



## 10870 - The Ring Plane Crossings of Uranus in 2007

Cycle: 15, Proposal Category: GO

(Availability Mode: AVAILABLE)

### 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>
41	(2) URANUS-WITH-MAB	ACS/HRC	1	21-May-2007 20:05:49.0	yes
42	(2) URANUS-WITH-MAB	ACS/HRC	1	21-May-2007 20:05:58.0	yes
43	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	21-May-2007 20:06:04.0	yes
44	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	21-May-2007 20:06:15.0	yes
45	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	21-May-2007 20:06:20.0	yes
51	(3) URANUS-WITH-MAB-WFPC2	WFPC2	2	21-May-2007 20:06:26.0	yes
52	(3) URANUS-WITH-MAB-WFPC2	WFPC2	4	21-May-2007 20:06:40.0	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>
53	(4) URANUS-WITH-MAB-WFPC2-2	WFPC2	4	21-May-2007 20:07:04.0	yes
61	(3) URANUS-WITH-MAB-WFPC2	WFPC2	2	21-May-2007 20:07:20.0	yes

17 Total Orbits Used

### **ABSTRACT**

The rings of Uranus turn edge-on to Earth in May and August 2007. In between, we will have a rare opportunity to see the unlit face of the rings. With the nine optically thick rings essentially invisible, we will observe features and phenomena that are normally lost in their glare. We will use this opportunity to search thoroughly for the embedded "shepherd" moons long believed to confine the edges of the rings, setting a mass limit roughly 10 times smaller than that of the smallest shepherd currently known, Cordelia. We will measure the vertical thicknesses of the rings and study the faint dust belts only known to exist from a single Voyager image. We will also study the colors of the newly-discovered faint, outer rings; recent evidence suggests that one ring is red and the other blue, implying that each ring is dominated by a different set of physical processes. We will employ near-edge-on photometry from 2006 and 2007 to derive the particle filling factor within the rings, to observe how ring epsilon responds to the "traffic jam" as particles pass through its narrowest point, and to test the latest models for preserving eccentricities and apse alignment within the rings. Moreover, this data set will allow us to continue monitoring the motions of the inner moons, which have been found to show possibly chaotic orbital variations; by nearly doubling the time span of the existing ACS astrometry, the details of the variations will become much clearer.

### **OBSERVING DESCRIPTION**

We will center on Uranus and orient the rings along the x-axis. With this orientation, we can saturate the planet and still obtain good detections of the rings and moons, because saturated pixels bloom along the HRC and PC y-axes. Visits must be timed to exclude the brightest moons---Ariel, Umbriel, Titania and Oberon. Miranda moves too quickly to be completely excluded, but we avoid times when it overlaps the main ring system. Some visits are specifically timed so that Mab is visible, so that we can study its orbital libration.

During August-September 2006 we will obtain photometry of the rings and moons approaching opposition, while the rings are open to Earth by only 4 degrees. Five single-orbit visits will sample phase angles of approximately 1, 0.5, 0.2, 0.1 and 0.05 degrees. Filters F330W, F475W, F606W and F814W will be used to obtain color information. These visits will employ a 2.5-pixel dither shift along the x-axis to improve radial resolution on the rings. Each visit will include 3 long, CLEAR exposures to continue imaging faint outer rings and small moons including Mab and Cupid.

In spring 2007 we will observe the rings with the PC during the brief window when Earth is on the north side of the ring plane but the Sun is still shining on the south side; the main rings will be especially dark during this period, potentially making fainter rings and smaller moons detectable. We will carry out four visits of four orbits each. Each orbit will begin and end with long, F606W exposures for moon tracking. One or two exposures in the middle of each orbit will obtain ring color using F450W and F814W. We will also obtain a small number of unsaturated images of the planet. We will position Uranus at slightly different locations at each visit so that any optical flaws tied to the PC pixel grid do not always overlap the rings.

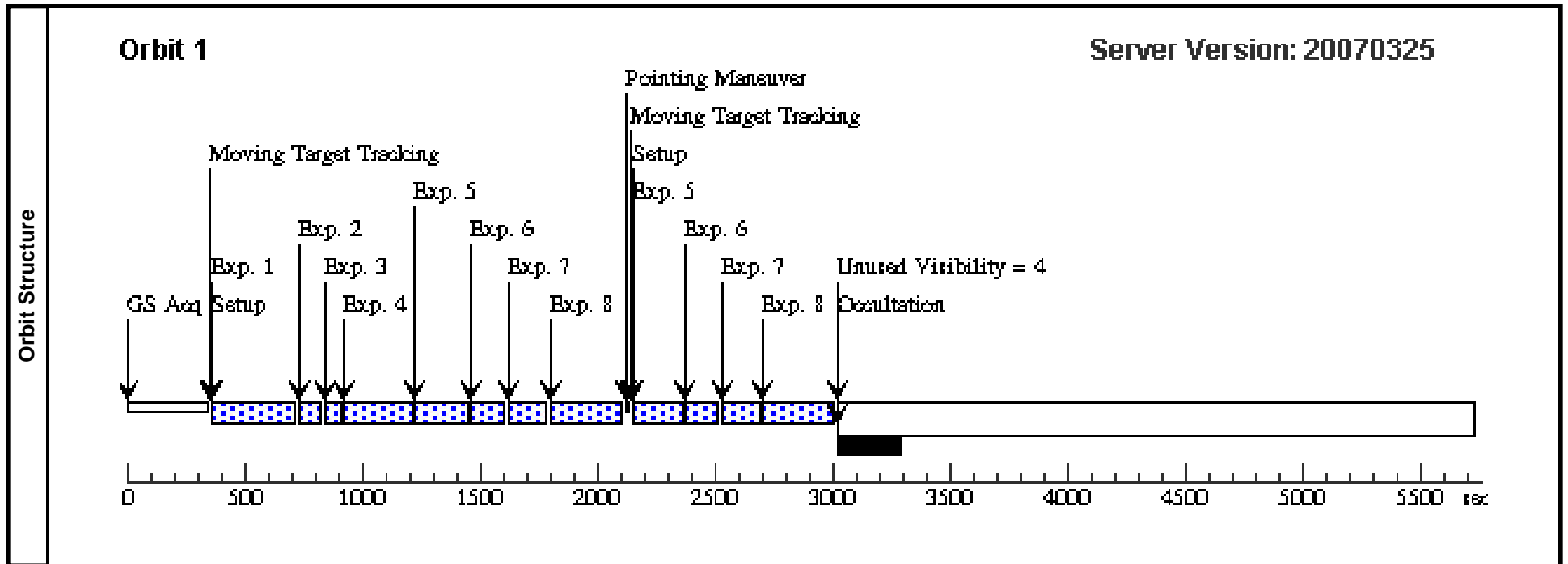
Proposal 10870 - Visit 41 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:24 GMT 2007

<b>Visit</b>	<b>Proposal 10870, Visit 41, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: ACS/HRC Special Requirements: SCHED 100%; ORIENT 247.0D TO 251.0 D; BETWEEN 15-AUG-2006:00:00:00 AND 20-AUG-2006:00:00:00 Comments: <i>Uranus near phase angle 1 degree. Rings open by only 4 degrees.</i>					
	<b>Patterns</b>	# (1)	<b>Primary Pattern</b> Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.071 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=5.8 Angle Between Sides= Center Pattern=false	<b>Secondary Pattern</b>  	<b>Exposures</b> (5-8)
<b>Solar System Targets</b>	# (2)	<b>Name</b> URANUS-WITH-MAB	<b>Level 1</b> STD=URANUS	<b>Level 2</b>  	<b>Level 3</b>  	<b>Window</b> NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MAB BETWEEN 0.0 50.0, NOT OLG OF MAB BETWEEN 130.0 230.0, NOT OLG OF MAB BETWEEN 310.0 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0, SEP OF MIRANDA MAB FROM EARTH GT 1.0"
Comments: <i>Uranus with Mab within 40 degrees of maximum elongation. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.</i>						

Proposal 10870 - Visit 41 - The Ring Plane Crossings of Uranus in 2007

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	CLEAR, 240 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>]	[1]
	2	F475W, 15 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs [==>]	[1]
	3	F606W, 10 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	10.0 Secs [==>]	[1]
	4	F330W, 210 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	210.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 10870 - Visit 42 - The Ring Plane Crossings of Uranus in 2007

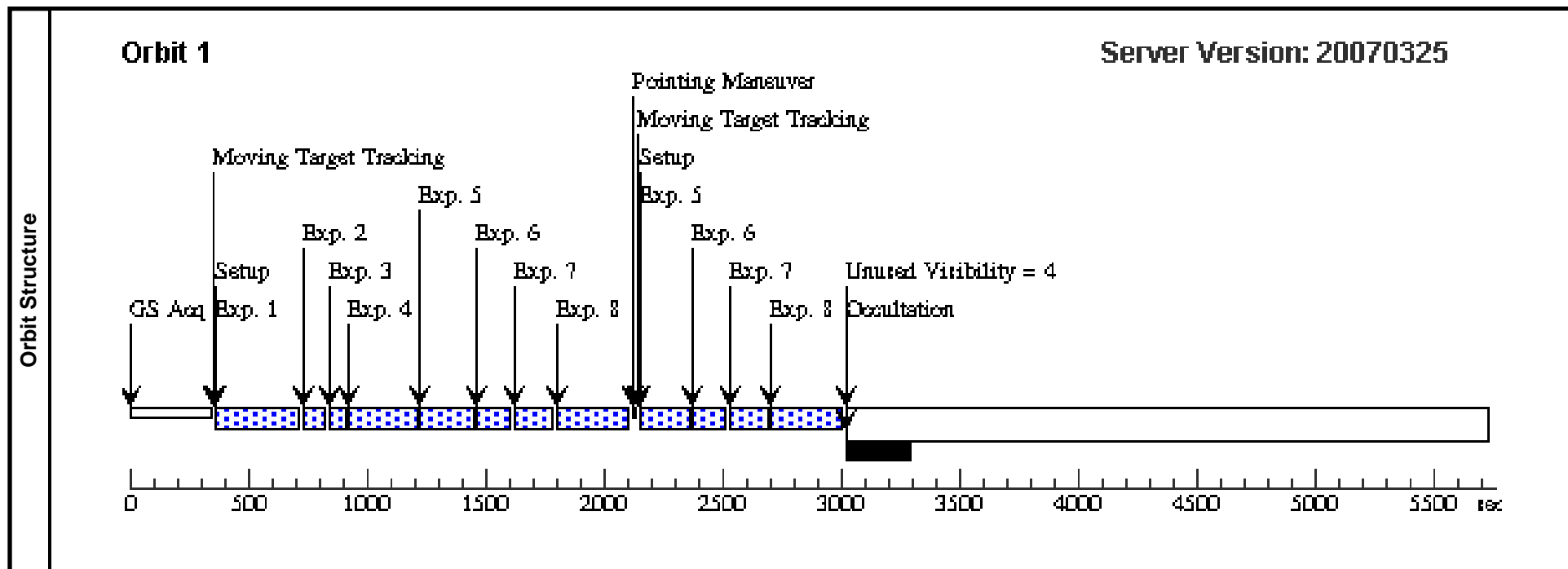
Mon May 21 19:07:24 GMT 2007

<b>Visit</b>	<b>Proposal 10870, Visit 42, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: ACS/HRC Special Requirements: SCHED 100%; ORIENT 247.0D TO 251.0 D; BETWEEN 24-AUG-2006:00:00:00 AND 28-AUG-2006:12:00:00 Comments: <i>Uranus near phase angle 0.5 degree. Rings open by only 4 degrees.</i>					
	<b>Patterns</b>	# (1)	<b>Primary Pattern</b> Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.071 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=5.8 Angle Between Sides= Center Pattern=false	<b>Secondary Pattern</b>  	<b>Exposures</b> (5-8)
<b>Solar System Targets</b>	# (2)	<b>Name</b> URANUS-WITH-MAB	<b>Level 1</b> STD=URANUS	<b>Level 2</b>  	<b>Level 3</b>  	<b>Window</b> NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MAB BETWEEN 0.0 50.0, NOT OLG OF MAB BETWEEN 130.0 230.0, NOT OLG OF MAB BETWEEN 310.0 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0, SEP OF MIRANDA MAB FROM EARTH GT 1.0"
Comments: <i>Uranus with Mab within 40 degrees of maximum elongation. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.</i>						

Proposal 10870 - Visit 42 - The Ring Plane Crossings of Uranus in 2007

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	CLEAR, 240 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>]	[1]
	2	F475W, 15 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs [==>]	[1]
	3	F606W, 10 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	10.0 Secs [==>]	[1]
	4	F330W, 210 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	210.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-WITH -MAB	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]





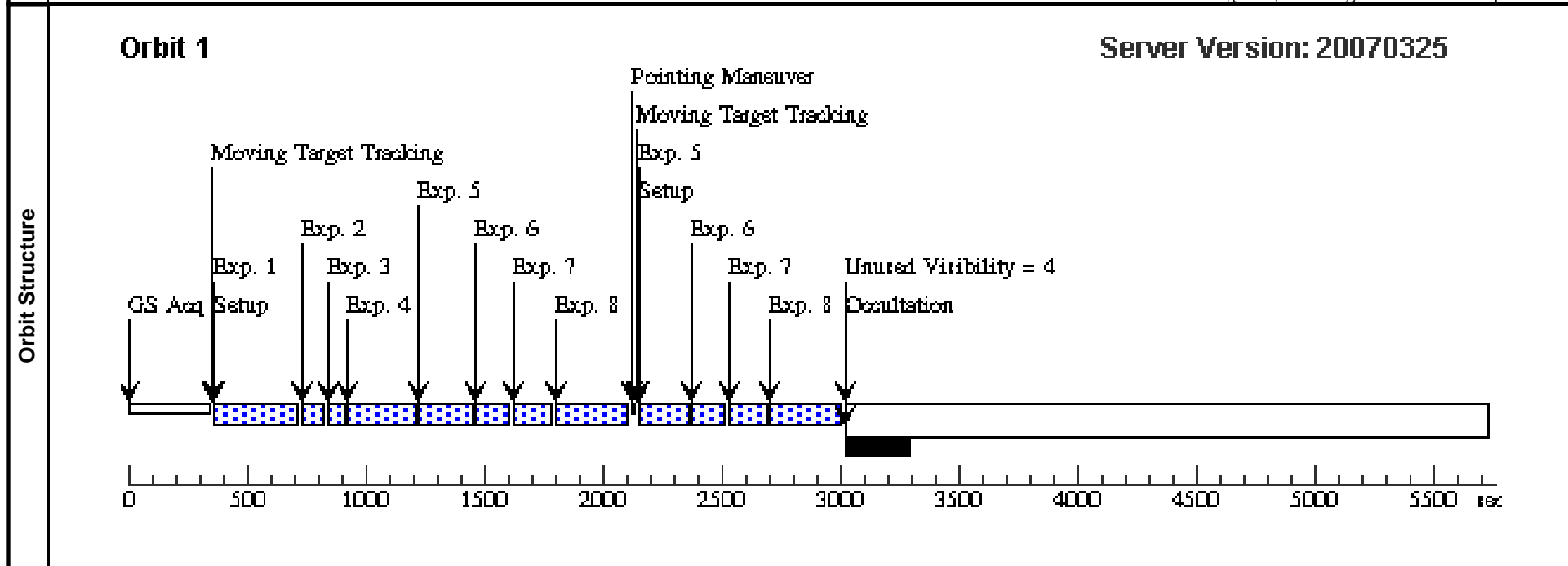
Proposal 10870 - Visit 43 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:25 GMT 2007

<b>Visit</b>	<b>Proposal 10870, Visit 43, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: ACS/HRC Special Requirements: SCHED 100%; ORIENT 247.0D TO 251.0 D; BETWEEN 31-AUG-2006:00:00:00 AND 02-SEP-2006:00:00:00 Comments: Uranus near phase angle 0.2 degree. Rings open by only 4 degrees.									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			
(1)		Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.071 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=5.8 Angle Between Sides= Center Pattern=false							(5-8)
<b>Solar System Targets</b>	<b>#</b>	<b>Name</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Window</b>				
	(1)	URANUS-NO-MOONS-NEARBY	STD=URANUS			NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0				
Comments: Uranus with Ariel, Umbriel, Titania and Oberon more than 100,000 km away in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system.										
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time/[Actual Dur.]</b>	<b>Orbit</b>
	1	CLEAR, 240 sec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>]	[1]
2	F475W, 15 sec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs [==>]	[1]	

Proposal 10870 - Visit 43 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures (continued)	3	F606W, 10 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO	Sequence 1-8 Non-Int	10.0 Secs [==>]	[1]
	4	F330W, 210 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO	Sequence 1-8 Non-Int	210.0 Secs [==>]	[1]
	5	F475W, 130 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]



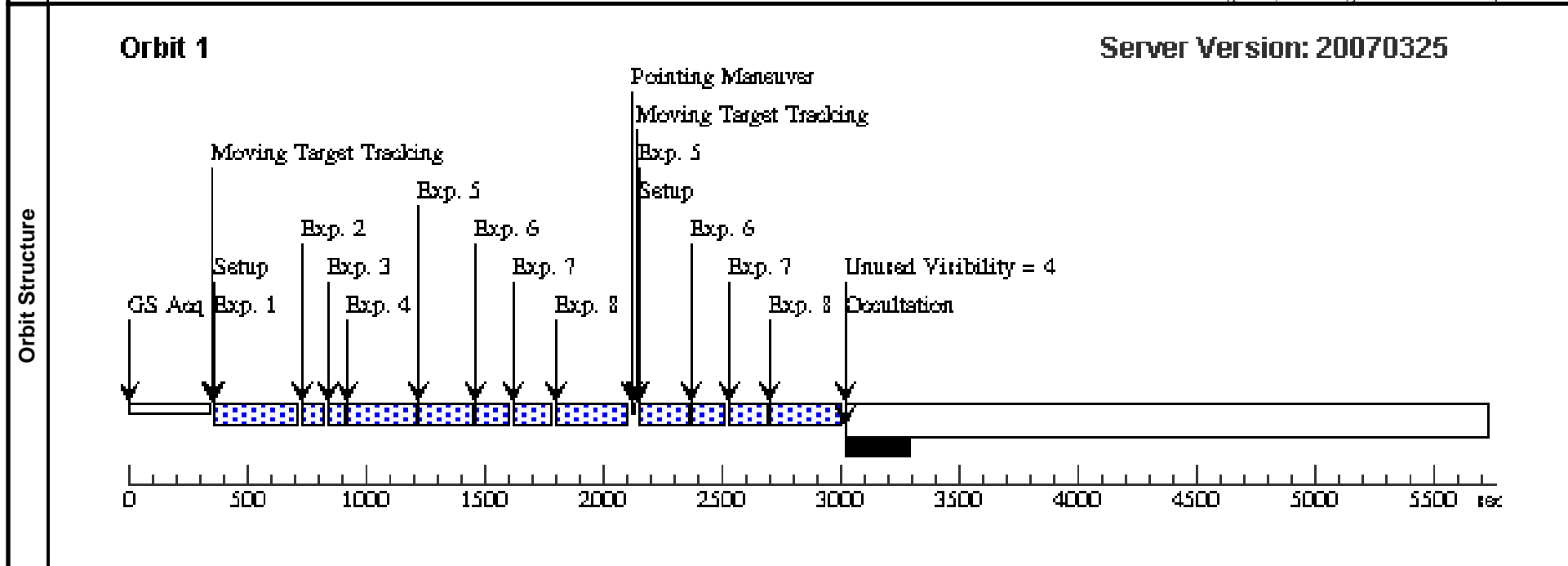
Proposal 10870 - Visit 44 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:26 GMT 2007

<b>Visit</b>	<b>Proposal 10870, Visit 44, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: ACS/HRC Special Requirements: SCHED 100%; ORIENT 247.0D TO 251.0 D; BETWEEN 03-SEP-2006:00:00:00 AND 04-SEP-2006:00:00:00 Comments: <i>Uranus near phase angle 0.1 degree. Rings open by only 4 degrees.</i>									
	<b>Patterns</b>	<b>#</b>	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			
(1)		Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.071 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=5.8 Angle Between Sides= Center Pattern=false					(5-8)		
<b>Solar System Targets</b>	<b>#</b>	<b>Name</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Window</b>				
	(1)	URANUS-NO-MOONS-NEARBY	STD=URANUS						NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0	
Comments: <i>Uranus with Ariel, Umbriel, Titania and Oberon more than 100,000 km away in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system.</i>										
<b>Exposures</b>	<b>#</b>	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time/[Actual Dur.]</b>	<b>Orbit</b>
	1	CLEAR, 240 sec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>]	[1]
2	F475W, 15 sec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs [==>]	[1]	

Proposal 10870 - Visit 44 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures (continued)	3	F606W, 10 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	10.0 Secs [==>]	[1]
	4	F330W, 210 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	210.0 Secs [==>]	[1]
	5	F475W, 130 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	F814W	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(1) URANUS-NO-M ACS/HRC, ACCUM, HRC-FIX OONS-NEARBY	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]



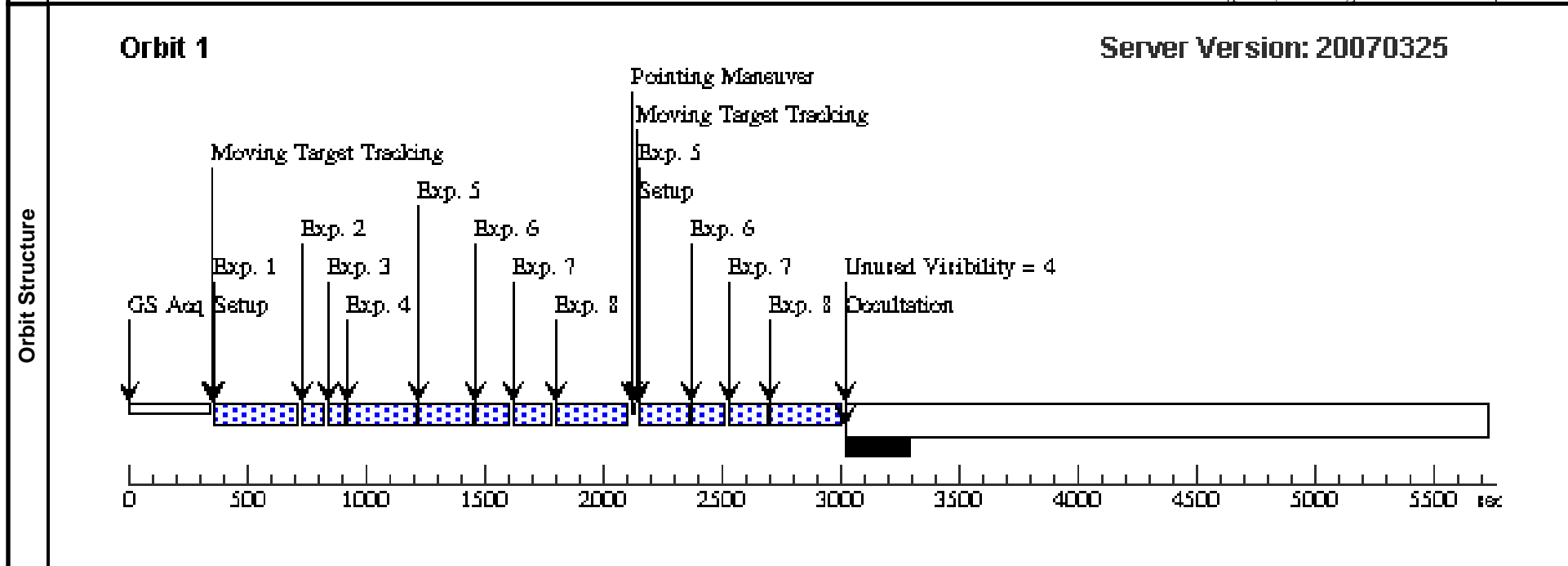
Proposal 10870 - Visit 45 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:26 GMT 2007

<b>Visit</b>	<b>Proposal 10870, Visit 45, completed</b> <b>Diagnostic Status: No Diagnostics</b> Scientific Instruments: ACS/HRC Special Requirements: SCHED 100%; ORIENT 247.0D TO 251.0 D; BETWEEN 04-SEP-2006:12:00:00 AND 06-SEP-2006:00:00:00 Comments: Uranus near opposition. Rings open by only 4 degrees.									
	<b>Patterns</b>	#	<b>Primary Pattern</b>				<b>Secondary Pattern</b>			
(1)		Pattern Type=LINE	Coordinate Frame=POS-TARG							(5-8)
		Purpose=DITHER	Pattern Orientation=5.8							
		Number Of Points=2	Angle Between Sides=							
		Point Spacing=0.071	Center Pattern=false							
		Line Spacing=								
<b>Solar System Targets</b>	#	<b>Name</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Window</b>				
	(1)	URANUS-NO-MOONS-NEARBY	STD=URANUS			NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0				
	Comments: Uranus with Ariel, Umbriel, Titania and Oberon more than 100,000 km away in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system.									
<b>Exposures</b>	#	<b>Label</b>	<b>Target</b>	<b>Config,Mode,Aperture</b>	<b>Spectral Els.</b>	<b>Opt. Params.</b>	<b>Special Reqs.</b>	<b>Groups</b>	<b>Exp. Time/[Actual Dur.]</b>	<b>Orbit</b>
	1	CLEAR, 24 0 sec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>]	[1]
	2	F475W, 15 ec	(1) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs [==>]	[1]

Proposal 10870 - Visit 45 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
Exposures (continued)	3	F606W, 10 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO	Sequence 1-8 Non-Int	10.0 Secs [==>]	[1]
	4	F330W, 210 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO	Sequence 1-8 Non-Int	210.0 Secs [==>]	[1]
	5	F475W, 130 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(1) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO	Sequence 1-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]



Proposal 10870 - Visit 51 - The Ring Plane Crossings of Uranus in 2007

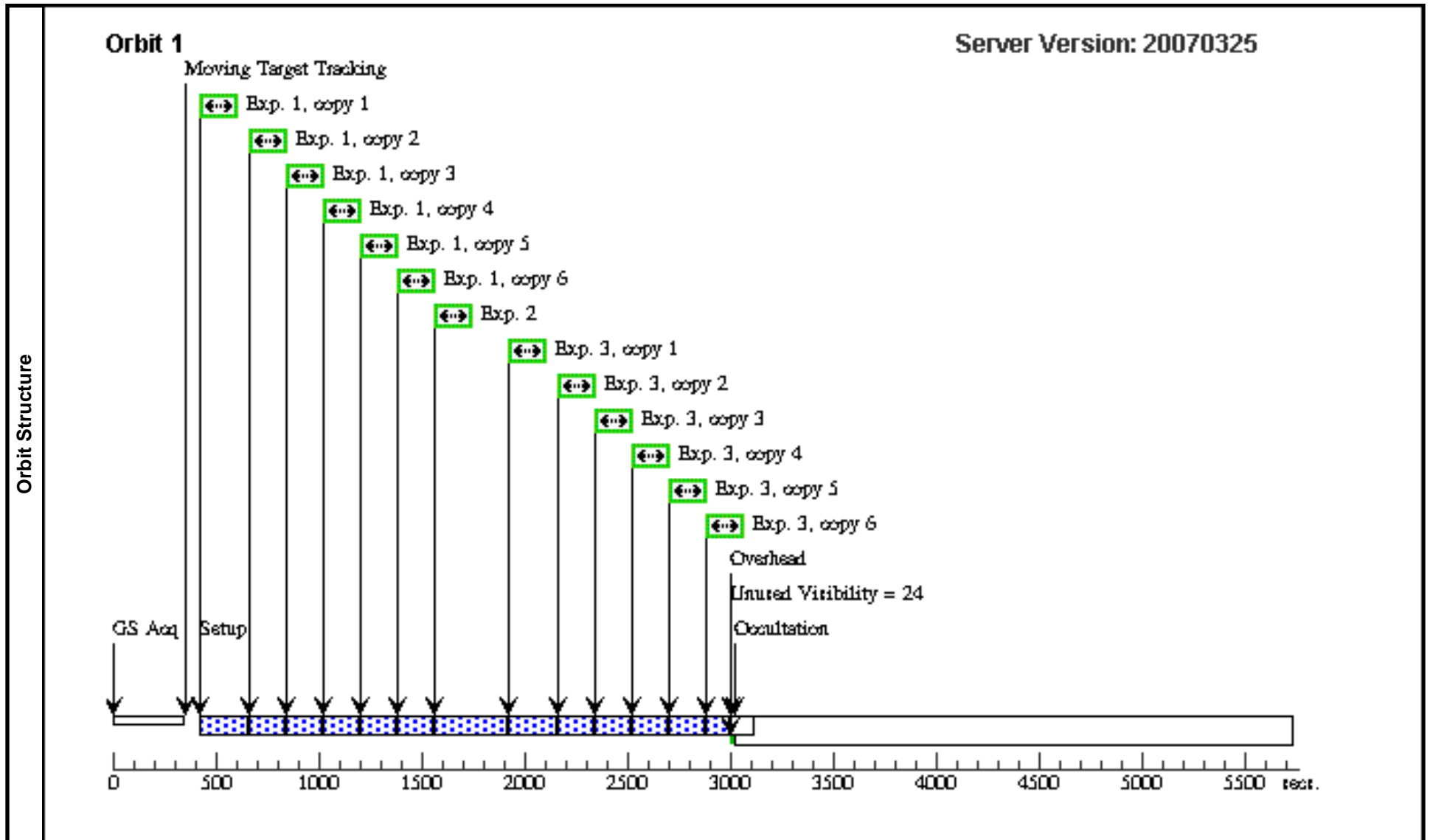
Mon May 21 19:07:27 GMT 2007

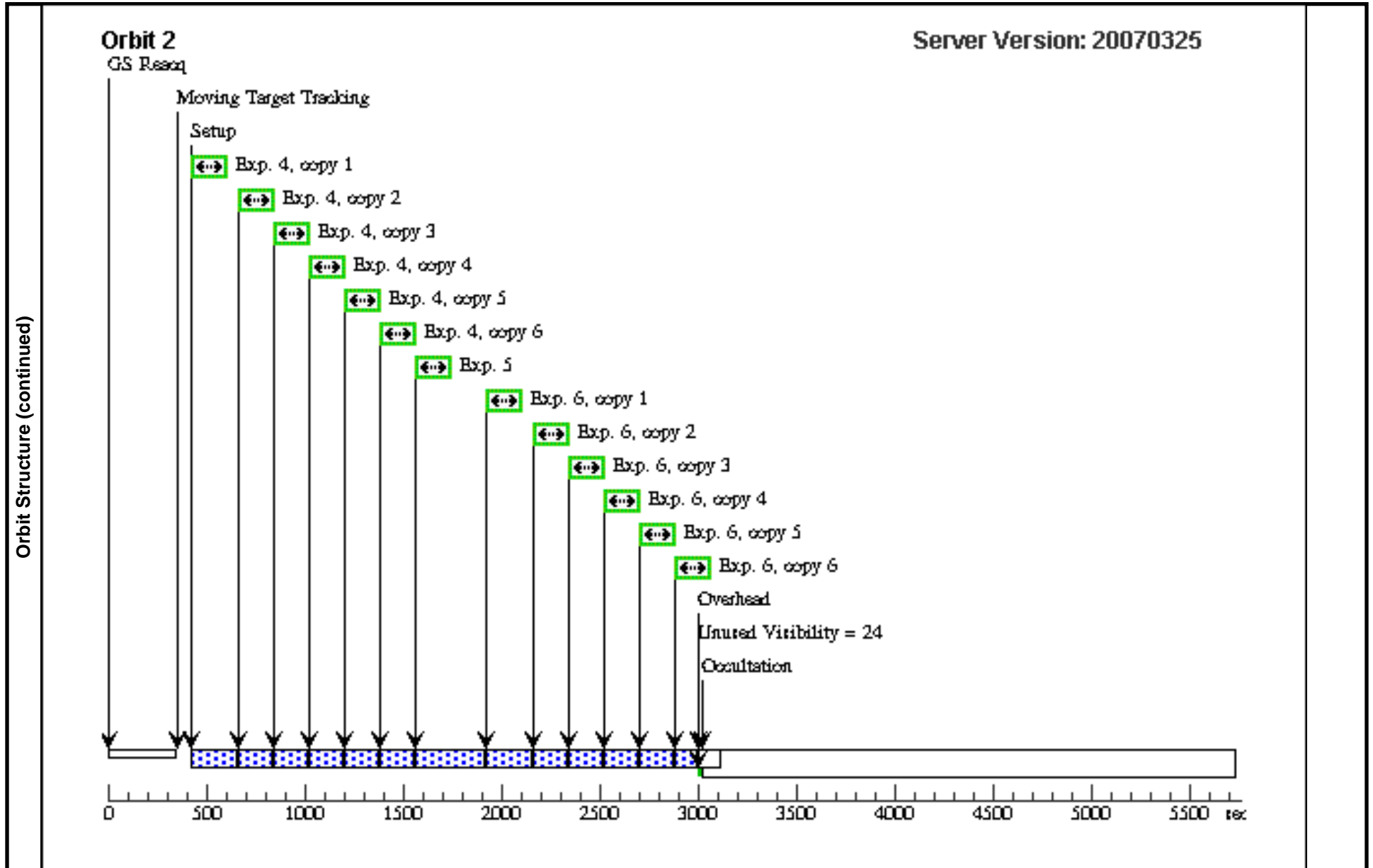
Visit	<p><b>Proposal 10870, Visit 51, scheduling</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: WFPC2</p> <p>Special Requirements: SCHED 100%; ORIENT 210.0D TO 243.0 D; BETWEEN 01-MAY-2007:00:00:00 AND 25-MAY-2007:00:00:00</p> <p><i>Comments: Extended search to study moons and rings. Uranus positioned 2" above and right of the PC center point. Ring plane oriented 33 degrees clockwise from the x-axis, which is as close to the x-axis as ORIENT constraints allow. We prefer that this visit be scheduled as early in the window as possible.</i></p>					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window
	(3)	URANUS-WITH-MAB -WFPC2	STD=URANUS			<p>NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MAB BETWEEN 0.0 10.0, NOT OLG OF MAB BETWEEN 170.0 190.0, NOT OLG OF MAB BETWEEN 350.0 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0, SEP OF MIRANDA MAB FROM EARTH GT 1.0"</p> <p><i>Comments: Uranus with Mab crossing maximum elongation during a 4-orbit visit. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.</i></p>



Proposal 10870 - Visit 51 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	POS TARG 2,2	Sequence 1-3 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[1]
	2	F814W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 1-3 Non-Int	200.0 Secs [==>]	[1]
	3	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 1-3 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[1]
	4	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]
	5	F450W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 4-6 Non-Int	200.0 Secs [==>]	[2]
	6	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]





Proposal 10870 - Visit 52 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:28 GMT 2007

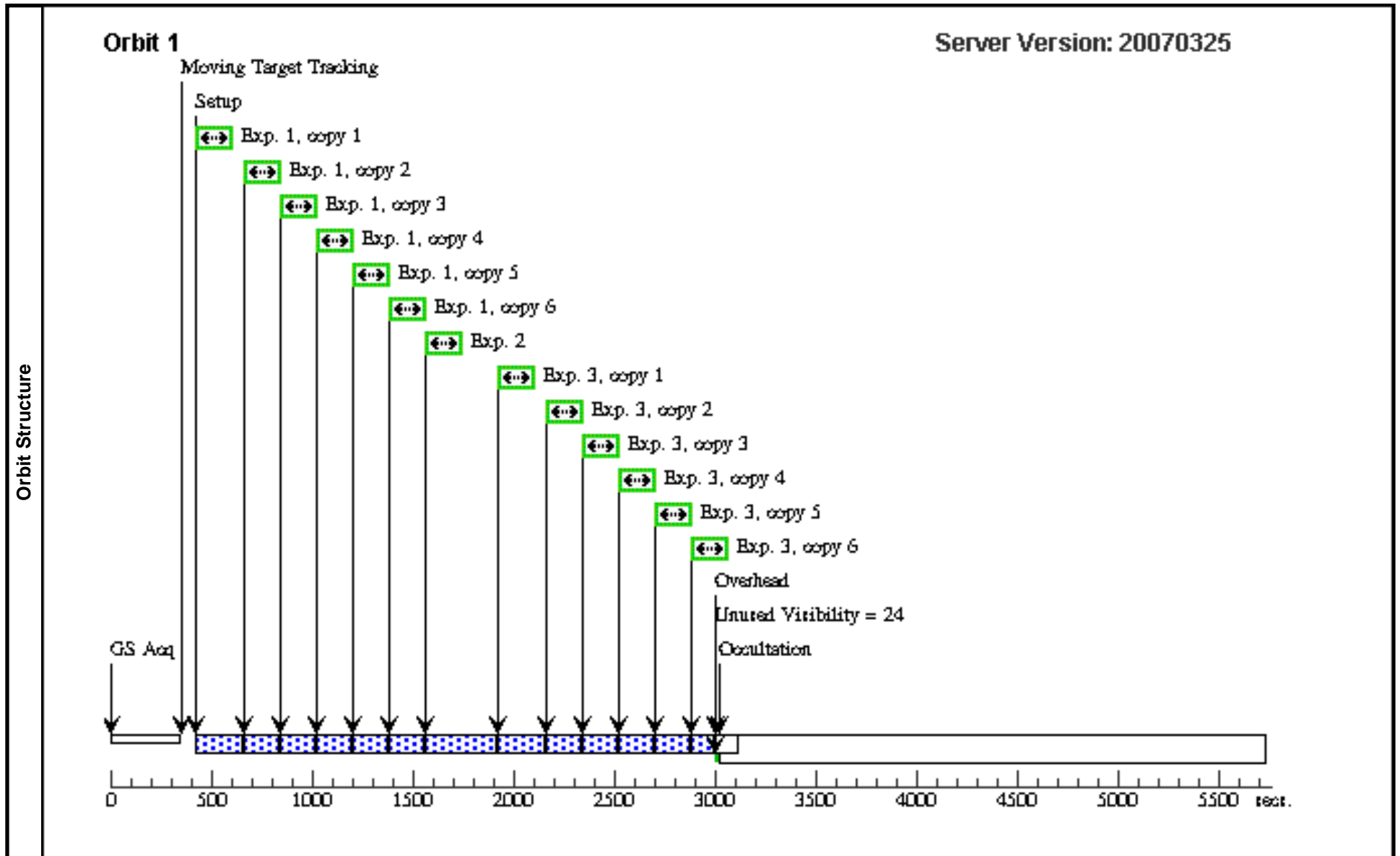
Visit	Proposal 10870, Visit 52, scheduling Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: SCHED 100%; ORIENT 210.0D TO 233.0 D; BETWEEN 08-JUN-2007:00:00:00 AND 20-JUN-2007:00:00:00 Comments: Extended search to study moons and rings. Uranus positioned 2" above and left of the PC center point. Ring plane oriented 23 degrees clockwise from the x-axis, which is as close to the x-axis as ORIENT constraints allow.					
	Solar System Targets	#	Name	Level 1	Level 2	Level 3
(3)		URANUS-WITH-MAB STD=URANUS -WFPC2				
Comments: Uranus with Mab crossing maximum elongation during a 4-orbit visit. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.						

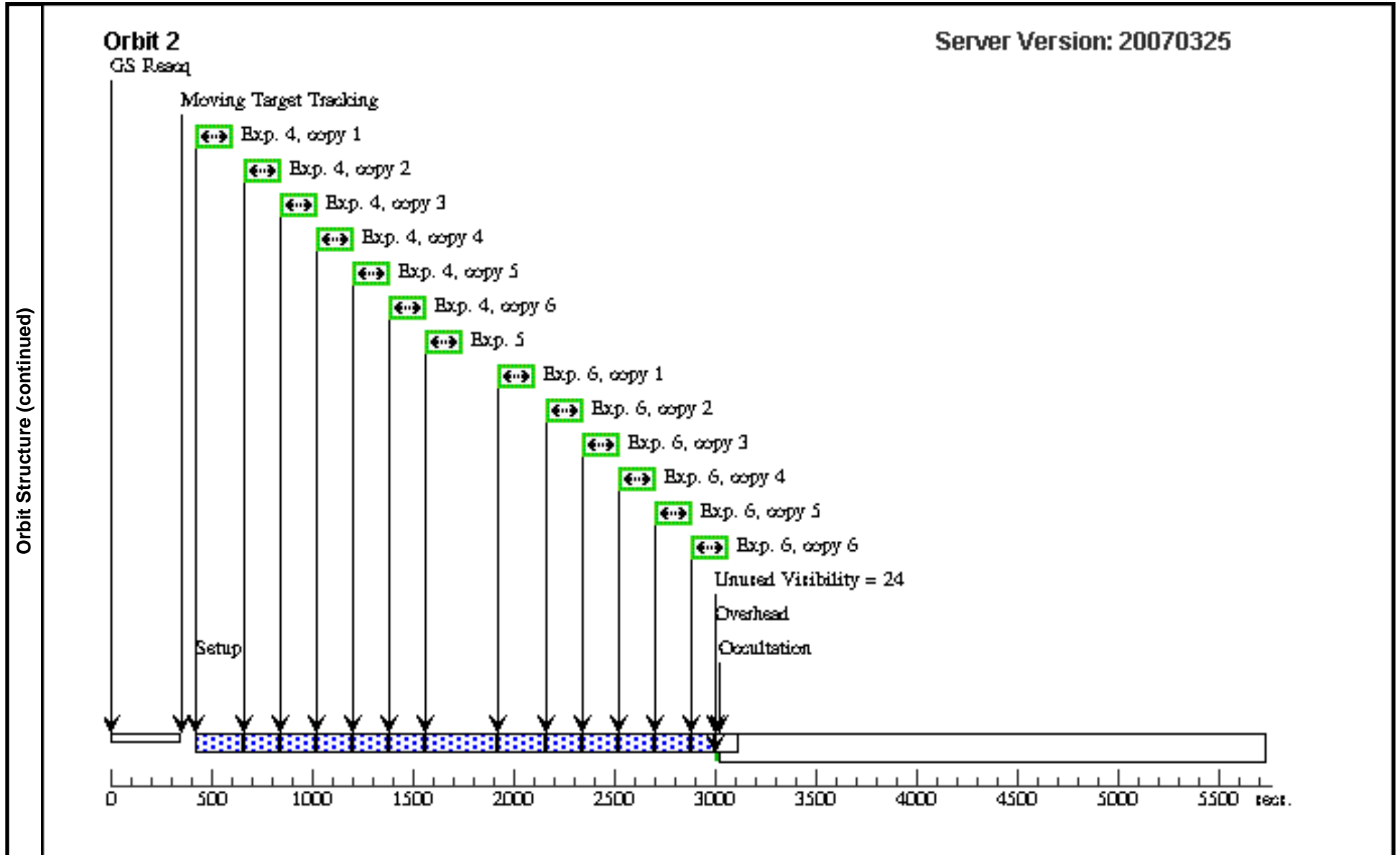
Proposal 10870 - Visit 52 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	POS TARG -2,2	Sequence 1-3 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[1]
	2	F814W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 1-3 Non-Int	200.0 Secs [==>]	[1]
	3	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 1-3 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[1]
	4	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]
	5	F450W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 4-6 Non-Int	200.0 Secs [==>]	[2]
	6	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]
	7	F606W, 100 sec x 5	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	100.0 Secs X 5 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[3]

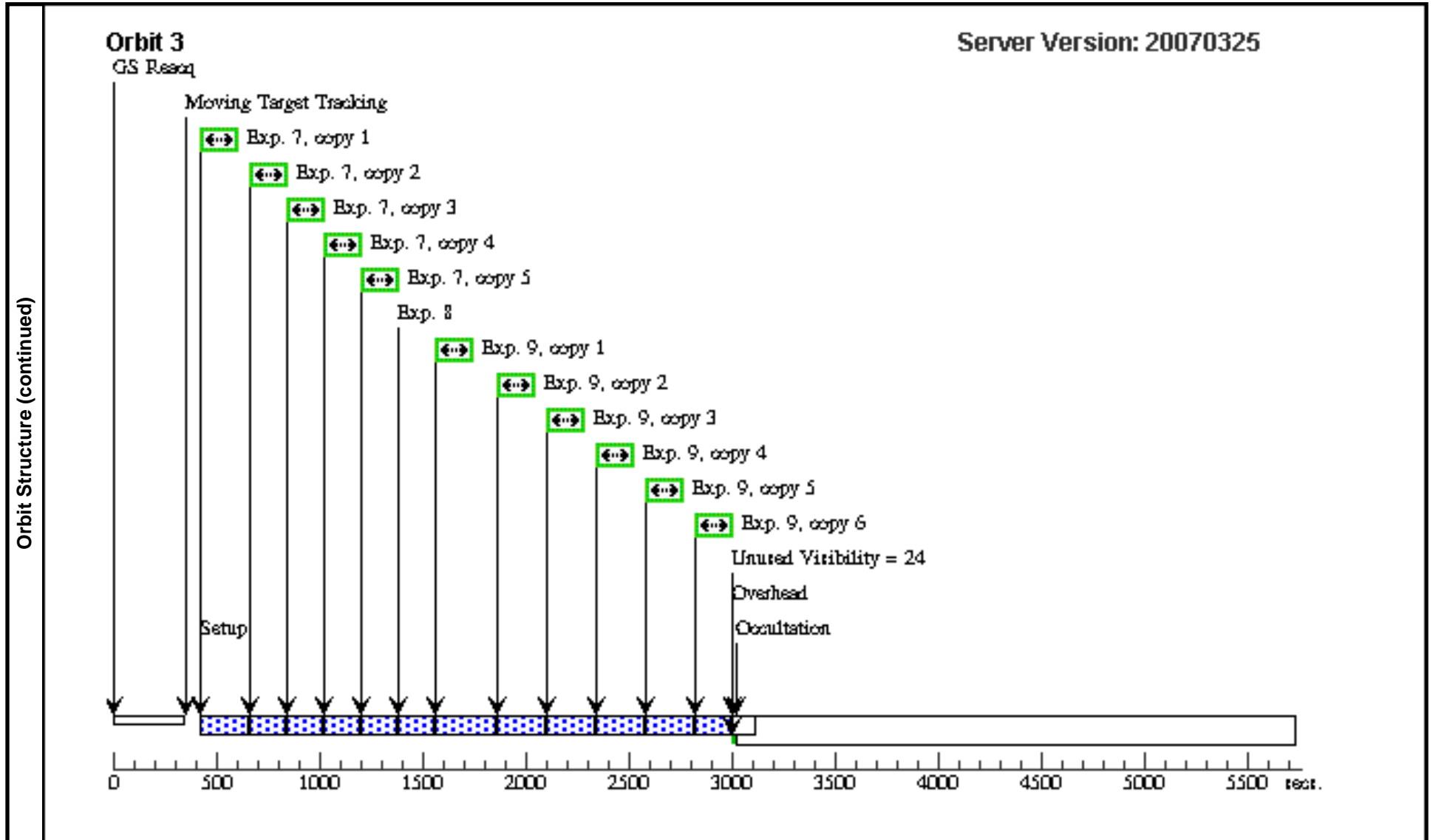
Proposal 10870 - Visit 52 - The Ring Plane Crossings of Uranus in 2007

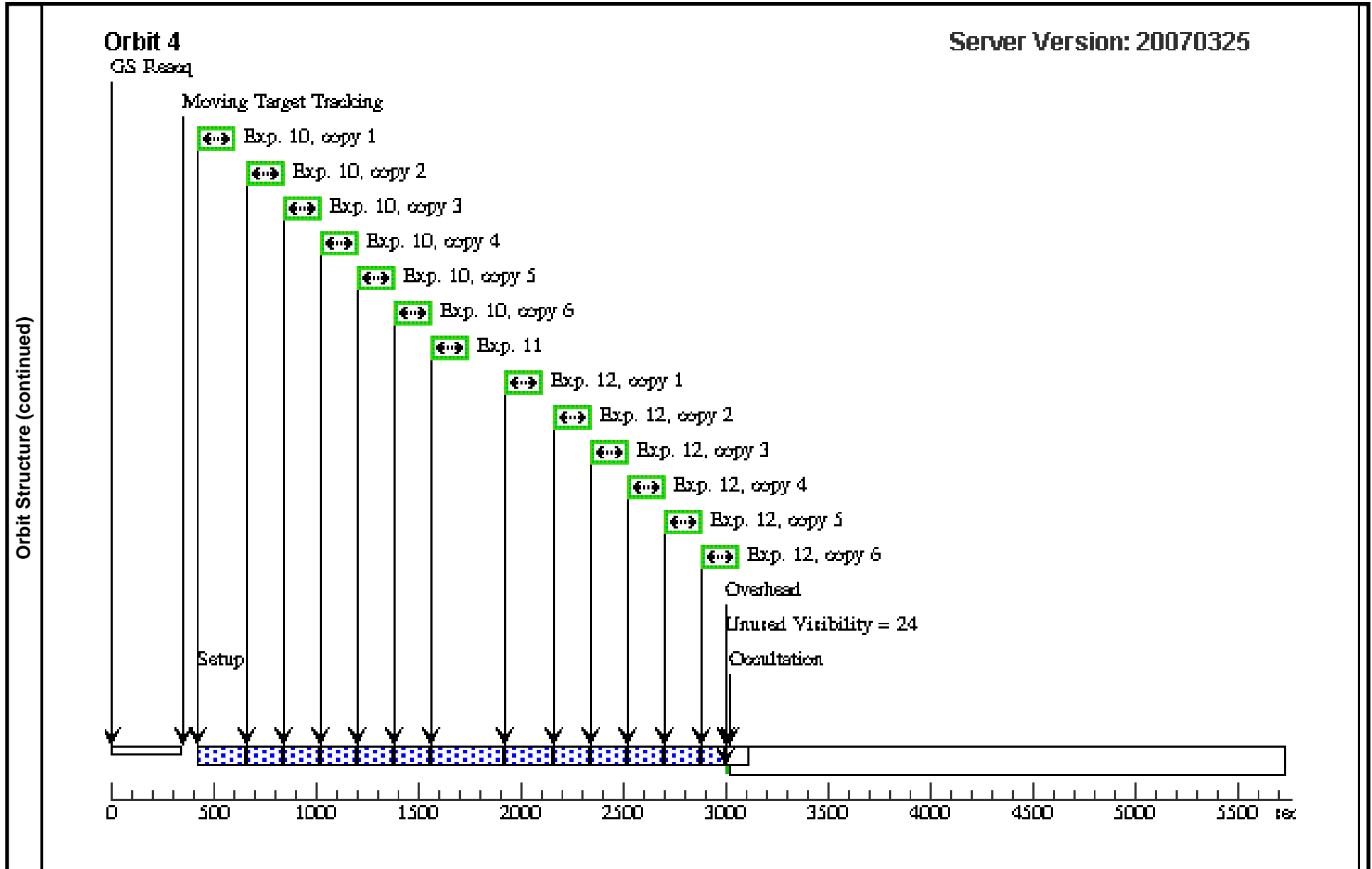
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	8	F814W, 2 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	2.0 Secs [==>]	[3]
	9	F606W, 120 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	120.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[3]
	10	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 10-12 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[4]
	11	F450W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 10-12 Non-Int	200.0 Secs [==>]	[4]
	12	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 10-12 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[4]











Proposal 10870 - Visit 53 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:30 GMT 2007

<b>Visit</b>	<p><b>Proposal 10870, Visit 53, scheduling</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: WFPC2</p> <p>Special Requirements: SCHED 100%; ORIENT 210.0D TO 233.0 D; BETWEEN 17-JUN-2007:00:00:00 AND 30-JUN-2007:00:00:00</p> <p><i>Comments: Extended search to study moons and rings. Uranus positioned 2" below and right of the PC center point. Ring plane oriented 23 degrees clockwise from the x-axis, which is as close to the x-axis as ORIENT constraints allow.</i></p>
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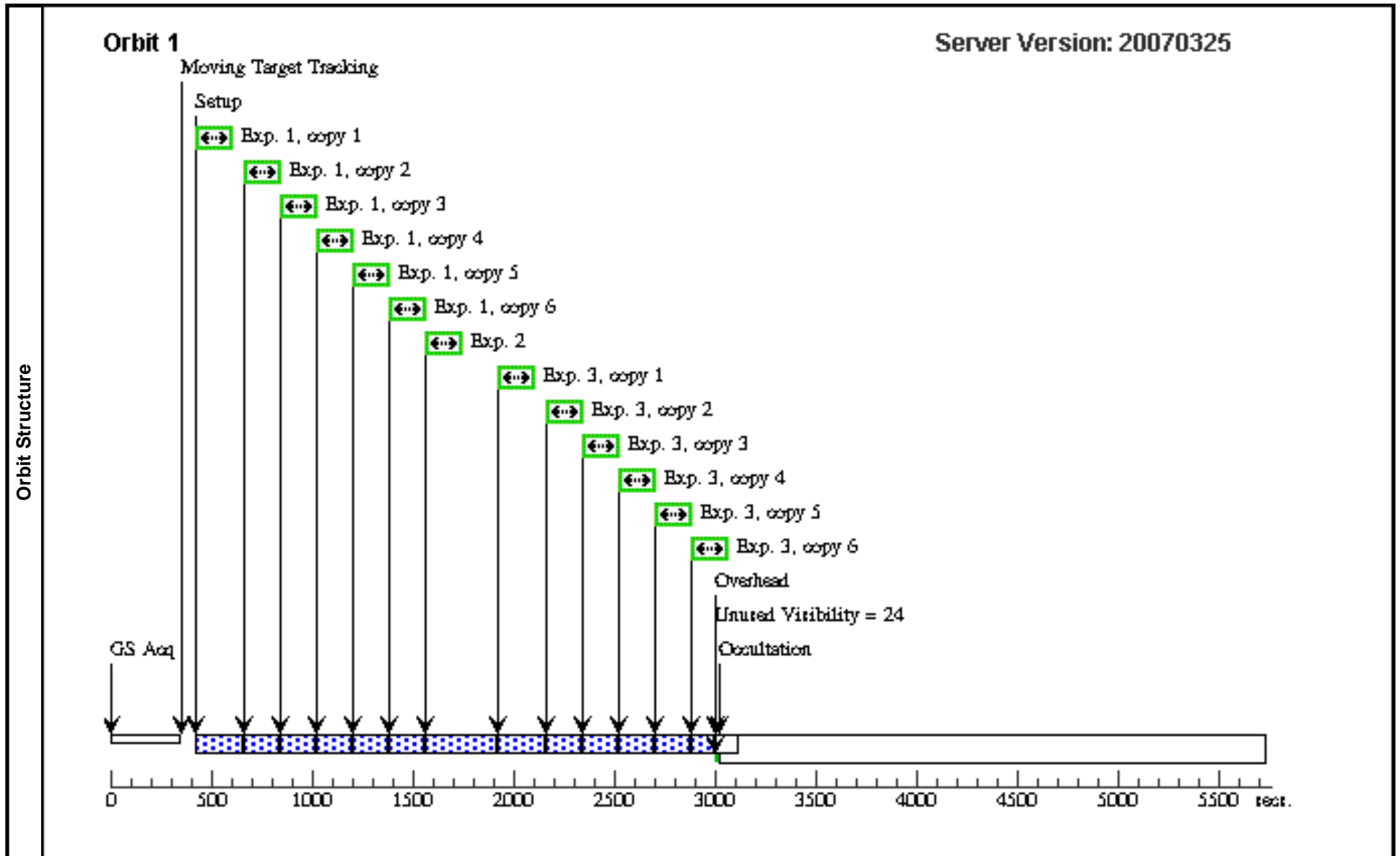
<b>Solar System Targets</b>	#	Name	Level 1	Level 2	Level 3	Window
	(4)	URANUS-WITH-MAB -WFPC2-2	STD=URANUS			NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MAB BETWEEN 170.0 190.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0, SEP OF MIRANDA MAB FROM EARTH GT 1.0"
	<p><i>Comments: Uranus with Mab crossing maximum elongation during a 4-orbit visit. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.</i></p>					

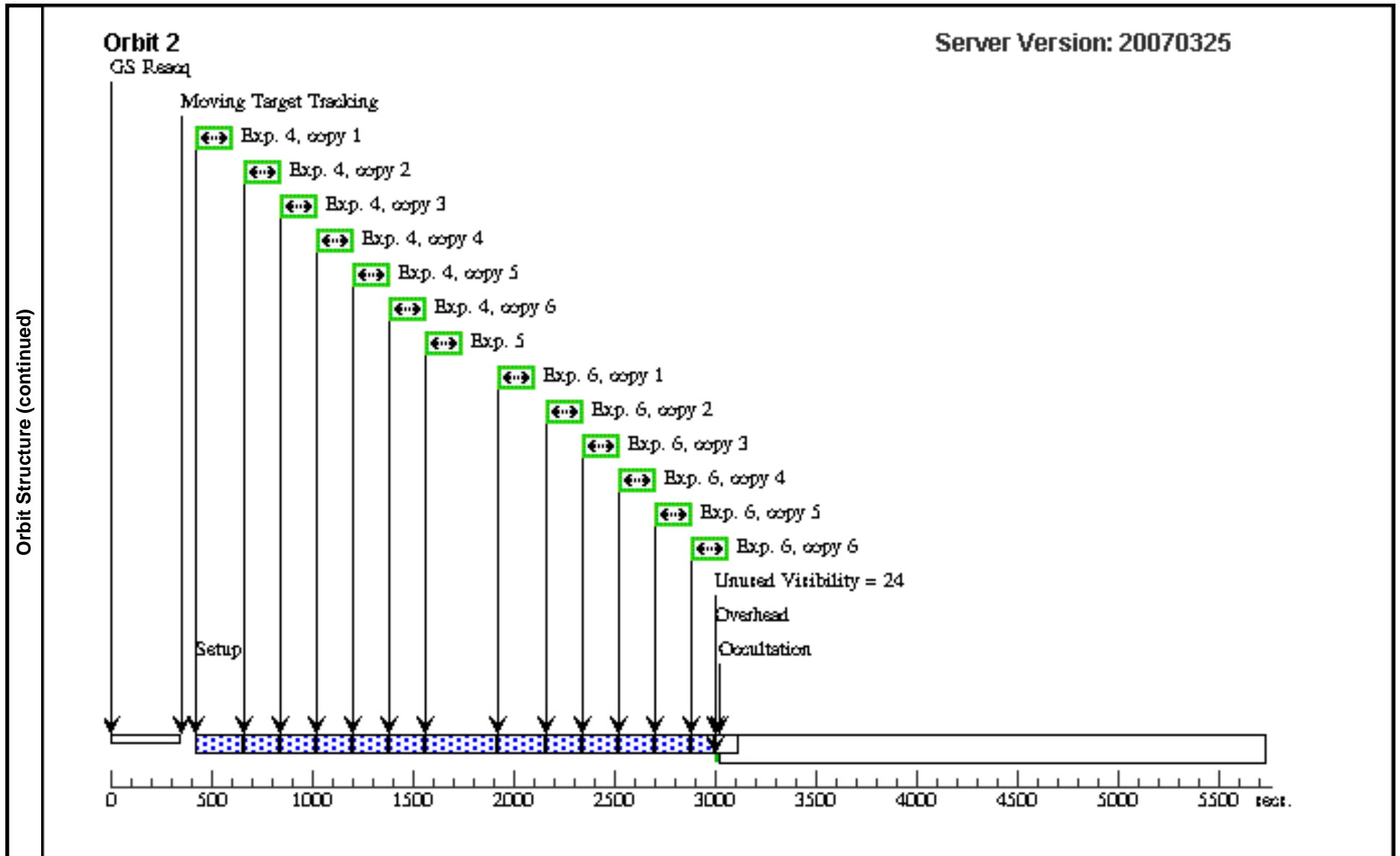
Proposal 10870 - Visit 53 - The Ring Plane Crossings of Uranus in 2007

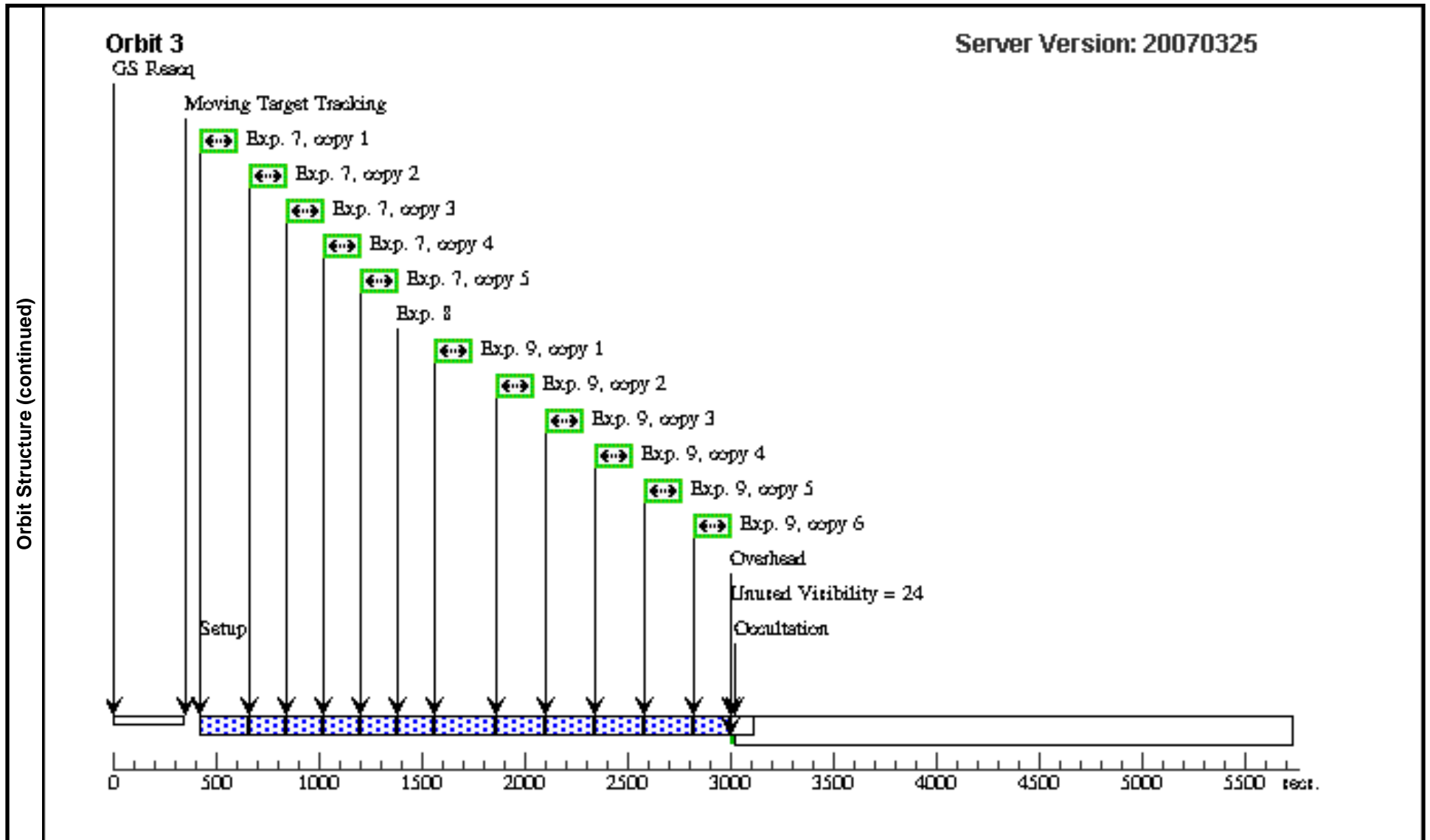
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	POS TARG 2,-2	Sequence 1-3 Non-Int	100.0 Secs X 6 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)] [=>(Copy 5)] [=>(Copy 6)]	[1]
	2	F814W, 200 sec	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 1-3 Non-Int	200.0 Secs [=>]	[1]
	3	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 1-3 Non-Int	100.0 Secs X 6 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)] [=>(Copy 5)] [=>(Copy 6)]	[1]
	4	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)] [=>(Copy 5)] [=>(Copy 6)]	[2]
	5	F450W, 200 sec	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 4-6 Non-Int	200.0 Secs [=>]	[2]
	6	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 4-6 Non-Int	100.0 Secs X 6 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)] [=>(Copy 5)] [=>(Copy 6)]	[2]
	7	F606W, 100 sec x 5	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	100.0 Secs X 5 [=>(Copy 1)] [=>(Copy 2)] [=>(Copy 3)] [=>(Copy 4)] [=>(Copy 5)]	[3]

Proposal 10870 - Visit 53 - The Ring Plane Crossings of Uranus in 2007

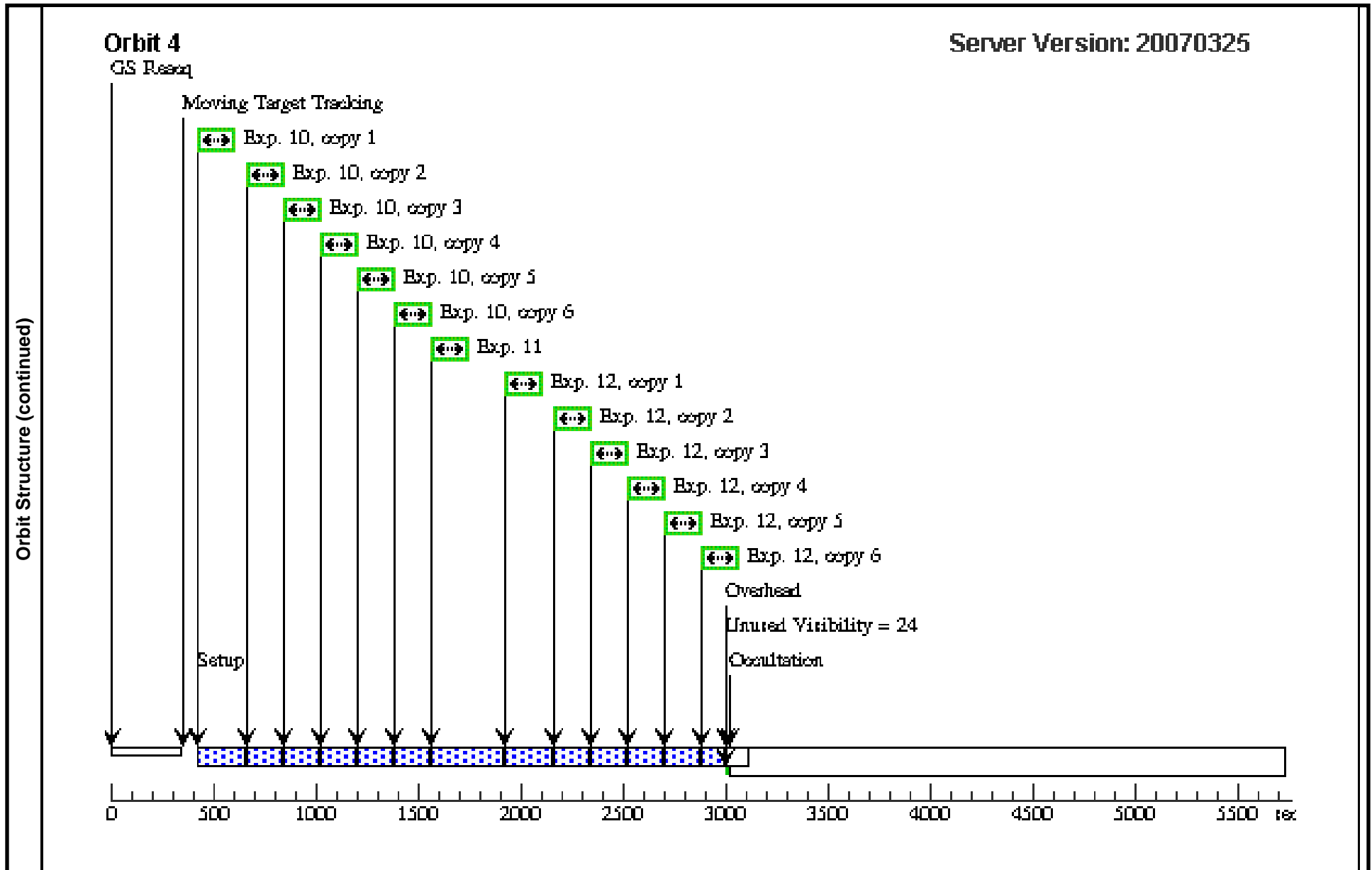
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures (continued)	8	F814W, 2 sec	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	2.0 Secs [==>]	[3]
	9	F606W, 120 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	120.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[3]
	10	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 10-12 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[4]
	11	F814W, 200 sec	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 10-12 Non-Int	200.0 Secs [==>]	[4]
	12	F606W, 100 sec x 6	(4) URANUS-WITH -MAB-WFPC2-2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 10-12 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[4]











Proposal 10870 - Visit 61 - The Ring Plane Crossings of Uranus in 2007

Mon May 21 19:07:32 GMT 2007

Visit	<p><b>Proposal 10870, Visit 61, scheduling</b></p> <p><b>Diagnostic Status: No Diagnostics</b></p> <p>Scientific Instruments: WFPC2</p> <p>Special Requirements: SCHED 100%; ORIENT 210.0D TO 243.0 D; BETWEEN 01-MAY-2007:00:00:00 AND 29-MAY-2007:00:00:00</p> <p><i>Comments: Extended search to study moons and rings. Uranus positioned 2" above and right of the PC center point. Ring plane oriented 33 degrees clockwise from the x-axis, which is as close to the x-axis as ORIENT constraints allow. We prefer that this visit be scheduled as early in the window as possible.</i></p>					
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window
	(3)	URANUS-WITH-MAB -WFPC2	STD=URANUS			<p>NOT OLG OF ARIEL BETWEEN 0.0 31.5, NOT OLG OF ARIEL BETWEEN 148.5 211.5, NOT OLG OF ARIEL BETWEEN 328.5 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 22.1, NOT OLG OF UMBRIEL BETWEEN 157.9 202.1, NOT OLG OF UMBRIEL BETWEEN 337.9 360.0, NOT OLG OF TITANIA BETWEEN 0.0 13.3, NOT OLG OF TITANIA BETWEEN 166.7 193.3, NOT OLG OF TITANIA BETWEEN 346.7 360.0, NOT OLG OF OBERON BETWEEN 0.0 9.9, NOT OLG OF OBERON BETWEEN 170.1 189.9, NOT OLG OF OBERON BETWEEN 350.1 360.0, NOT OLG OF MAB BETWEEN 0.0 10.0, NOT OLG OF MAB BETWEEN 170.0 190.0, NOT OLG OF MAB BETWEEN 350.0 360.0, NOT OLG OF MIRANDA BETWEEN 0.0 25.0, NOT OLG OF MIRANDA BETWEEN 155.0 205.0, NOT OLG OF MIRANDA BETWEEN 335.0 360.0, SEP OF MIRANDA MAB FROM EARTH GT 1.0"</p> <p><i>Comments: Uranus with Mab crossing maximum elongation during a 4-orbit visit. Ariel, Umbriel, Titania and Oberon are required to be more than 100,000 km from the center of Uranus in projected distance along the ring ansa; this guarantees that any bright, vertical diffraction spike falls beyond the orbit of Mab. Also, Miranda's diffraction spike must stay outside the ring system and at least 1 arcsec from Mab.</i></p>

Proposal 10870 - Visit 61 - The Ring Plane Crossings of Uranus in 2007

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	F606W, 100 sec x 5	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	POS TARG 2,2	Sequence 1-6 Non-Int	100.0 Secs X 5 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)]	[1]
	2	F814W, 2 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F814W	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-6 Non-Int	2.0 Secs [==>]	[1]
	3	F450W, 4 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-6 Non-Int	4.0 Secs [==>]	[1]
	4	F606W, 1 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CR-SPLIT=NO	SAME POS AS 1	Sequence 1-6 Non-Int	1.0 Secs [==>]	[1]
	5	F606W, 50 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 1-6 Non-Int	50.0 Secs [==>]	[1]
	6	F606W, 100 sec x 4	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 1-6 Non-Int	100.0 Secs X 4 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)]	[1]
	7	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]
	8	F450W, 200 sec	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F450W	CR-SPLIT=NO; CLOCKS=YES	SAME POS AS 1	Sequence 7-9 Non-Int	200.0 Secs [==>]	[2]
	9	F606W, 100 sec x 6	(3) URANUS-WITH -MAB-WFPC2	WFPC2, IMAGE, PC1-FIX	F606W	CLOCKS=YES; CR-SPLIT=NO	SAME POS AS 1	Sequence 7-9 Non-Int	100.0 Secs X 6 [==>(Copy 1)] [==>(Copy 2)] [==>(Copy 3)] [==>(Copy 4)] [==>(Copy 5)] [==>(Copy 6)]	[2]

