13067 - The Jovian Transit of Venus - A 'Truth Test' for Atmospheric Characterization of Earth-Size Planets in Habitable Zones

Cycle: 19, Proposal Category: GO/DD

(Availability Mode: AVAILABLE)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Glenn Schneider (PI) (Contact)	**University of Arizona**	**gschneider@as.arizona.edu**
Prof. John T. Clarke (CoI)	Boston University	jclarke@bu.edu
Dr. David Ehrenreich (CoI) (ESA Member)	Universite de Grenoble I	david.ehrenreich@obs.ujf-grenoble.fr
Dr. Greg Kopp (CoI)	University of Colorado at Boulder	greg.kopp@lasp.colorado.edu
Dr. Alain Lecavelier des Etangs (CoI) (ESA Member)	CNRS, Institut d'Astrophysique de Paris	lecaveli@iap.fr
Prof. Jay M. Pasachoff (CoI)	Williams College	jay.m.pasachoff@williams.edu
Kevin Reardon (CoI)	National Solar Observatory/Sacramento Peak	reardonk@nso.edu
Dr. Paolo Tanga (CoI) (ESA Member)	Observatoire de la Cote d'Azur	paolo.tanga@oca.eu
Dr. Alfred Vidal-Madjar (CoI) (ESA Member)	CNRS, Institut d'Astrophysique de Paris	vidalmadjar@iap.fr
Dr. Thomas Widemann (CoI) (ESA Member)	Observatoire de Paris	thomas.widemann@obspm.fr
Dr. Richard Willson (CoI)	Columbia University in the City of New York	rwillson@acrim.com

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:01:36.0	yes
02	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:01:47.0	yes
03	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:01:56.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:04.0	yes
05	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:13.0	yes
06	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:19.0	yes
07	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:25.0	yes
08	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:30.0	yes
09	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:36.0	yes
10	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:42.0	yes
11	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:49.0	yes
12	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:02:57.0	yes
13	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:03:05.0	yes
14	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:03:13.0	yes
15	(1) JUPITER	WFC3/UVIS	1	07-Sep-2012 21:03:17.0	yes

15 Total Orbits Used

ABSTRACT

Following the June 2012 Transit of Venus (ToV) visible from Earth (E/ToV2012), we now propose to observe an exceedingly rare ToV in reflection from Jupiter on 20 Sep 2012, as an exoplanet-transit analog in our own solar system. Using Jupiter as an integrating sphere, the Sun is unresolved, allowing us to analogously test the ability to characterize Earth-size planetary atmospheres in stellar habitable zones with foreknowledge of the Cytherean atmosphere. Imaging in two key WFC3/UVIS diagnostic bands, we will collect ~1E12 photons from the entire disk of Jupiter over the transit duration enabling ppm differential detection of Venus's atmosphere. Our observation and data analysis plans allow us to reduce systematic errors to a comparable or lesser level and assess the impact of refractive atmospheric lensing (the Cytherean aureole) on the discernment of Earth-size exoplanet atmospheres. The color-dependent evolution of the aureole with photospheric impact distance was studied as a key goal of the now-completed E/ToV2012, ground, and space-based observing campaign. Those data suggest the possibility of optical amplification of the atmospheric absorption signal, enhancing its detectability, a possibility this proposal will test. These observations will directly inform on performance requirements for future Exo-earth detection and characterization missions, and also serve to enable a comparative planetology experiment to test the ability to discriminate between Cytherean and Telluric analogexoplanet atmospheres with an upcoming even rarer informative event, a Jovian Transit of Earth on 5 Jan 2014 (the subject of a future HST proposal; the last such event in HST's lifetime.)

OBSERVING DESCRIPTION

This is a *TIME CRITICAL, MOVING TARGET* observation of the 20 Sept 2012 UT Transit of Venus as seen in reflection off Jupiter (an event designated J/ToV2012) using 14 WFC3/UVIS orbits centered as close as possible to mid-transit at 09h 53m UT as the target visibility/orbit phasing pattern will allow.

SYNOPSIS. We will obtain WFC3/UVIS imaging of J/ToV2012, using Jupiter as an integrating sphere, to observe and differentially detect the atmospheric spectral signature of Venus crossing the Sun via high-precision imaging photometry in two filter bands, F275W and F763M. Over the full ~ 9.7 h (6 orbit) duration of the transit, we will collect ~ 10^12 counts in both spectral bands, sufficient to detect the wavelength dependence in the photometric transit signal anticipated at the ~10^-6 level to a ? photon noise sensitivity of app 1 ppm (see APT Phase 1 Scientific Justification). We observe identically in and out of transit as a control to subtract the non-transit Sun+Jupiter signal. In combination with four pre- and four post-transit “flanking” orbits we will characterize, calibrate, and reduce anticipated systematics to comparable or lower noise levels (see ATP Phase 1 Description of Observations). This experiment, which will enable a quantitate truth test for strategies and methodologies under investigation in the quest for the eventual detection and characterization of exo-Earths, requires 14 HST orbits.

OBSERVING STRATEGY. This is a high precision DIFFERENTIAL imaging photometry experiment. We use our expectations for the wavelength dependence in the transit signal, *not* a single-band ~ 100 ppm "light curve to detect, and to 1st order characterize, Venus’s atmosphere as it transits the Sun as seen from Jupiter. We use the full disk of Jupiter (diameter ~ 41.6" at time of transit) as an integrating sphere, presenting to HST the solar emergent spectrum modified by Jupiter, to reveal the interposed presence of Venus's atmosphere at the expected ~ ppm level.

INSTRUMENT CONFIGURATION/EXPOSURES. We use WFPC3/UVIS imaging in two diagnostic filter bands: F275W and F763M. To meet the ~ ppm imaging goal, we collect ~ 10^12 instrumental counts over the duration of the full transit (C2 – C3: ~ 9h 40m). Exposure times computed with the WFC3 ETC are designed to reach 90% full well depth for the brightest features of the Jovian cloud tops in each spectral band to avoid saturation and were cross-checked with previous observations of Jupiter (corrected for a 3% brightness difference at the J/ToV2012 epoch): 29.4s for F275W and 0.5s for F763M. Using all app 866000 WFC3 pixels that tile the disk of Jupiter each image will produce an aggregate of 5x10^10 electrons per exposure. We use a 2Kx2K (80" x 80") sub-array, centered on the ~42” angular diameter planet, both to reduce readout overhead, and to minimize Jovian stray light (encircled energy) to < 1 ppm from escaping the imaging aperture’s FOV.

TRANSIT ORBIT DESIGN. With these filters, exposure times, and readout aperture, as informed by the APT Phase 2 orbit planner (see Fig 4) we

can program five exposures in each of the two filters (ten in all) with a readout cadence of app 215 s (except for one intrusive non-parallel buffer dump in each orbit). We alternate between the F275W and F763M filters sequentially in each orbit, as one method to control and in partial mitigation calibrate, the effects of > 5 milliHz variation in solar intensity at comparable and longer timescales at the ~ ppm level (see further discussion below on systematic errors). Given the ~ 96 min HST orbit period with ~ 52 min target visibility intervals, we will reach our 1012 e–photon collection goal, in the absence of SAA impacted orbits (which cannot be predicted in HST Phase 1 for time-constrained observations) using all six orbits spanning the full transit duration.

CALIBRATION/CONTROL ORBITS DESIGN AND ORBIT COUNT: To control, characterize, and mitigate systematics (detailed below) we additionally and identically obtain a set of out-of-transit observations; i.e., an additional six orbits as a control and null test for our in-transit detection, thus enabling a double differential detection: (1) a wavelength differential with signal (2) in and out of transit, observed to equal depth and ppm precision. These six out-of-transit differential calibration orbits will be scheduled flanking the in-transit orbits as closely as possible in time, subject to SAA and Jovian satellite intrusions (there are two), with three orbits before transit ingress and three after egress. Planetary ephemerides inform that in each of three orbits immediately flanking the transit, the 1st orbit before ingress and the 1st orbit after egress, will be "polluted" by light from Europa and Io, respectively, intruding in the FOV, and thus cannot be used for a differential null test. We take this as a great opportunity, however, to use those two moon-crossing orbits with the moons themselves as (smaller) integrating spheres injecting a priori known signals into identically acquired data in these two “polluted” orbits, but still require a full set of six null signal orbits for transit detection calibration, pushing out in time (by one orbit) the extrema of the null orbit sets. We thus require a total of 14 orbits: four pre- and four post- transit orbits each with three null and one satellite calibration orbits and the six transit orbits themselves. All 14 orbits should be executed contiguously (but with SAA interrupts to fall where they may), at the same orientation angle, and with two-FGS guiding.

IMPLEMENTATION NOTES FOR OUR PROGRAM COORDINATOR

1) TEMPORAL LINKAGES.
We must observe all six contiguous in-transit orbits, and two contiguous sets 4-orbit pre- and post-transit calibration orbits. Ideally, we wish to have all 14 orbits scheduled contiguously. We know, however, at some point not predictable with APT, that some of these orbits will become SAA impacted. Depending upon which orbits those are, we have two solutions (that may be taken together or separately as needed) to enable implementation without jeopardizing our scientific goals:

(a) In any SAA-impacted orbits (in or out of transit) we can delete the very last F275W/F763M exposure pair (exposure #’s 9 and 10) which will

reduce, because of an otherwise intrusive buffer dump after exposure 8 during the visibility period, the duration of the portion of the visibility period used by appx 1000 seconds – thus making shorter, SAA-impacted visibility periods, usable still with margin against our SNR requirements.

(b) The set of four contiguous pre-transit calibration orbits and/or the set of four contiguous post-calibration orbits may be broken off, with a minimum possible gap, in time from the six contiguous in-transit orbits they flank -- into non-SAA impacted periods. (In APT implementation this would entail changing the AFTER and BEFORE absolute timing requirements for those pre- or post- transit visits).

Once the actual SAA pattern is determined, given the time-critical scheduling window for our 14-orbit observations (to be approximately centered on 20 Sept 2012 09 53 UT) we will work with our PC to assess the best option available to implement with the least impact to the program. Please see our Phase 1 proposal (Table 2) for event times so they may be mapped to actual UTCs of visibility intervals

NOTE TO OUR PC: The APT Phase 2 file we have submitted specifies “Between” intervals for all Visits predicated on 14 orbits executed contiguously w.r.t. mid-transit with the presumption of orbit-sequential timing links. I.e., each orbit executing after the completion of the previous orbit). With SAA impacts this, we know, will not be possible. Hence we deliver this APT file with “After Visit” (sequential) linkages severed between Visits 4 and 5 (between pre-transit calibration orbits and transit ingress), and also between Visits 10 and 11 (between transit egress and post-transit calibration orbits). We do not know, a priori, without knowledge of the SAA-pattern, if this is the best solution – but presents an executable (schedulable) scenario with option (b). Before a particular implementation action is taken we wish to discuss this with our PC once the target visibility phasing w.r.t. the SAA pattern w.r.t. mid-transit is known.

2) 2Kx2K SUBBARRAY. In this APT Phase 2 file we have selected from choices A, B, C, and D, the UVIS2-2K2C-SUB sub-array. We DO NOT KNOW if this is the best choice in terms of noise performance or other possible considerations that might inform a better decision. We ask here for the advise of STScI’s WFC3 instrument experts, and would readily switch to one of the other 2Kx2K sub-arrays if better performance might be anticipated.

REAL TIME JUSTIFICATION

We have no Real Time Requirements

CALIBRATION JUSTIFICATION

See our Phase 1 Proposal which discussed in detail the need for calibration orbits to enable ppm differential photometry.

Visit

Proposal 13067, Visit 01, scheduling Sat Sep 08 01:03:25 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05; SEQ 01,02,03,04,05,06,07,08,09,10,11,12,13,14 WITHIN 13.5 Orbits

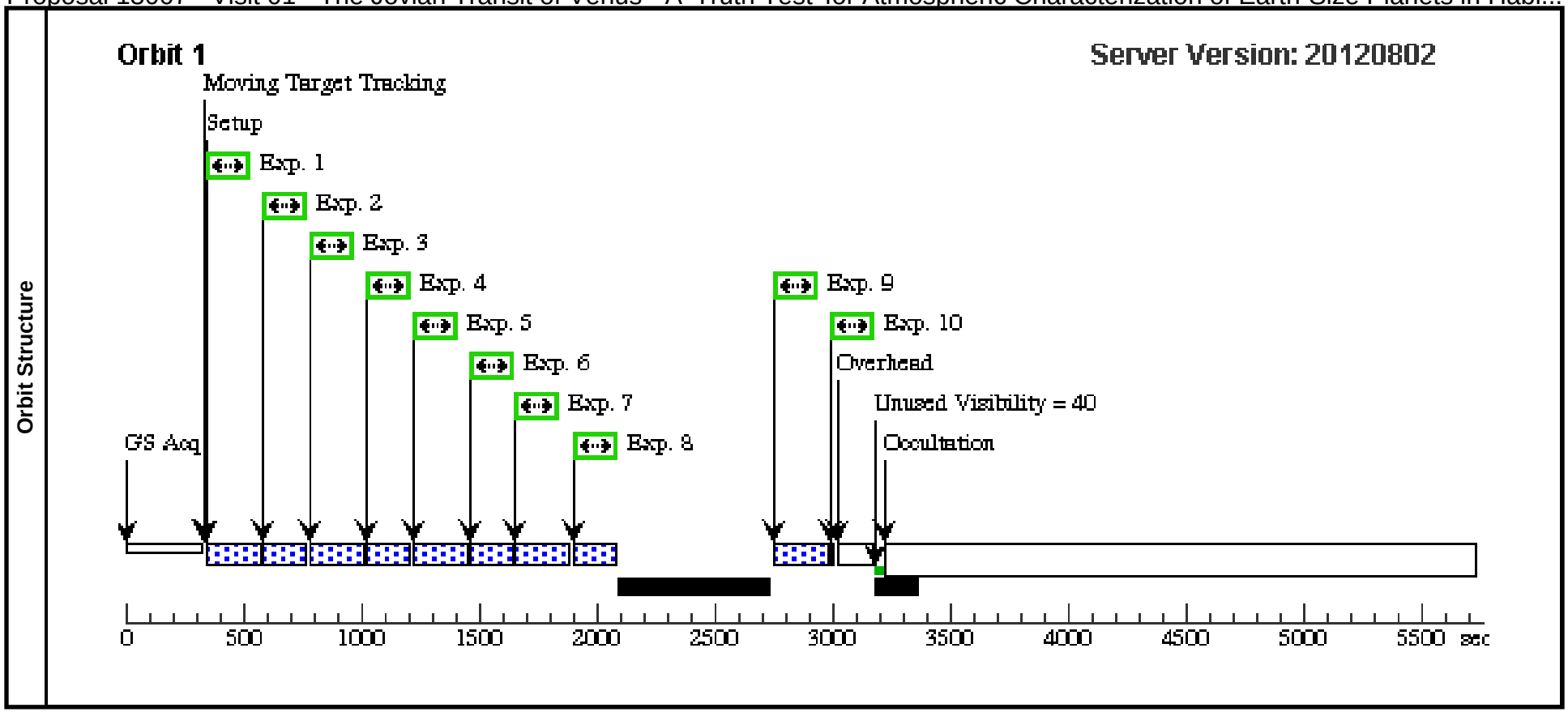
Comments: This is the first of four contiguous pre-transit calibration orbits.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 40
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 02, scheduling Sat Sep 08 01:03:27 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

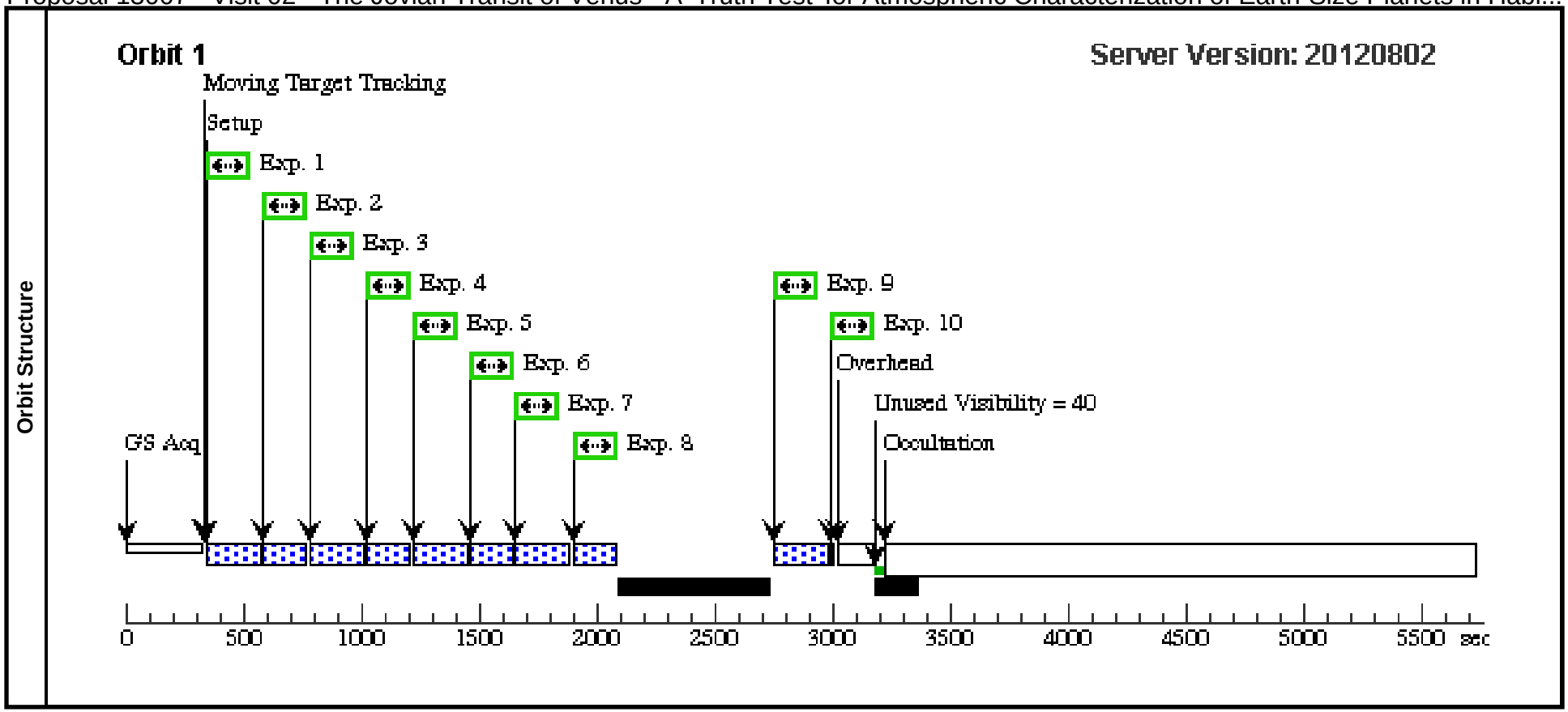
Comments: This is the second of four contiguous pre-transit calibration orbits.
We anticipate (not a requirement) Europa in the field during the target visibility interval.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 40
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 03, scheduling Sat Sep 08 01:03:28 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

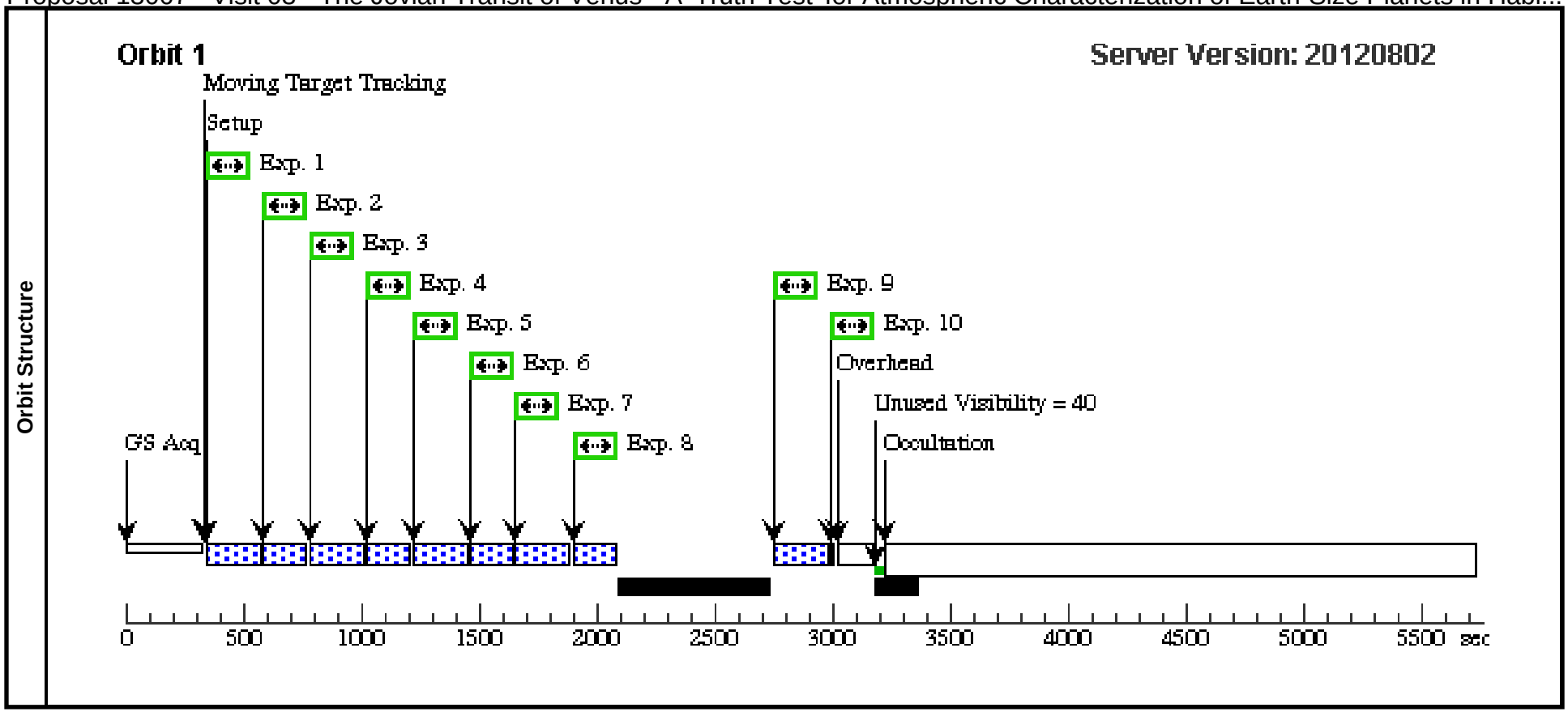
Comments: This is the third of four contiguous pre-transit calibration orbits.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 40
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 04, scheduling Sat Sep 08 01:03:29 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

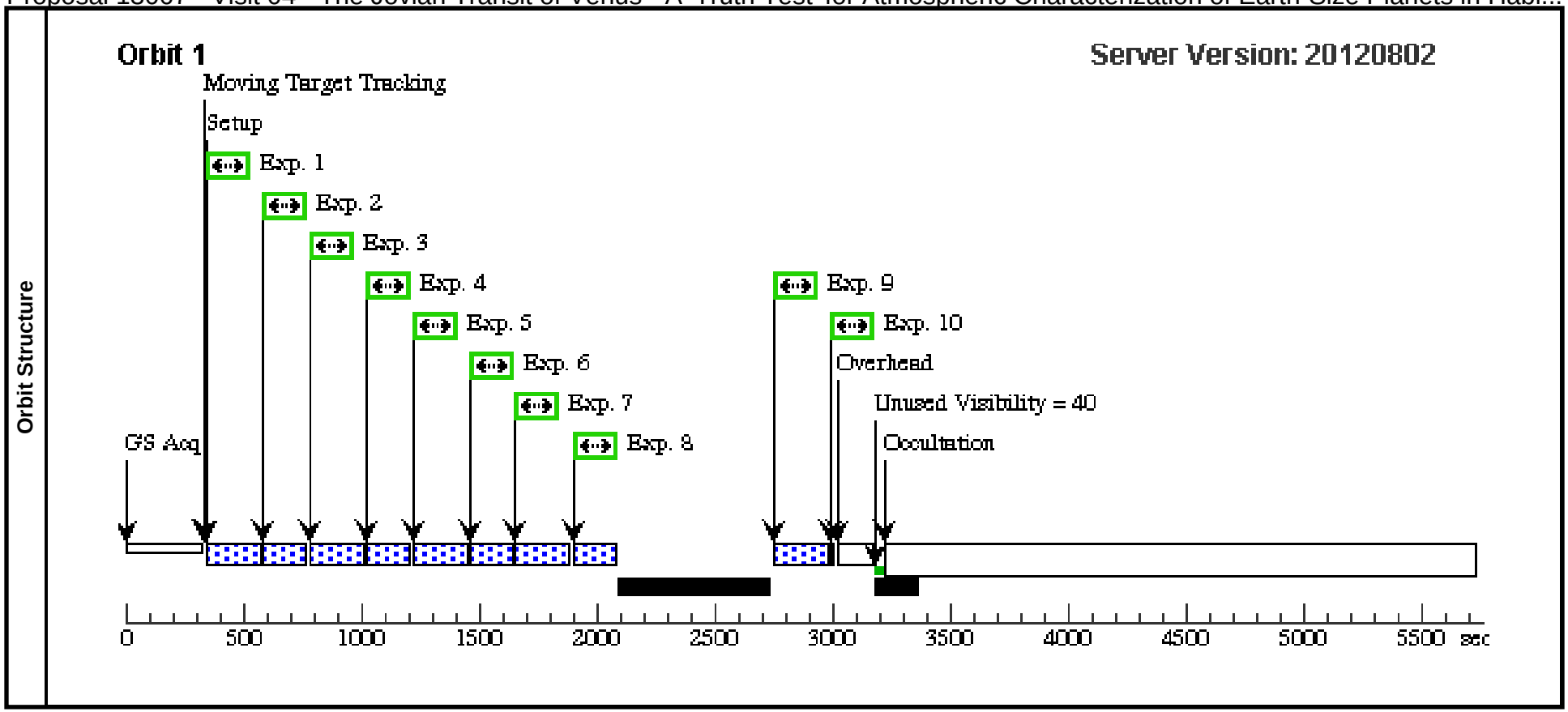
Comments: This is the fourth of four contiguous pre-transit calibration orbits.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 40
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 05, scheduling Sat Sep 08 01:03:30 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BETWEEN 2012.264:05:30 AND 2012.264:06:30

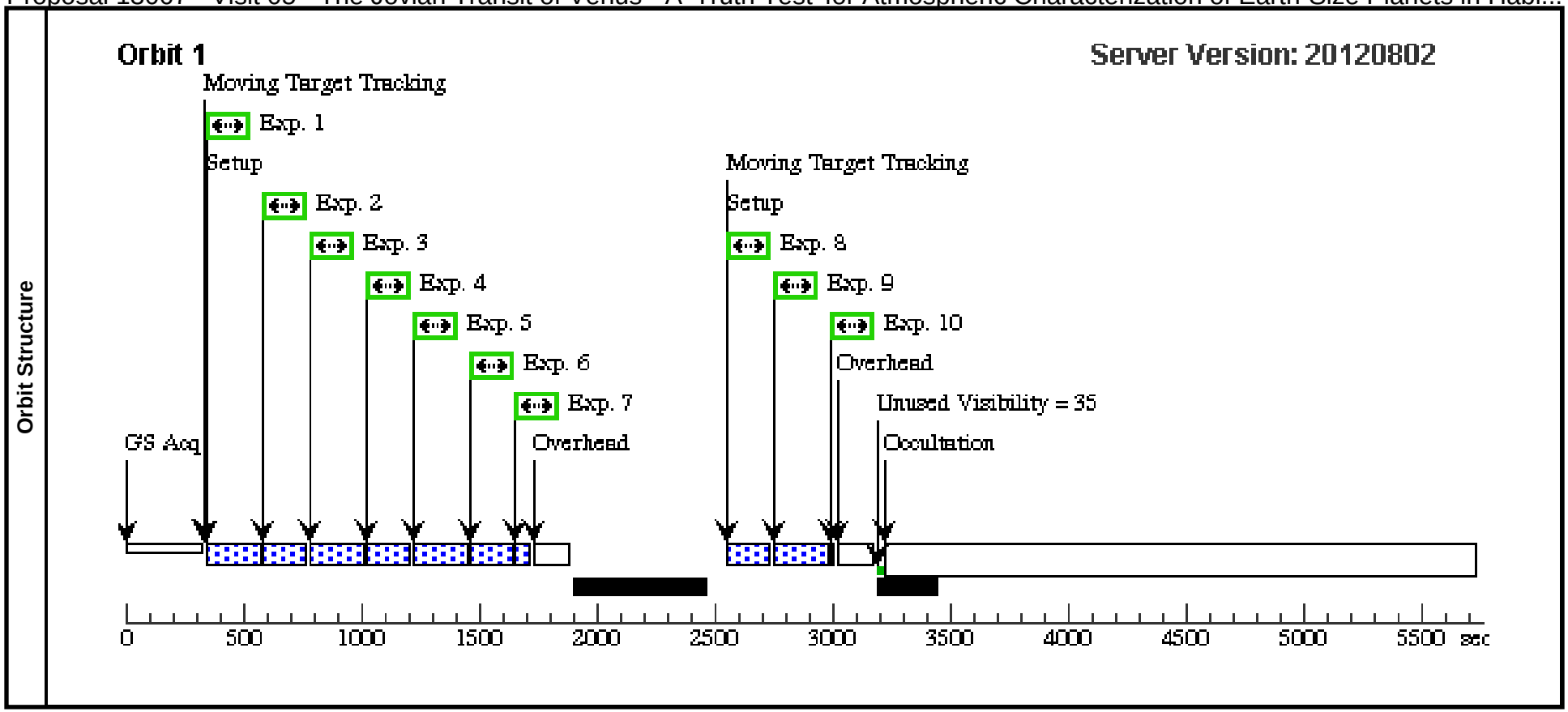
Comments: This is the FIRST In-Transit orbit.
Second Contact is at 05:02 UT.
Ideally, the first WFC3 exposure in this orbit should occur at that time - but the visibility interval phasing with the orbit will dictate.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9; SAA CONTOUR 02		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		29.4 Secs *[==>]*	 ***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02; AFTER BY 900 S; NEW ALIGNMENT		0.5 Secs *[==>]*	 ***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		29.4 Secs *[==>]*	 ***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Overhead
GS Acq
Moving Target Tracking
Setup
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 35
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 06, scheduling Sat Sep 08 01:03:32 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

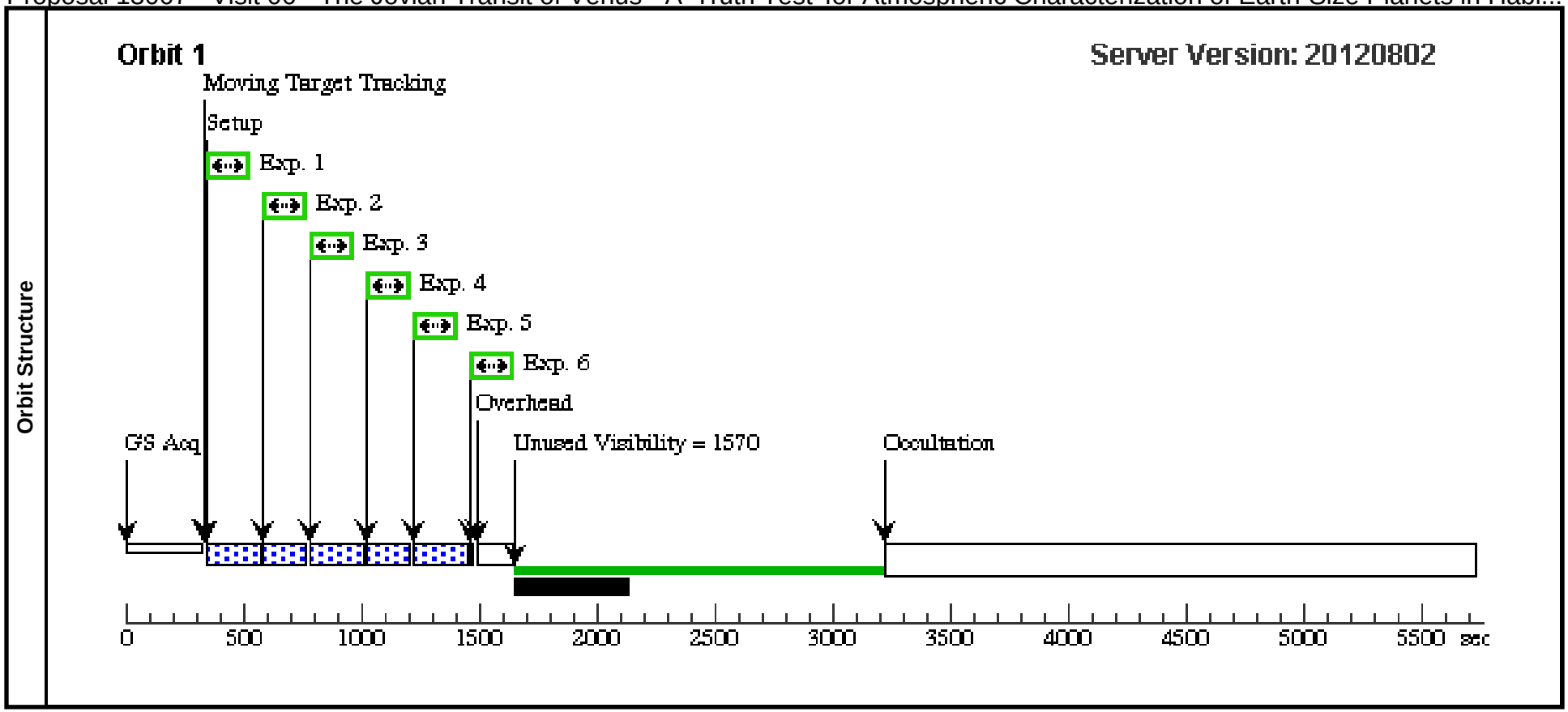
Comments: This is the SECOND In-Transit orbit.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Overhead
GS Acq
Unused Visibility = 1570
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 07, scheduling Sat Sep 08 01:03:32 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

Comments: This is the THIRD In-Transit orbit.
Mid-Transit is 09:53 UT.
Mid-Transit may occur during this orbit (Visit 07) , or the next (Visit 08)
Ideally, mid-transit should occur between the visibility intervals of Visits 07 and Visit 08 - but the visibility interval phasing with the orbits will dictate.

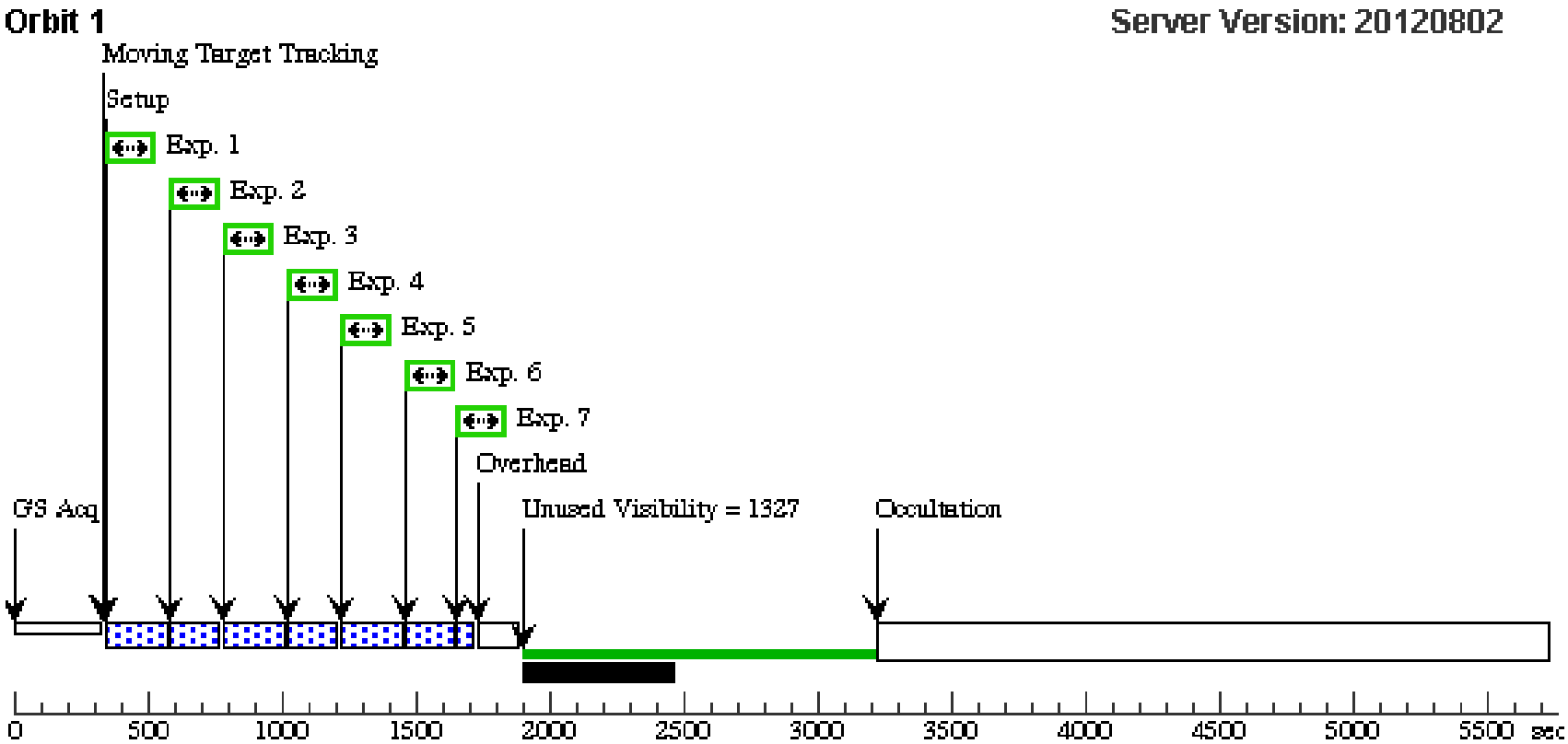
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***

Orbit Structure



Visit

Proposal 13067, Visit 08, scheduling Sat Sep 08 01:03:33 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

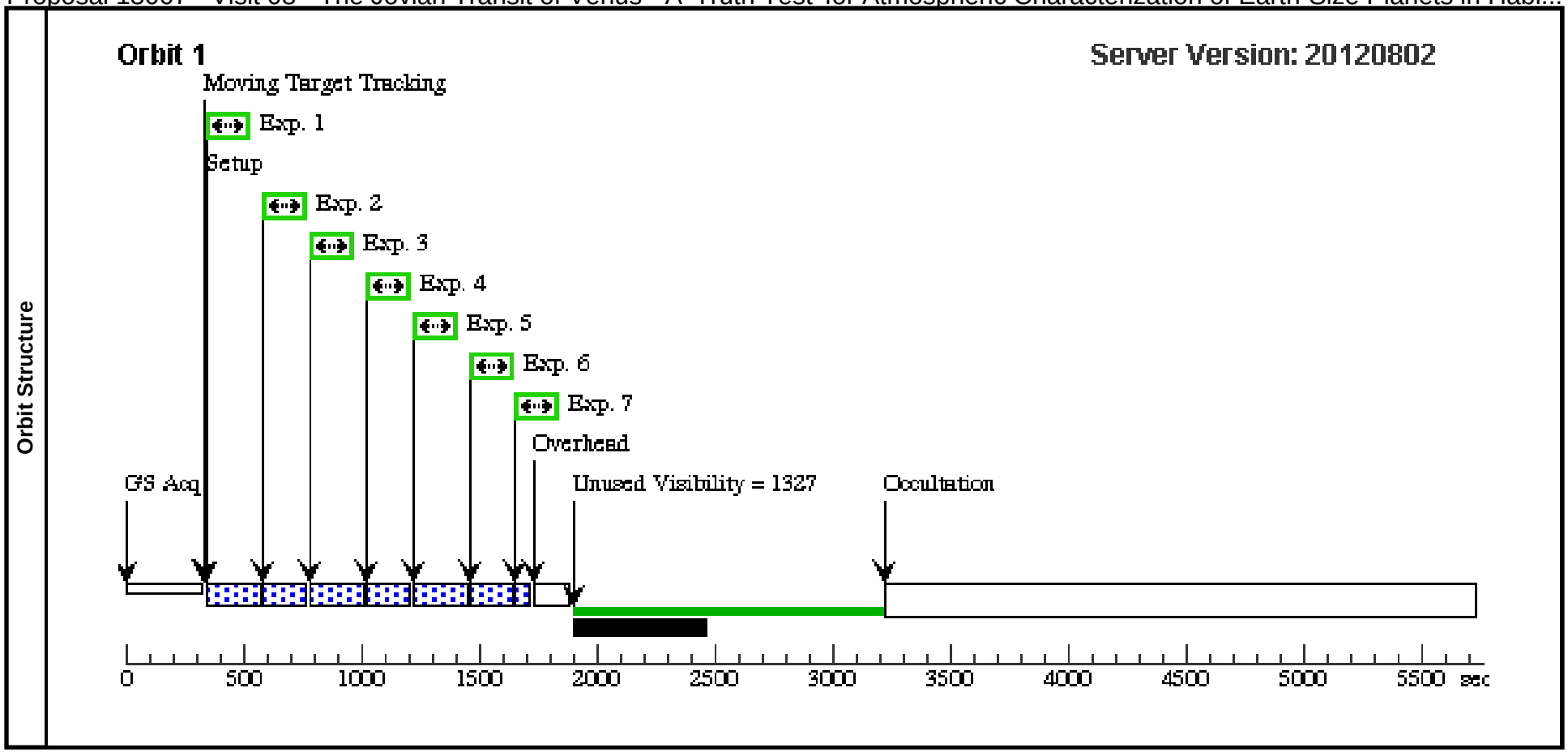
Comments: This is the FOURTH In-Transit orbit.
Mid-Transit is 09:53 UT.
Mid-Transit may occur during this orbit (Visit 07) , or the next (Visit 08)
Ideally, mid-transit should occur between the visibility intervals of Visits 07 and Visit 08 - but the visibility interval phasing with the orbits will dictate.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Overhead
GS Acq
Unused Visibility = 1327
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 09, scheduling Sat Sep 08 01:03:34 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

Comments: This is the FIFTH In-Transit orbit.

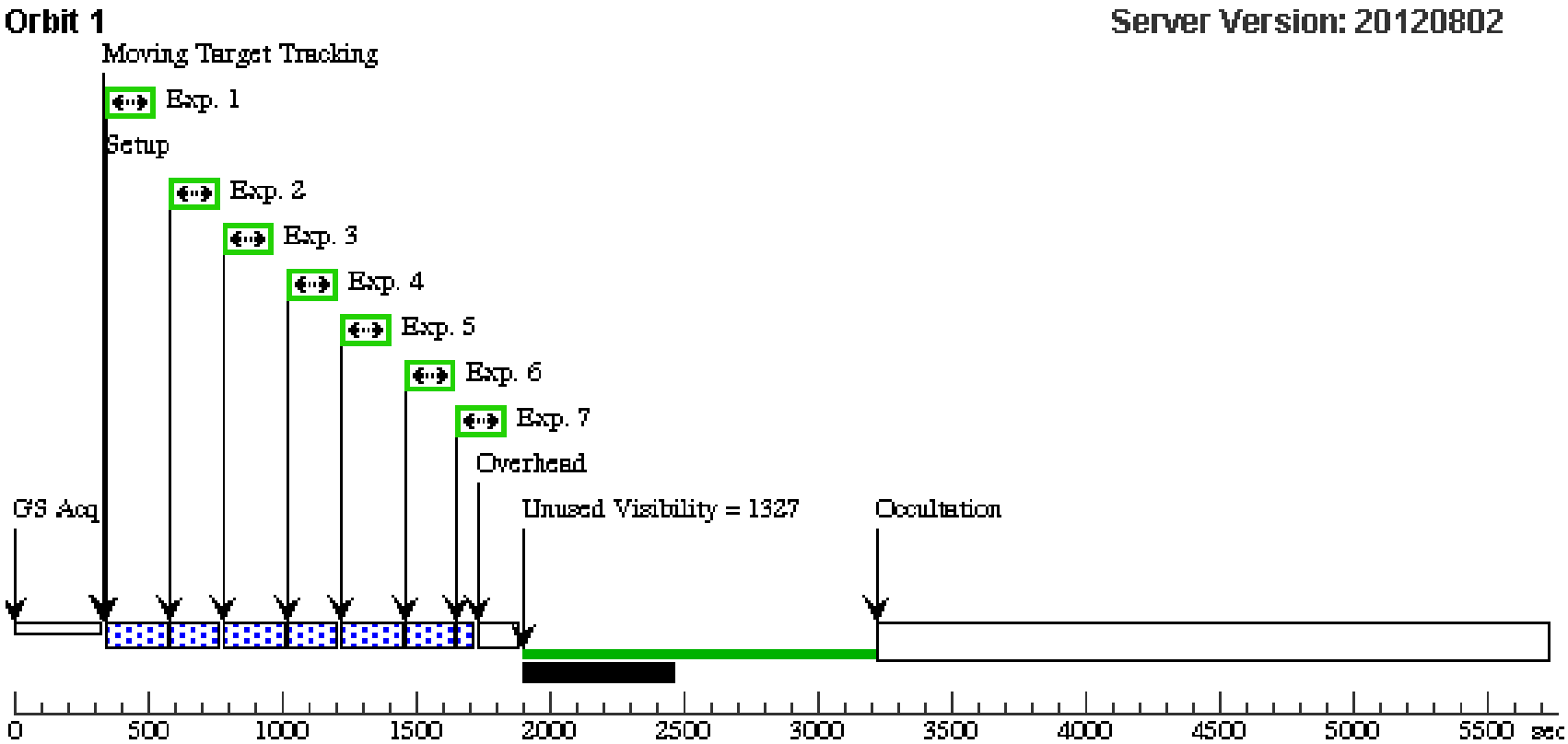
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***

Orbit Structure



Visit

Proposal 13067, Visit 10, scheduling Sat Sep 08 01:03:35 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

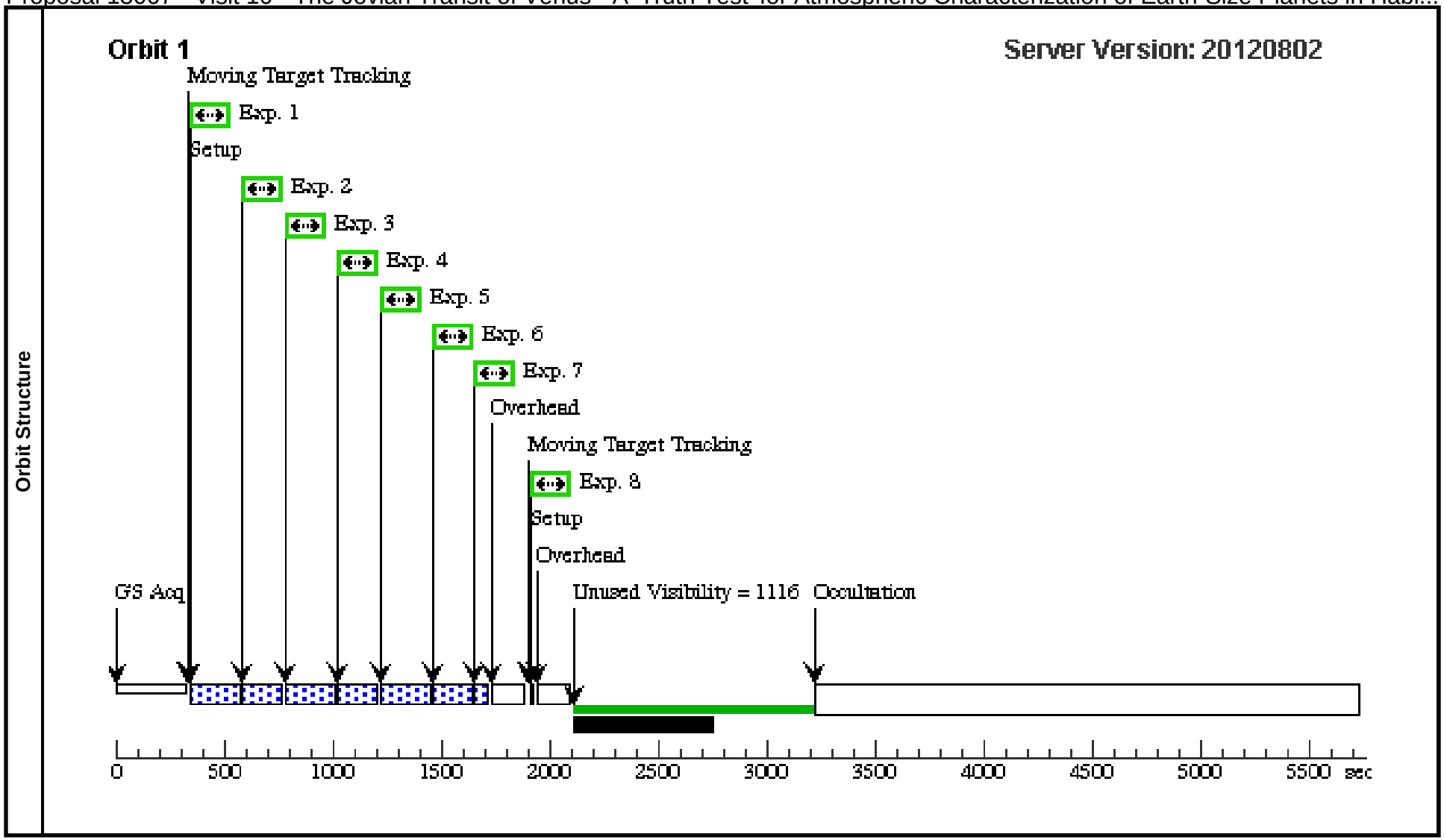
Comments: This is the SIXTH In-Transit orbit.
Third Contact is at 14:44 UT.
Ideally, the first WFC3 exposure in this orbit should occur at that time - but the visibility interval phasing with the orbit will dictate

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Overhead
Moving Target Tracking
Exp. 8
Setup
Overhead
GS Acq
Unused Visibility = 1116
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 11, scheduling Sat Sep 08 01:03:36 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

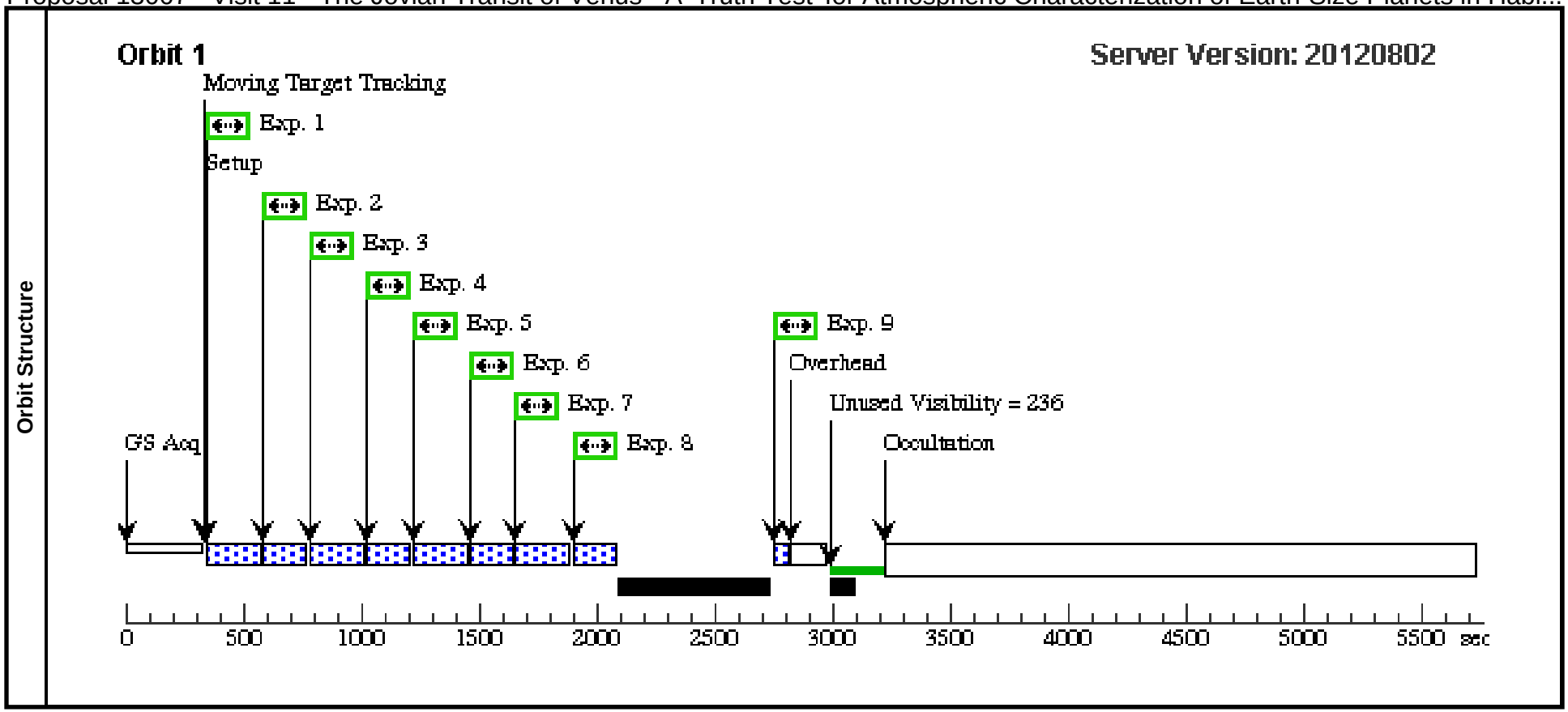
Comments: This is the first of four contiguous post-transit calibration orbits.
We anticipate (not a requirement) Io in the field during the target visibility interval.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Overhead
Unused Visibility = 236
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 12, scheduling Sat Sep 08 01:03:37 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

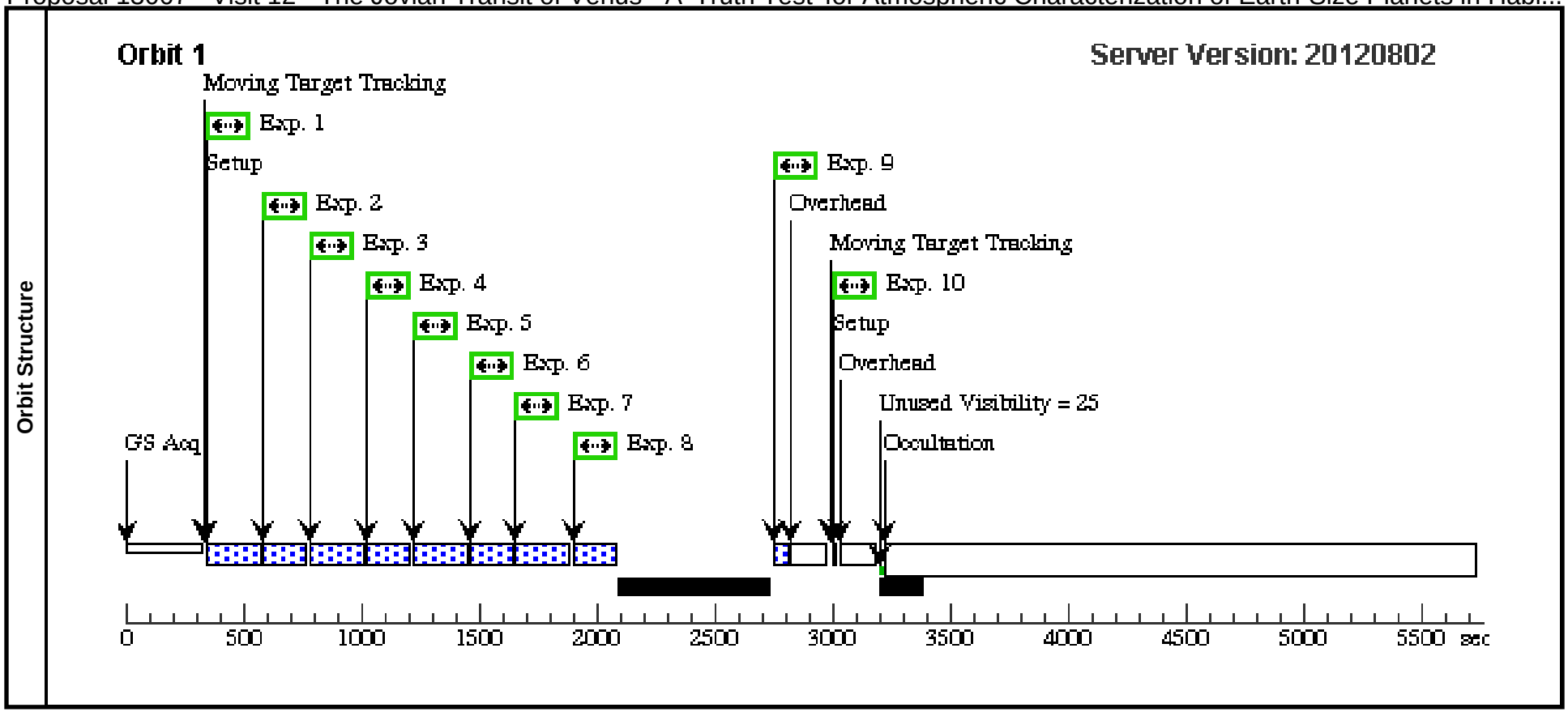
Comments: This is the second of four contiguous post-transit calibration orbits.
We anticipate (not a requirement) Europa in the field during the target visibility interval.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs *[==>]*	 ***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs *[==>]*	 ***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
GS Acq
Exp. 9
Overhead
Moving Target Tracking
Exp. 10
Setup
Overhead
Unused Visibility = 25
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 13, scheduling Sat Sep 08 01:03:38 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

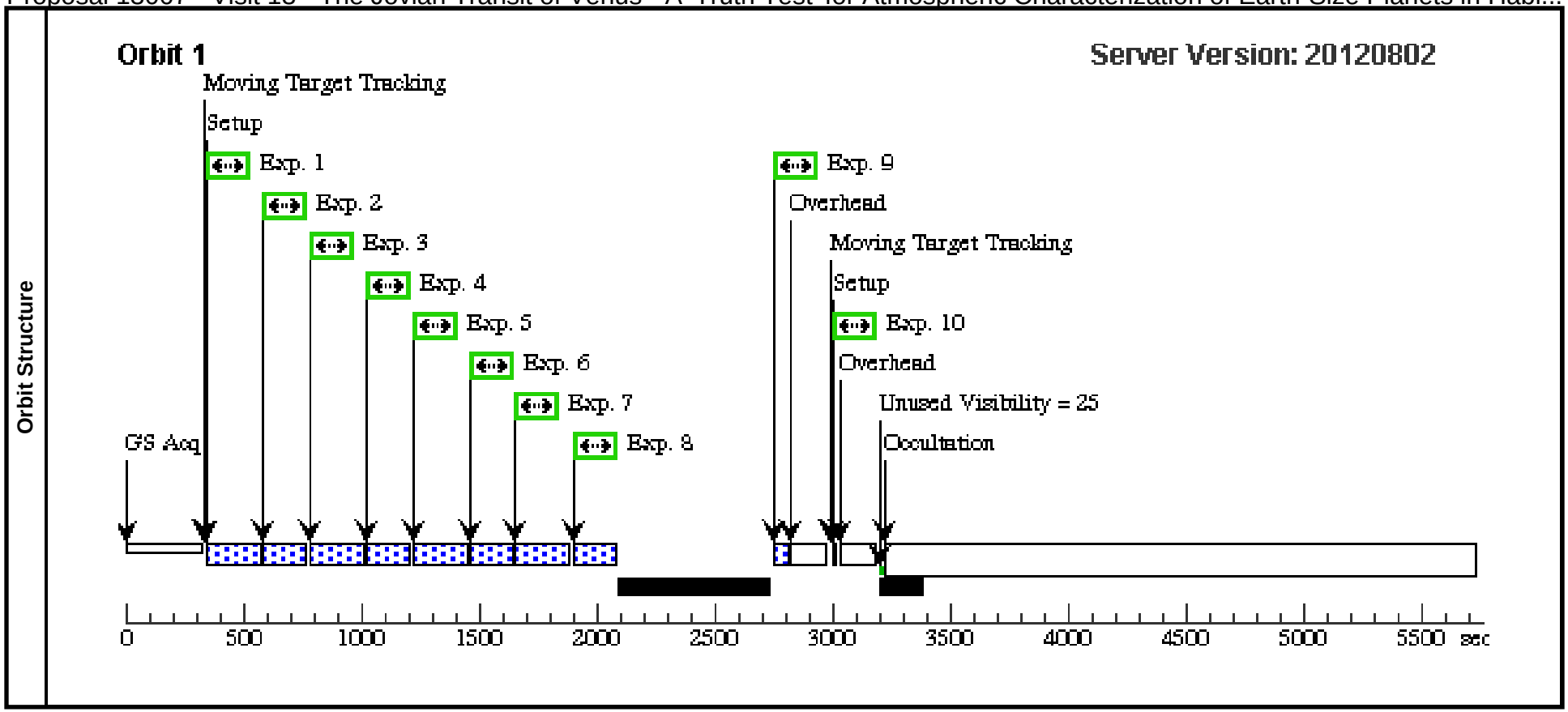
Comments: This is the third of four contiguous post-transit calibration orbits.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1; SAA CONTOUR 02		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
GS Acq
Exp. 9
Overhead
Moving Target Tracking
Setup
Exp. 10
Overhead
Unused Visibility = 25
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, Visit 14, scheduling Sat Sep 08 01:03:39 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: SAME ORIENT AS 05

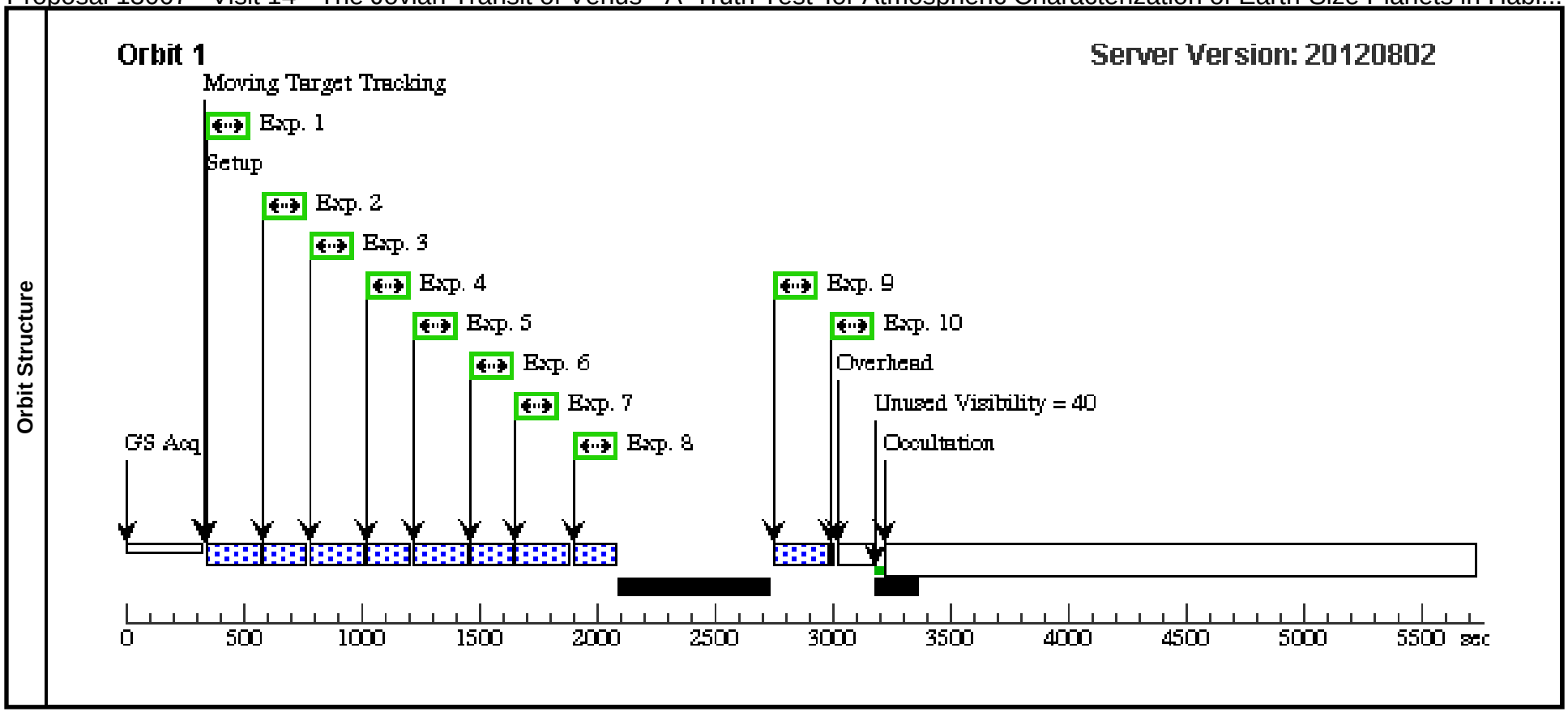
Comments: This is the fourth of four contiguous pre-transit calibration orbits..

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	POS TARG 10.4,9		29.4 Secs	
								[==>]	***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
3	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
4	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
5	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
6	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
7	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
8	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***
9	F275W	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F275W	CR-SPLIT=NO	SAME POS AS 1		29.4 Secs	
								[==>]	***[1]***
10	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.5 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20120802
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9
Exp. 10
Overhead
Unused Visibility = 40
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13067, EARLY IMAGING F763M (15), completed Sat Sep 08 01:03:40 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: BEFORE 2012.240

Comments: This is an EARLY Visit, to execute sufficiently ahead of Visit 01-14 to inform on selection of an optimal exposure time for the F763M filter in those visits. This Visit should be scheduled as soon as possible to allow for an update to Visits 01-14 to be executed on 20 Sept 2012. This Visit is different than the other Visits. It contains only three exposures all (only) with the F763M filter with exposure times of 0.5s, 0.8s, 1.0s. We use the same UVIS2-2K2C-SUB aperture/subarray and corresponding +10.4, +9.0 POS TARGS as our other 14 Visits.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window	Ephem Center
(1)	JUPITER	STD=JUPITER			MOSS Planning Start: 01-AUG-2012 MOSS Planning End: 30-SEP-2012	EARTH

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	POS TARG 10.4,9		0.5 Secs *[==>]*	 ***[1]***
2	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		0.8 Secs *[==>]*	 ***[1]***
3	F763M	(1) JUPITER	WFC3/UVIS, ACCUM, UVIS2-2K2C-SUB	F763M	CR-SPLIT=NO	SAME POS AS 1		1.0 Secs *[==>]*	 ***[1]***

Orbit Structure