



13631 - Dynamical Change in Jupiter's Great Red Spot

Cycle: 21, Proposal Category: GO/DD

(Availability Mode: SUPPORTED)

INVESTIGATORS

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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) JUPITER-GRS-1	WFC3/UVIS	1	10-Apr-2014 21:23:36.0	yes
02	(2) JUPITER-GRS-2	WFC3/UVIS	1	10-Apr-2014 21:23:47.0	yes

2 Total Orbits Used

ABSTRACT

Although it has been known for some time that Jupiter's Great Red Spot (GRS) is shrinking in longitudinal extent (becoming more 'round'), it has recently undergone an unprecedented acceleration of that shrinkage. At the same time, there is significant convective activity along the South Temperate Belt's (STB) northern edge. Using amateur data, there now appears to be a correlation between this nearby activity and interactions with the GRS, driving vorticity changes. We hypothesize that this activity is responsible for the change in GRS aspect, and with corresponding changes in the GRS's internal flow field and vorticity, but this is only measurable from Hubble because of the required spatial resolution. These observations cannot wait until Cycle 22, as the STB activity is expected to cease around May 2014, based on historical accounts of longevity of this type of

activity; in addition, Jupiter enters solar exclusion in May. Capturing the interaction would be a major achievement in understanding the energetic feeding of the GRS and constraining the mechanism that governs its long life.

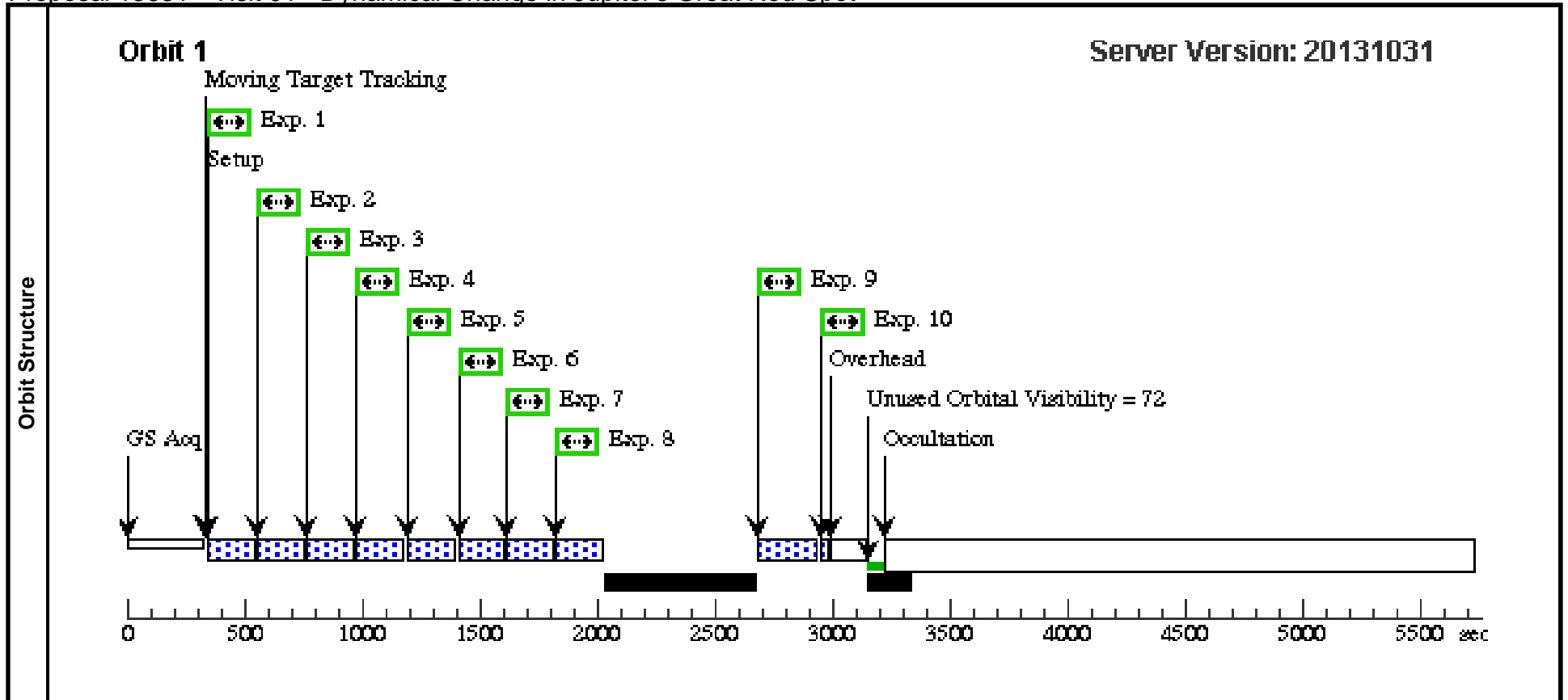
OBSERVING DESCRIPTION

tbd

Proposal 13631 - Visit 01 - Dynamical Change in Jupiter's Great Red Spot

Fri Apr 11 01:23:56 GMT 2014

Visit	Proposal 13631, Visit 01, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: PCS MODE FINE; BETWEEN 21-APR-2014:09:30 AND 21-APR-2014:10:30									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(1)	JUPITER-GRS-1	STD=JUPITER	TYPE=PGRAPHIC, LONG=40, LAT=-22, R_LONG=0.33, EPOCH=21-APR-2014:10:07:20, EpochTimeScale=UTC			EARTH				
<i>Comments: Target GRS, at or near Central Meridian Longitude</i>										
Exposures	#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N				3 Secs (3 Secs)	
									[==>]	[1]
	2	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F502N				3 Secs (3 Secs)	
									[==>]	[1]
	3	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F395N				12 Secs (12 Secs)	
									[==>]	[1]
	4	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F469N				9 Secs (9 Secs)	
									[==>]	[1]
	5	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F487N				6 Secs (6 Secs)	
								[==>]	[1]	
6	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N				3 Secs (3 Secs)		
								[==>]	[1]	
7	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F502N				3 Secs (3 Secs)		
								[==>]	[1]	
8	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F395N				12 Secs (12 Secs)		
								[==>]	[1]	
9	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ889N				60 Secs (60 Secs)		
								[==>]	[1]	
10	(1) JUPITER-GRS-1		WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N				3 Secs (3 Secs)		
								[==>]	[1]	



Proposal 13631 - Visit 02 - Dynamical Change in Jupiter's Great Red Spot

Fri Apr 11 01:23:59 GMT 2014

Visit	Proposal 13631, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: PCS MODE FINE; AFTER 01 BY .375 D TO .458 D									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(2)	JUPITER-GRS-2	STD=JUPITER	TYPE=PGRAPHIC, LONG=40, LAT=-22, R_LONG=0.33, EPOCH=21-APR-2014:19:40:51, EpochTimeScale=UTC				EARTH		
	<i>Comments: Target GRS, at or near Central Meridian Longitude</i>									
Exposures	#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N					3 Secs (3 Secs)	[1]
	2	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F502N					3 Secs (3 Secs)	[1]
	3	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F395N					12 Secs (12 Secs)	[1]
	4	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F469N					9 Secs (9 Secs)	[1]
	5	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F487N					6 Secs (6 Secs)	[1]
	6	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N					3 Secs (3 Secs)	[1]
	7	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F502N					3 Secs (3 Secs)	[1]
	8	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F395N					12 Secs (12 Secs)	[1]
	9	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ889N					60 Secs (60 Secs)	[1]
10	(2) JUPITER-GRS-2	WFC3/UVIS, ACCUM, UVIS1-2K2A-SUB	F631N					3 Secs (3 Secs)	[1]	

