



12665 - Orbital Evolution and Stability of the Inner Uranian Moons

Cycle: 19, Proposal Category: GO

(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>
31	(1) URANUS-PERDITA-SOUTH-MAB	WFC3/UVIS	1	02-Aug-2011 21:33:40.0	yes
32	(2) URANUS-PERDITA-NORTH-MAB	WFC3/UVIS	1	02-Aug-2011 21:33:45.0	yes
33	(3) URANUS-MAB-SOUTH	WFC3/UVIS	1	02-Aug-2011 21:33:49.0	yes
34	(4) URANUS-MAB-NORTH	WFC3/UVIS	1	02-Aug-2011 21:33:52.0	yes
35	(5) URANUS-CUPID-SOUTH-MAB	WFC3/UVIS	1	02-Aug-2011 21:33:56.0	yes
36	(6) URANUS-CUPID-NORTH-MAB	WFC3/UVIS	1	02-Aug-2011 21:34:00.0	yes
41	(11) URANUS-PERDITA-SOUTH	WFC3/UVIS	1	02-Aug-2011 21:34:04.0	yes
42	(12) URANUS-PERDITA-NORTH	WFC3/UVIS	1	02-Aug-2011 21:34:07.0	yes
45	(15) URANUS-CUPID-SOUTH	WFC3/UVIS	1	02-Aug-2011 21:34:11.0	yes
46	(16) URANUS-CUPID-NORTH	WFC3/UVIS	1	02-Aug-2011 21:34:14.0	yes

10 Total Orbits Used

ABSTRACT

Nine densely-packed inner moons of Uranus show signs of chaos and orbital instability over a variety of time scales. Many moons show measureable orbital changes within a decade or less. Long-term integrations predict that some moons could collide in less than one million years. One faint ring embedded in the system may, in fact, be the debris left behind from an earlier such collision. Meanwhile, the nearby moon Mab falls well outside the influence of the others but nevertheless shows rapid, as yet unexplained, changes in its orbit. It is embedded within a dust ring that also shows surprising variability. A highly optimized series of observations with WFC3 over the next three cycles will address some of the fundamental open questions about this dynamically active system: Do the orbits truly show evidence of chaos? If so, over what time scales? What can we say about the masses of the moons involved? What is the nature of the variations in Mab's orbit? Is Mab's motion predictable or random? Astrometry will enable us to derive the orbital elements of these moons with 10-km precision. This will be sufficient to study the year-by-year changes and, combined with other data from 2003-2007, the decadal evolution of the orbits. The pairing of precise astrometry with numerical integrations will enable us to derive new dynamical constraints on the masses of these moons. Mass is the fundamental unknown quantity currently limiting our ability to reproduce the interactions within this system. This program will also capitalize upon our best opportunity for nearly 40 years to study the unexplained variations in Uranus's faint outer rings.

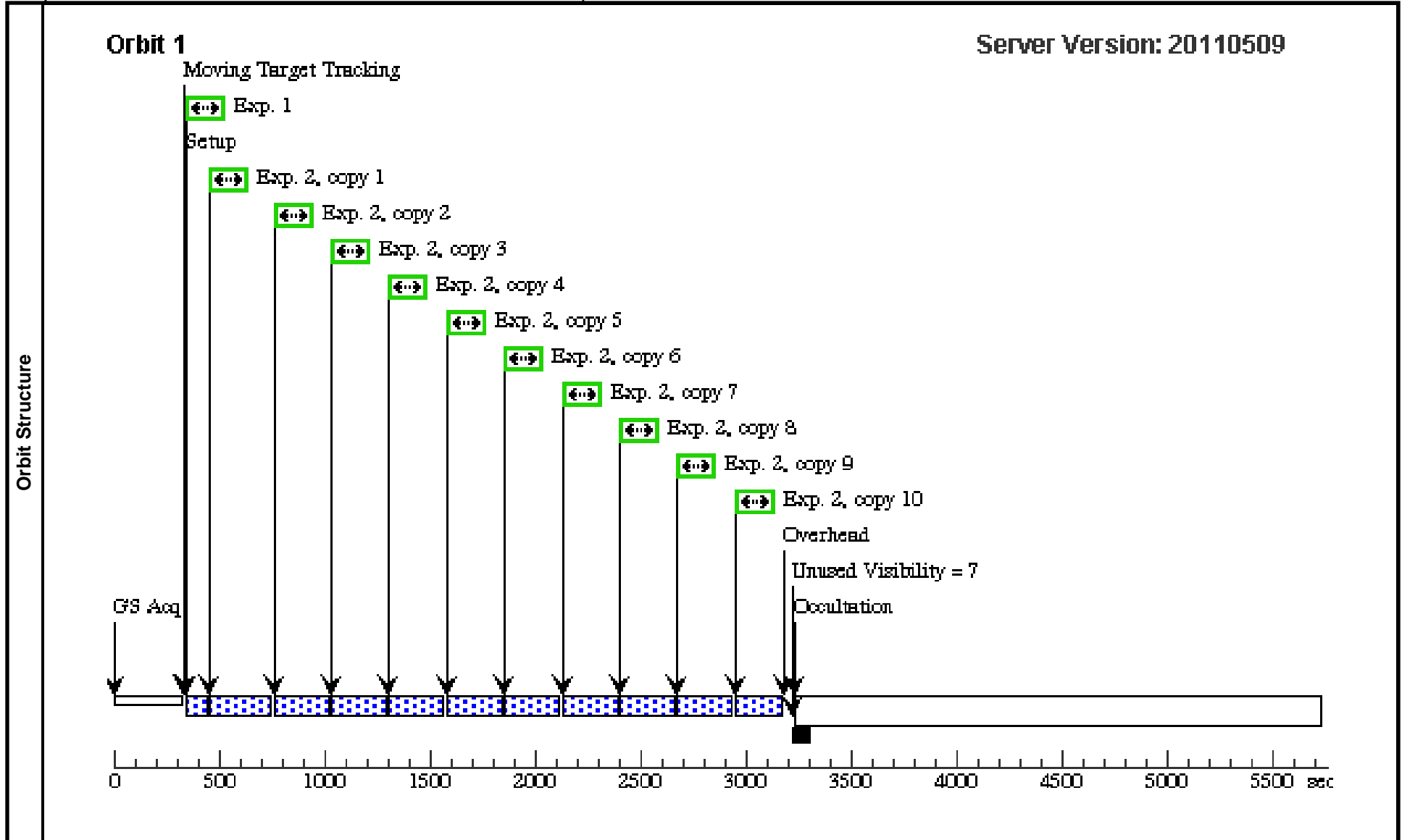
OBSERVING DESCRIPTION

Astrometry of the Uranian satellites is accomplished via six visits, each consisting of a sequence of long exposures through the broad F350LP filter. Each orbit begins with one unsaturated image of the planet for geometric reference and calibration checking. The orbital plane is oriented within 20 degrees of the X-axis in the images to separate the moons from the wide vertical band caused by saturation bloom from the planet. From orbit to orbit, Uranus is shifted upward and downward by ~ 40 pixels within the 512x512 subarray to achieve some of the benefits of dithering; however, moons can always be distinguished from hot pixels by their motion. Each visit is timed to place one of the smallest moons near its maximum orbital elongation, because this is where such moons are most detectable. The larger moons will be captured by chance and require no special targeting. Mab is the target of repeated observations in order to study its orbital variations.

Proposal 12665 - Visit 31 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:19 GMT 2011

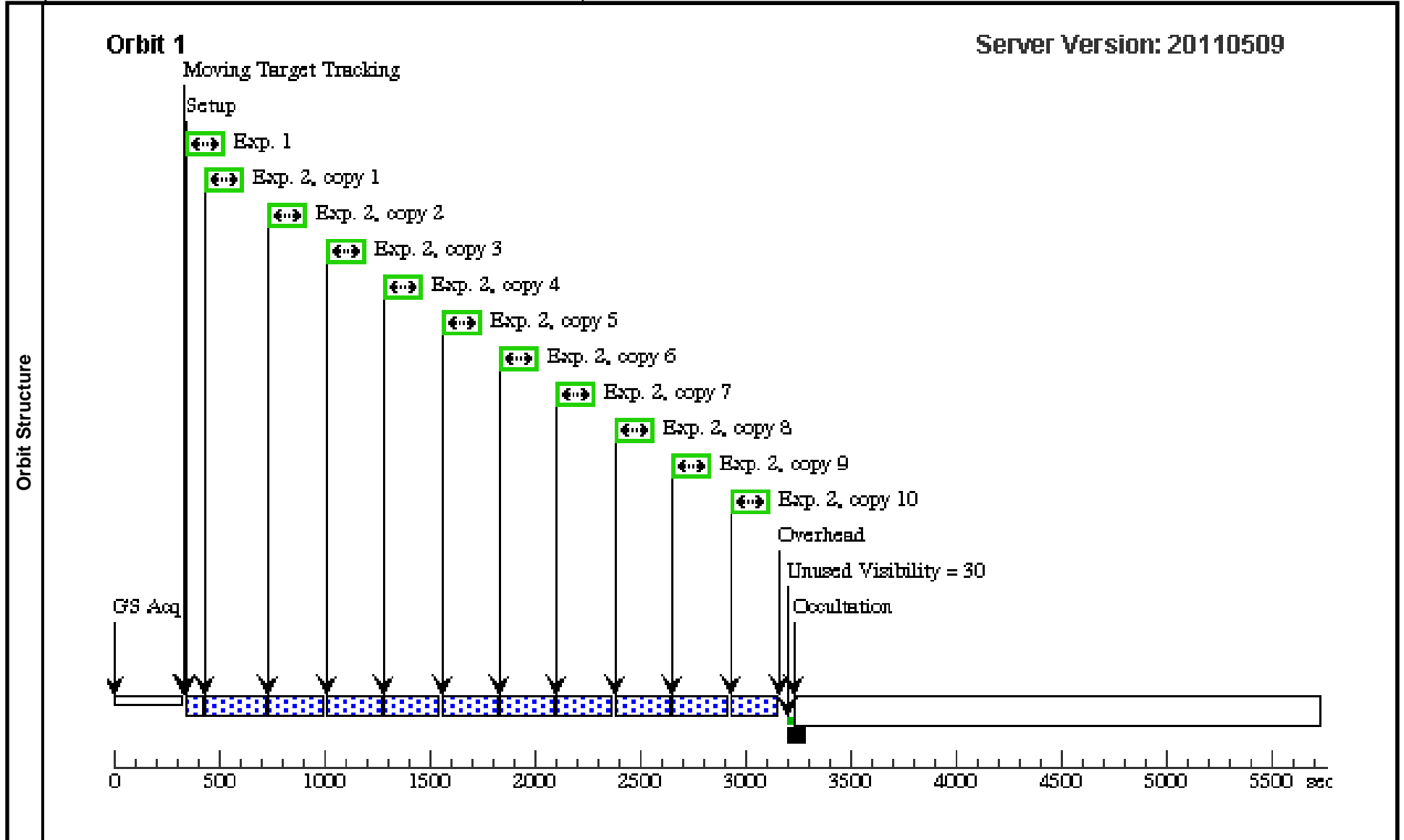
Visit	Proposal 12665, Visit 31, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 Comments: Uranus timed to position Perdita near its southern orbital elongation. Mab is also visible. The ring plane is oriented within 20 degrees of horizontal.									
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(1)	URANUS-PERDITA-SOUTH-MAB	STD=URANUS			OLG OF PERDITA BETWEEN 70 110, SEP OF PERDITA ARIEL FROM EARTH GT 4", SEP OF PERDITA UMBRIEL FROM EARTH GT 4", SEP OF PERDITA TITANIA FROM EARTH GT 5", SEP OF PERDITA OBERON FROM EARTH GT 5", SEP OF PERDITA MIRANDA FROM EARTH GT 4", SEP OF PERDITA PUCK FROM EARTH GT 2", SEP OF PERDITA BELINDA FROM EARTH GT 1", NOT OLG OF MAB BETWEEN 0 45, NOT OLG OF MAB BETWEEN 135 225, NOT OLG OF MAB BETWEEN 315 360	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F845M, 30 s	(1) URANUS-PERDITA-SOUTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO	POS TARG 0,1.5	Sequence 1-2 Non-Int in Visit 31	30 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(1) URANUS-PERDITA-SOUTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 31	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	



Proposal 12665 - Visit 32 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:20 GMT 2011

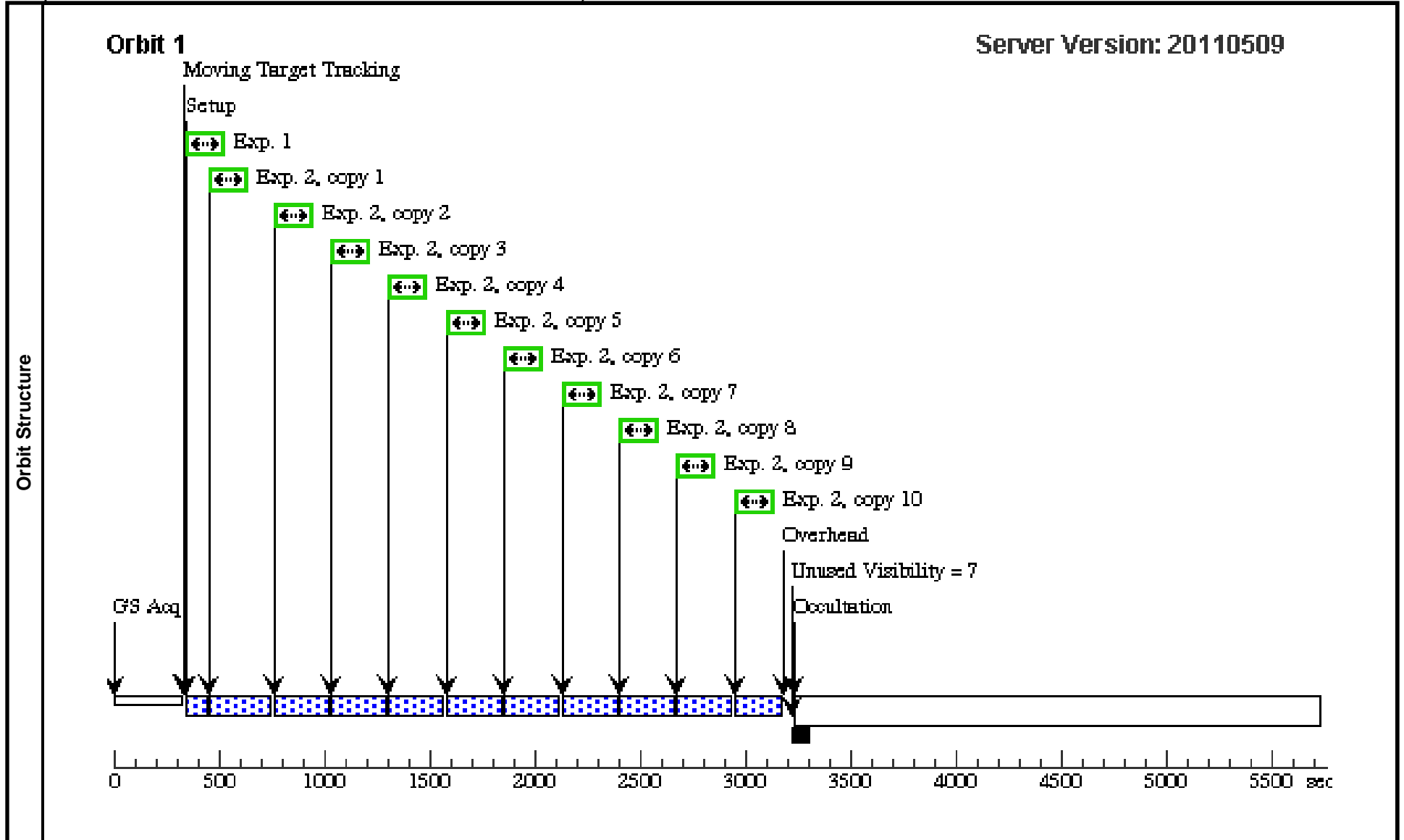
Visit	Proposal 12665, Visit 32, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 Comments: Uranus timed to position Perdita near its northern orbital elongation. Mab is also visible. The ring plane is oriented within 20 degrees of horizontal.									
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(2)	URANUS-PERDITA-NORTH-MAB	STD=URANUS			OLG OF PERDITA BETWEEN 250 290, SEP OF PERDITA ARIEL FROM EARTH GT 4", SEP OF PERDITA UMBRIEL FROM EARTH GT 4", SEP OF PERDITA TITANIA FROM EARTH GT 5", SEP OF PERDITA OBERON FROM EARTH GT 5", SEP OF PERDITA MIRANDA FROM EARTH GT 4", SEP OF PERDITA PUCK FROM EARTH GT 2", SEP OF PERDITA BELINDA FROM EARTH GT 1", NOT OLG OF MAB BETWEEN 0 45, NOT OLG OF MAB BETWEEN 135 225, NOT OLG OF MAB BETWEEN 315 360	EARTH			
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures	1	F467M, 10 s	(2) URANUS-PERDITA-NORTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	POS TARG 0,-1.5	Sequence 1-2 Non-Int in Visit 32	10 Secs [==>]	[1]
	2	F350LP, 10 x 224 s	(2) URANUS-PERDITA-NORTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 32	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]



Proposal 12665 - Visit 33 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:21 GMT 2011

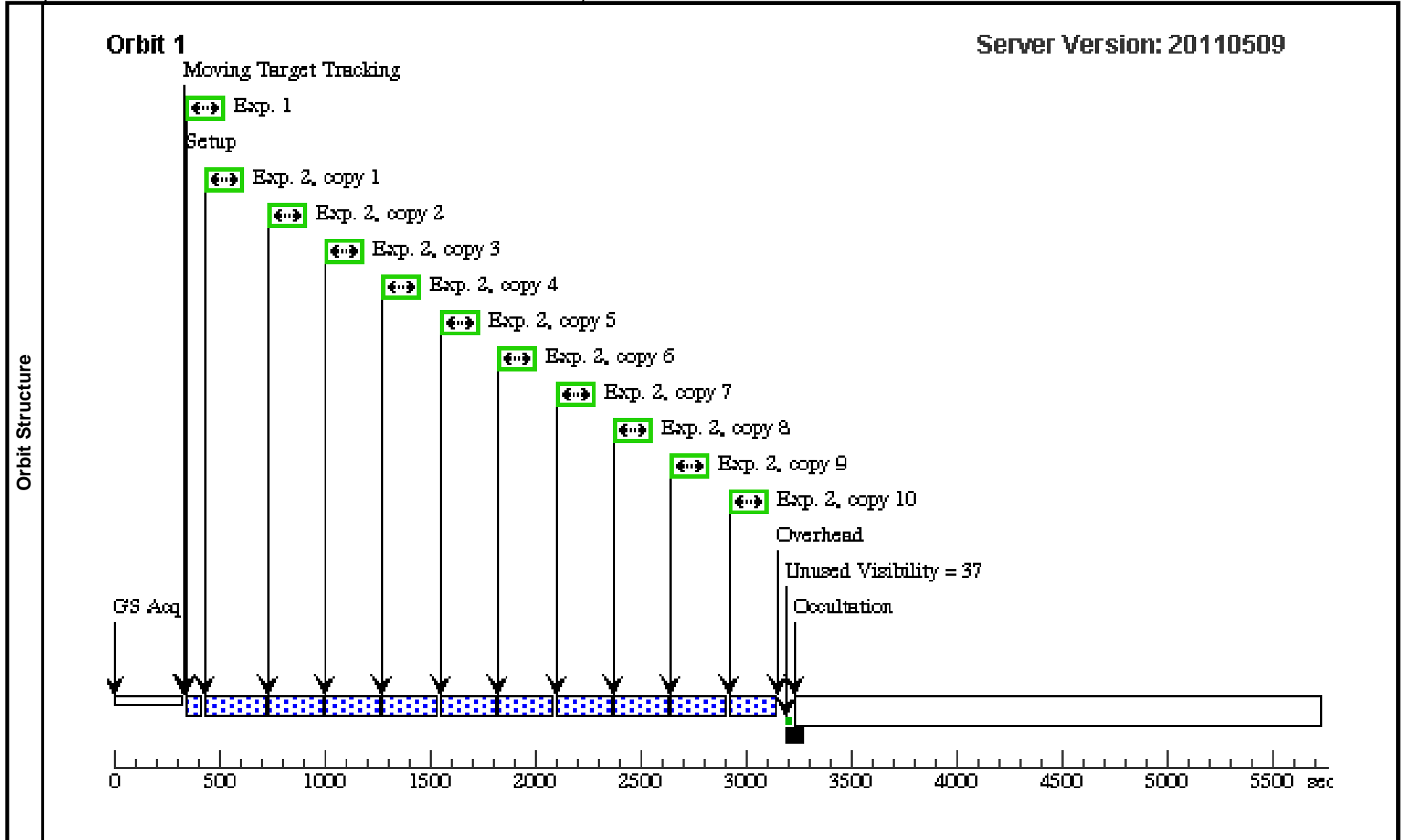
Visit	Proposal 12665, Visit 33, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 <i>Comments: Uranus timed to position Mab near its southern orbital elongation. The ring plane is oriented within 20 degrees of horizontal.</i>									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(3)	URANUS-MAB-SOUTH	STD=URANUS				OLG OF MAB BETWEEN 60 120, SEP OF MAB ARIEL FROM EARTH GT 4", SEP OF MAB UMBRIEL FROM EARTH GT 4", SEP OF MAB TITANIA FROM EARTH GT 5", SEP OF MAB OBERON FROM EARTH GT 5", SEP OF MAB MIRANDA FROM EARTH GT 4"	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F845M, 30 s	(3) URANUS-MAB-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO	POS TARG 0,1.5; GS ACQ SCENARI O BASE1B3	Sequence 1-2 Non-Int in Visit 33	30 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(3) URANUS-MAB-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 33	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	



Proposal 12665 - Visit 34 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:22 GMT 2011

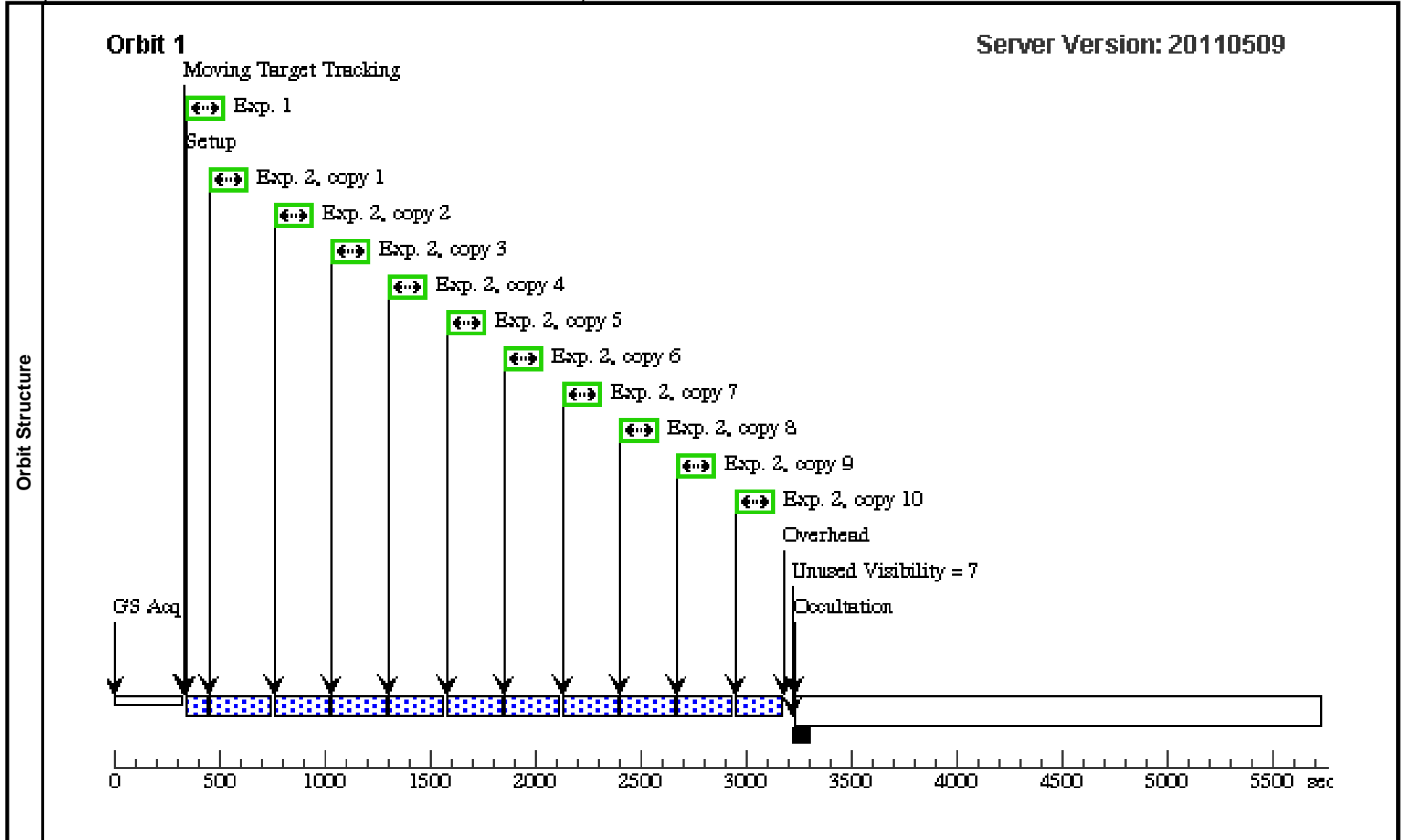
Visit	Proposal 12665, Visit 34, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 Comments: Uranus timed to position Mab near its northern orbital elongation. The ring plane is oriented within 20 degrees of horizontal.									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(4)	URANUS-MAB-NORTH	STD=URANUS				OLG OF MAB BETWEEN 240 300, SEP OF MAB ARIEL FROM EARTH GT 4", SEP OF MAB UMBRIEL FROM EARTH GT 4", SEP OF MAB TITANIA FROM EARTH GT 5", SEP OF MAB OBERON FROM EARTH GT 5", SEP OF MAB MIRANDA FROM EARTH GT 4"	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F621M, 3 s	(4) URANUS-MAB-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F621M	CR-SPLIT=NO	POS TARG 0,-1.5; GS ACQ SCENARIO BASE1B3	Sequence 1-2 Non-Int in Visit 34	3 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(4) URANUS-MAB-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 34	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	



Proposal 12665 - Visit 35 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:23 GMT 2011

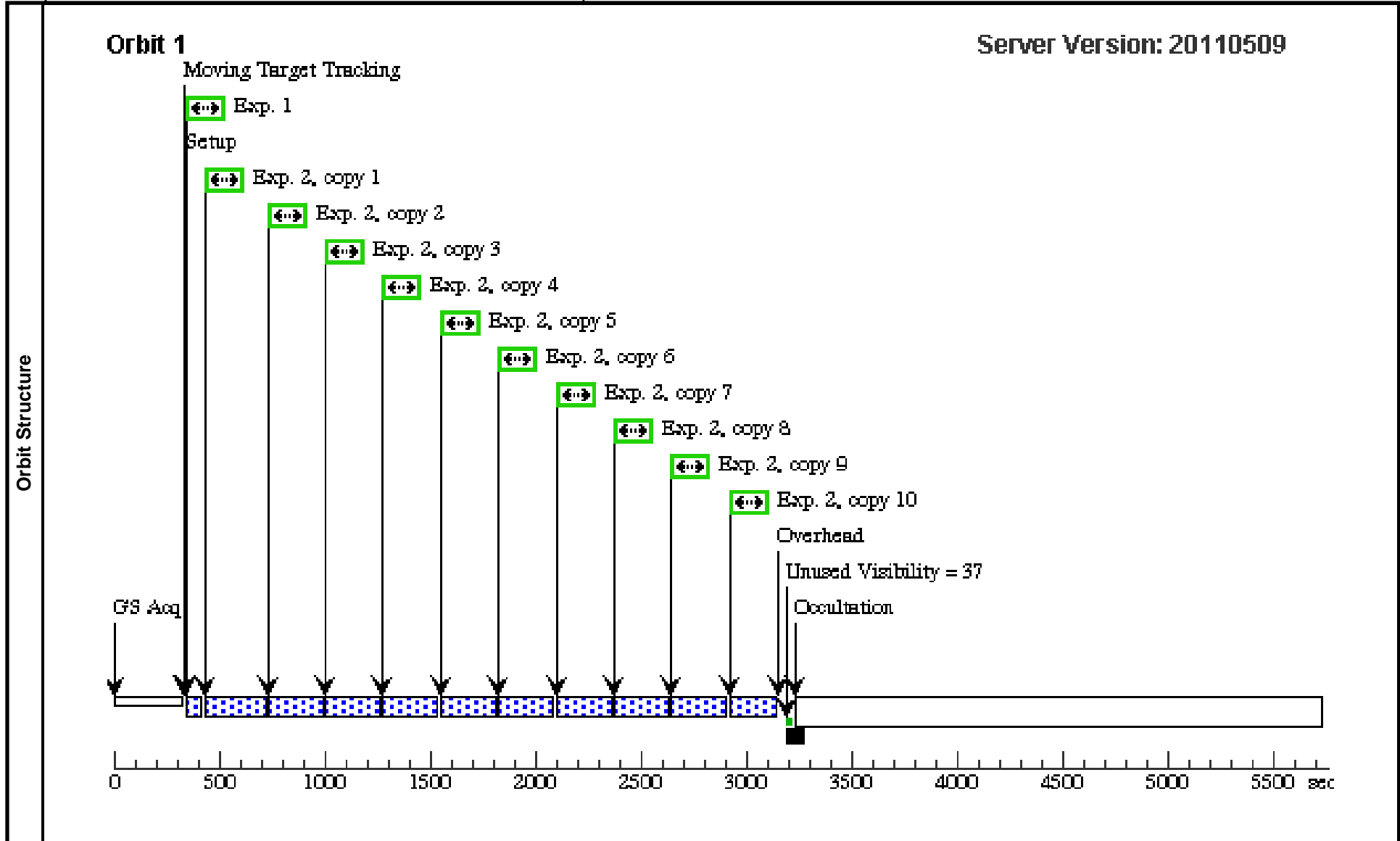
Visit	Proposal 12665, Visit 35, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 Comments: Uranus timed to position Cupid near its southern orbital elongation. Mab is also visible. The ring plane is oriented within 20 degrees of horizontal.									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(5)	URANUS-CUPID-SOUTH-MAB	STD=URANUS				OLG OF CUPID BETWEEN 70 110, SEP OF CUPID ARIEL FROM EARTH GT 4", SEP OF CUPID UMBRIEL FROM EARTH GT 4", SEP OF CUPID TITANIA FROM EARTH GT 5", SEP OF CUPID OBERON FROM EARTH GT 5", SEP OF CUPID MIRANDA FROM EARTH GT 4", SEP OF CUPID PUCK FROM EARTH GT 2", SEP OF CUPID BELINDA FROM EARTH GT 1", NOT OLG OF MAB BETWEEN 0 45, NOT OLG OF MAB BETWEEN 135 225, NOT OLG OF MAB BETWEEN 315 360	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F845M, 30 s	(5) URANUS-CUPID-SOUTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO	POS TARG 0,1.5	Sequence 1-2 Non-Int in Visit 35	30 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(5) URANUS-CUPID-SOUTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 35	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	



Proposal 12665 - Visit 36 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:23 GMT 2011

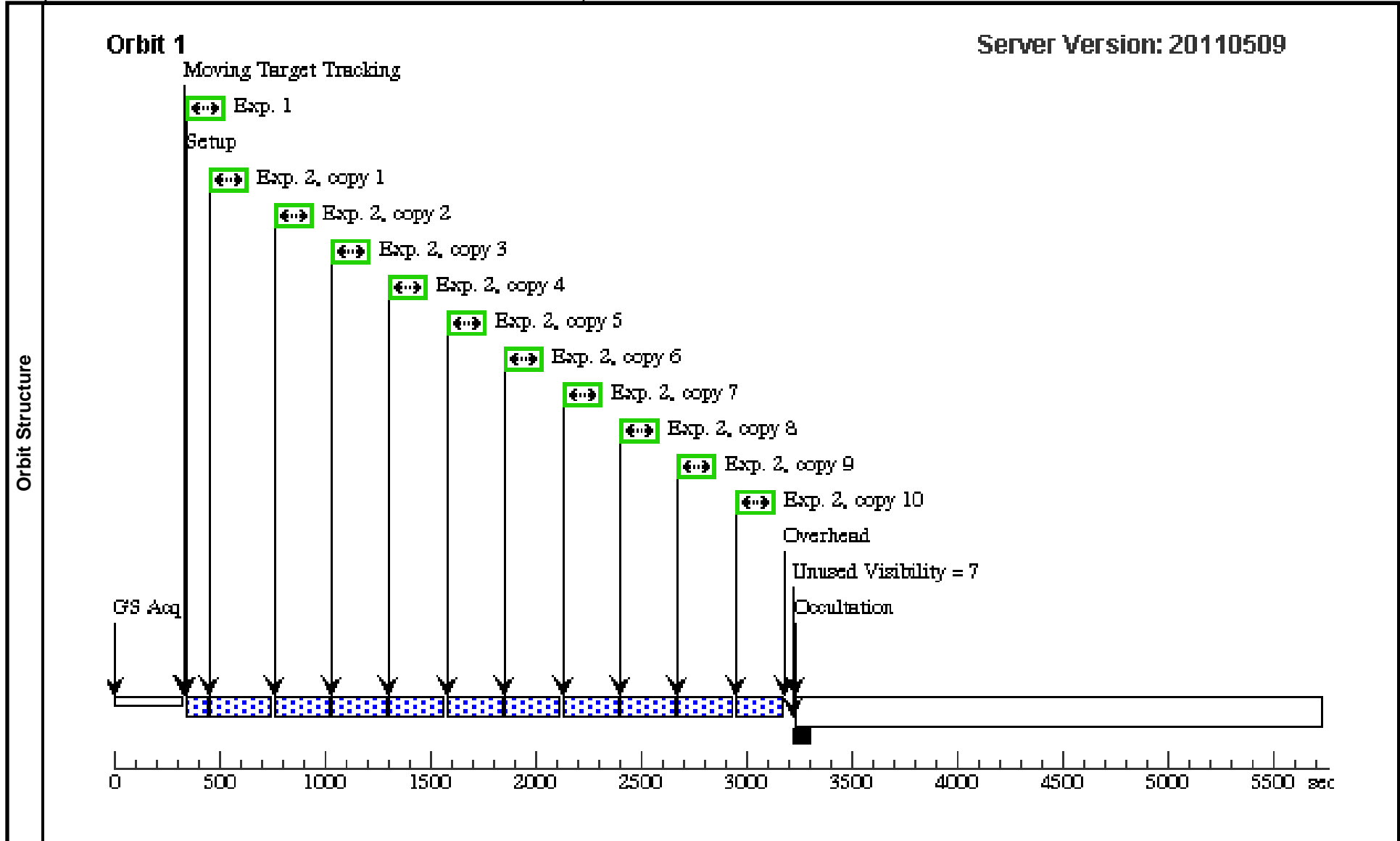
Visit	Proposal 12665, Visit 36, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00 Comments: Uranus timed to position Cupid near its northern orbital elongation. Mab is also visible. The ring plane is oriented within 20 degrees of horizontal.									
	Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center		
	(6)	URANUS-CUPID-NORTH-MAB	STD=URANUS				OLG OF CUPID BETWEEN 250 290, SEP OF CUPID ARIEL FROM EARTH GT 4", SEP OF CUPID UMBRIEL FROM EARTH GT 4", SEP OF CUPID TITANIA FROM EARTH GT 5", SEP OF CUPID OBERON FROM EARTH GT 5", SEP OF CUPID MIRANDA FROM EARTH GT 4", SEP OF CUPID PUCK FROM EARTH GT 2", SEP OF CUPID BELINDA FROM EARTH GT 1", NOT OLG OF MAB BETWEEN 0 45, NOT OLG OF MAB BETWEEN 135 225, NOT OLG OF MAB BETWEEN 315 360	EARTH		
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F621M, 3 s	(6) URANUS-CUPID-NORTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F621M	CR-SPLIT=NO	POS TARG 0,-1.5	Sequence 1-2 Non-Int in Visit 36	3 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(6) URANUS-CUPID-NORTH-MAB	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 36	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	



Proposal 12665 - Visit 41 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:23 GMT 2011

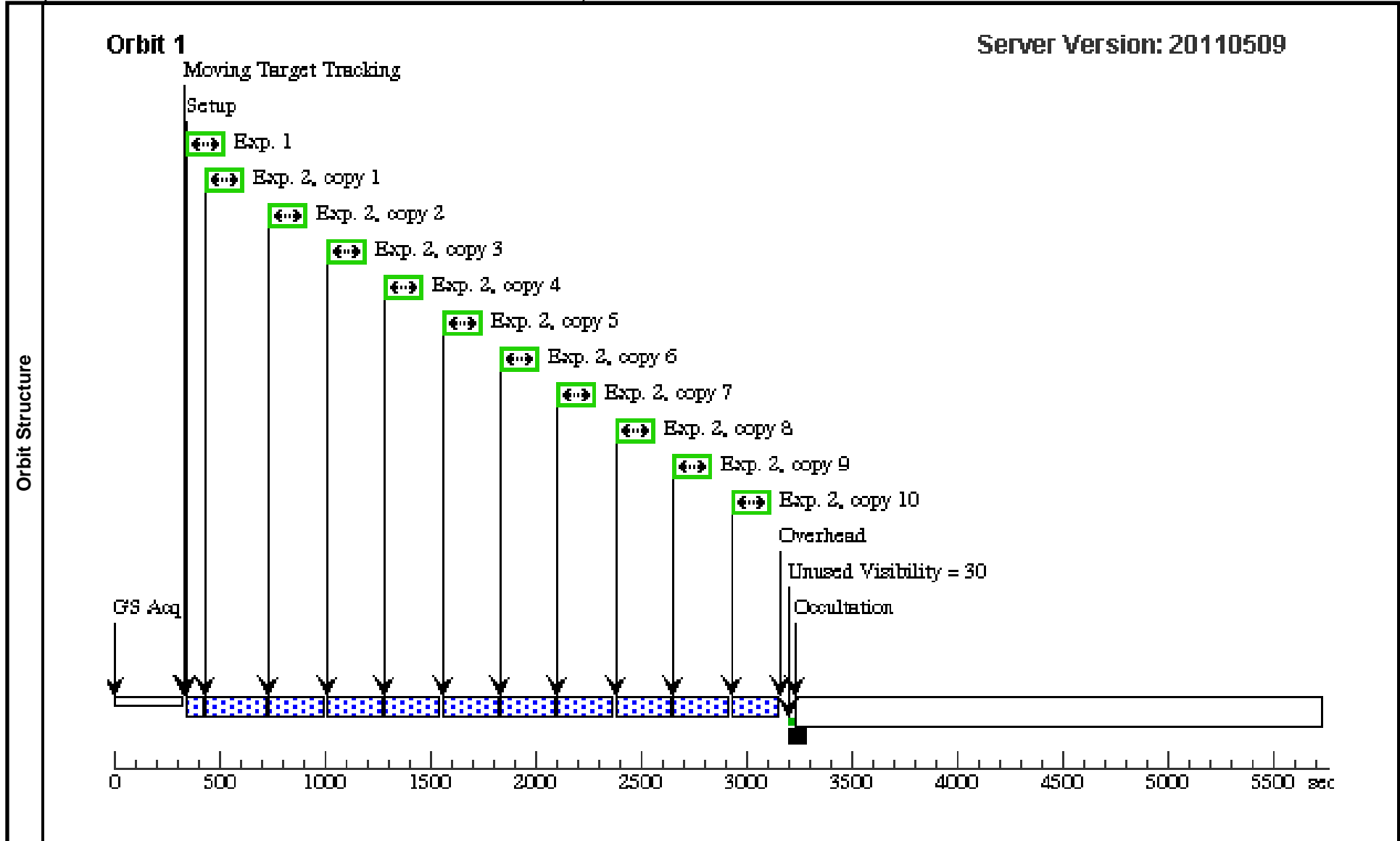
Visit	Proposal 12665, Visit 41, withdrawn Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00; ON HOLD Comments: Uranus timed to position Perdita near its southern orbital elongation. The ring plane is oriented within 20 degrees of horizontal. On Hold Comments: Use as an alternative to Visit 31, if Visit 31 (with additional constraints on the orbital position of Mab) is too difficult to schedule.									
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(11)	URANUS-PERDITA-SOUTH	STD=URANUS			OLG OF PERDITA BETWEEN 70 110, SEP OF PERDITA ARIEL FROM EARTH GT 4", SEP OF PERDITA UMBRIEL FROM EARTH GT 4", SEP OF PERDITA TITANIA FROM EARTH GT 5", SEP OF PERDITA OBERON FROM EARTH GT 5", SEP OF PERDITA MIRANDA FROM EARTH GT 4", SEP OF PERDITA PUCK FROM EARTH GT 2", SEP OF PERDITA BELINDA FROM EARTH GT 1"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F845M, 30 s	(11) URANUS-PERDITA-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO	POS TARG 0,1.5	Sequence 1-2 Non-Int in Visit 41	30 Secs [==>]	[1]
	2	F350LP, 10 x 224 s	(11) URANUS-PERDITA-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 41	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]



Proposal 12665 - Visit 42 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:24 GMT 2011

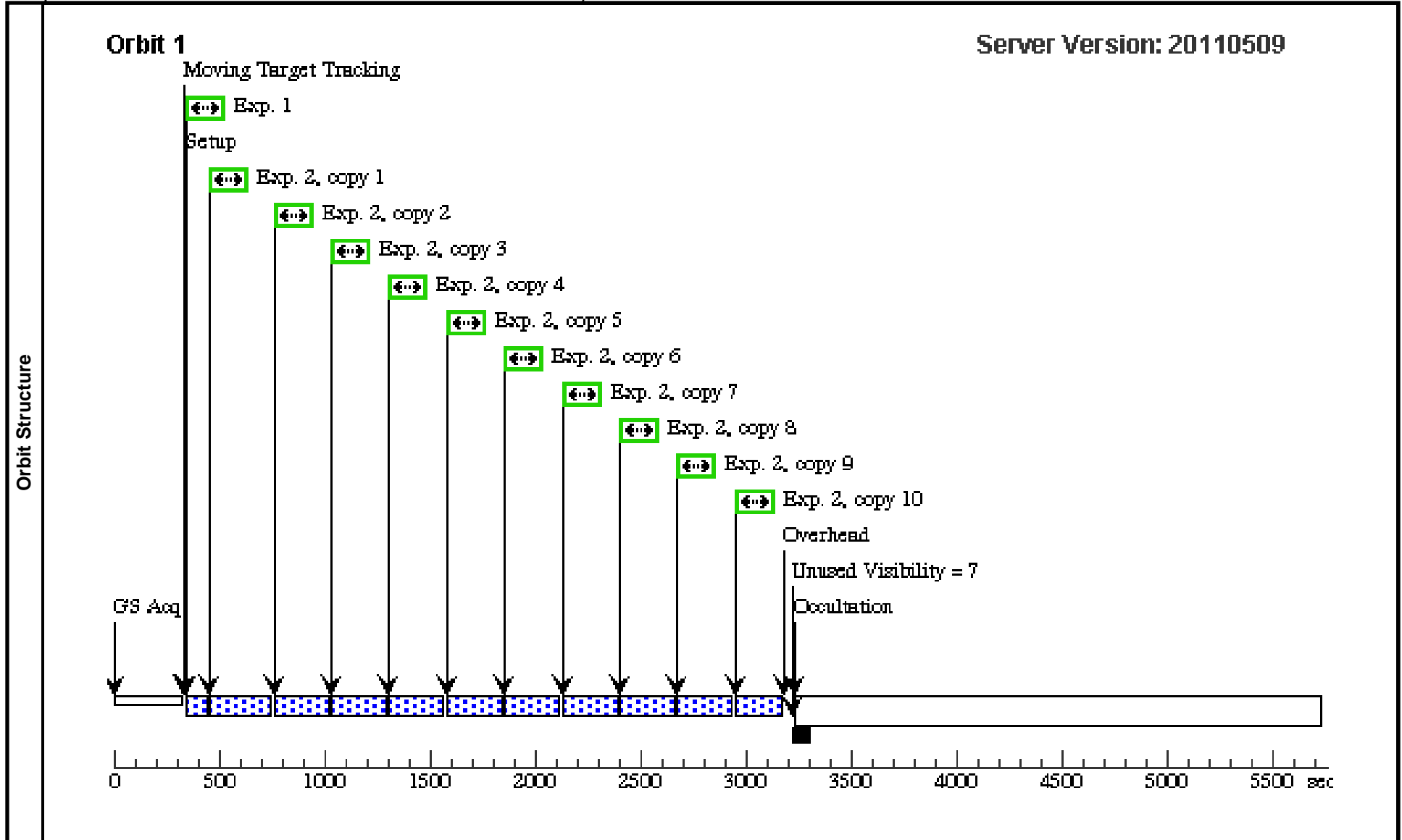
Visit	Proposal 12665, Visit 42, withdrawn Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00; ON HOLD Comments: Uranus timed to position Perdita near its northern orbital elongation. The ring plane is oriented within 20 degrees of horizontal. On Hold Comments: Use as an alternative to Visit 32, if Visit 32 (with additional constraints on the orbital position of Mab) is too difficult to schedule.									
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(12)	URANUS-PERDITA-NORTH	STD=URANUS			OLG OF PERDITA BETWEEN 250 290, SEP OF PERDITA ARIEL FROM EARTH GT 4", SEP OF PERDITA UMBRIEL FROM EARTH GT 4", SEP OF PERDITA TITANIA FROM EARTH GT 5", SEP OF PERDITA OBERON FROM EARTH GT 5", SEP OF PERDITA MIRANDA FROM EARTH GT 4", SEP OF PERDITA PUCK FROM EARTH GT 2", SEP OF PERDITA BELINDA FROM EARTH GT 1"	EARTH			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F467M, 10 s	(12) URANUS-PERDITA-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F467M	CR-SPLIT=NO	POS TARG 0,-1.5	Sequence 1-2 Non-Int in Visit 42	10 Secs [==>]	[1]
	2	F350LP, 10 x 224 s	(12) URANUS-PERDITA-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 42	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]



Proposal 12665 - Visit 45 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:24 GMT 2011

Visit	Proposal 12665, Visit 45, withdrawn Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00; ON HOLD Comments: Uranus timed to position Cupid near its southern orbital elongation. The ring plane is oriented within 20 degrees of horizontal. On Hold Comments: Use as an alternative to Visit 35, if Visit 35 (with its additional constraints on the orbital position of Mab) is too difficult to schedule.									
	#	Name	Level 1	Level 2	Level 3	Window	Ephem Center			
Solar System Targets	(15)	URANUS-CUPID-SOUTH	STD=URANUS			OLG OF CUPID BETWEEN 70 110, SEP OF CUPID ARIEL FROM EARTH GT 4", SEP OF CUPID UMBRIEL FROM EARTH GT 4", SEP OF CUPID TITANIA FROM EARTH GT 5", SEP OF CUPID OBERON FROM EARTH GT 5", SEP OF CUPID MIRANDA FROM EARTH GT 4", SEP OF CUPID PUCK FROM EARTH GT 2", SEP OF CUPID BELINDA FROM EARTH GT 1"	EARTH			
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures	1	F845M, 30 s	(15) URANUS-CUPID-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F845M	CR-SPLIT=NO	POS TARG 0,1.5	Sequence 1-2 Non-Int in Visit 45	30 Secs [==>]	[1]
	2	F350LP, 10 x 224 s	(15) URANUS-CUPID-SOUTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 45	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]



Proposal 12665 - Visit 46 - Orbital Evolution and Stability of the Inner Uranian Moons

Wed Aug 03 01:34:24 GMT 2011

Visit	Proposal 12665, Visit 46, withdrawn Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: SCHED 30%; ORIENT 7D TO 47 D; ORIENT 187D TO 227 D; BEFORE 01-JAN-2012:00:00:00; ON HOLD Comments: Uranus timed to position Cupid near its northern orbital elongation. The ring plane is oriented within 20 degrees of horizontal. On Hold Comments: Use as an alternative to Visit 36, if Visit 36 (with additional constraints on the orbital position of Mab) is too difficult to schedule.									
	Solar System Targets									
#	Name	Level 1	Level 2	Level 3	Window	Ephem Center				
(16)	URANUS-CUPID-NORTH	STD=URANUS			OLG OF CUPID BETWEEN 250 290, SEP OF CUPID ARIEL FROM EARTH GT 4", SEP OF CUPID UMBRIEL FROM EARTH GT 4", SEP OF CUPID TITANIA FROM EARTH GT 5", SEP OF CUPID OBERON FROM EARTH GT 5", SEP OF CUPID MIRANDA FROM EARTH GT 4", SEP OF CUPID PUCK FROM EARTH GT 2", SEP OF CUPID BELINDA FROM EARTH GT 1"	EARTH				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	F621M, 3 s	(16) URANUS-CUPID-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F621M	CR-SPLIT=NO	POS TARG 0,-1.5	Sequence 1-2 Non-Int in Visit 46	3 Secs [==>]	[1]
2	F350LP, 10 x 224 s	(16) URANUS-CUPID-NORTH	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F350LP	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-2 Non-Int in Visit 46	224 Secs X 10 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)] [==>(Copy 7)] [==>(Copy 8)] [==>(Copy 9)] [==>(Copy 10)]	[1]	

