17430 - Pulling Back the Curtain Veiling Extreme UV Galaxies: Revealing the Mysterious Sources of He II Emission

Cycle: 31, Proposal Category: GO

(Availability Mode: SUPPORTED)

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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) J0944-0038	WFC3/UVIS	2	05-Mar-2025 11:00:14.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(1) J0944-0038	ACS/WFC	2	05-Mar-2025 11:00:15.0	yes
20	(1) J0944-0038	ACS/WFC	1	05-Mar-2025 11:00:15.0	yes
03	(2) J1016+3754	WFC3/UVIS	3	05-Mar-2025 11:00:16.0	yes
04	(2) J1016+3754	ACS/WFC	2	05-Mar-2025 11:00:17.0	yes
05	(3) J1044+0353	WFC3/UVIS	1	05-Mar-2025 11:00:18.0	yes
06	(4) J1418+2102	ACS/WFC	4	05-Mar-2025 11:00:18.0	yes
07	(5) J1545+0858	WFC3/UVIS	2	05-Mar-2025 11:00:19.0	yes
08	(5) J1545+0858	ACS/WFC	2	05-Mar-2025 11:00:20.0	yes
21	(3) J1044+0353	WFC3/UVIS	4	05-Mar-2025 11:00:20.0	yes
22	(5) J1545+0858	ACS/WFC	3	05-Mar-2025 11:00:21.0	yes

26 Total Orbits Used

ABSTRACT

Our first deep observations of high redshift galaxies revealed exceptionally strong high-ionization nebular emission lines. Characterizing and describing the detailed observations of the earliest galaxies with JWST and future extremely large telescopes will hinge on our understanding of these lines. However, current stellar population synthesis models catastrophically fail to reproduce the observed strengths of these extreme emission lines, often invoking theories of rare phenomena to understand this emission. Fortunately, progress is possible: high-spatial-resolution maps of very-high-ionization emission can help constrain the options for these potentially exotic sources. Here, we propose 25 orbits of high-spatial-resolution HST imaging to map the spatial morphology of HeII 4686 emission in five nearby low-metallicity, highly-ionized galaxies selected for their strong HeII emission. We will compare the spatial distribution of HeII emission with maps of the stellar population and the nebular gas traced by the Balmer lines, [OII], and [OIII], in order to distinguish between photoionization from massive and metal-poor stars, X-ray binaries, shocks, Wolf Rayet stars, and AGN. The compact nature for many of these sources requires a high spatial resolution (< 50 pc) that is only possible with HST. These observations will provide the necessary constraints to create the next generation of ionizing radiation models in highly-ionized galaxies, like those common during the Epoch of Reionization.

OBSERVING DESCRIPTION

We propose high-resolution HST WFC3/UVIS and ACS/WFC imaging of five nearby extreme emission-line galaxies, so as to strongly constrain the source(s) of their extreme and, currently, unexplained He II 4686 emission. These observations will also allow us to relate the production of this excess emission to the stars and gas in these extreme galaxies and provide insights on the intense radiation observed from similar galaxies at high-z.

Targets:
1. J0944-0038 (z = 0.005)
2. J1016+3754 (z = 0.004)
3. J1044+0353 (z = 0.013)
4. J1418+2102 (z = 0.009)
5. J1545+0858 (z = 0.038)

Features of interest:

- He II: For Targets 1, 2, and 4, He II can be mapped with the ACS/WFC FR462N ramp filter. To remove the stellar continuum and Ar IV contamination from our He II observations, we plan for a series of three observations with this filter, using slightly different central wavelengths chosen to observe:
1) He II 4686A + Ar IV 4711,4740AA + stellar continuum
2) Ar IV 4711,4740AA + stellar continuum
3) only the stellar continuum
Target 3 already has archival He II observations. Target 5 uses the WFC3/UVIS F487N filter to map He II (with ArIV and continuum), while the ACS/WFC FR505N and FR462N ramp filters are used to observe ArIV (with continuum) and the continuum near He II, respectively.

- Nebular emission: H-alpha 6563A, H-beta 4861A, [O II] 3726,9A, and [O III] 4959,5008A. Trace low and high ionization zones (HII regions). Balmer decrement can distinguish variations in dust attenuation. For Targets 1 and 2, these correspond to the WFC3/UVIS filters F665N, F487N, F373N, and F502N, respectively. For Target 3, H-beta with FQ492N, [O II] will be observed with FQ378N, and [O III] with F502N. There is

archival H-alpha data for Target 3. Target 4 has archival data for H-alpha, H-beta, [O II], and [O III]. Target 5 needs ACS/WFC ramp filters: FR505N to map H-beta and [O III], FR656N to map H-alpha, and FR388N to map [O II].

- Continuum: We will observe the stellar continuum near multiple regions of interest. Targets 1, 2, 3, and 5, involve observations of the stellar continuum using WFC3/UVIS F275W (traces the young stellar population) and F336W (near O II). Targets 1, 2, and 5, also use the WFC3/UVIS filter F645N for the continuum near H-alpha.

Visits:

1. J0944: 1 visit with 4 total orbits
-- orbit 1-2: seven WFC3/UVIS filters (F275W, F336W, F373N, F487N, F502N, F645N, F665N) and the UVIS2-2K2C-SUB aperture. These observations will use a 2-point dither pattern (WFC3-UVIS-DITHER-LINE), where each of the filters is used for one exposure in each orbit.
-- orbit 3-4: a ACS/WFC filter (FR462N), set to three different central wavelengths: 4750A (He II + Ar IV + continuum), 4780A (Ar IV + continuum), and 4580A (continuum). WFC2-ORAMP aperture. This combination of observations will allow us to produce maps of the He II emission, without contamination from Ar IV and the stellar continuum. These observations will use a 2-point dither pattern (ACS-WFC-DITHER-LINE), where each of the filters is used for one exposure in each orbit.

2. J1016: 1 visit with 5 total orbits
-- orbit 1-3: same seven WFC3/UVIS filters as used for Target 1 and the UVIS2-2K2C-SUB aperture. Unike Target 1, these observations will use a 3-point dither pattern (WFC3-UVIS-DITHER-LINE-3PT), where each of the filters is used for one exposure per orbit.
-- orbit 4-5: ACS/WFC FR462N set to three different central wavelengths: 4740A (He II + Ar IV + continuum), 4765A (Ar IV + continuum), and 4580A (continuum). WFC2-ORAMP aperture. These observations will use a 2-point dither pattern (ACS-WFC-DITHER-LINE), where each of the filters is used for one exposure in each orbit.

3. J1044: 1 visit with 5 total orbits
-- orbit 1: one WFC3/UVIS filter (FQ378N) and UVIS-QUAD aperture. 3-point dither with WFC3-UVIS-DITHER-LINE-3PT.
-- orbit 2-5: three WFC3/UVIS filters (F502N, F275W, F336W) and UVIS2 aperture. 4-point dither with WFC3-UVIS-DITHER-BOX.

4. J1418: 1 visit with 4 total orbits
-- ACS/WFC FR462N set to three different central wavelengths: 4760A (He II + Ar IV + continuum), 4790A (Ar IV + continuum), and 4600A (continuum). WFC2-ORAMP aperture. 4-point dither with ACS-WFC-DITHER-BOX, with an exposure from each filter in all four orbits.

5. J1545: 1 visit with 7 total orbits
-- orbit 1-2: four WFC3/UVIS filters (F275W, F336W, F487N, F645N) + UVIS2 aperture. 2-point dither pattern WFC3-UVIS-DITHER-LINE, with an exposure from each filter in both orbits.
-- orbit 3-4: two ACS/WFC filters (2xFR505N, FR656N) + WFC2-MRAMP aperture. 2-point dither pattern (ACS-WFC-DITHER-LINE) with an exposure from each of the 3 filters in each orbit (FR505N set at 5030A, FR505N at 5180A, and FR656N at 6800A).
-- orbit 5-6: two ACS/WFC filters (FR388N, FR505N) + WFC2-MRAMP aperture. 2-point dither pattern (ACS-WFC-DITHER-LINE) with an exposure from each of the 2 filters in each orbit (FR388N set at 3870A and FR505N set at 4940A).
-- orbit 7: one ACS/WFC filter (FR462N) + WFC2-ORAMP aperture. 2-point dither pattern (ACS-WFC-DITHER-LINE) with FR462N set to 4750 A, to observe the continuum near He II 4686.

Additional notes:

To limit spatial variations of central wavelengths with the ramp filter, the dithers for observations with these filters have intentionally small, sub-pixel step sizes.

The number of post-flash electrons to add to the ACS ramp and UVIS imaging is calculated filter-by-filter using the imaging ETCs.

Visit

Proposal 17430, J0944 (WFC3) (01), completed Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: 2 orbits: WFC3/UVIS

Diagnostics

(J0944 (WFC3) (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J0944 (WFC3) (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1-7)

Fixed Targets

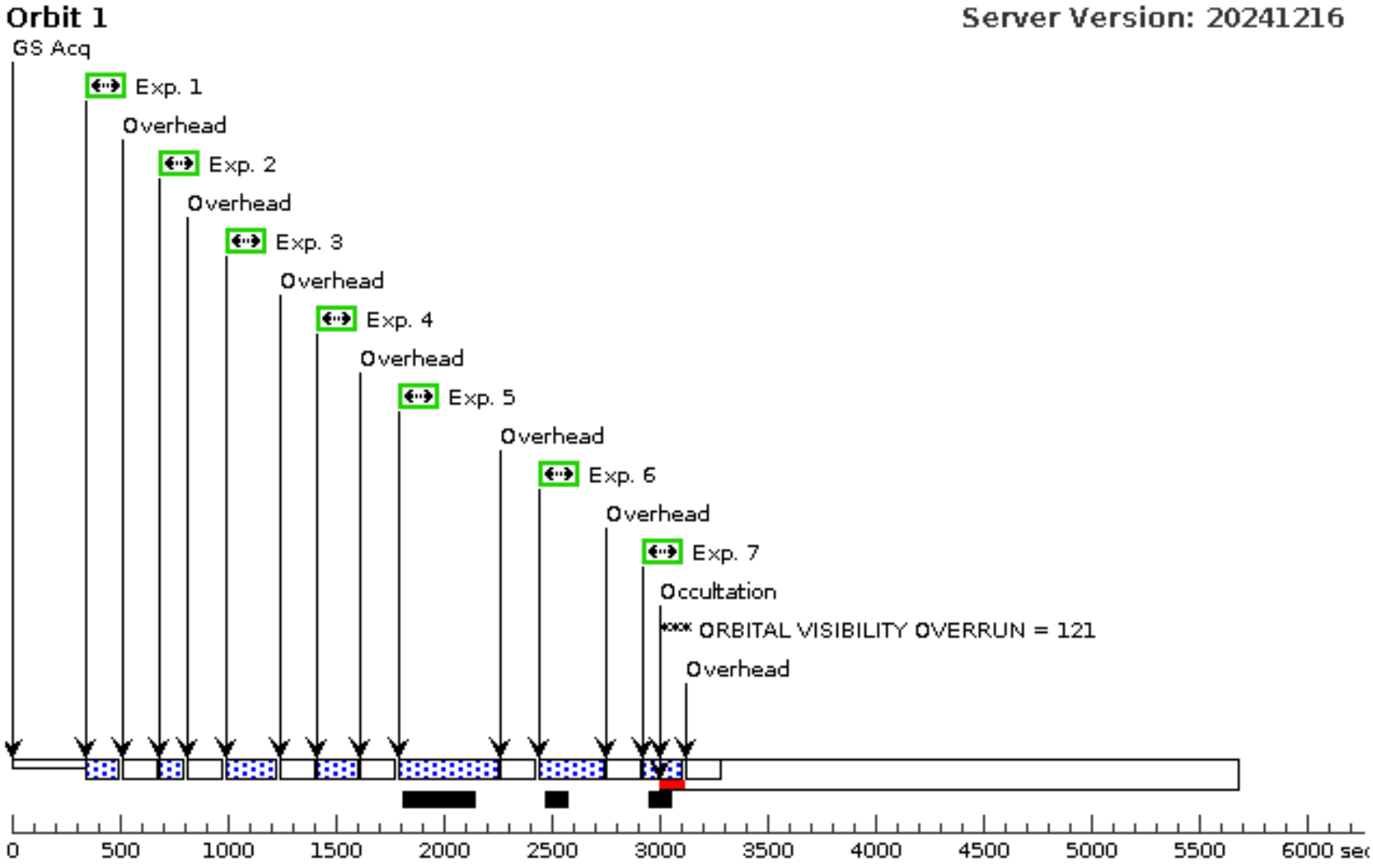
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0944-0038	RA: 09 44 1.8720 (146.0078000d) Dec: -00 38 32.17 (-.64227d) Equinox: J2000		V=15.69	Reference Frame: ICRS

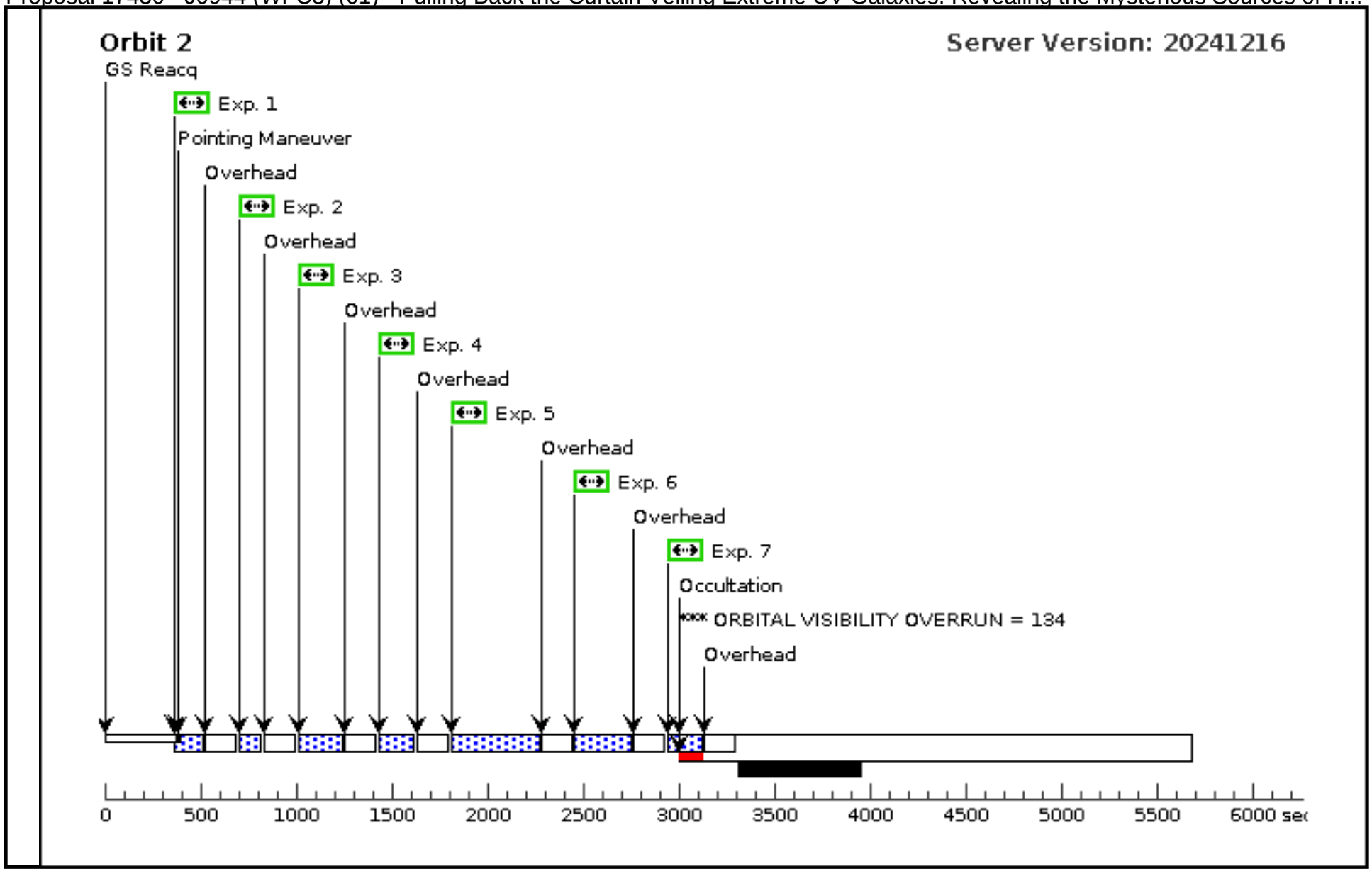
Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	cont. UV (F275W) (1891185)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	70 Secs (243 Secs)	
								[==>122.0 Secs (Pattern 1)]	***[1]***
								[==>121.0 Secs (Pattern 2)]	***[2]***
2	cont. OII (F336W) (1891184)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F336W	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	40 Secs (183 Secs)	
								[==>92.0 Secs (Pattern 1)]	***[1]***
								[==>91.0 Secs (Pattern 2)]	***[2]***
3	cont. Ha (F645N) (1891186)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F645N	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	170 Secs (443 Secs)	
								[==>222.0 Secs (Pattern 1)]	***[1]***
								[==>221.0 Secs (Pattern 2)]	***[2]***
4	Ha (F665N) (1891182)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F665N	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	105 Secs (313 Secs)	
								[==>157.0 Secs (Pattern 1)]	***[1]***
								[==>156.0 Secs (Pattern 2)]	***[2]***
5	OII (F373N) (1891187)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F373N	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	390 Secs (883 Secs)	
								[==>442.0 Secs (Pattern 1)]	***[1]***
								[==>441.0 Secs (Pattern 2)]	***[2]***
6	Hb (F487N) (1891188)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F487N	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	215 Secs (533 Secs)	
								[==>267.0 Secs (Pattern 1)]	***[1]***
								[==>266.0 Secs (Pattern 2)]	***[2]***
7	OIII (F502N) (1891189)	(1) J0944-0038	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F502N	FLASH=20		Pattern 3, Exps 1-7 in J0944 (WFC3) (01) (3)	115 Secs (333 Secs)	
								[==>167.0 Secs (Pattern 1)]	***[1]***
								[==>166.0 Secs (Pattern 2)]	***[2]***

Orbit Structure




Orbit 2
Server Version: 20241216
GS Reacq
Exp. 1
Pointing Maneuver
Overhead
Exp. 2
Overhead
Exp. 3
Overhead
Exp. 4
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Exp. 5
Overhead
Exp. 6
Overhead
Exp. 7
Occultation
**** ORBITAL VISIBILITY OVERRUN = 134
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17430, J0944 (ACS) (02), failed Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 2 orbits: ACS/WFC

Diagnostics

(J0944 (ACS) (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J0944 (ACS) (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(He II (FR462N) (02.001)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(cont. HeII (FR462N) (02.002)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(ArIV (FR462N) (02.003)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-3)

Fixed Targets

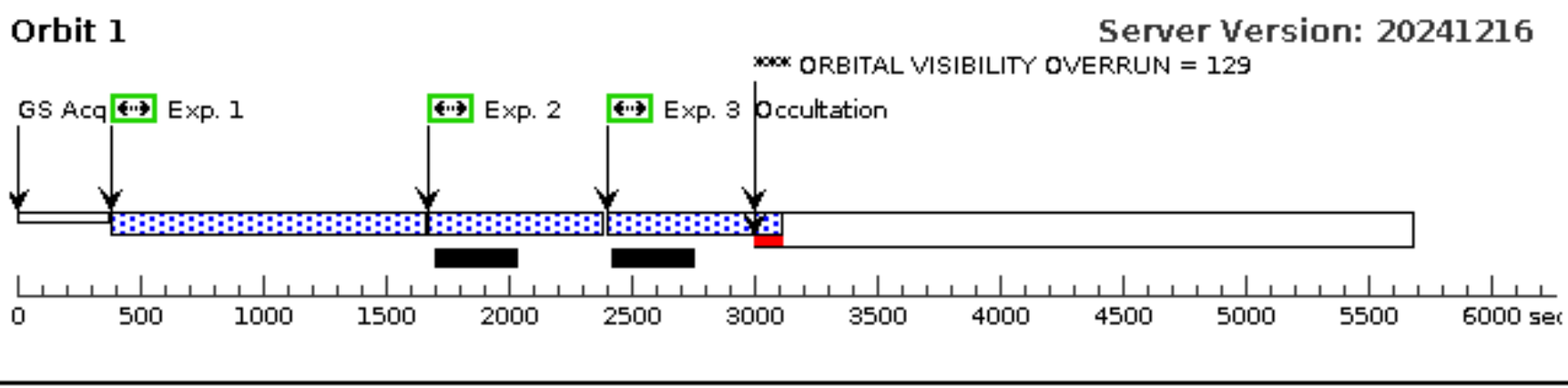
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0944-0038	RA: 09 44 1.8720 (146.0078000d) Dec: -00 38 32.17 (-.64227d) Equinox: J2000		V=15.69	Reference Frame: ICRS

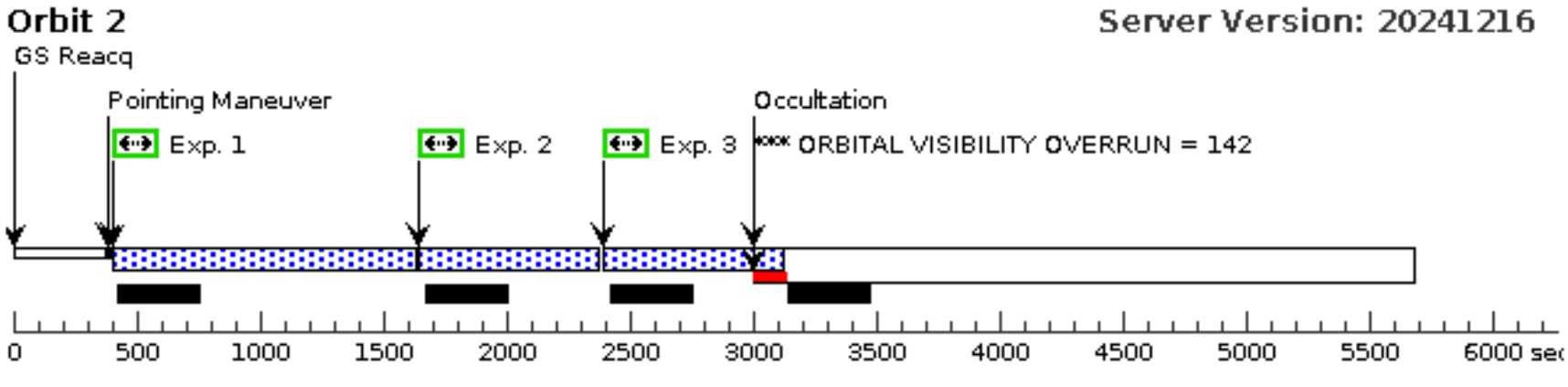
Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	He II (FR462N) (1891235)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4750 A	FLASH=20		Pattern 4, Exps 1-3 in J0944 (ACS) (02) (4)	1000 Secs (2165 Secs)	
								[==>1072.0 Secs (Pattern 1)]	***[1]***
								[==>1093.0 Secs (Pattern 2)]	***[2]***
2	cont. HeII (FR462N) (1891239)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4580 A	FLASH=20		Pattern 4, Exps 1-3 in J0944 (ACS) (02) (4)	500 Secs (1165 Secs)	
								[==>572.0 Secs (Pattern 1)]	***[1]***
								[==>593.0 Secs (Pattern 2)]	***[2]***
3	ArIV (FR462N) (1891238)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4780 A	FLASH=20		Pattern 4, Exps 1-3 in J0944 (ACS) (02) (4)	500 Secs (1165 Secs)	
								[==>572.0 Secs (Pattern 1)]	***[1]***
								[==>593.0 Secs (Pattern 2)]	***[2]***

Orbit Structure





Visit

Proposal 17430, J0944 (ACS) (20), implementation Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 1 orbit: ACS/WFC
HOPR 93005 repeat of visit 2.

Fixed Targets

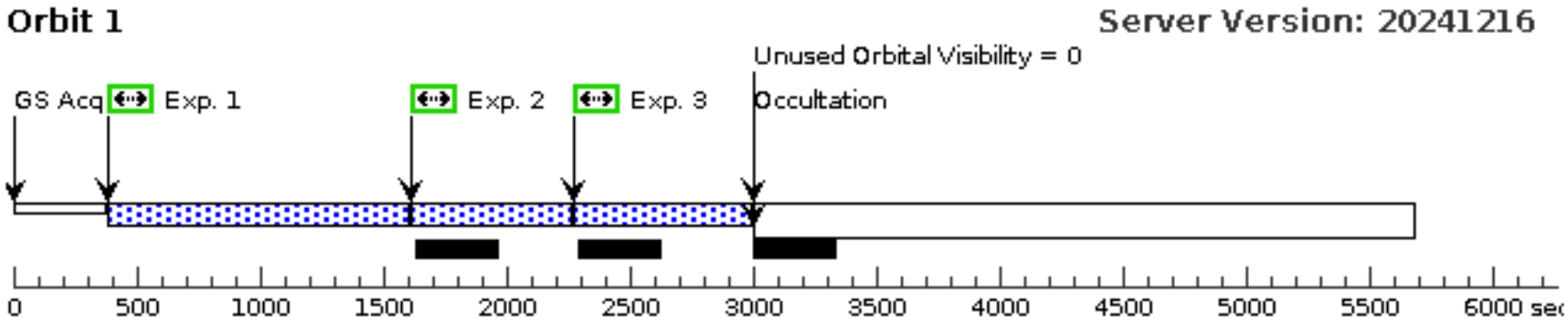
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0944-0038	RA: 09 44 1.8720 (146.0078000d) Dec: -00 38 32.17 (-.64227d) Equinox: J2000		V=15.69	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	He II (FR462N) (1891235)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4750 A	FLASH=20			1000 Secs (1005 Secs) *[==>1005.0 Secs]*	 ***[1]***
2	cont. HeII (FR462N) (1891239)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4580 A	FLASH=20			500 Secs (505 Secs) *[==>505.0 Secs]*	 ***[1]***
3	ArIV (FR462N) (1891238)	(1) J0944-0038	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4780 A	FLASH=20			500 Secs (577 Secs) *[==>577.0 Secs]*	 ***[1]***

Orbit Structure



Visit

Proposal 17430, J1016 (WFC3) (03), completed Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: 3 orbits: WFC3/UVIS

Diagnostics

(J1016 (WFC3) (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1016 (WFC3) (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1016 (WFC3) (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1-7)

Fixed Targets

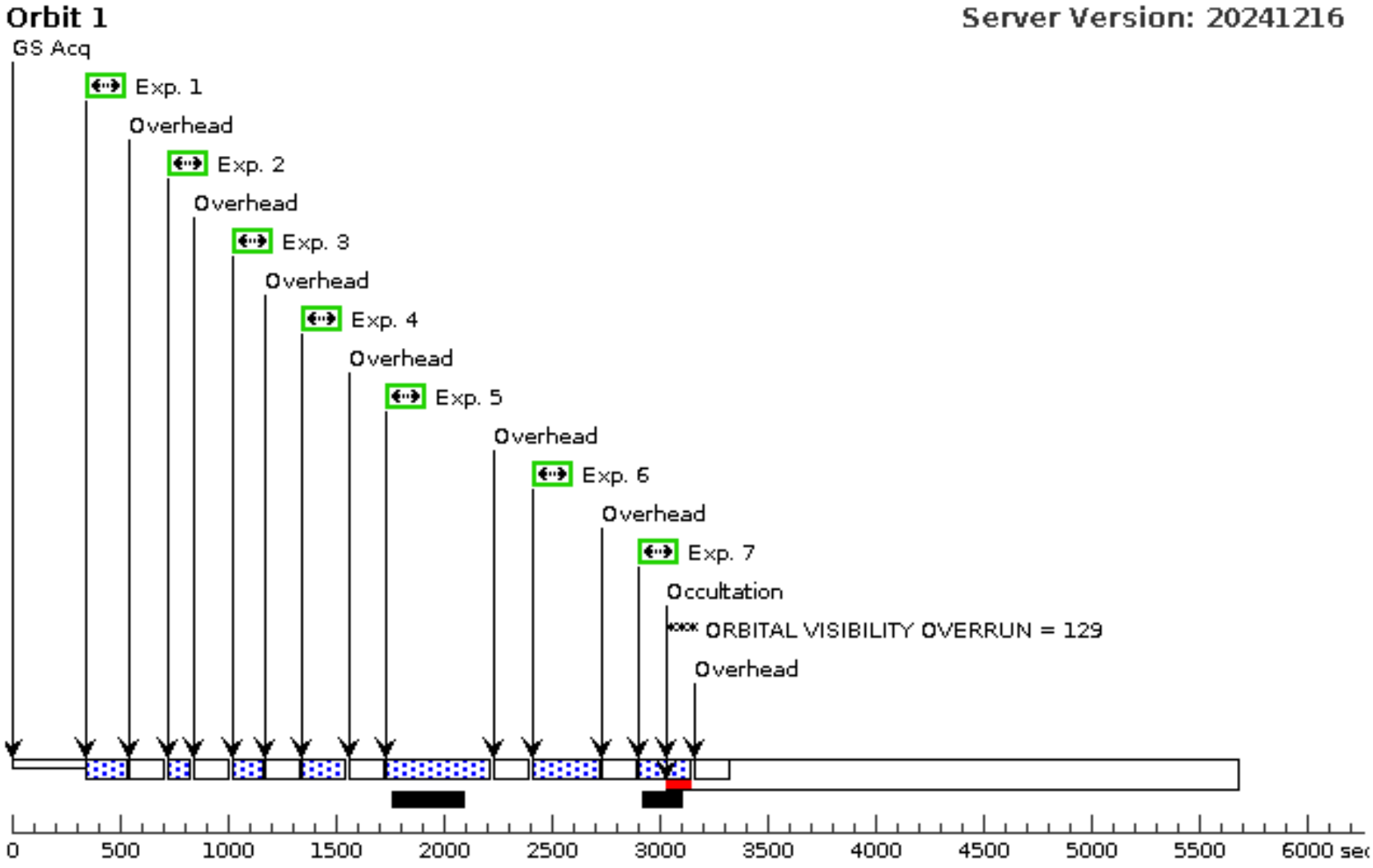
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J1016+3754	RA: 10 16 24.4800 (154.1020000d) Dec: +37 54 46.08 (37.91280d) Equinox: J2000		V=16.06	Reference Frame: ICRS

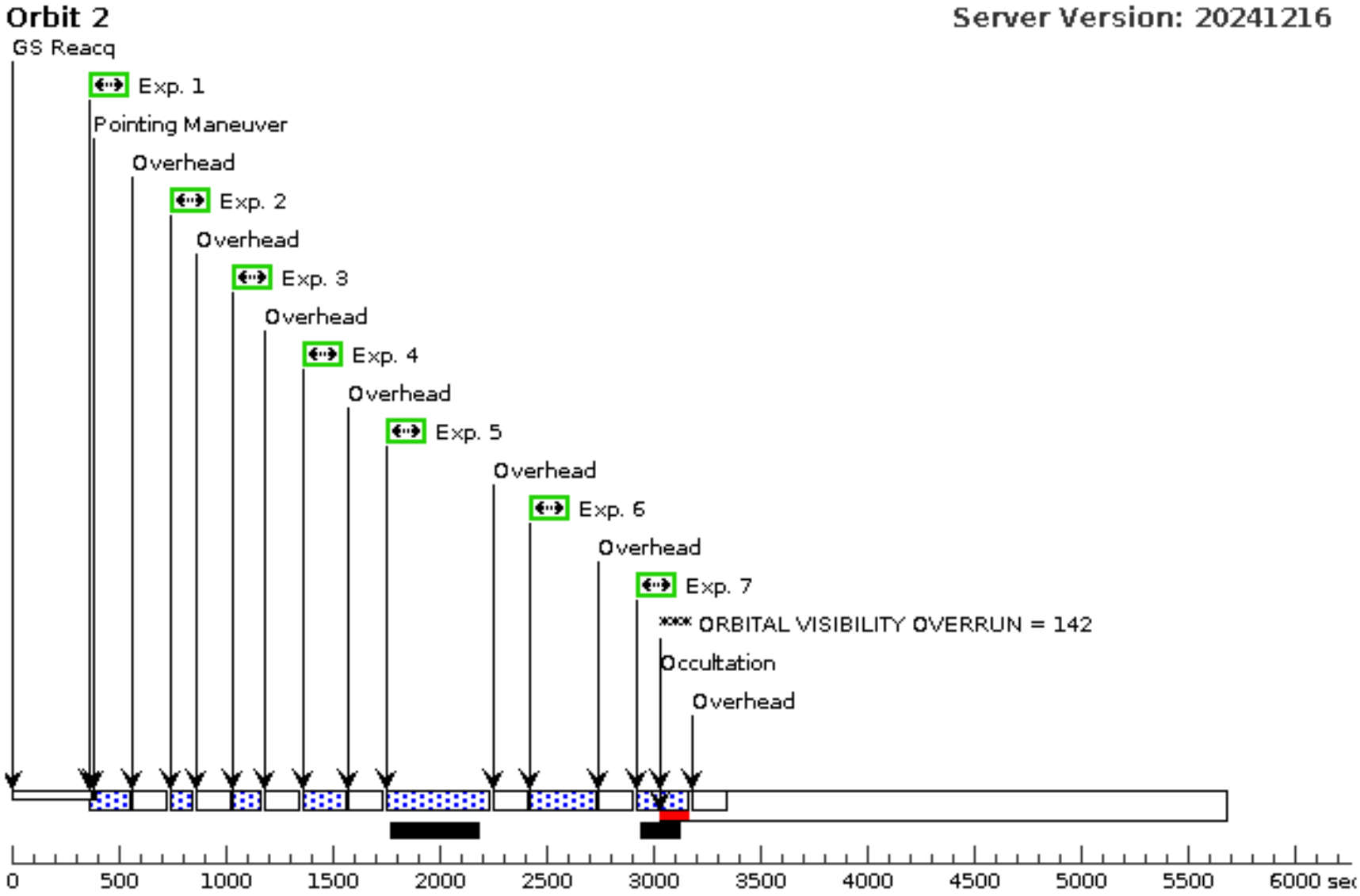
Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

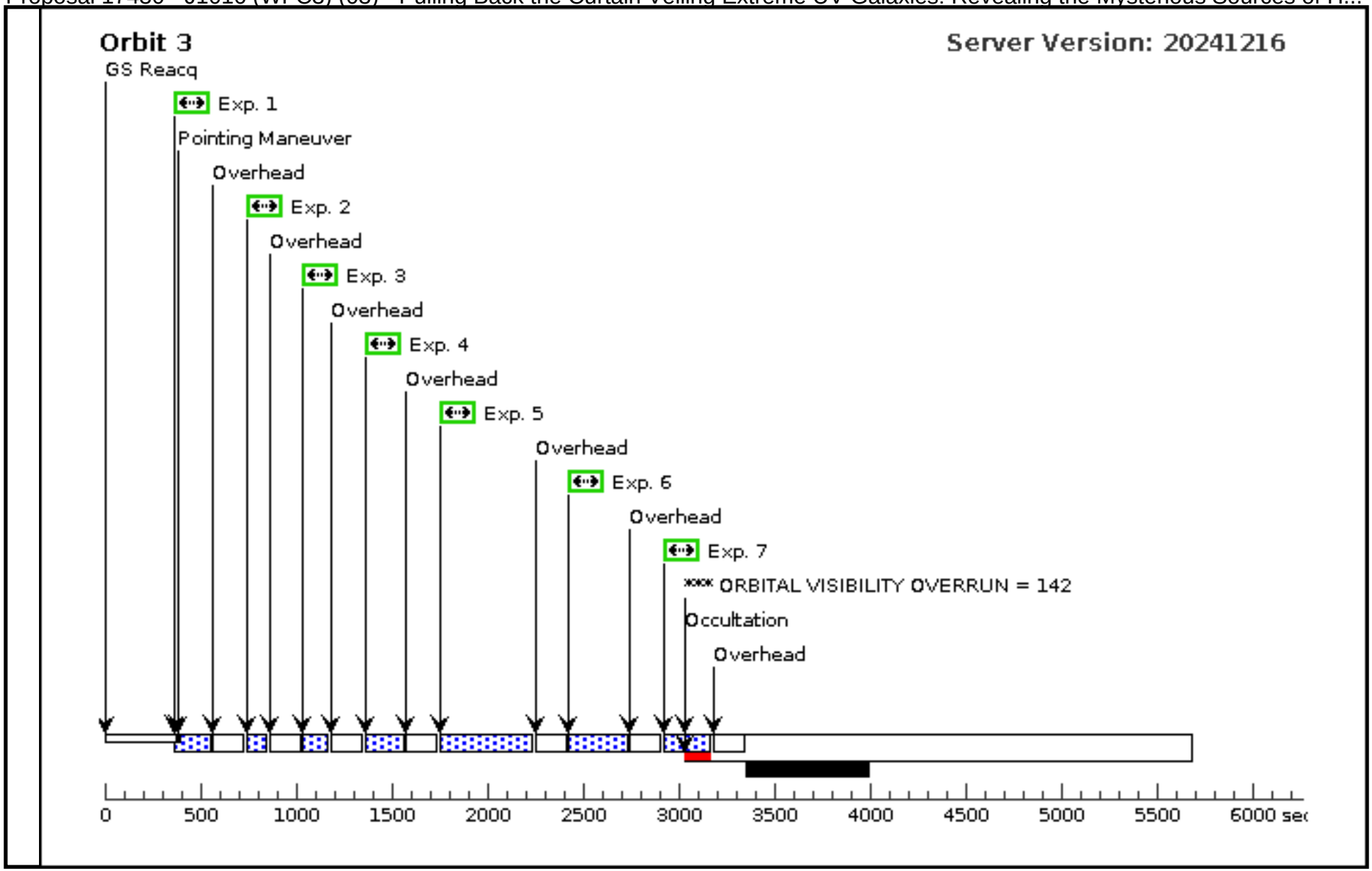
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Ha (F665N) (1891191)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F665N	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	120 Secs (472 Secs)	
								[==>158.0 Secs (Pattern 1)]	***[1]***
								[==>157.0 Secs (Pattern 2)]	***[2]***
								[==>157.0 Secs (Pattern 3)]	***[3]***
2	cont. OII (F336W) (1891192)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F336W	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	40 Secs (232 Secs)	
								[==>78.0 Secs (Pattern 1)]	***[1]***
								[==>77.0 Secs (Pattern 2)]	***[2]***
								[==>77.0 Secs (Pattern 3)]	***[3]***
3	cont. UV (F275W) (1891193)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	75 Secs (337 Secs)	
								[==>113.0 Secs (Pattern 1)]	***[1]***
								[==>112.0 Secs (Pattern 2)]	***[2]***
								[==>112.0 Secs (Pattern 3)]	***[3]***
4	OIII (F502N) (1891194)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F502N	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	140 Secs (532 Secs)	
								[==>178.0 Secs (Pattern 1)]	***[1]***
								[==>177.0 Secs (Pattern 2)]	***[2]***
								[==>177.0 Secs (Pattern 3)]	***[3]***
5	OII (F373N) (1891195)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F373N	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	430 Secs (1402 Secs)	
								[==>468.0 Secs (Pattern 1)]	***[1]***
								[==>467.0 Secs (Pattern 2)]	***[2]***
								[==>467.0 Secs (Pattern 3)]	***[3]***
6	Hb (F487N) (1891196)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F487N	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	240 Secs (832 Secs)	
								[==>278.0 Secs (Pattern 1)]	***[1]***
								[==>277.0 Secs (Pattern 2)]	***[2]***
								[==>277.0 Secs (Pattern 3)]	***[3]***
7	cont. Ha (F645N) (1891197)	(2) J1016+3754	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F645N	FLASH=20		Pattern 2, Exps 1-7 in J1016 (WFC3) (03) (2)	195 Secs (697 Secs)	
								[==>233.0 Secs (Pattern 1)]	***[1]***
								[==>232.0 Secs (Pattern 2)]	***[2]***
								[==>232.0 Secs (Pattern 3)]	***[3]***

Orbit Structure




Orbit 2
Server Version: 20241216
GS Reacq
Exp. 1
Pointing Maneuver
Overhead
Exp. 2
Overhead
Exp. 3
Overhead
Exp. 4
Overhead
Exp. 5
Overhead
Exp. 6
Overhead
Exp. 7
**** ORBITAL VISIBILITY OVERRUN = 142
Occultation
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec


Orbit 3
Server Version: 20241216
GS Reacq
Exp. 1
Pointing Maneuver
Overhead
Exp. 2
Overhead
Exp. 3
Overhead
Exp. 4
Overhead
Exp. 5
Overhead
Exp. 6
Overhead
Exp. 7
**** ORBITAL VISIBILITY OVERRUN = 142
Occultation
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17430, J1016 (ACS) (04), completed Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 2 orbits: ACS/WFC

Diagnostics

(J1016 (ACS) (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1016 (ACS) (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(cont. HeII (FR462N) (04.001)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(ArIV (FR462N) (04.002)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(HeII (FR462N) (04.003)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-3)

Fixed Targets

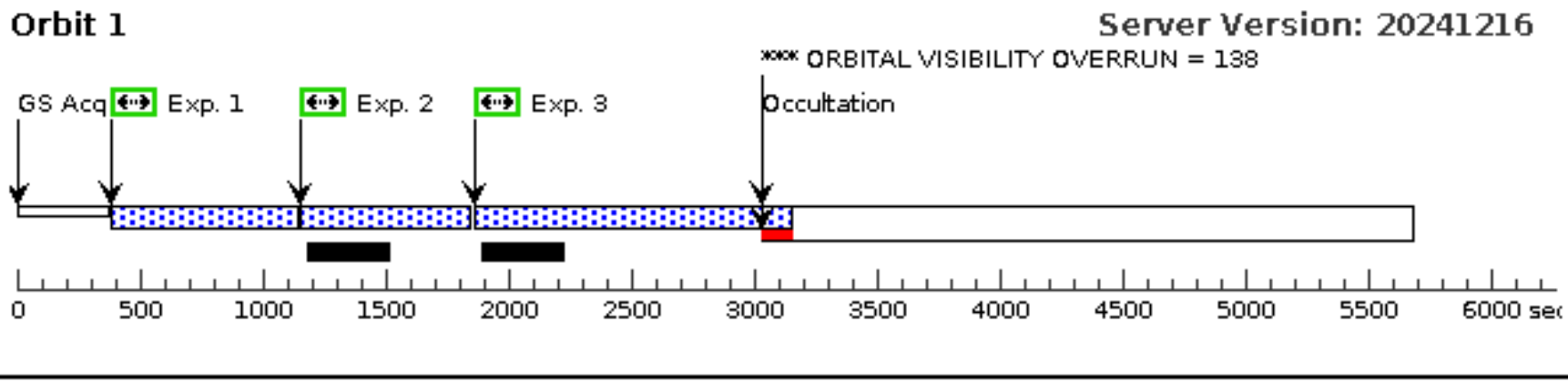
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J1016+3754	RA: 10 16 24.4800 (154.1020000d) Dec: +37 54 46.08 (37.91280d) Equinox: J2000		V=16.06	Reference Frame: ICRS

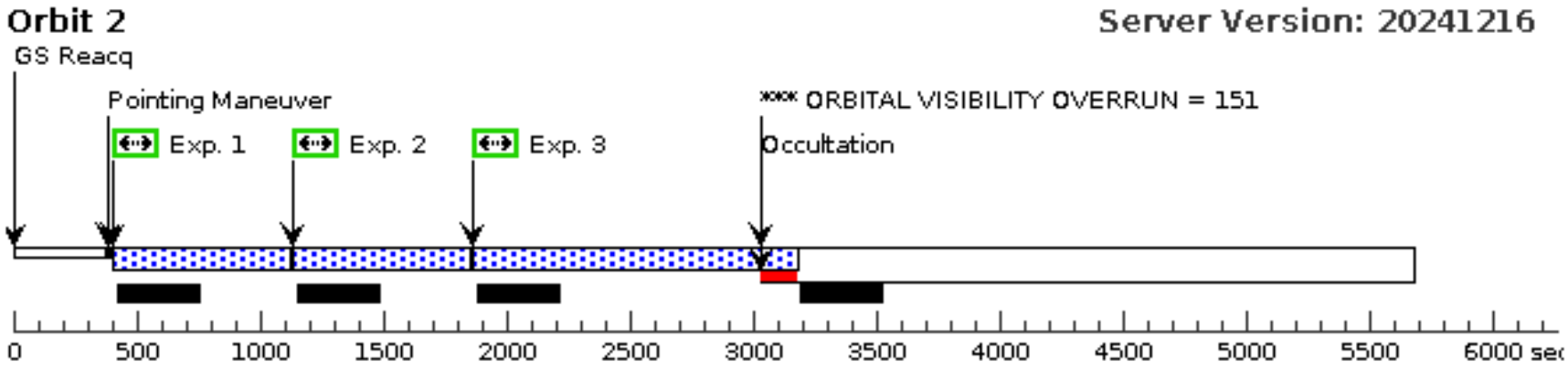
Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	cont. HeII (FR462N) (1891247)	(2) J1016+3754	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4580 A	FLASH=20		Pattern 4, Exps 1-3 in J1016 (ACS) (04) (4)	500 Secs (1127 Secs)	
								[==>553.0 Secs (Pattern 1)]	***[1]***
								[==>574.0 Secs (Pattern 2)]	***[2]***
2	ArIV (FR462N) (1891246)	(2) J1016+3754	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4765 A	FLASH=20		Pattern 4, Exps 1-3 in J1016 (ACS) (04) (4)	500 Secs (1127 Secs)	
								[==>553.0 Secs (Pattern 1)]	***[1]***
								[==>574.0 Secs (Pattern 2)]	***[2]***
3	HeII (FR462N) (1891242)	(2) J1016+3754	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4740 A	FLASH=20		Pattern 4, Exps 1-3 in J1016 (ACS) (04) (4)	1100 Secs (2327 Secs)	
								[==>1153.0 Secs (Pattern 1)]	***[1]***
								[==>1174.0 Secs (Pattern 2)]	***[2]***

Orbit Structure





Visit

Proposal 17430, J1044 (WFC3) (05), implementation Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: 1 orbit - WFC3/UVIS

Diagnostics

(OII (FQ378N) (05.001)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1)

Fixed Targets

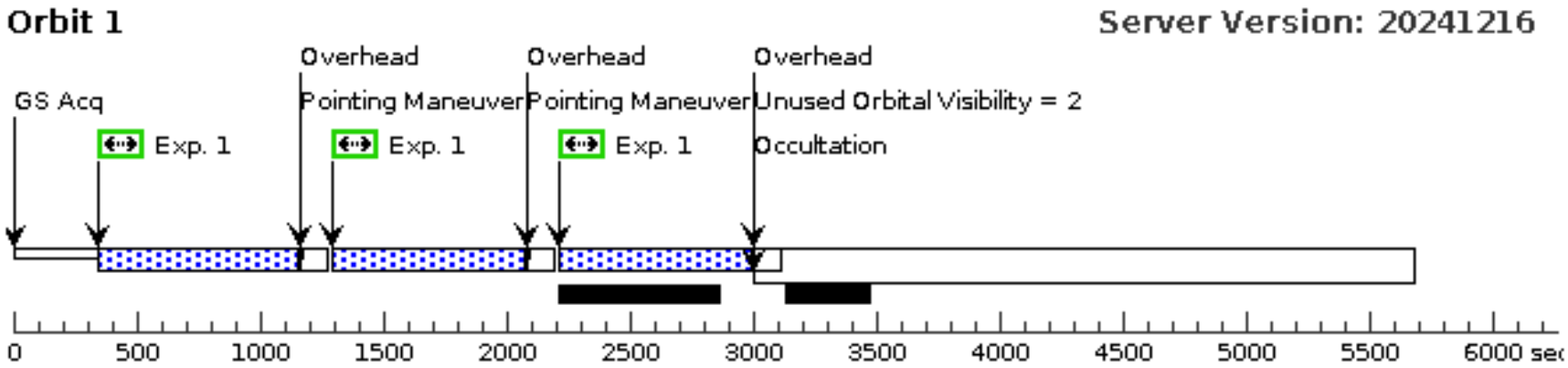
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J1044+0353	RA: 10 44 57.7900 (161.2407917d) Dec: +03 53 13.10 (3.88697d) Equinox: J2000		V=17.86	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	OII (FQ378N) (1891252)	(3) J1044+0353	WFC3/UVIS, ACCUM, UVIS-QUAD	FQ378N	FLASH=20		Pattern 2, Exps 1-1 in J1044 (WFC3) (05) (2)	650 Secs (2337 Secs) *[==>779.0 Secs (Pattern 1)]* *[==>779.0 Secs (Pattern 2)]* *[==>779.0 Secs (Pattern 3)]*	***[1]***

Orbit Structure



Visit

Proposal 17430, J1418 (ACS) (06), scheduling Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 4 orbits - ACS/WFC

Diagnostics

(cont. HeII (FR462N) (06.001)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(ArIV (FR462N) (06.002)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(HeII (FR462N) (06.003)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(6)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.171 Line Spacing=0.171	Coordinate Frame=POS-TARG Pattern Orientation=30.16 Angle Between Sides=145.82 Center Pattern=false		(1-3)

Fixed Targets

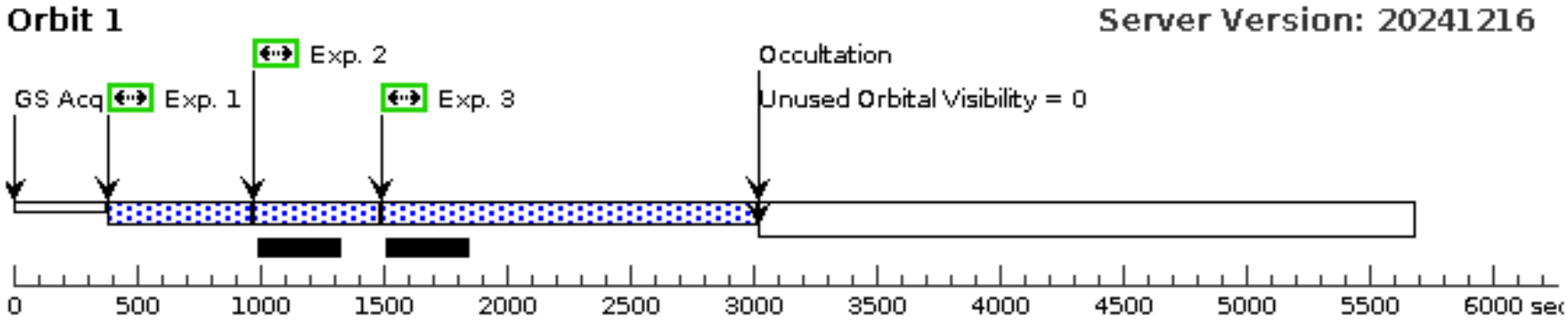
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1418+2102	RA: 14 18 51.1190 (214.7129958d) Dec: +21 02 39.84 (21.04440d) Equinox: J2000		V=17.74	Reference Frame: ICRS

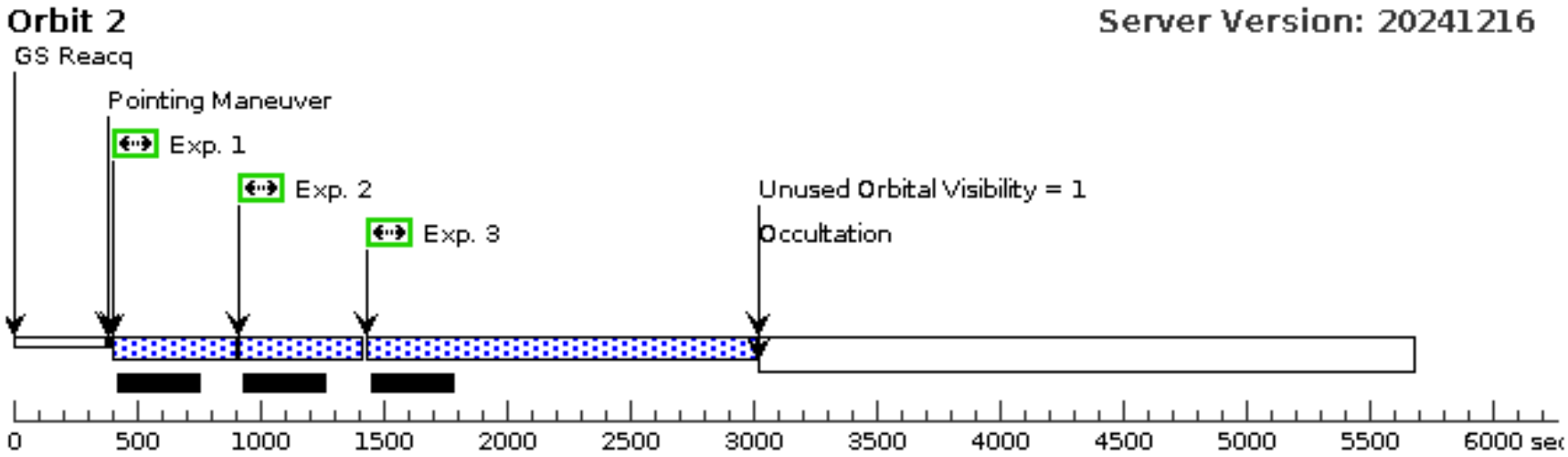
Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

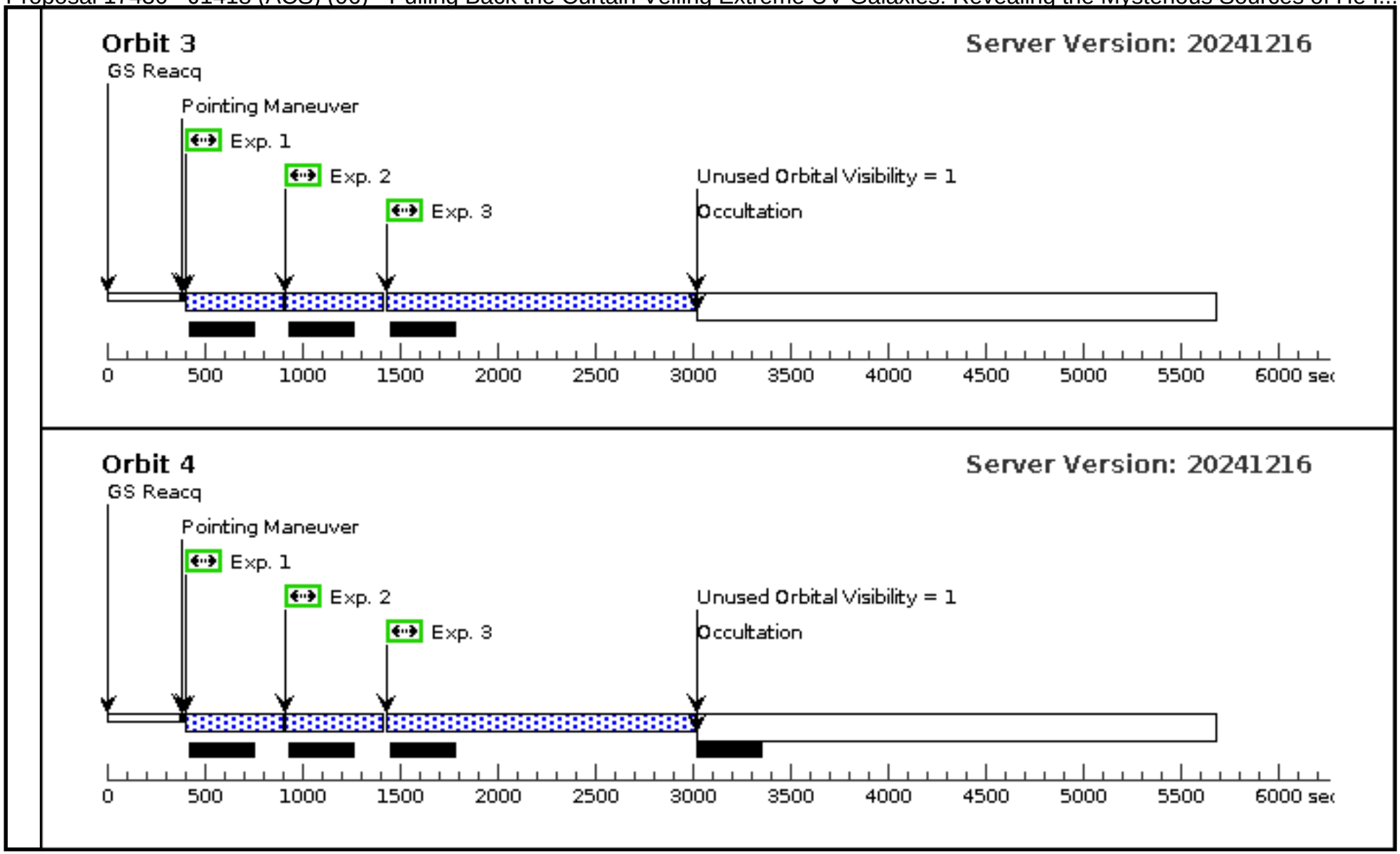
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	cont. HeII (FR462N) (1891272)	(4) J1418+2102	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4600 A	FLASH=20		Pattern 6, Exps 1-3 in J1418 (ACS) (06) (6)	400 Secs (1444 Secs)	
								[==>364.0 Secs (Pattern 1)]	***[1]***
								[==>360.0 Secs (Pattern 2)]	***[2]***
								[==>360.0 Secs (Pattern 3)]	***[3]***
								[==>360.0 Secs (Pattern 4)]	***[4]***
2	ArIV (FR462N) (1891274)	(4) J1418+2102	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4790 A	FLASH=20		Pattern 6, Exps 1-3 in J1418 (ACS) (06) (6)	400 Secs (1444 Secs)	
								[==>364.0 Secs (Pattern 1)]	***[1]***
								[==>360.0 Secs (Pattern 2)]	***[2]***
								[==>360.0 Secs (Pattern 3)]	***[3]***
								[==>360.0 Secs (Pattern 4)]	***[4]***
3	HeII (FR462N) (1891275)	(4) J1418+2102	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4760 A	FLASH=20		Pattern 6, Exps 1-3 in J1418 (ACS) (06) (6)	1000 Secs (5699 Secs)	
								[==>1382.0 Secs (Pattern 1)]	***[1]***
								[==>1439.0 Secs (Pattern 2)]	***[2]***
								[==>1439.0 Secs (Pattern 3)]	***[3]***
								[==>1439.0 Secs (Pattern 4)]	***[4]***

Orbit Structure






Orbit 3
Server Version: 20241216
GS Reacq
Pointing Maneuver
Exp. 1
Exp. 2
Exp. 3
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 4
Server Version: 20241216
GS Reacq
Pointing Maneuver
Exp. 1
Exp. 2
Exp. 3
Unused Orbital Visibility = 1
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17430, J1545 (WFC3) (07), scheduling Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: 2 orbits - WFC3/UVIS

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false		(1-4)

Fixed Targets

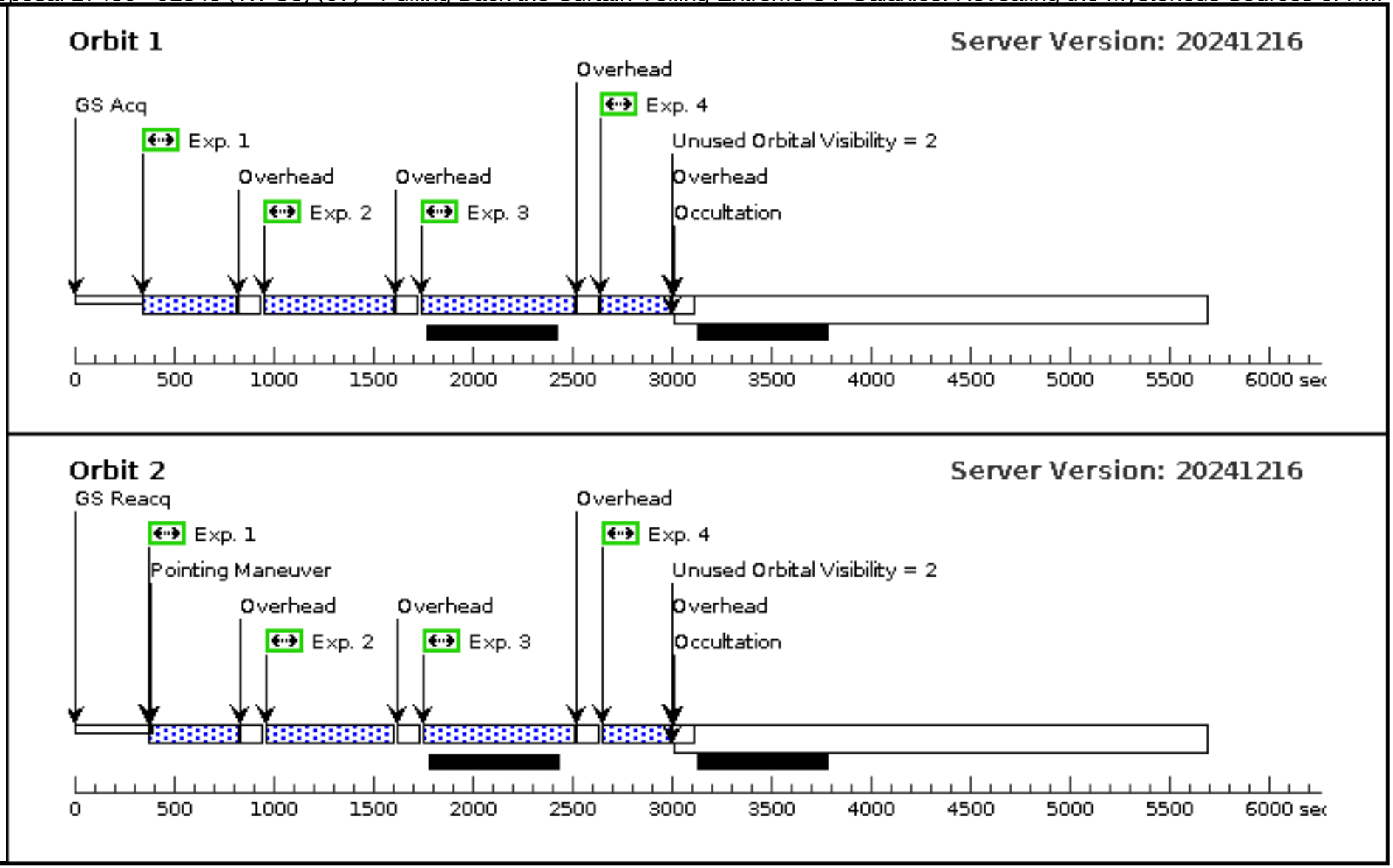
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1545+0858	RA: 15 45 43.4400 (236.4310000d) Dec: +08 58 1.34 (8.96704d) Equinox: J2000		V=17.78	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	cont. UV (F275W) (1891277)	(5) J1545+0858	WFC3/UVIS, ACCUM, UVIS2	F275W	FLASH=20		Pattern 3, Exps 1-4 in J1545 (WFC3) (07) (3)	400 Secs (867 Secs)	
								[==>436.0 Secs (Pattern 1)]	***[1]***
								[==>431.0 Secs (Pattern 2)]	***[2]***
2	cont. Ha (F645N) (1891282)	(5) J1545+0858	WFC3/UVIS, ACCUM, UVIS2	F645N	FLASH=20		Pattern 3, Exps 1-4 in J1545 (WFC3) (07) (3)	600 Secs (1267 Secs)	
								[==>636.0 Secs (Pattern 1)]	***[1]***
								[==>631.0 Secs (Pattern 2)]	***[2]***
3	HeII (F487N) (1890495)	(5) J1545+0858	WFC3/UVIS, ACCUM, UVIS2	F487N	FLASH=20		Pattern 3, Exps 1-4 in J1545 (WFC3) (07) (3)	700 Secs (1467 Secs)	
								[==>736.0 Secs (Pattern 1)]	***[1]***
								[==>731.0 Secs (Pattern 2)]	***[2]***
4	cont. OII (F336W) (1891284)	(5) J1545+0858	WFC3/UVIS, ACCUM, UVIS2	F336W	FLASH=20		Pattern 3, Exps 1-4 in J1545 (WFC3) (07) (3)	290 Secs (647 Secs)	
								[==>326.0 Secs (Pattern 1)]	***[1]***
								[==>321.0 Secs (Pattern 2)]	***[2]***

Orbit Structure



Visit

Proposal 17430, J1545 (ACS) (08), scheduling Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 2 orbits - ACS/WFC

Diagnostics

(Hb (FR505N) (08.001)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(OIII (FR505N) (08.002)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(Ha (FR656N) (08.003)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-3)

Fixed Targets

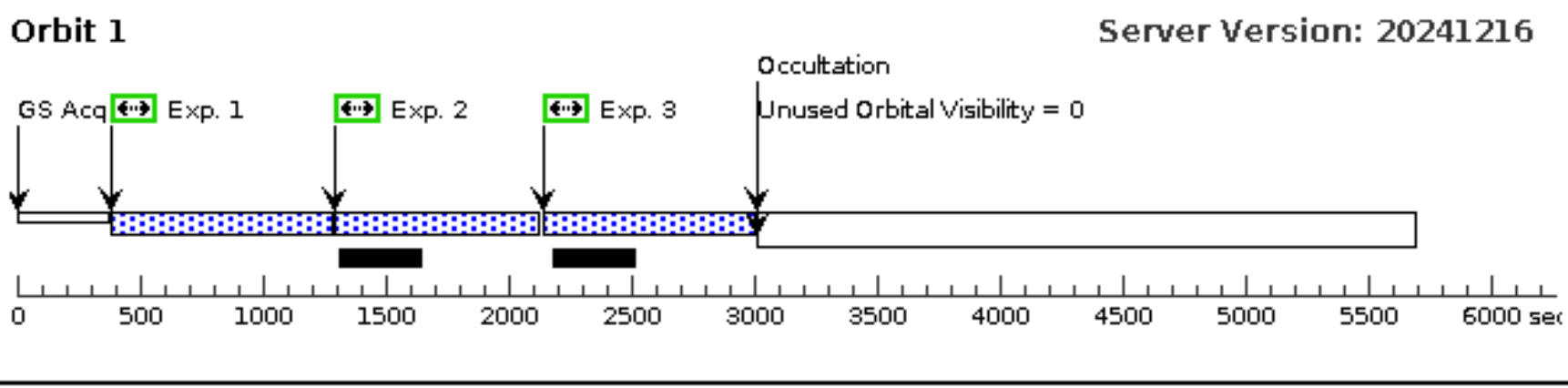
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1545+0858	RA: 15 45 43.4400 (236.4310000d) Dec: +08 58 1.34 (8.96704d) Equinox: J2000		V=17.78	Reference Frame: ICRS

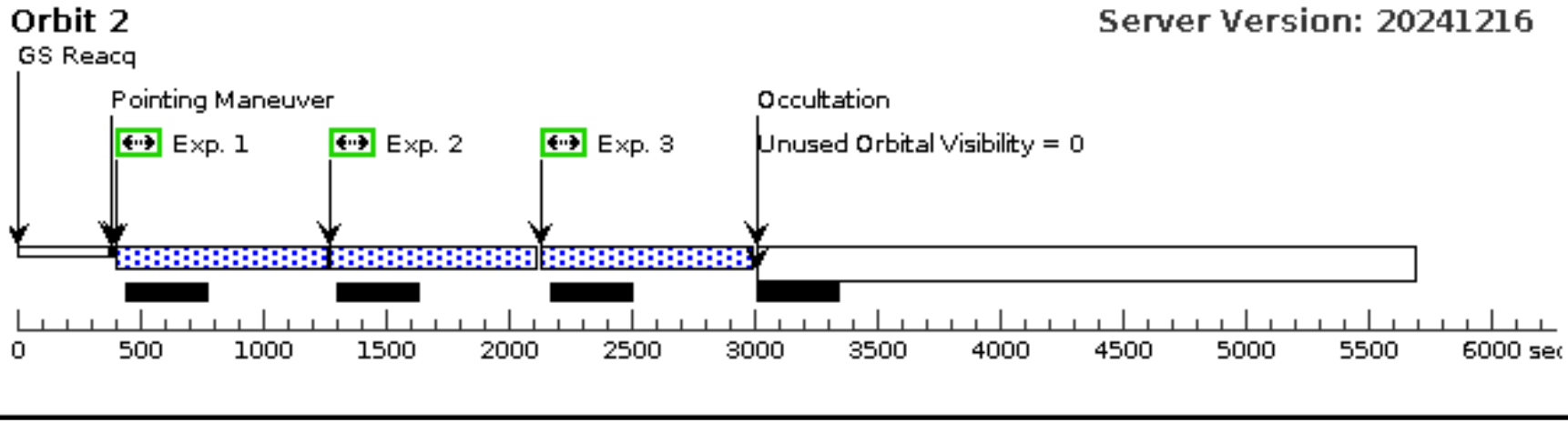
Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Hb (FR505N) (1891292)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-MRAMP	FR505N 5030 A	FLASH=20		Pattern 4, Exps 1-3 in J1545 (ACS) (08) (4)	650 Secs (1386 Secs)	
								[==>689.0 Secs (Pattern 1)]	***[1]***
								[==>697.0 Secs (Pattern 2)]	***[2]***
2	OIII (FR505N) (1891311)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-MRAMP	FR505N 5180 A	FLASH=20		Pattern 4, Exps 1-3 in J1545 (ACS) (08) (4)	650 Secs (1386 Secs)	
								[==>689.0 Secs (Pattern 1)]	***[1]***
								[==>697.0 Secs (Pattern 2)]	***[2]***
3	Ha (FR656N) (1891308)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-MRAMP	FR656N 6800 A	FLASH=20		Pattern 4, Exps 1-3 in J1545 (ACS) (08) (4)	650 Secs (1386 Secs)	
								[==>689.0 Secs (Pattern 1)]	***[1]***
								[==>697.0 Secs (Pattern 2)]	***[2]***

Orbit Structure





Visit

Proposal 17430, J1044 (WFC3 - continued) (21) Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Comments: 4 orbits

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(5)	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		(1-3)

Fixed Targets

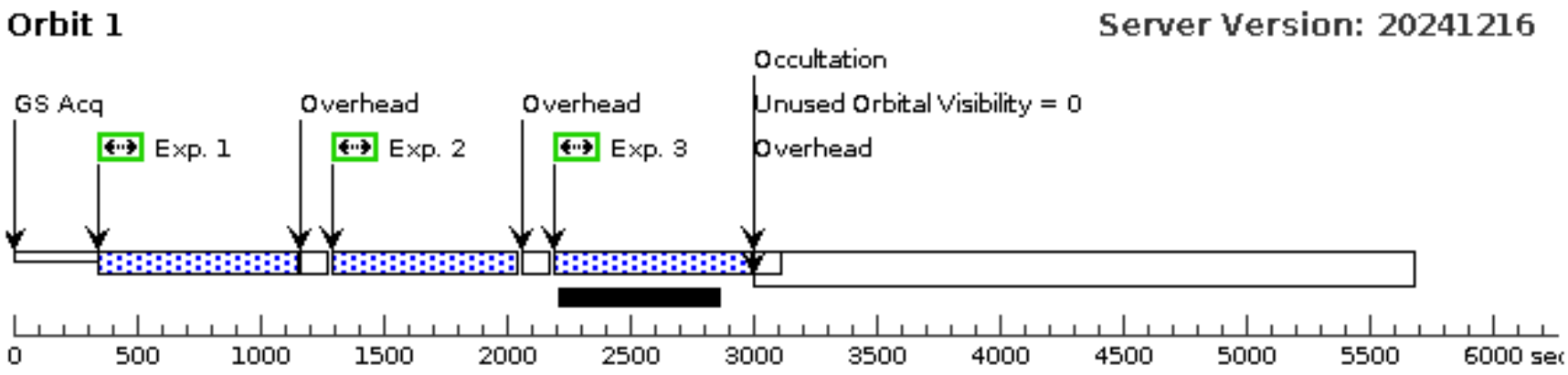
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J1044+0353	RA: 10 44 57.7900 (161.2407917d) Dec: +03 53 13.10 (3.88697d) Equinox: J2000		V=17.86	Reference Frame: ICRS

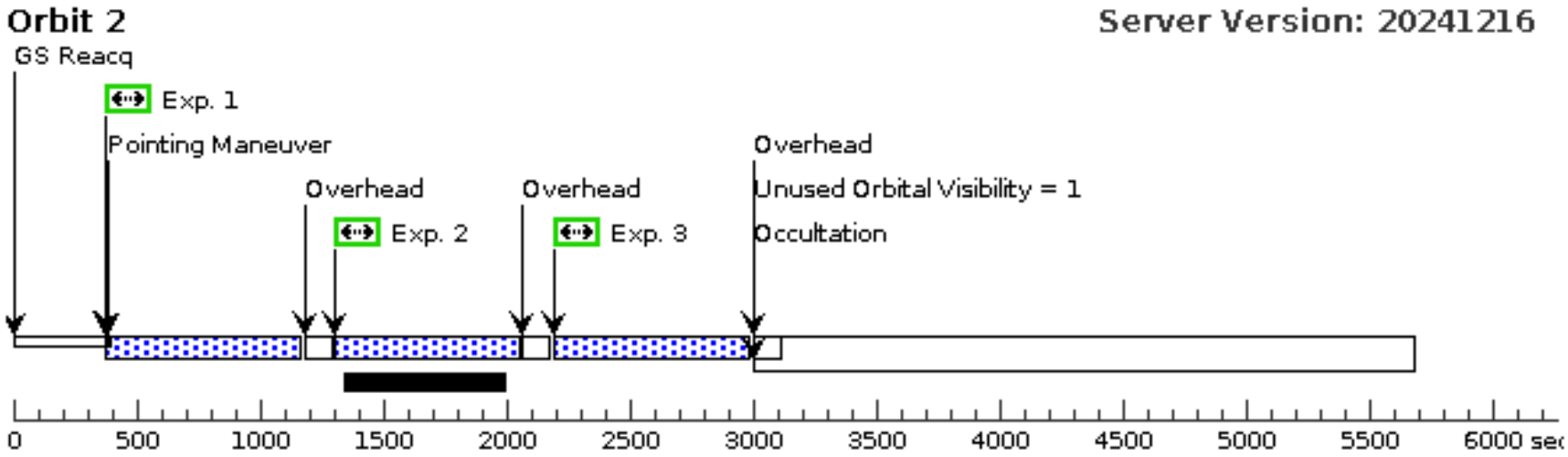
Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

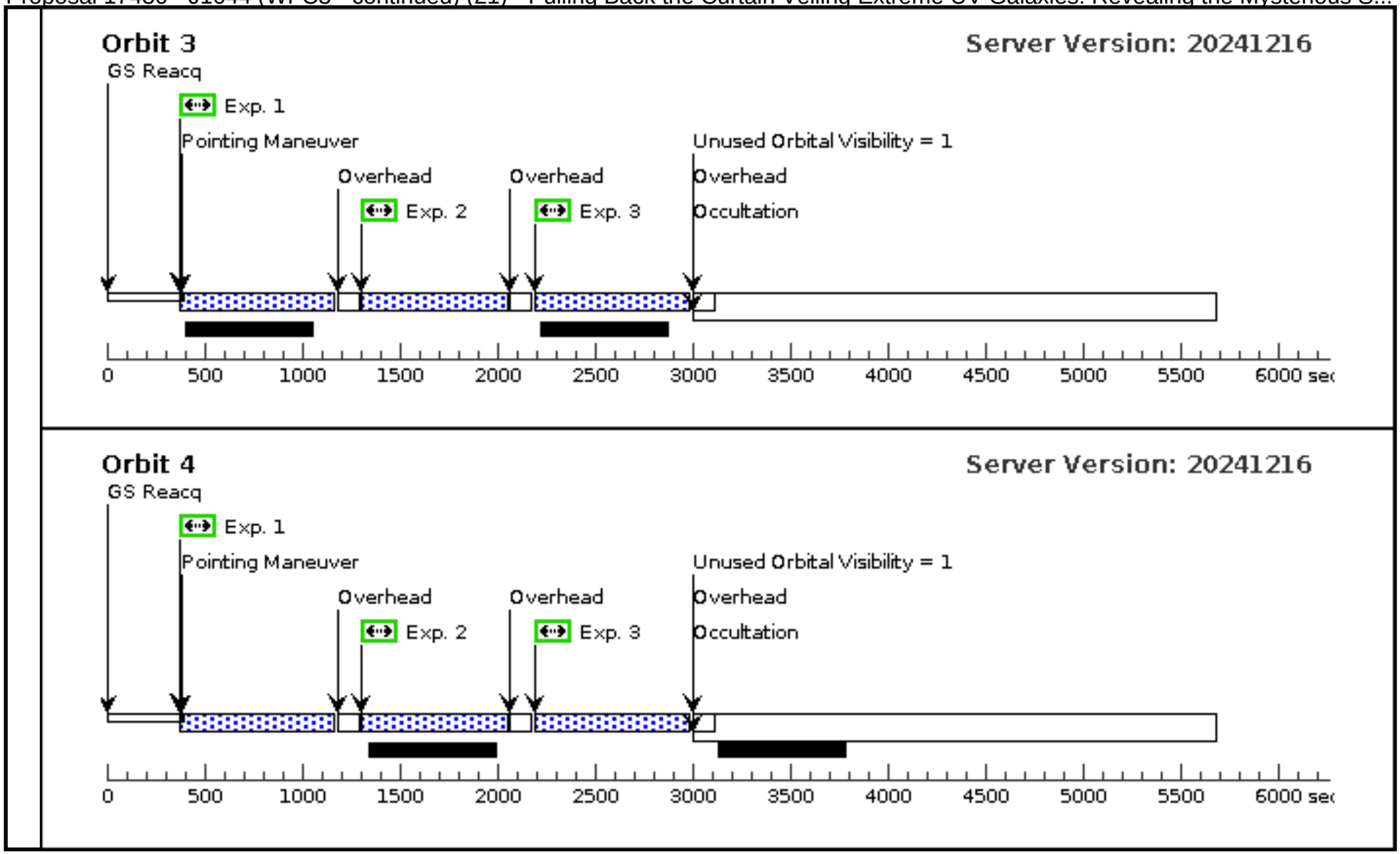
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	OIII (F502N) (1891269)	(3) J1044+0353	WFC3/UVIS, ACCUM, UVIS2	F502N	FLASH=20		Pattern 5, Exps 1-3 in J1044 (WFC3 - continued) (21) (5)	750 Secs (3099 Secs)	
								[==>780.0 Secs (Pattern 1)]	***[1]***
								[==>773.0 Secs (Pattern 2)]	***[2]***
								[==>773.0 Secs (Pattern 3)]	***[3]***
								[==>773.0 Secs (Pattern 4)]	***[4]***
Comments: only OIII 4959 (no OIII 5008)									
2	cont. UV (F275W) (1891265)	(3) J1044+0353	WFC3/UVIS, ACCUM, UVIS2	F275W	FLASH=20		Pattern 5, Exps 1-3 in J1044 (WFC3 - continued) (21) (5)	700 Secs (2899 Secs)	
								[==>730.0 Secs (Pattern 1)]	***[1]***
								[==>723.0 Secs (Pattern 2)]	***[2]***
								[==>723.0 Secs (Pattern 3)]	***[3]***
								[==>723.0 Secs (Pattern 4)]	***[4]***
3	cont. OII (F336W) (1891270)	(3) J1044+0353	WFC3/UVIS, ACCUM, UVIS2	F336W	FLASH=20		Pattern 5, Exps 1-3 in J1044 (WFC3 - continued) (21) (5)	750 Secs (3099 Secs)	
								[==>780.0 Secs (Pattern 1)]	***[1]***
								[==>773.0 Secs (Pattern 2)]	***[2]***
								[==>773.0 Secs (Pattern 3)]	***[3]***
								[==>773.0 Secs (Pattern 4)]	***[4]***

Orbit Structure






Orbit 3
Server Version: 20241216
GS Reacq
Exp. 1
Pointing Maneuver
Overhead
Exp. 2
Overhead
Exp. 3
Unused Orbital Visibility = 1
Overhead
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec
Orbit 4
Server Version: 20241216
GS Reacq
Exp. 1
Pointing Maneuver
Overhead
Exp. 2
Overhead
Exp. 3
Unused Orbital Visibility = 1
Overhead
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17430, J1545 (ACS - continued) (22) Wed Mar 05 16:00:22 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Comments: 3 visits

Diagnostics

(OII (FR388N) (22.001)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(ArIV (FR505N) (22.002)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

(cont. HeII (FR462N) (22.003)) Warning (Form): POS TARG & PATTERN should be used carefully with ACS ramp filters as central wavelengths & transmission efficiencies vary within the apertures.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(4)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.146 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false		(1-2), (3)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1545+0858	RA: 15 45 43.4400 (236.4310000d) Dec: +08 58 1.34 (8.96704d) Equinox: J2000		V=17.78	Reference Frame: ICRS

Comments:
Category=GALAXY
Description=[STAR FORMING REGION]

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	OII (FR388N) (1891313)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-MRAMP	FR388N 3870 A	FLASH=20		Pattern 4, Exps 1-2 in J1545 (ACS - continued) (22) (4)	1100 Secs (2209 Secs) *[==>(Pattern 1)]* *[==>1109.0 Secs (Pattern 2)]*	 ***[1]*** ***[2]***
2	ArIV (FR505N) (1891314)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-MRAMP	FR505N 4940 A	FLASH=20		Pattern 4, Exps 1-2 in J1545 (ACS - continued) (22) (4)	1100 Secs (2209 Secs) *[==>(Pattern 1)]* *[==>1109.0 Secs (Pattern 2)]*	 ***[1]*** ***[2]***
3	cont. HeII (FR462N) (1891315)	(5) J1545+0858	ACS/WFC, ACCUM, WFC2-ORAMP	FR462N 4750 A	FLASH=20		Pattern 4, Exps 3-3 in J1545 (ACS - continued) (22) (4)	1100 Secs (2292 Secs) *[==>1146.0 Secs (Pattern 1)]* *[==>1146.0 Secs (Pattern 2)]*	 ***[3]***

Orbit Structure