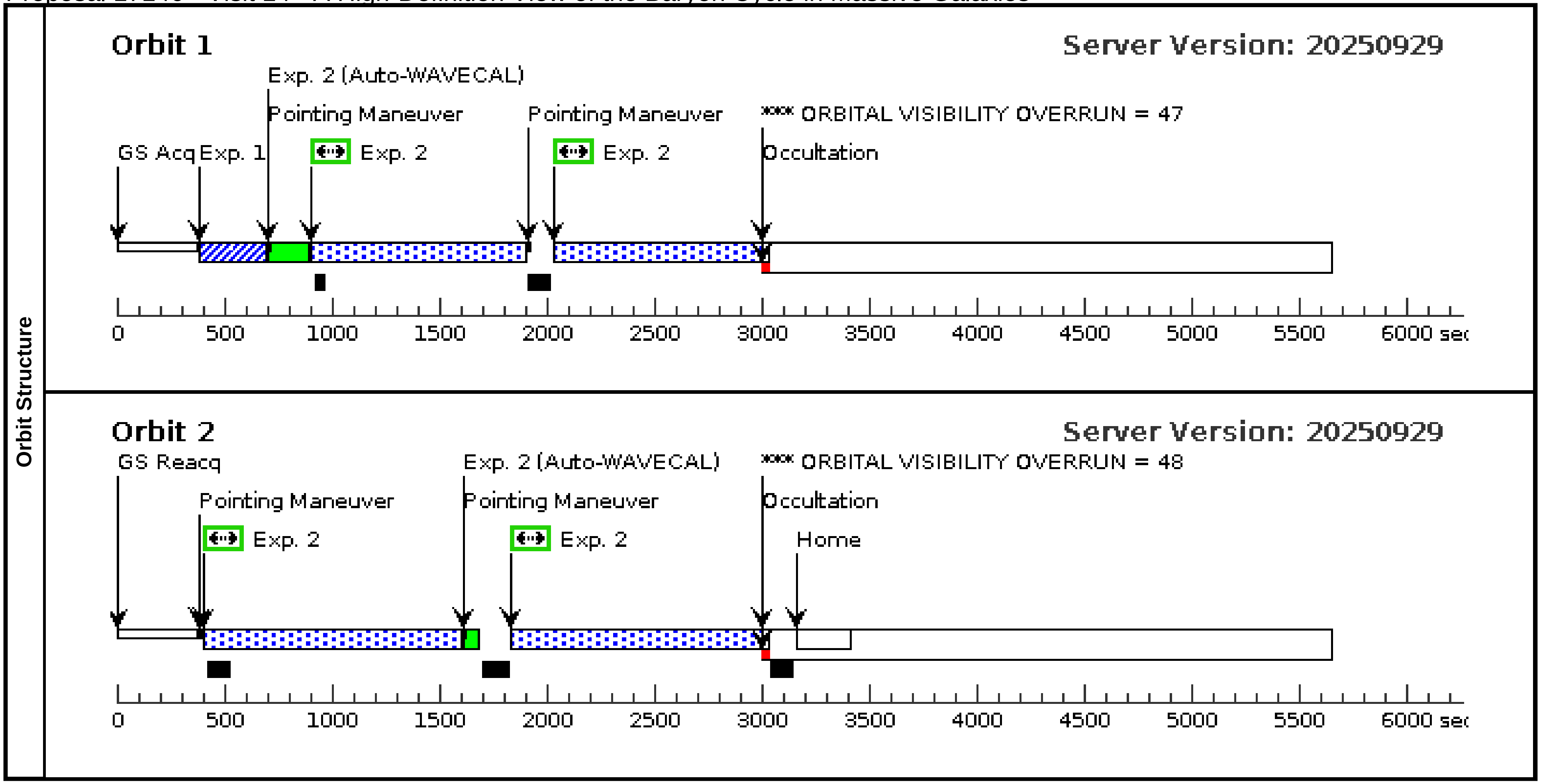
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1206+4322A	RA: 12 06 29.6400 (181.6235000d) Dec: +43 32 17.57 (43.53821d) Equinox: J2000		V=18.8 GALEX NUV(AB)=19.5	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811190)	(4) J1206+4322A	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			20 Secs (20 Secs) *[==>]*	***[1]***
2	(STIS.sp.1811217)	(4) J1206+4322A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 1, Exps 2-2 in Visit 14 (1)	4000 Secs (4354 Secs) *[==>989.0 Secs (Pattern 1)]* *[==>989.0 Secs (Pattern 2)]*	***[1]***
								[==>1188.0 Secs (Pattern 3)] *[==>1188.0 Secs (Pattern 4)]*	***[2]***

Proposal 17146 - Visit 14 - A High-Definition View of the Baryon Cycle in Massive Galaxies



Visit

Proposal 17146, Visit 15, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: (none)

Diagnostics

(Visit 15) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 15) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 15) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1206+4322A	RA: 12 06 29.6400 (181.6235000d) Dec: +43 32 17.57 (43.53821d) Equinox: J2000		V=18.8 GALEX NUV(AB)=19.5	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J1206+4322B-OFFSET	Offset from J1206+4322A RA Offset: 1.1111E-5 Secs Dec Offset: 3.03 Arcsec		V=18.8 GALEX NUV(AB)=19.9	Offset Position (J1206+4322B-OFFSET)

Comments: Object is a doubly imaged QSO. Listed coordinates are for the fainter image B, which are its offset from image A. We will apply an offset of delta_RA=+0.04 arcsec and delta_dec=+3.03 arcsec after first acquiring A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

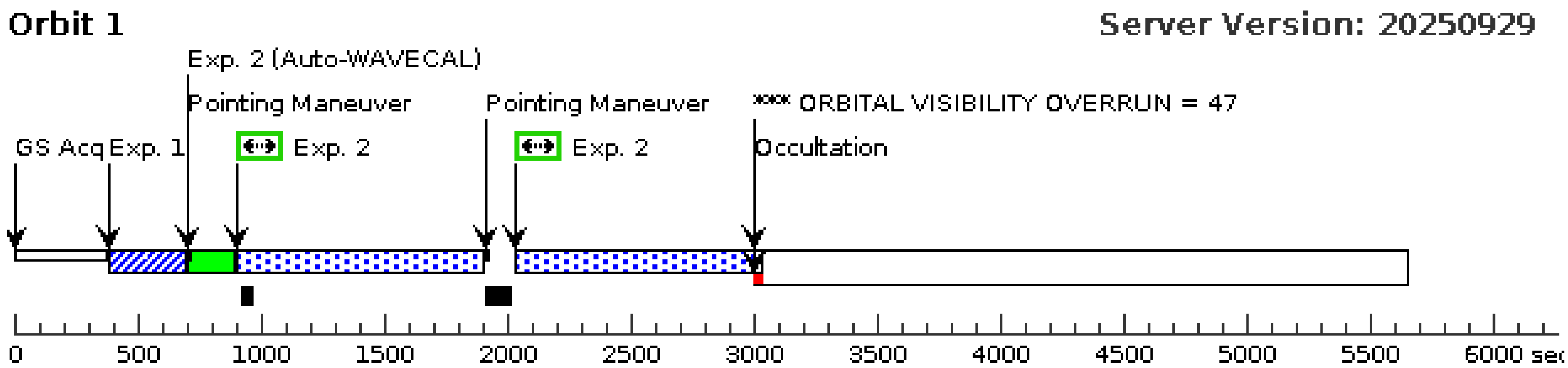
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1190)	(4) J1206+4322A	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			20 Secs (20 Secs) *[==>]*	***[1]***

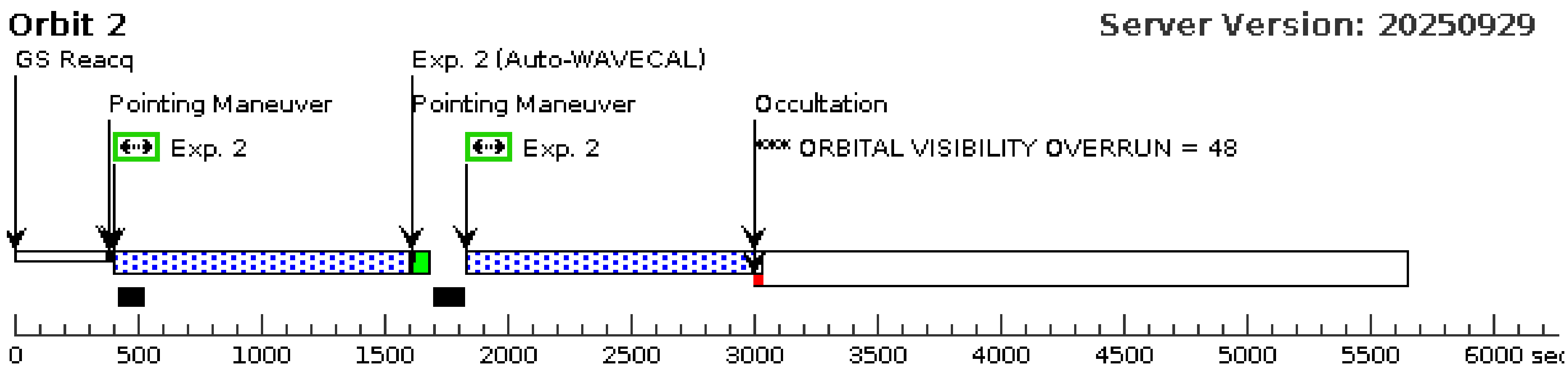
Comments: This is the first stage in our acquisition: acquiring image A.

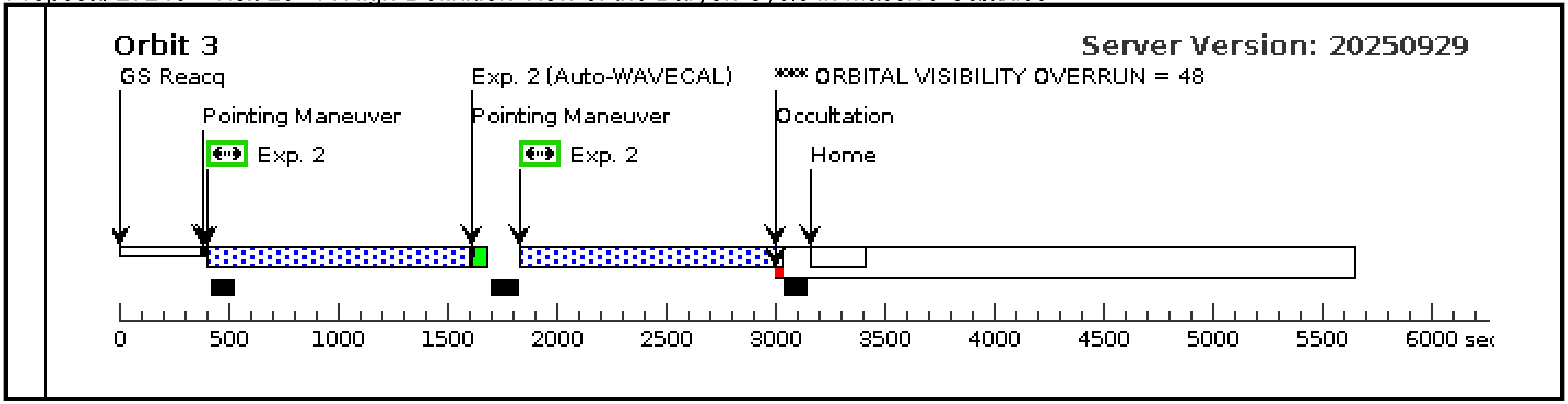
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	(STIS.sp.18 11217)	(7) J1206+4322B-O FFSET	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 i n Visit 15 (2)	6800 Secs (6730 Secs)	
								[==>989.0 Secs (Pattern 1)] *[==>989.0 Secs (Pattern 2)]*	***[1]***
								[==>1188.0 Secs (Pattern 3)] *[==>1188.0 Secs (Pattern 4)]*	***[2]***
								[==>1188.0 Secs (Pattern 5)] *[==>1188.0 Secs (Pattern 6)]*	***[3]***

Comments: We apply an offset to slew to image B.

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Exp. 2 (Auto-WAVECAL)
*** ORBITAL VISIBILITY OVERRUN = 48
Pointing Maneuver
Pointing Maneuver
Occultation
Exp. 2
Exp. 2
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17146, Visit 16, completed — Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: (none)

Diagnostics

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=5 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(5)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=3 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1206+4322A	RA: 12 06 29.6400 (181.6235000d) Dec: +43 32 17.57 (43.53821d) Equinox: J2000		V=18.8 GALEX NUV(AB)=19.5	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

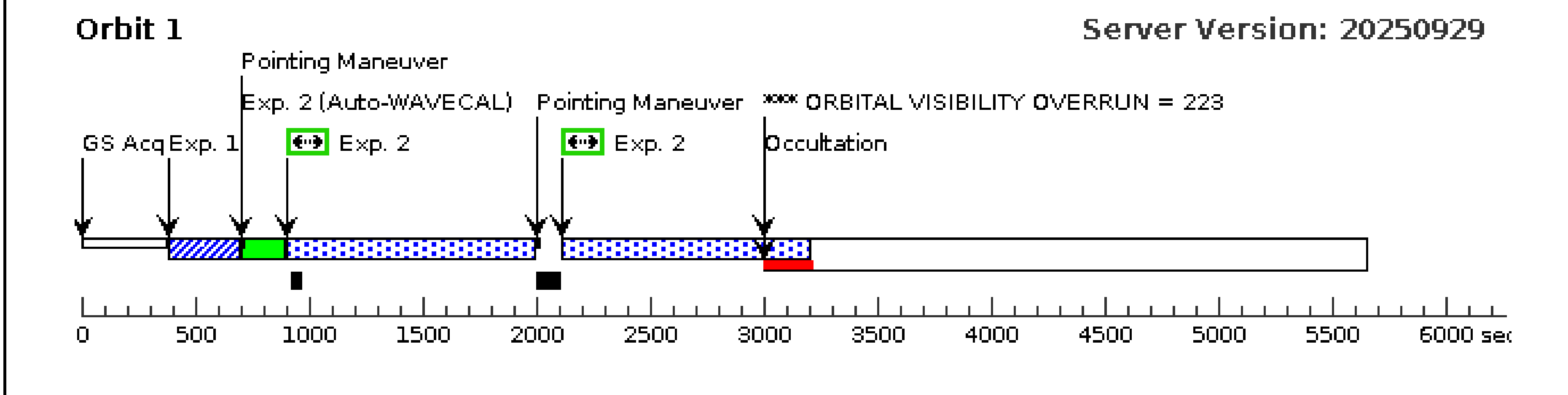
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J1206+4322B-OFFSET	Offset from J1206+4322A RA Offset: 1.1111E-5 Secs Dec Offset: 3.03 Arcsec		V=18.8 GALEX NUV(AB)=19.9	Offset Position (J1206+4322B-OFFSET)

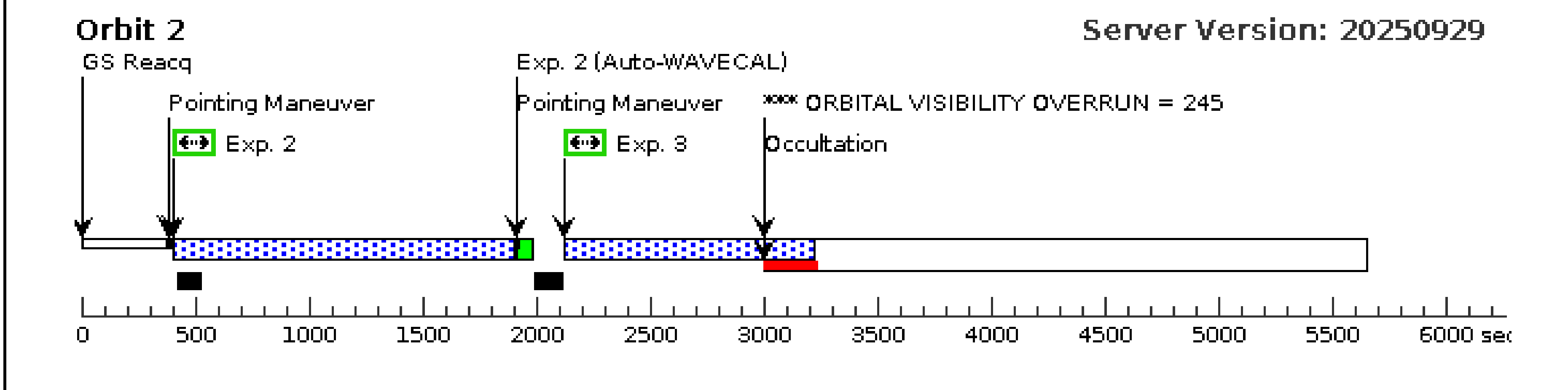
Comments: Object is a doubly imaged QSO. Listed coordinates are for the fainter image B, which are its offset from image A. We will apply an offset of delta_RA=+0.04 arcsec and delta_dec=+3.03 arcsec after first acquiring A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

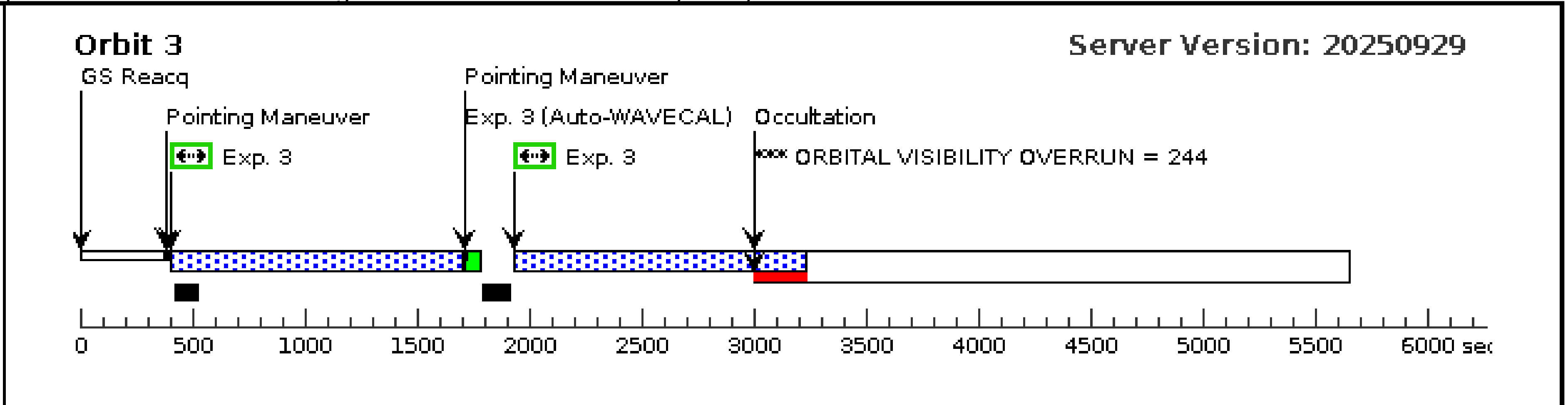
Exposures

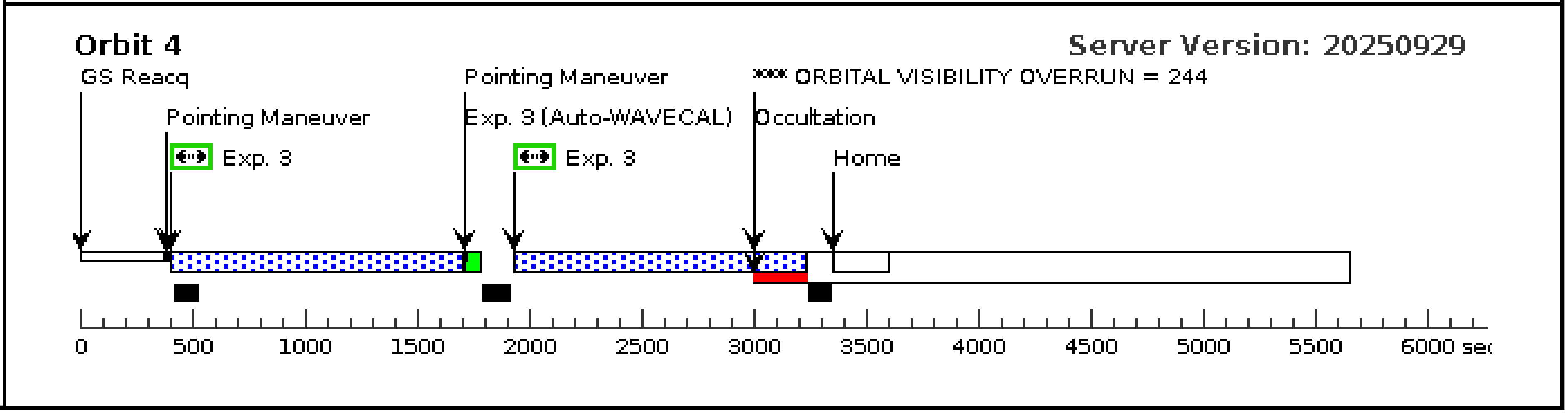
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811190)	(4) J1206+4322A	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			20 Secs (20 Secs)	
								[==>]	***[1]***
Comments: We will start this visit observing image A									
2	(STIS.sp.1811218)	(4) J1206+4322A	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 5, Exps 2-2 in Visit 16 (5)	3500 Secs (3637 Secs)	
								[==>1077.0 Secs (Pattern 1)]	***[1]***
								[==>1077.0 Secs (Pattern 2)]	
								[==>1483.0 Secs (Pattern 3)]	***[2]***
3	(STIS.ta.1811190)	(7) J1206+4322B-OFFSET	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 4, Exps 3-3 in Visit 16 (4)	6800 Secs (6234 Secs)	
								[==>1090.0 Secs (Pattern 1)]	***[2]***
								[==>1286.0 Secs (Pattern 2)]	***[3]***
								[==>1286.0 Secs (Pattern 3)]	
								[==>1286.0 Secs (Pattern 4)]	***[4]***
								[==>1286.0 Secs (Pattern 5)]	
Comments: For the second part of the visit, we will switch to image B by applying the offset									

Orbit Structure






Orbit 3
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Occultation
*** ORBITAL VISIBILITY OVERRUN = 244
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec


Orbit 4
Server Version: 20250929
GS Reacq
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
*** ORBITAL VISIBILITY OVERRUN = 244
Occultation
Home
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Visit

Proposal 17146, Visit 17, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

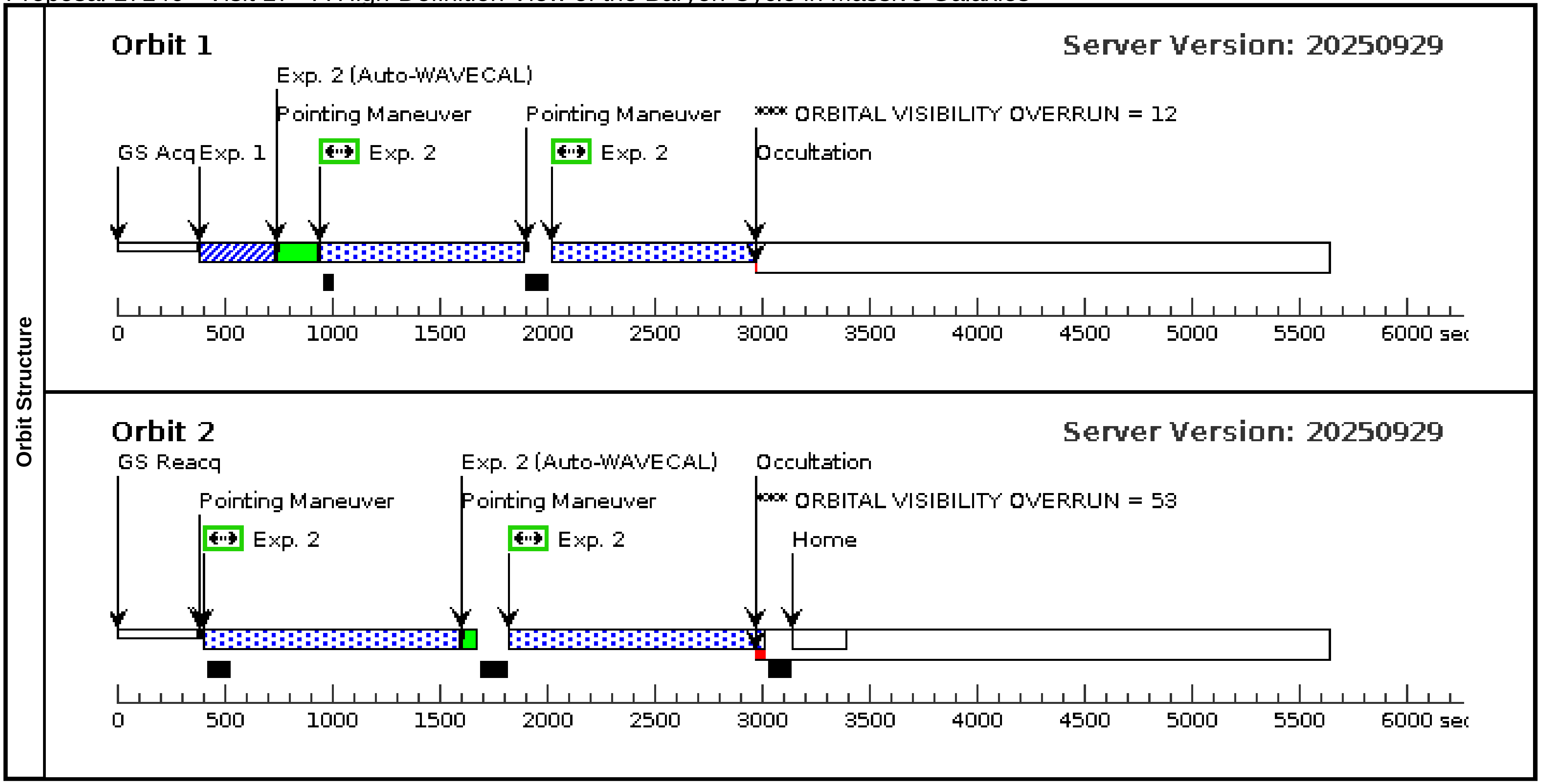
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.181 1238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs) *[==>]*	***[1]***
2	(STIS.sp.18 11610)	(6) J0246-0825AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit 17 (1)	8800 Secs (4236 Secs) *[==>940.0 Secs (Pattern 1)]* *[==>939.0 Secs (Pattern 2)]*	***[1]***
								[==>1179.0 Secs (Pattern 3)] *[==>1178.0 Secs (Pattern 4)]*	***[2]***

Proposal 17146 - Visit 17 - A High-Definition View of the Baryon Cycle in Massive Galaxies



Visit

Proposal 17146, Visit 18, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/NUV-MAMA, STIS/CCD

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

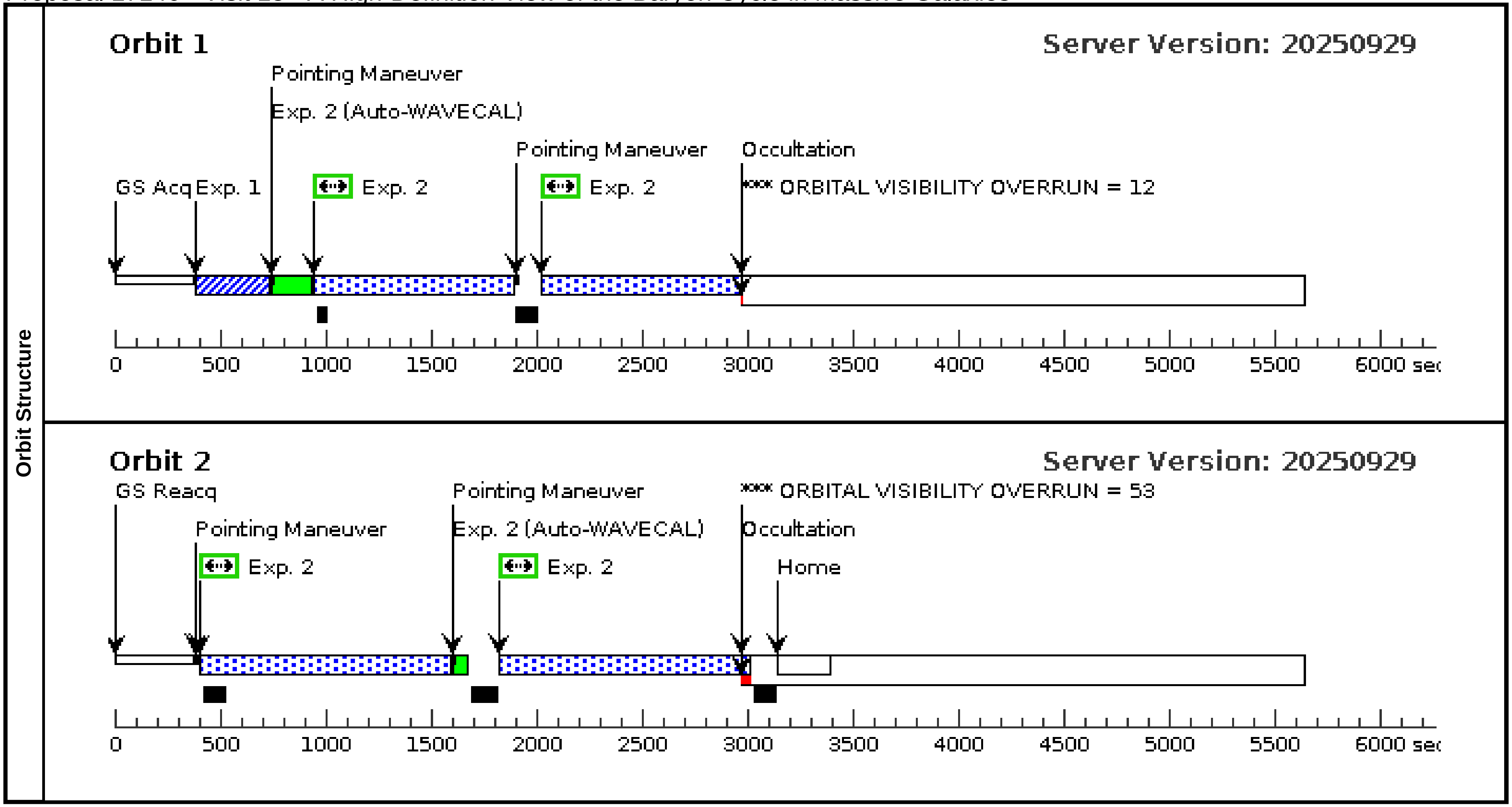
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs) *[==>]*	***[1]***
2	(STIS.sp.1811610)	(6) J0246-0825AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit 18 (1)	8800 Secs (4236 Secs) *[==>940.0 Secs (Pattern 1)]* *[==>939.0 Secs (Pattern 2)]*	***[1]***
								[==>1179.0 Secs (Pattern 3)] *[==>1178.0 Secs (Pattern 4)]*	***[2]***

Proposal 17146 - Visit 18 - A High-Definition View of the Baryon Cycle in Massive Galaxies



Proposal 17146 - Visit 19 - A High-Definition View of the Baryon Cycle in Massive Galaxies

Visit

Proposal 17146, Visit 19, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: SCHED 70%; ORIENT 169.17D TO 170.17 D; ORIENT 349.17D TO 350.17 D

Diagnostics

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

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

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

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=6 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

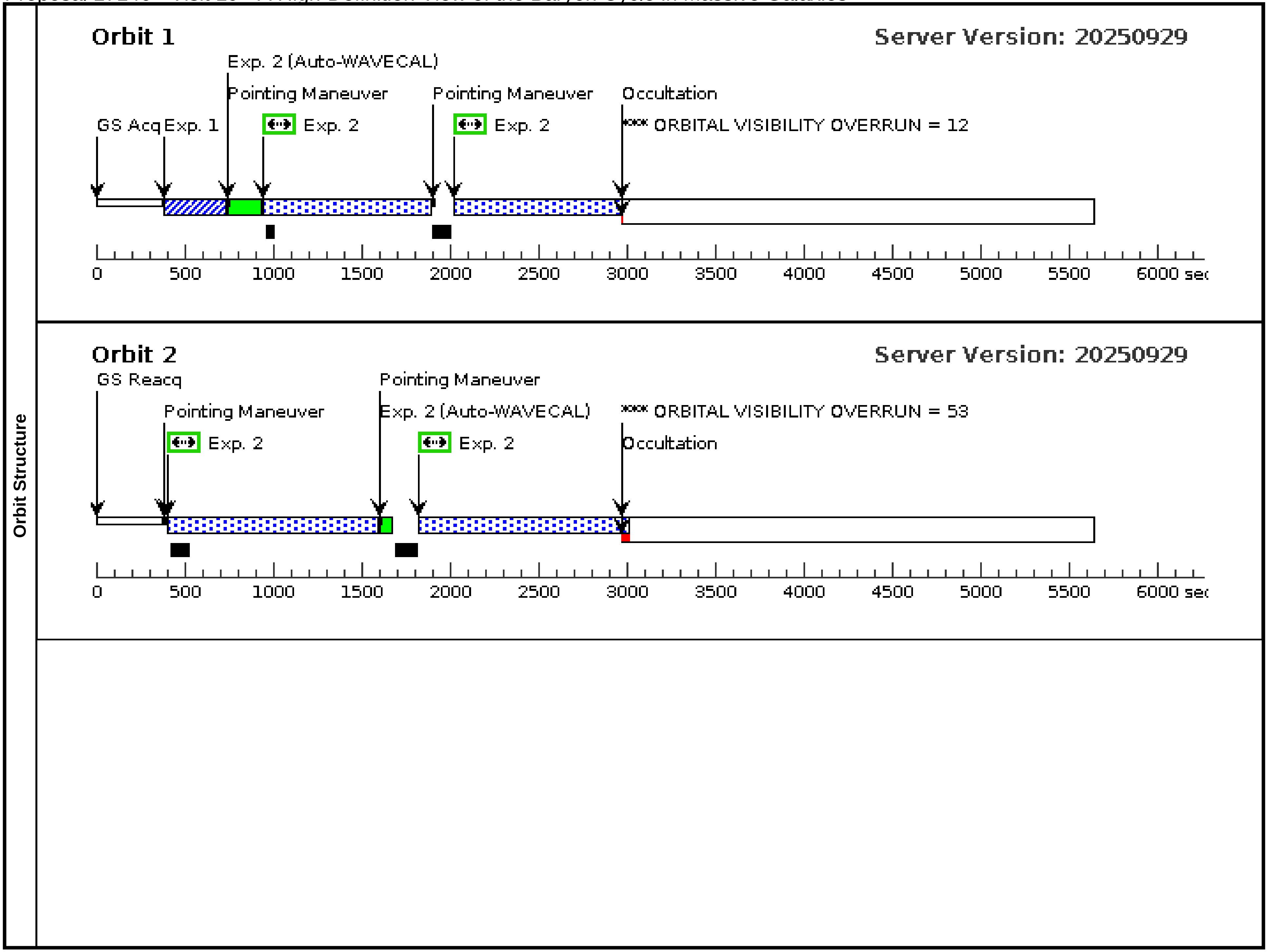
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0246-0825AB	RA: 02 46 34.1100 (41.6421250d) Dec: -08 25 36.30 (-8.42675d) Equinox: J2000		V=18.2 GALEX NUV(AB) = 19.28	Reference Frame: ICRS

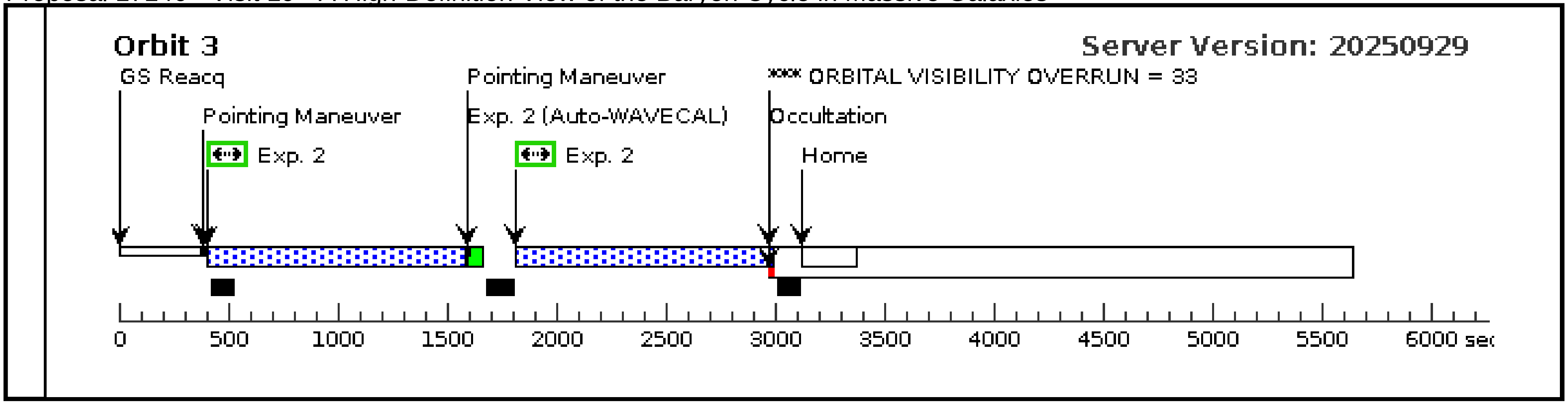
Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A. Both lensed images A and B will be observed simultaneously
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811238)	(6) J0246-0825AB	STIS/CCD, ACQ, F28X50LP	MIRROR				30 Secs (30 Secs)	
								[==>]	***[1]***
2	(STIS.sp.1811263)	(6) J0246-0825AB	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in Visit 19 (2)	7200 Secs (6573 Secs)	
								[==>939.0 Secs (Pattern 1)] *[==>940.0 Secs (Pattern 2)]*	***[1]***
								[==>1179.0 Secs (Pattern 3)] *[==>1178.0 Secs (Pattern 4)]*	***[2]***
								[==>1169.0 Secs (Pattern 5)] *[==>1168.0 Secs (Pattern 6)]*	***[3]***


Orbit Structure
Orbit 1
Server Version: 20250929
Exp. 2 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Occultation
GS Acq
Exp. 1
Exp. 2
Exp. 2
**** ORBITAL VISIBILITY OVERRUN = 12
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec
Orbit 2
Server Version: 20250929
GS Reacq
Pointing Maneuver
Pointing Maneuver
Exp. 2 (Auto-WAVECAL)
**** ORBITAL VISIBILITY OVERRUN = 53
Exp. 2
Exp. 2
Occultation
0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Proposal 17146 - Visit 19 - A High-Definition View of the Baryon Cycle in Massive Galaxies



Visit

Proposal 17146, Visit 20, completed Tue Dec 16 02:00:27 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: (none)

Diagnostics

(Visit 20) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Visit 20) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=4 Point Spacing=0.3 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1206+4322A	RA: 12 06 29.6400 (181.6235000d) Dec: +43 32 17.57 (43.53821d) Equinox: J2000		V=18.8 GALEX NUV(AB)=19.5	Reference Frame: ICRS

Comments: Object is a doubly imaged QSO. Listed coordinates are for the brighter image A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J1206+4322B-OFFSET	Offset from J1206+4322A RA Offset: 1.1111E-5 Secs Dec Offset: 3.03 Arcsec		V=18.8 GALEX NUV(AB)=19.9	Offset Position (J1206+4322B-OFFSET)

Comments: Object is a doubly imaged QSO. Listed coordinates are for the fainter image B, which are its offset from image A. We will apply an offset of delta_RA=+0.04 arcsec and delta_dec=+3.03 arcsec after first acquiring A.
Category=GALAXY
Description=[GRAVITATIONAL LENS, QSO, QUASAR]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.1811190)	(4) J1206+4322A	STIS/CCD, ACQ, F28X50LP	MIRROR	ACQTYPE=POINT			20 Secs (20 Secs) *[==>]*	*[1]*

Comments: We will start this visit observing image A

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	(STIS.sp.1811218)	(7) J1206+4322B-OFFSET	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 1, Exps 2-2 in Visit 20 (1)	3500 Secs (4354 Secs) *[==>989.0 Secs (Pattern 1)]* *[==>990.0 Secs (Pattern 2)]*	*[1]*
								[==>1187.0 Secs (Pattern 3)] *[==>1188.0 Secs (Pattern 4)]*	*[2]*

Proposal 17146 - Visit 20 - A High-Definition View of the Baryon Cycle in Massive Galaxies