



17468 - Space weather on GJ 436 b

Cycle: 31, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:13.0	yes
51	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:14.0	yes
02	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:15.0	yes
03	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:16.0	yes
53	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	2	19-Feb-2025 13:00:17.0	yes
04	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:19.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
05	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:20.0	yes
06	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:21.0	yes
07	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	3	19-Feb-2025 13:00:22.0	yes
57	(1) ROSS-905 WAVE	STIS/CCD STIS/FUV-MAMA	2	19-Feb-2025 13:00:23.0	yes

28 Total Orbits Used

ABSTRACT

GJ 436 b produces a spectacular Ly α transit with a depth in excess of 50%, an ingress well before, and an egress well beyond the optical transit. This transit, however, proves to be challenging to simulate despite numerous attempts and no consensus on the planetary wind properties has been reached. Yet, GJ 436 b is one of the few hot Neptunes where we can directly observe mass-loss through a planetary wind and study processes that may cause the hot-Neptune desert and the radius gap.

The Ly α transit, however, has been pieced together using data from eight(!) different epochs spread over six years. This would be acceptable if the system were stable in time, but we now know that the host star has a 7.4 year long activity cycle. This entails changes of more than a factor of two in the EUV regime compared to changes of only 1% in the optical, and the stellar wind is expected to change, too. EUV illumination and stellar wind control the Ly α transit properties, and simulations already suggest that the discrepancies between predictions and data are largely caused by assuming a constant star. Therefore, GJ 436 b likely experiences severe space weather effects measurable in Ly α .

We propose to check this hypothesis by obtaining a complete Ly α transit light curve of GJ 436 b within only 10% of its activity cycle. Seven visits strategically spread over GJ 436 b's Ly α transit will allow us to measure, for the first time, how changes in the host star's activity affect the Ly α transit, check if simulations include the dominant physical processes, and probe GJ 436 b's wind as a direct tracer of its photoevaporative mass-loss, crucial to understand the exoplanet population at large.

OBSERVING DESCRIPTION

This program aims at sampling the entire Lya transit of GJ 436b in a homogeneous and systematic manner. The transit lasts several times the optical transit and requires observations from as early as 8 hours before and 27 hours after mid-transit. We will sample this time period with seven identical visits, each consisting of three orbits. The timing of the visits is

1. visit, -8 ... -5 hours: establish pre-transit level -> start phase: 0.874
2. visit, -5 ... -2 hours: ingress -> start phase: 0.921
3. visit, -1.5 ... 1.5 hours: mid-transit -> start phase: 0.976
4. visit, 2 ... 5 hours: early egress -> start phase: 0.032
5. visit, 6 ... 9 hours: late egress -> start phase: 0.095
6. visit, 12 ... 15 hours: very late egress -> start phase: 0.189
7. visit, 24 ... 27 hours: establish post-transit level -> start phase: 0.378

Phase constraints:

The planetary orbital period is about 2.644 days and we can allow for tolerance of 20 min in start time, which translates to an uncertainty of 0.005 in phase (-0.0025, +0.0025). Tying the start phase to the first science exposure in the second orbit of each visit introduces a "home"-action so we fixed the phase constraint to the first exposure in the visit, i.e., ACQ. We calculate and offset of ca. 6359 sec from the start of target ACQ during the first orbit to the start of the first science exposure in the second orbit (label "Integration 2/3") as follows:

start of ACQ in first orbit 443 sec into the orbit,

start of MAMA integration in second orbit at 1077 sec into the orbit ("Integration 2/3"),

orbit duration 5725 sec,

i.e, the first relevant science exposure starts $5725 + 1077 - 443 = 6359$ sec after first orbit ACQ start. Applying this phase shift, we assure that the "true" start of the science exposures matches the desired phases. Ephemerides are from Kokori et al. (2022), ApJS, 258, 40, i.e., the transit period is 2.643897510 days.

Visit description:

Each visit starts with ACQ and ACQ/PEAK followed by a first STIS G140M exposure using the 0.2" wide slit. The first orbit is primarily for relaxation of the telescope and the 0.2" slit assures capturing the full flux for comparison.

The second and third orbits of each visit are essentially identical. They start with ACQ/PEAK for better flux accuracy and employ the 0.1" slit for better airglow reduction/separation.

WAVECAL is performed during occultation after each orbit.

Detector safety:

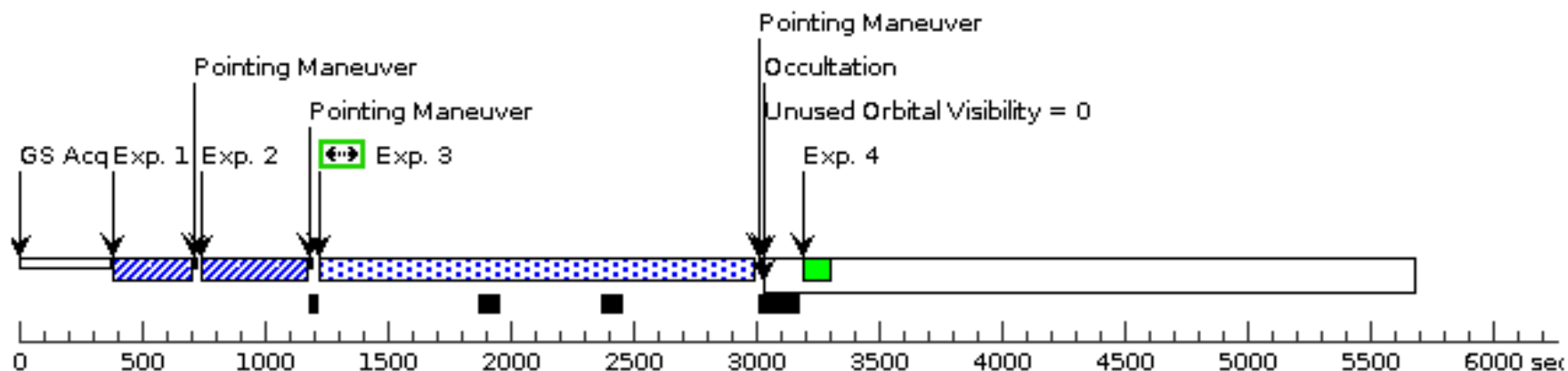
Previous observations show a maximum local count rate of about 2×10^{-2} cts/s/pixel, i.e., a factor of one hundred below the limit. Furthermore, GJ 436 is a very inactive M2.5 dwarf (H α in absorption, i.e., well below the canonical 1 AA border between active and inactive stars). Therefore, the maximum increase in Ly α flux during a potential stellar flare is well below the screening limits. BOT reports no dangerous sources.

Proposal 17468 - Pre-transit (01) - Space weather on GJ 436 b

Visit	Proposal 17468, Pre-transit (01), failed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 01,02,03,04,05,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the pre-transit level											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire target (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.8435 TO 0.8487		13 Secs (13 Secs)		
									[==>]		[1]
	Comments: The exposure time of 13 seconds is about squarely between the minimum exposure time for S/N=40 of 0.6 seconds and the time to saturation of 233 seconds.										
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO	POS TARG null,0.69 6		1581 Secs (1606 Secs)		
									[==>1606.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO			1616 Secs (1937 Secs)		
									[==>1937.0 Secs]		[2]
	7	Second WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO	POS TARG null,0.34 8		1616 Secs (1933 Secs)			
								[==>1933.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

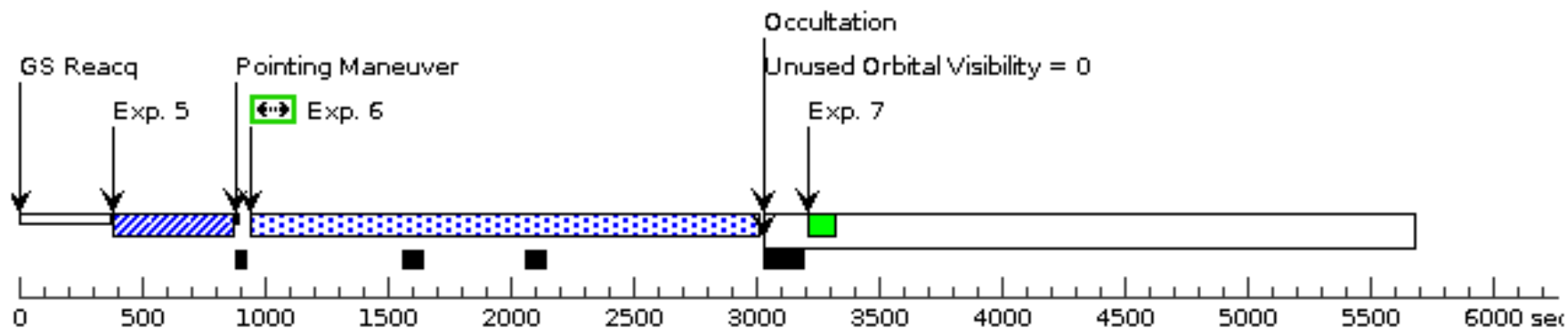
Orbit 1

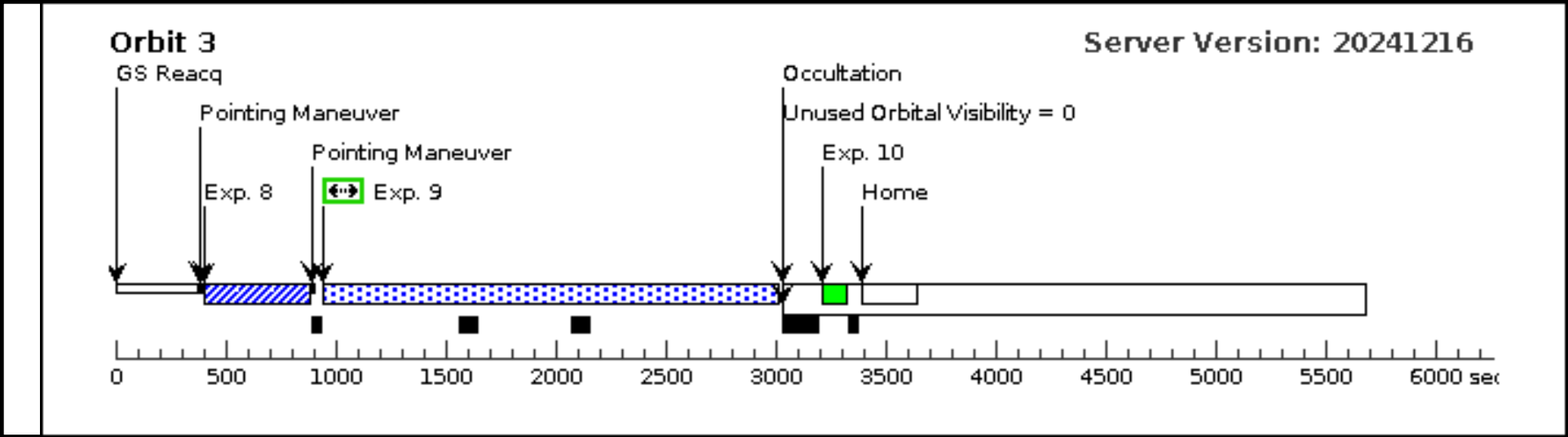
Server Version: 20241216



Orbit 2

Server Version: 20241216



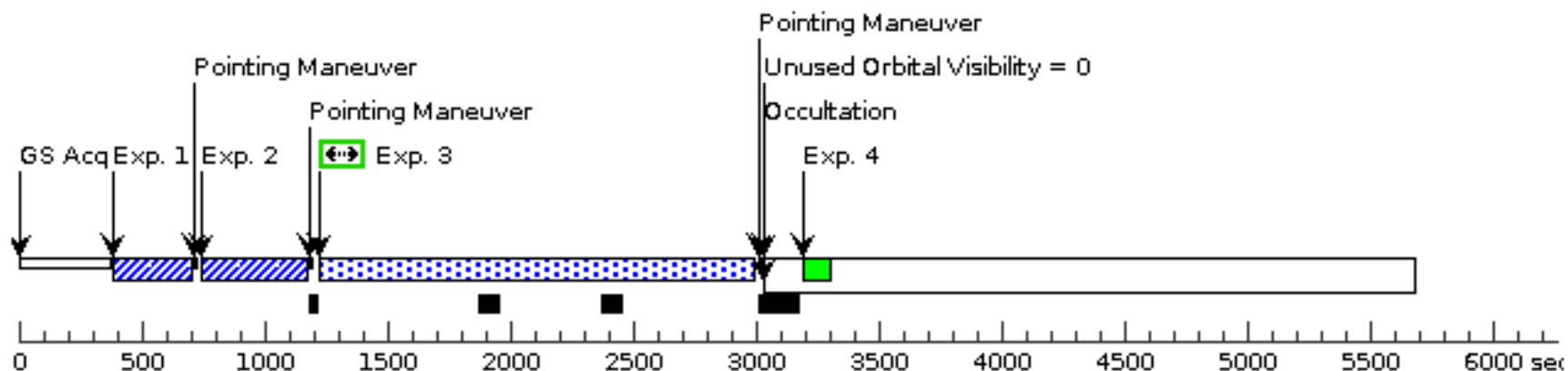


Proposal 17468 - Pre-transit (51) - Space weather on GJ 436 b

Visit	Proposal 17468, Pre-transit (51), completed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 51,02,03,04,05,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the pre-transit level											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.8435 TO 0.8487		13 Secs (13 Secs)		
									[==>]		[1]
	Comments: The exposure time of 13 seconds is about squarely between the minimum exposure time for S/N=40 of 0.6 seconds and the time to saturation of 233 seconds.										
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (1606 Secs)		
									[==>1606.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1937 Secs)		
									[==>1937.0 Secs]		[2]
	7	Second WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1933 Secs)			
								[==>1933.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

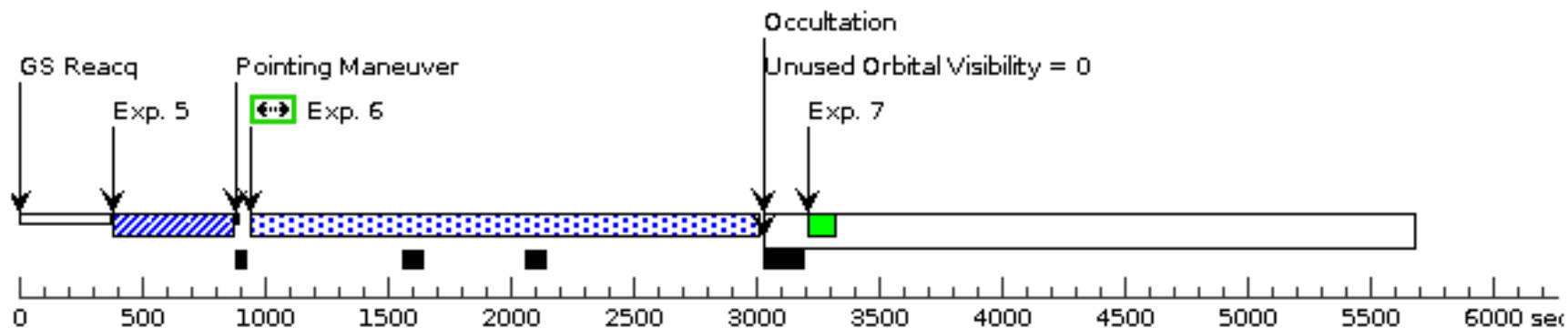
Orbit 1

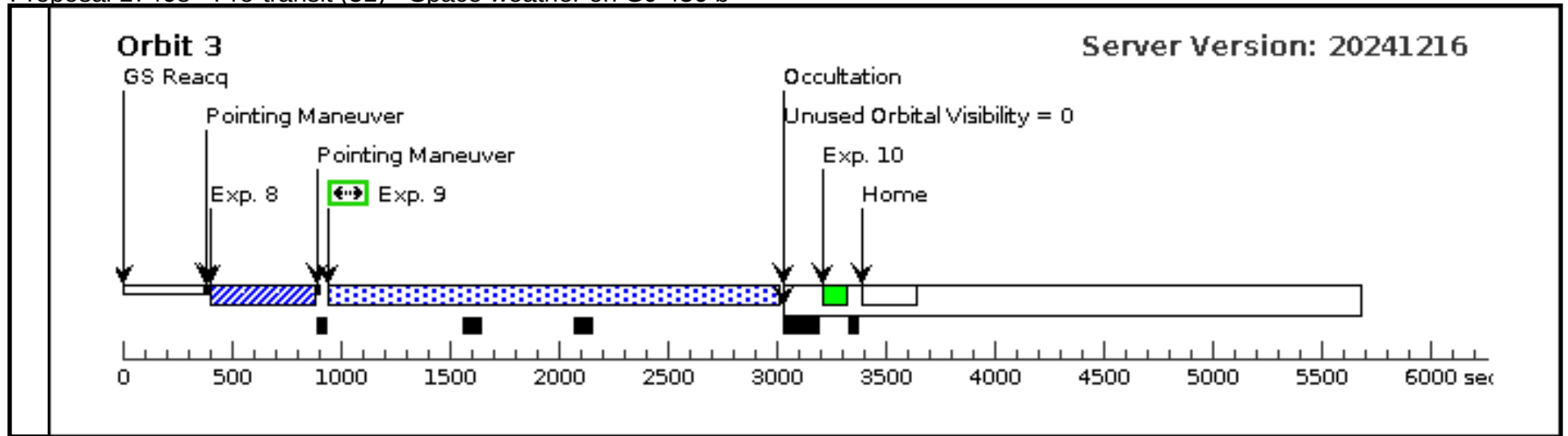
Server Version: 20241216



Orbit 2

Server Version: 20241216



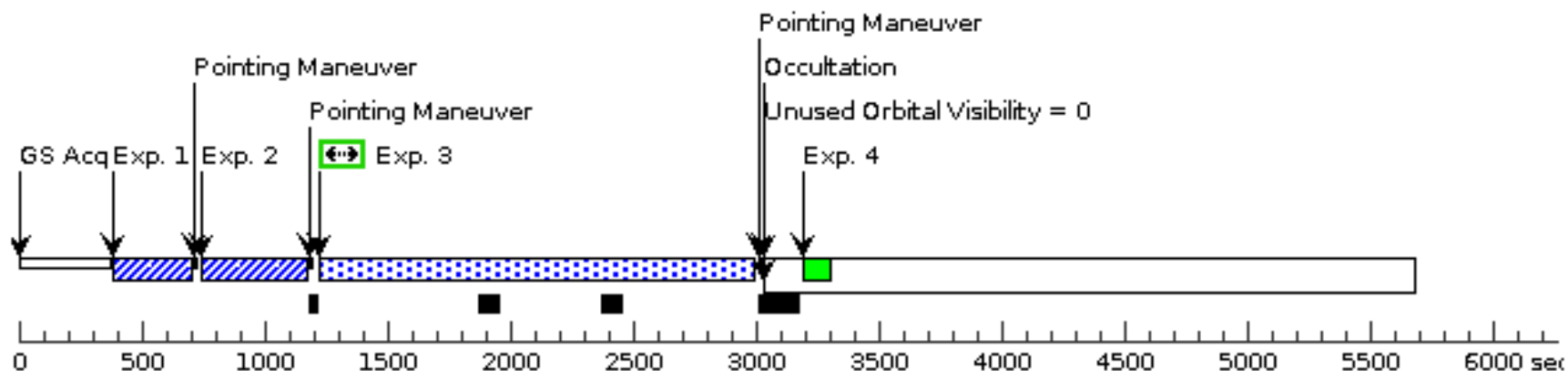


Proposal 17468 - Ingress (02) - Space weather on GJ 436 b

Visit	Proposal 17468, Ingress (02), completed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 02,01,03,04,05,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the ingress											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.8907 TO 0 .8960		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (1606 Secs)		
									[==>1606.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1937 Secs)		
									[==>1937.0 Secs]		[2]
7	Second WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]	
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1933 Secs)			
								[==>1933.0 Secs]		[3]	
10	Last WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

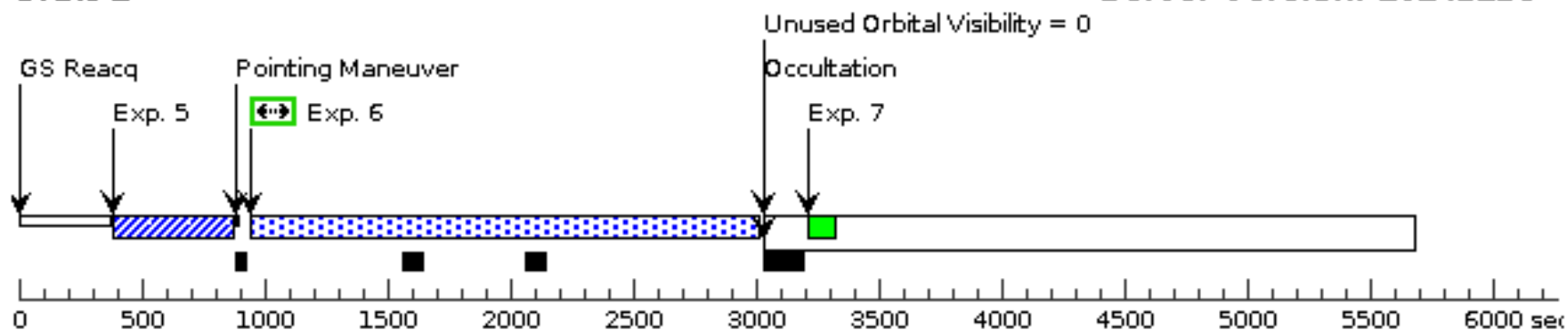
Orbit 1

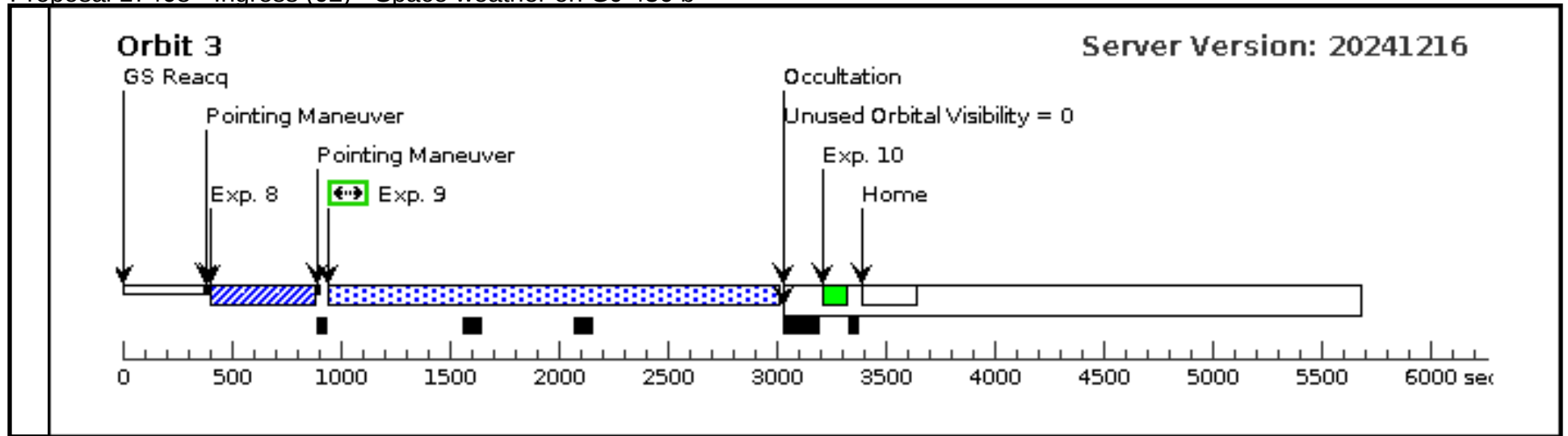
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Orbit 2

Server Version: 20241216



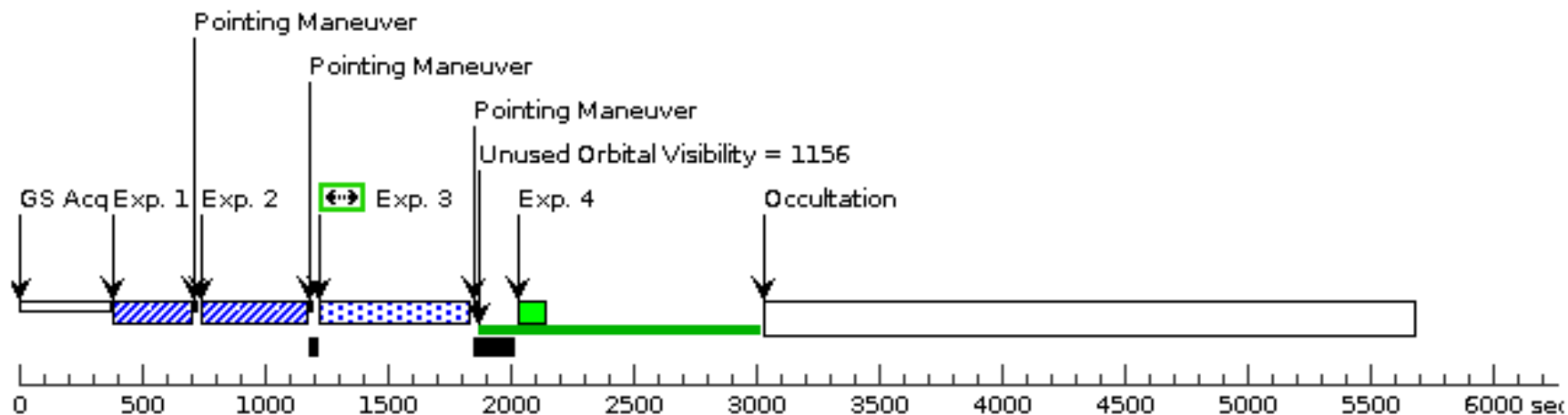


Proposal 17468 - Mid-transit (03) - Space weather on GJ 436 b

Visit	Proposal 17468, Mid-transit (03), failed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 03,01,02,04,05,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the mid-transit											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.9459 TO 0 .9511		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (450 Secs)		
							WAVECAL=NO		[==>450.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1450 Secs)		
							WAVECAL=NO		[==>1450.0 Secs]		[2]
7	Second WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]	
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1450 Secs)			
						WAVECAL=NO		[==>1450.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

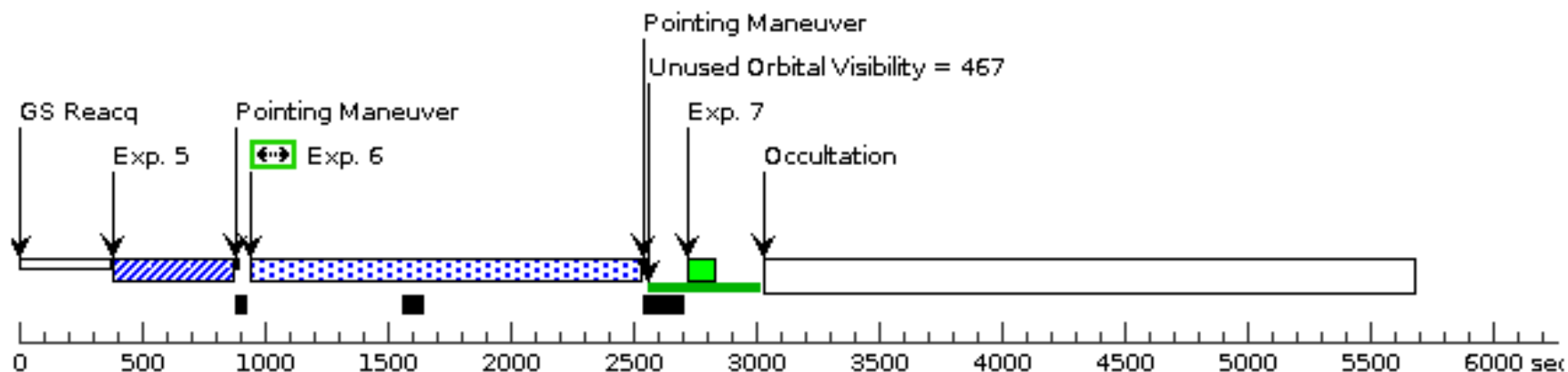
Orbit 1

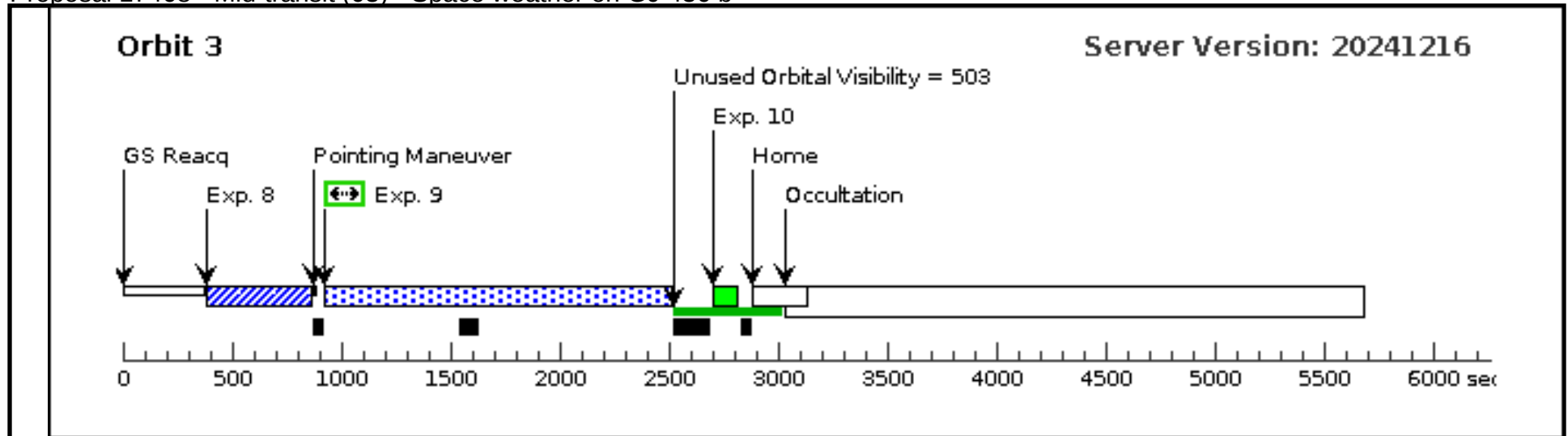
Server Version: 20241216



Orbit 2

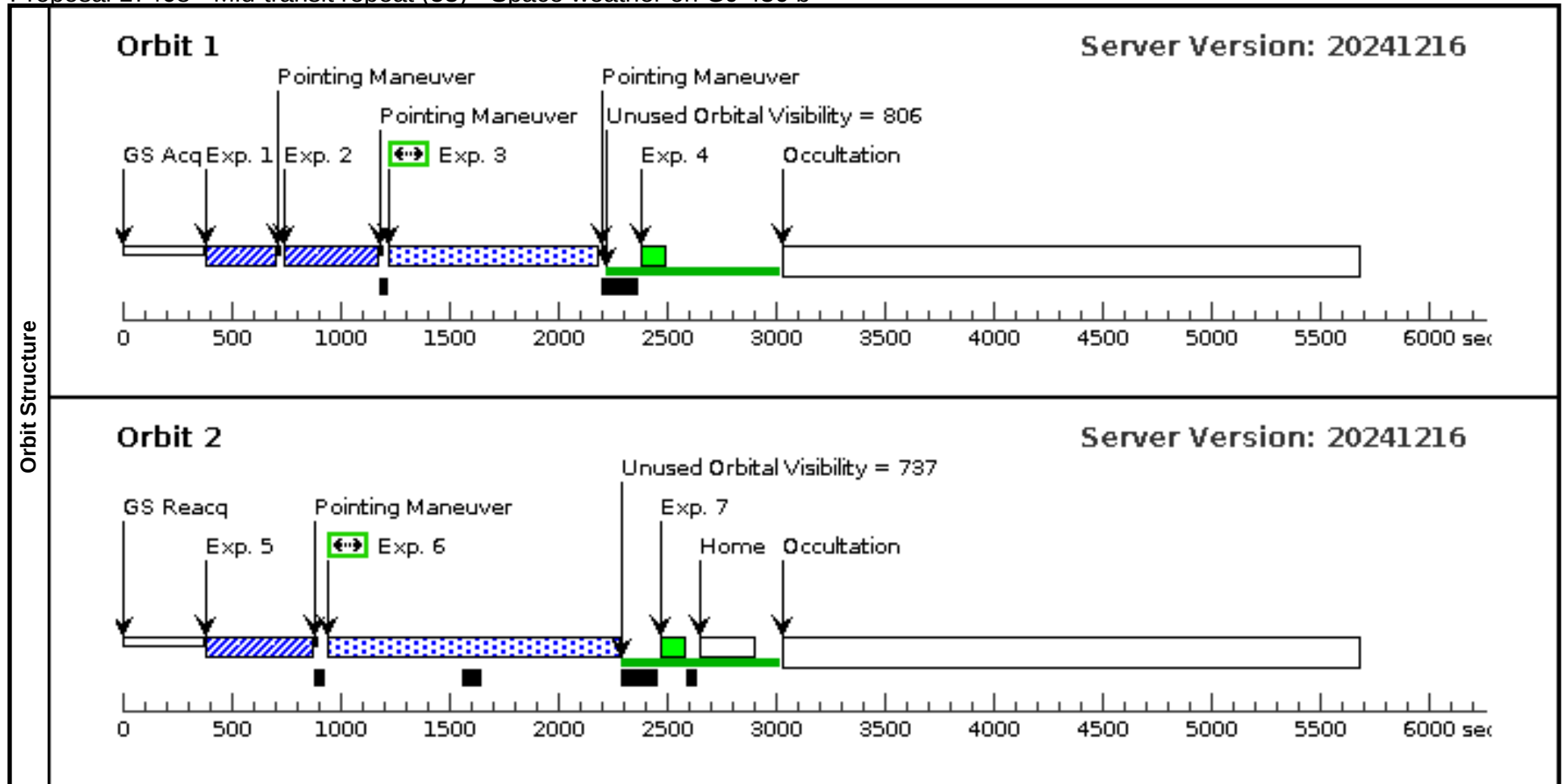
Server Version: 20241216





Proposal 17468 - Mid-transit repeat (53) - Space weather on GJ 436 b

Visit	Proposal 17468, Mid-transit repeat (53), pi								Wed Feb 19 18:00:24 GMT 2025	
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA									
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 53,01,02,04,05,06,07 WITHIN 200D									
	Comments: 2 orbit visit to measure the mid-transit									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	ROSS-905 Alt Name1: GJ436	RA: 11 42 12.1287 (175.5505362d) Dec: +26 42 11.04 (26.70307d) Equinox: J2000	Proper Motion RA: 0.06679656490011585 sec of time/yr Proper Motion Dec: -0.8135499999752938 arcsec/yr Epoch of Position: 2015.5	V=10.613	Reference Frame: ICRS				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.									
	Category=STAR									
	Description=[M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.91 TO 0.99		13 Secs (13 Secs) [==>]	[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs) [==>]	[1]
	3	Integration 1 /2, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=500; WAVECAL=NO	POS TARG null,0.696		1581 Secs (800 Secs) [==>800.0 Secs]	[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]	[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs) [==>]	[2]
	6	Integration 2 /2, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=500; WAVECAL=NO			1616 Secs (1200 Secs) [==>1200.0 Secs]	[2]
	7	Second WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]	[2]

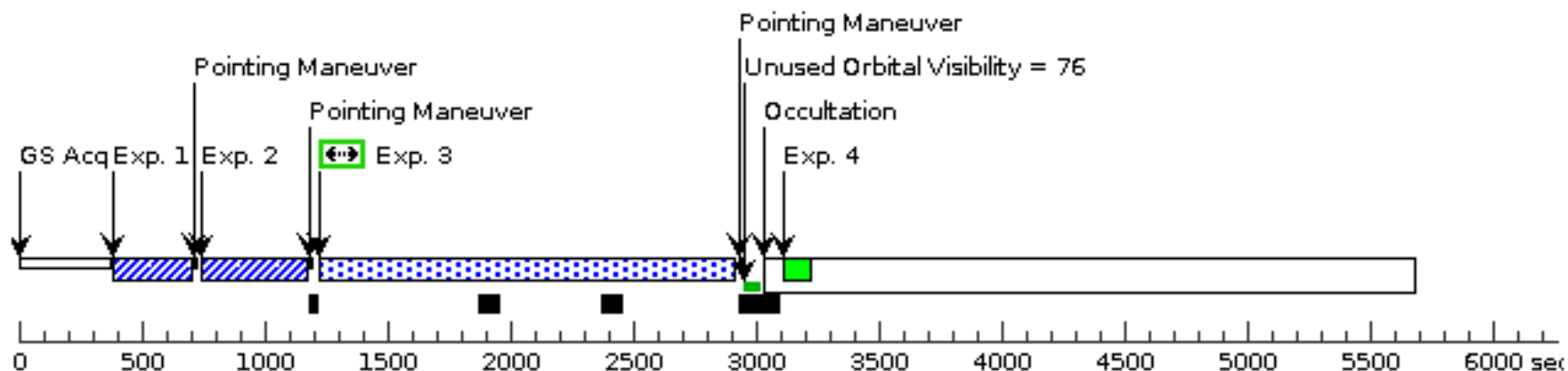


Proposal 17468 - Early egress (04) - Space weather on GJ 436 b

Visit	Proposal 17468, Early egress (04), completed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 04,01,02,03,05,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the early egress											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.0011 TO 0 .0063		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (1530 Secs)		
									[==>1530.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1892 Secs)		
									[==>1892.0 Secs]		[2]
7	Second WA VECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]	
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1908 Secs)			
								[==>1908.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

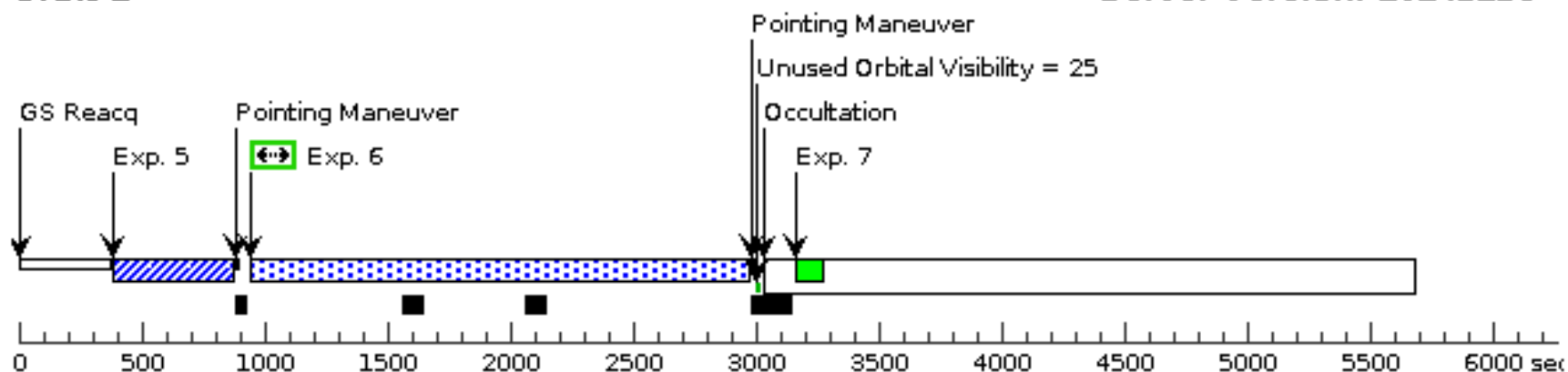
Orbit 1

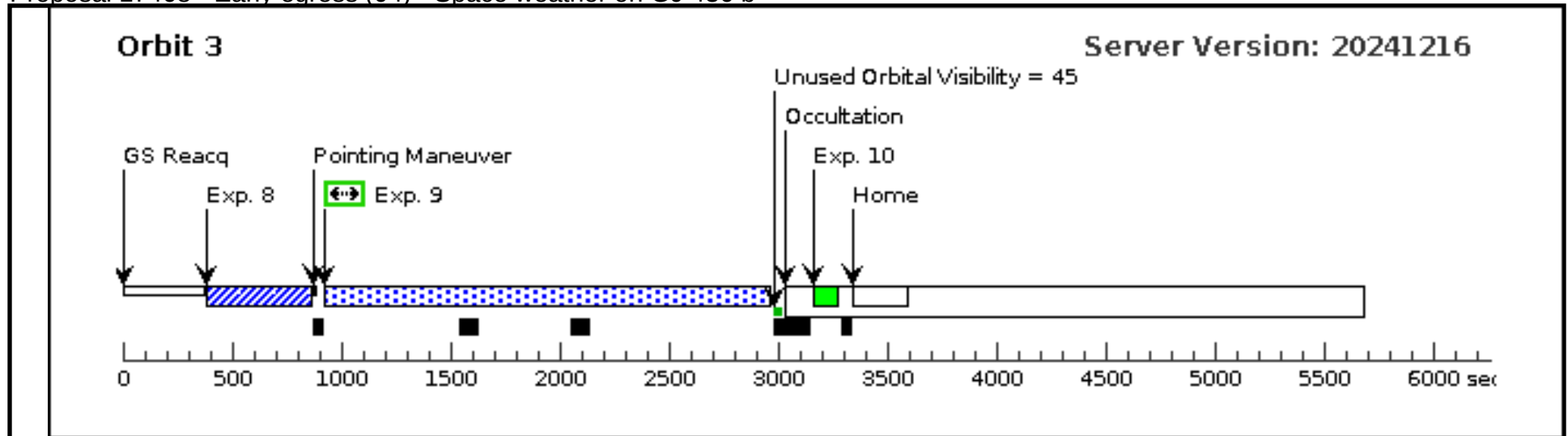
Server Version: 20241216



Orbit 2

Server Version: 20241216



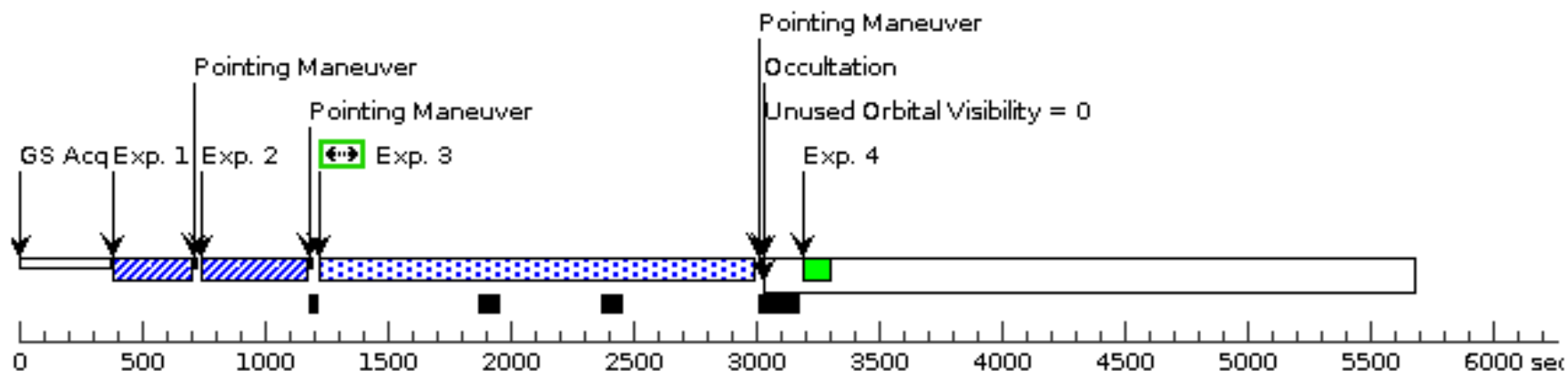


Proposal 17468 - Late egress (05) - Space weather on GJ 436 b

Visit	Proposal 17468, Late egress (05), completed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 05,01,02,03,04,06,07 WITHIN 200D										
Comments: 3 orbit visit to measure the late egress											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.0641 TO 0.0693		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (1606 Secs)		
									[==>1606.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1937 Secs)		
									[==>1937.0 Secs]		[2]
7	Second WAVE VECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]	
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1933 Secs)			
								[==>1933.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

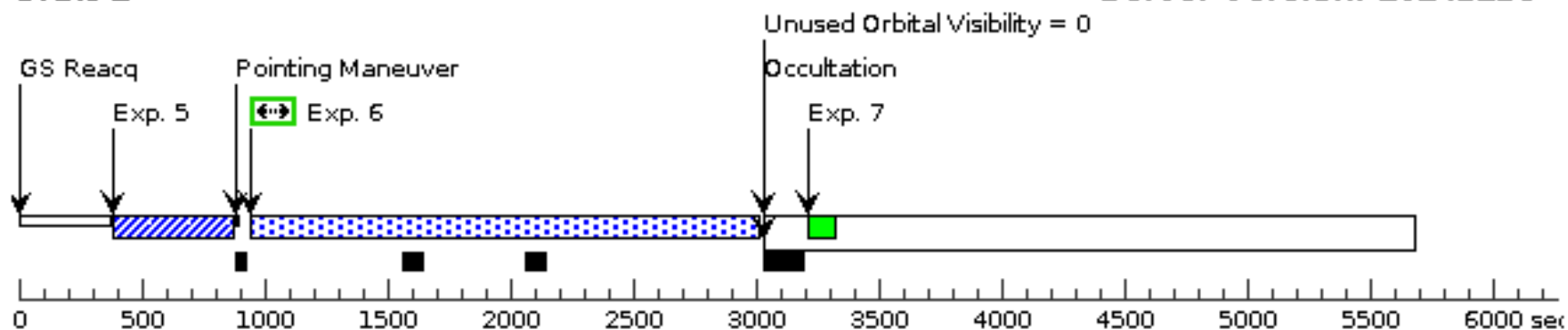
Orbit 1

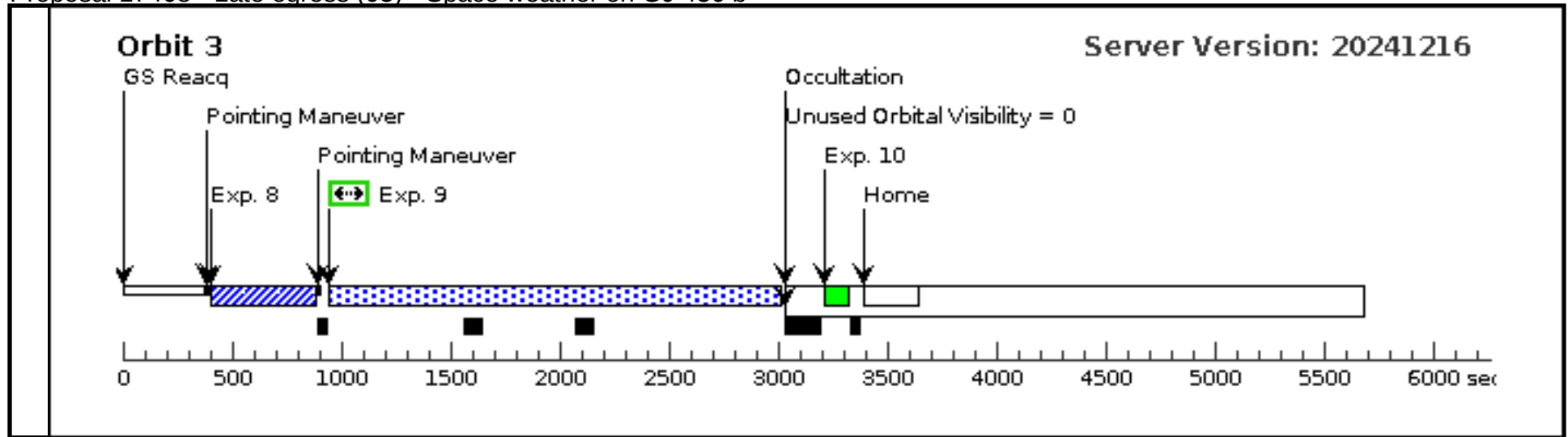
Server Version: 20241216



Orbit 2

Server Version: 20241216



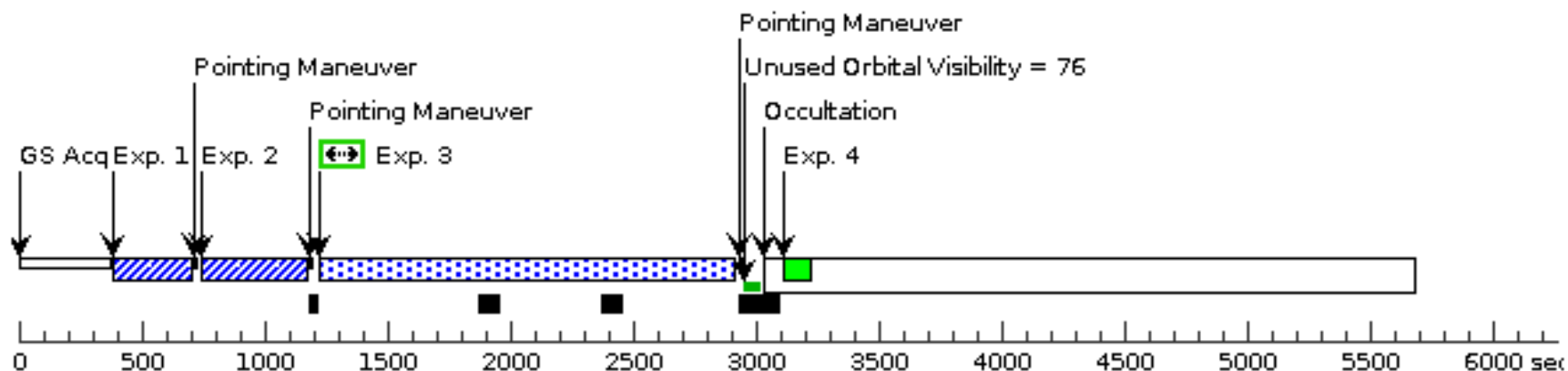


Proposal 17468 - Very late egress (06) - Space weather on GJ 436 b

Visit	Proposal 17468, Very late egress (06), completed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 06,01,02,03,04,05,07 WITHIN 200D										
Comments: 3 orbit visit to measure the very late egress											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.1587 TO 0.1639		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO	POS TARG null,0.69 6		1581 Secs (1530 Secs)		
									[==>1530.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO			1616 Secs (1892 Secs)		
									[==>1892.0 Secs]		[2]
	7	Second WA VECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]
	8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO	POS TARG null,0.34 8		1616 Secs (1908 Secs)			
								[==>1908.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

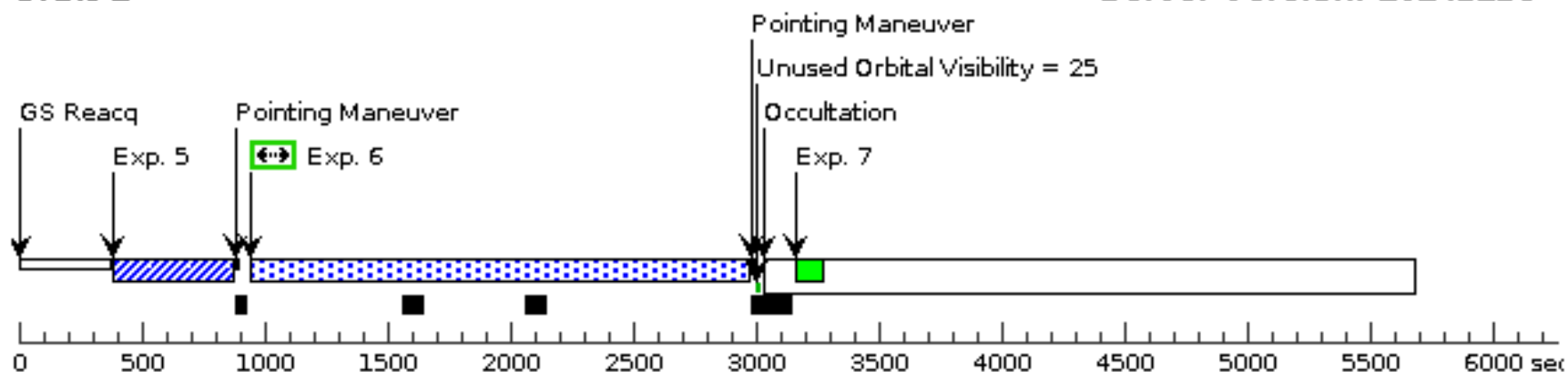
Orbit 1

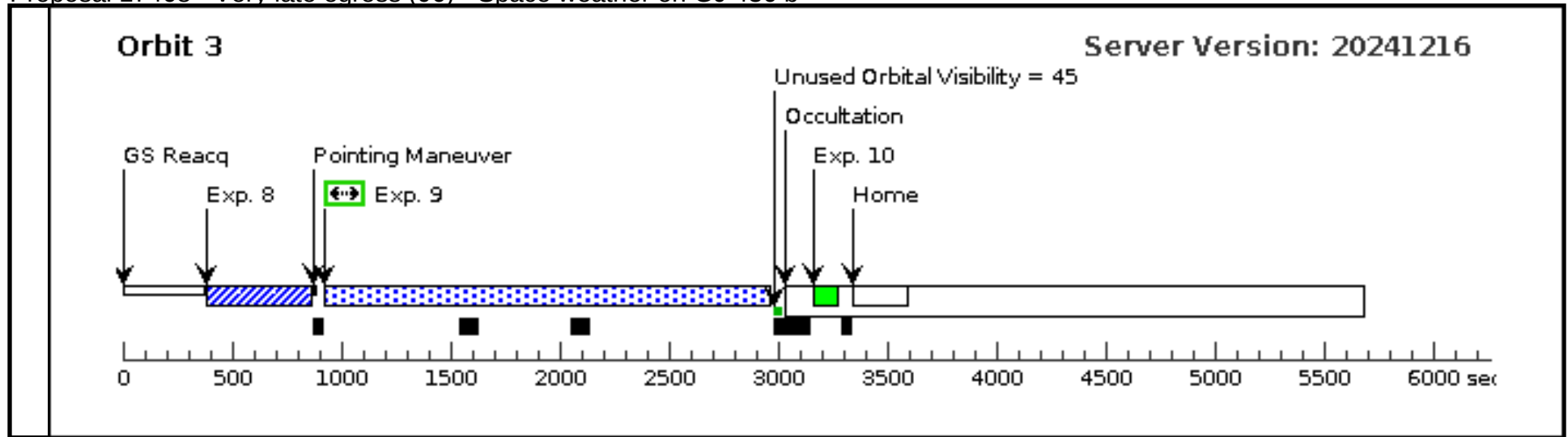
Server Version: 20241216



Orbit 2

Server Version: 20241216



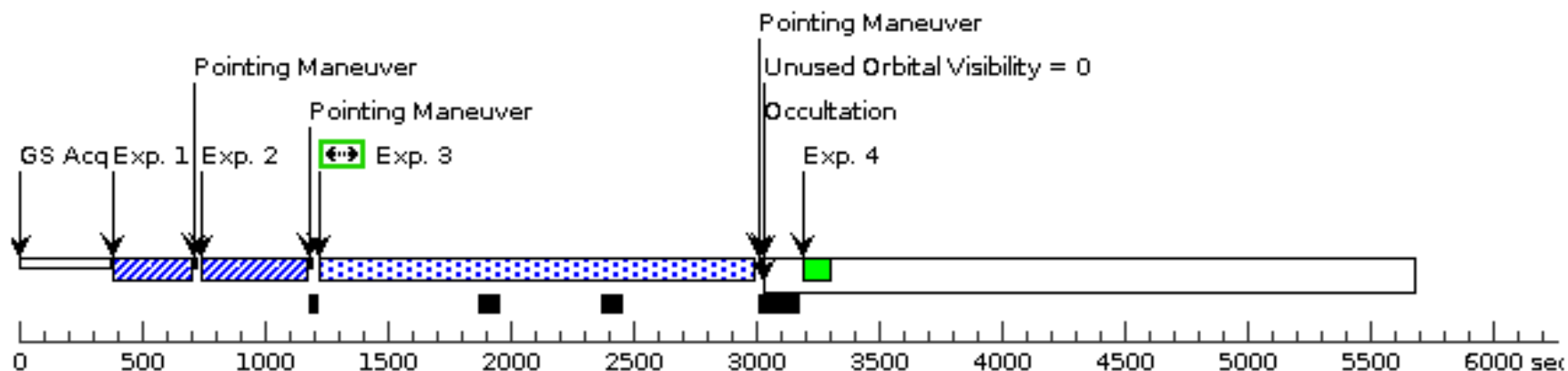


Proposal 17468 - Post-transit (07) - Space weather on GJ 436 b

Visit	Proposal 17468, Post-transit (07), failed										Wed Feb 19 18:00:24 GMT 2025
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA										
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820; GROUP 07,01,02,03,04,05,06 WITHIN 200D										
Comments: 3 orbit visit to measure the post-transit level											
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905	RA: 11 42 12.1287 (175.5505362d)		Proper Motion RA: 0.06679656490011585		V=10.613		Reference Frame: ICRS		
		Alt Name1: GJ436	Dec: +26 42 11.04 (26.70307d)		sec of time/yr						
			Equinox: J2000		Proper Motion Dec: -0.8135499999752938						
Epoch of Position: 2015.5											
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
Category=STAR											
Description=[M V-IV]											
Extended=NO											
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]		Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.3478 TO 0.3530		13 Secs (13 Secs)		
									[==>]		[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[1]
	3	Integration 1 /3, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.69 6		1581 Secs (1606 Secs)		
							WAVECAL=NO		[==>1606.0 Secs]		[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]		[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)		
									[==>]		[2]
	6	Integration 2 /3, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;			1616 Secs (1937 Secs)		
							WAVECAL=NO		[==>1937.0 Secs]		[2]
7	Second WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[2]	
8	center target , orbit 3 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs)			
								[==>]		[3]	
9	Integration 3 /3, orbit 3 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0;	POS TARG null,0.34 8		1616 Secs (1933 Secs)			
						WAVECAL=NO		[==>1933.0 Secs]		[3]	
10	Last WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]		[3]	

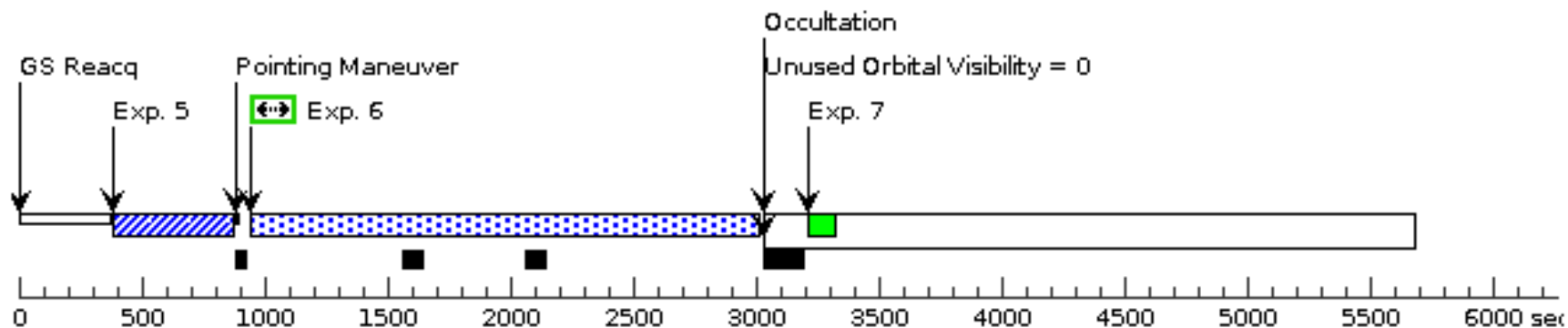
Orbit 1

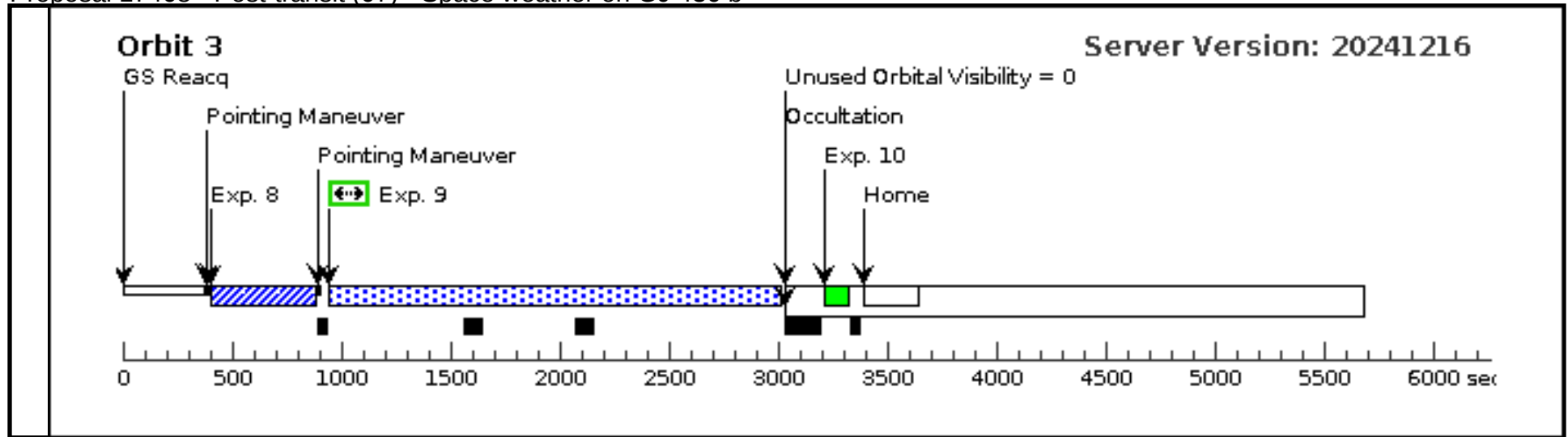
Server Version: 20241216



Orbit 2

Server Version: 20241216





Proposal 17468 - Post-transit repeat (57) - Space weather on GJ 436 b

Visit	Proposal 17468, Post-transit repeat (57), completed								Wed Feb 19 18:00:24 GMT 2025	
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: STIS/CCD, STIS/FUV-MAMA									
	Special Requirements: Period 2.643897510 D AND ZERO-PHASE HJD2454873.015820									
	Comments: 2 orbit visit to measure the post-transit level									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes		Miscellaneous		
	(1)	ROSS-905 Alt Name1: GJ436	RA: 11 42 12.1287 (175.5505362d) Dec: +26 42 11.04 (26.70307d) Equinox: J2000	Proper Motion RA: 0.06679656490011585 sec of time/yr Proper Motion Dec: -0.8135499999752938 arcsec/yr Epoch of Position: 2015.5		V=10.613		Reference Frame: ICRS		
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.									
	Category=STAR									
	Description=[M V-IV] Extended=NO									
Exposures	#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Acquire targ et (STIS.ta.189 6406)	(1) ROSS-905	STIS/CCD, ACQ, F28X500III	MIRROR		PHASE 0.3478 TO 0.364		13 Secs (13 Secs) [==>]	[1]
	2	center target (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs) [==>]	[1]
	3	Integration 1 /2, orbit 1 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.2D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO	POS TARG null,0.69 6		1581 Secs (1550 Secs) [==>1550 Secs]	[1]
	4	First WAVE CAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.2	G140M 1222 A				[==>]	[1]
	5	center target , orbit 2 (STIS.sp.18 96491)	(1) ROSS-905	STIS/CCD, ACQ/PEAK, 52X0.1D1	G430L 4300 A				13 Secs (13 Secs) [==>]	[2]
	6	Integration 2 /2, orbit 2 (STIS.sp.41 5432)	(1) ROSS-905	STIS/FUV-MAMA, TIME-TAG, 52X0.1D1	G140M 1222 A	BUFFER-TIME=50 0; WAVECAL=NO			1616 Secs (1850 Secs) [==>1850 Secs]	[2]
	7	Second WAVECAL	WAVE	STIS/FUV-MAMA, ACCUM, 52X0.1	G140M 1222 A				[==>]	[2]

