



10473 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Cycle: 14, Proposal Category: GO

(Availability Mode: AVAILABLE)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets</i>	<i>Configurations</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
31	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:03.0	yes
3A	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:10.0	yes
32	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:17.0	yes
3B	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:25.0	yes
33	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:31.0	yes
3C	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:36.0	yes
34	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	3	06-Jul-2005 21:01:47.0	yes
35	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC	1	06-Jul-2005 21:01:55.0	yes

10 Total Orbits Used

ABSTRACT

We propose to image the rings and small inner satellites of Uranus using the High Resolution Channel of the ACS. The revolutionary capabilities of the ACS will allow us to address a variety of important questions relating to ring properties and ring-moon interactions. Observations at a range of wavelengths and phase angles will reveal the opposition surges of these rings and moons, providing information on color and surface structure. Measurements of the ring in front of the planet will provide complementary information on optical depth; any variations of optical depth with wavelength will reveal the rings' poorly-constrained population of embedded dust. The rings of Uranus are closing rapidly as the planet approaches equinox in 2007, an event that takes place only every 42 years. Using this opportunity, our observations will be repeated at different solar and terrestrial tilt angles; this sequence of images will be particularly valuable for constraining the physical thickness and packing density of the rings. We will place particular emphasis on the rotational variations of the Epsilon Ring, whose radial width (and therefore its packing density) varies by a factor of five. In addition, deep exposures through the CLEAR filter will enable us to detect and recover 4-5 km moons in or near the ring system. Dynamicists invoke numerous such moons to "shepherd" the many sharp ring boundaries, so this will serve as a definitive test of the theory.

OBSERVING DESCRIPTION

Images will be centered on the planet and oriented such that the rings extend along the HRC's x-axis. In overexposed images of the planet, the saturated pixels bloom along the y-axis so this orientation guarantees that they do not corrupt our observations. Uranus is oriented on the sky such that this requirement is generally easy to meet. Each visit will contain a set of saturated exposures (CLEAR at ~250 sec; F606W at ~100 sec; F475W at ~150 sec) for optimal ring photometry and to continue our search for small satellites. We will also obtain unsaturated exposures (F303W at ~200 sec; F475W at 15 sec; F606W at 10 sec; F814w at ~70 sec) for expanded wavelength coverage and to support planet science. Most ring photometry images are embedded in a dither pattern involving a 2.5-pixel shift along the x-axis; this is used to improve the resolution on individual rings. Single-orbit visits occur at phase angles of 1.2, 0.5, 0.2 degrees prior to opposition (September 1, 2005) and at 2.8 degrees after solar conjunction (June 2006). A three-orbit visit as close as possible to opposition will include many additional long, CLEAR exposures to search more completely for small orbiting moons.

ADDITIONAL COMMENTS

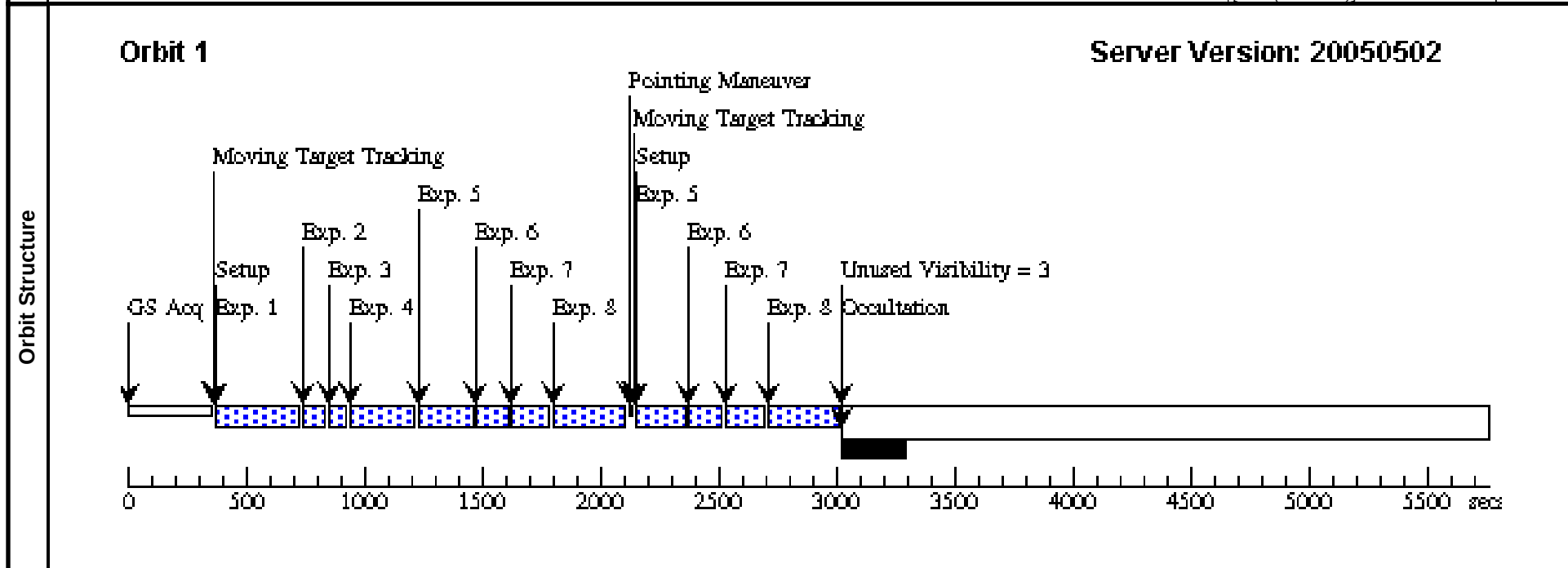
- (1) We understand that ORIENT constraints are discouraged under HST's 2-gyro operation but they are critical for us to achieve our science goals.
- (2) OLG constraints on the brightest moons are needed to ensure that their bright diffraction spikes do not cross the ring region. We have confirmed that these constraints leave multiple scheduling options for each visit, with most options lasting at least several hours.
- (3) Visits 31, 32 and 33 are constrained by our wish to catch a particular orbiting feature near its maximum elongation from the planet; opportunities repeat every 3 hours 46 minutes but the start time of a visit has a brief window of only 44 minutes. In case any of these are too difficult to schedule, we also provide alternative visits 3A, 3B, 3C which do not have the strict timing constraints. These are designated ON HOLD. We therefore request one visit from each pair (31,3A), (32,3B) and (33,3C), where the former is preferred but the latter is acceptable.
- (4) If at all possible, schedule our opposition visit 34 as three consecutive orbits; this maximizes the orbital coverage for our search for small moons.

Proposal 10473 - Visit 31 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 31										Thu Jul 07 01:01:57 GMT 2005	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/HRC											
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 07-AUG-2005:02:21:00 AND 07-AUG-2005:03:05:00; BETWEEN 07-AUG-2005:06:07:00 AND 07-AUG-2005:06:51:00; BETWEEN 07-AUG-2005:09:53:00 AND 07-AUG-2005:10:37:00; BETWEEN 07-AUG-2005:13:40:00 AND 07-AUG-2005:14:24:00; BETWEEN 07-AUG-2005:17:26:00 AND 07-AUG-2005:18:10:00; BETWEEN 07-AUG-2005:21:12:00 AND 07-AUG-2005:21:56:00; BETWEEN 08-AUG-2005:00:58:00 AND 08-AUG-2005:01:42:00; BETWEEN 08-AUG-2005:04:45:00 AND 08-AUG-2005:05:29:00; BETWEEN 08-AUG-2005:08:31:00 AND 08-AUG-2005:09:15:00; BETWEEN 08-AUG-2005:12:17:00 AND 08-AUG-2005:13:01:00; BETWEEN 08-AUG-2005:16:04:00 AND 08-AUG-2005:16:48:00; BETWEEN 08-AUG-2005:19:50:00 AND 08-AUG-2005:20:34:00; BETWEEN 08-AUG-2005:23:36:00 AND 09-AUG-2005:00:20:00											
Comments: Uranian rings with phase angle near 1.2 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 31 or 3A. Visit 31 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3A instead if Visit 31 is too difficult to schedule.												
Patterns	#	Primary Pattern				Secondary Pattern				Exposures		
	(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=										
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window						
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0					
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.											
	Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
		1	CLEAR, 24 0 sec	(2) 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	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs		
									[==>]	[1]		

Proposal 10473 - Visit 31 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	3	F606W, 10 sec	(2) 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, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	195.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) 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	(2) 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	(2) 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	(2) 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]

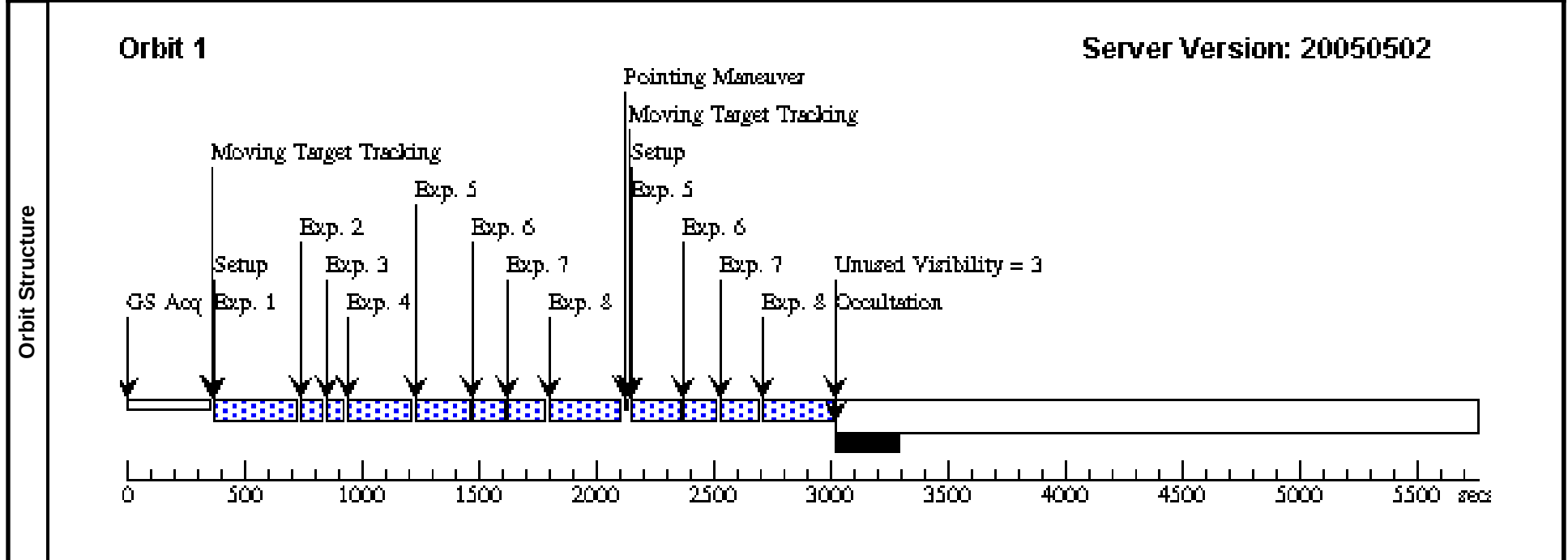


Proposal 10473 - Visit 3A - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 3A				Thu Jul 07 01:01:58 GMT 2005					
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/HRC									
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 07-AUG-2005:00:00:00 AND 09-AUG-2005:00:00:00; ON HOLD									
	Comments: Uranian rings with phase angle near 1.2 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 31 or 3A. Visit 31 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3A instead if Visit 31 is too difficult to schedule. On Hold Comments: Use in place of Visit 31 if Visit 31 is too difficult to schedule.									
Patterns	#	Primary Pattern			Secondary Pattern			Exposures		
	(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)			
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window				
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS			NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0				
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	CLEAR, 24 0 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO			240.0 Secs	
									[==>]	[1]
	2	F475W, 15 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO			15.0 Secs	
									[==>]	[1]
	3	F606W, 10 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO			10.0 Secs	
									[==>]	[1]

Proposal 10473 - Visit 3A - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	4	F330W, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO			195.0 Secs [=>]	[1]
	5	F475W, 130 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	130.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	80.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	70.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	240.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]

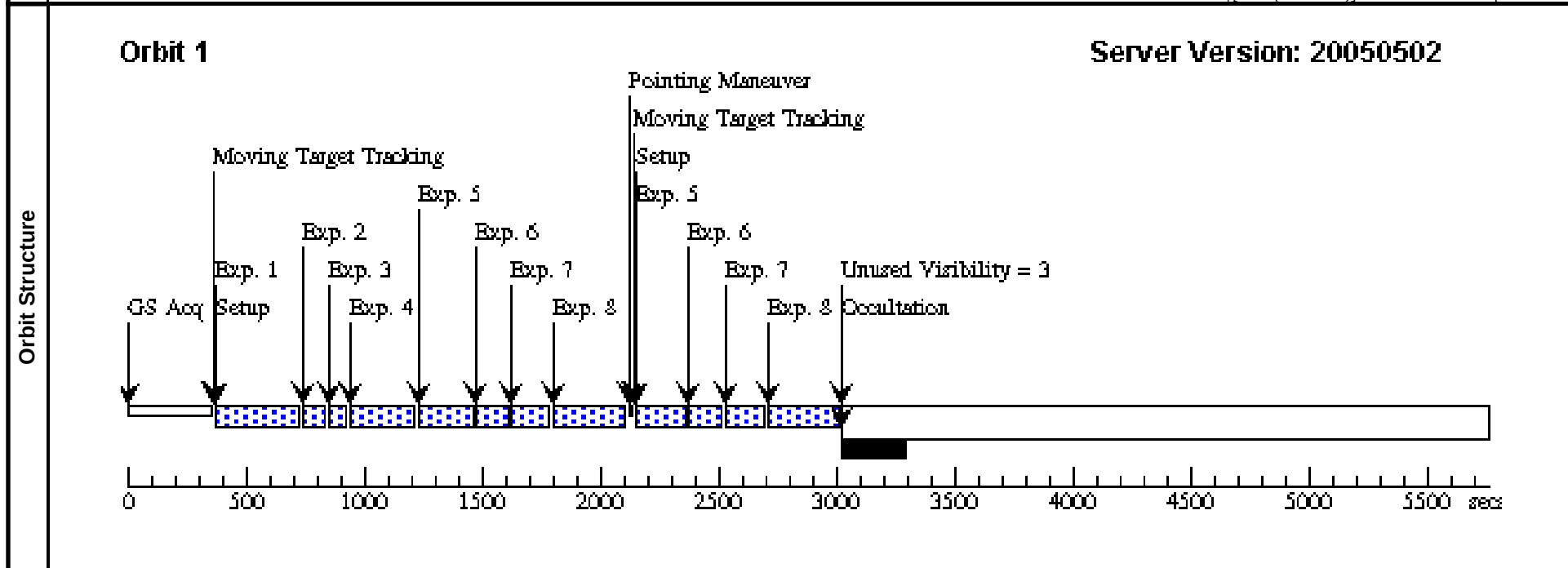


Proposal 10473 - Visit 32 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 32										Thu Jul 07 01:01:59 GMT 2005	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/HRC											
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 21-AUG-2005:02:01:00 AND 21-AUG-2005:02:45:00; BETWEEN 21-AUG-2005:05:47:00 AND 21-AUG-2005:06:31:00; BETWEEN 21-AUG-2005:09:33:00 AND 21-AUG-2005:10:17:00; BETWEEN 21-AUG-2005:13:20:00 AND 21-AUG-2005:14:04:00; BETWEEN 21-AUG-2005:17:06:00 AND 21-AUG-2005:17:50:00; BETWEEN 21-AUG-2005:20:52:00 AND 21-AUG-2005:21:36:00; BETWEEN 22-AUG-2005:00:38:00 AND 22-AUG-2005:01:22:00; BETWEEN 22-AUG-2005:04:25:00 AND 22-AUG-2005:05:09:00; BETWEEN 22-AUG-2005:08:11:00 AND 22-AUG-2005:08:55:00; BETWEEN 22-AUG-2005:11:57:00 AND 22-AUG-2005:12:41:00; BETWEEN 22-AUG-2005:15:44:00 AND 22-AUG-2005:16:28:00; BETWEEN 22-AUG-2005:19:30:00 AND 22-AUG-2005:20:14:00; BETWEEN 22-AUG-2005:23:16:00 AND 23-AUG-2005:00:00:00 Comments: Uranian rings with phase angle near 0.5 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 32 or 3B. Visit 32 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3B instead if Visit 32 is too difficult to schedule.											
Patterns	#	Primary Pattern				Secondary Pattern				Exposures		
	(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)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window						
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0					
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	CLEAR, 24 0 sec	(2) 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	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs			
									[==>]		[1]	

Proposal 10473 - Visit 32 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	3	F606W, 10 sec	(2) 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, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	195.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) 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	(2) 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	(2) 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	(2) 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]

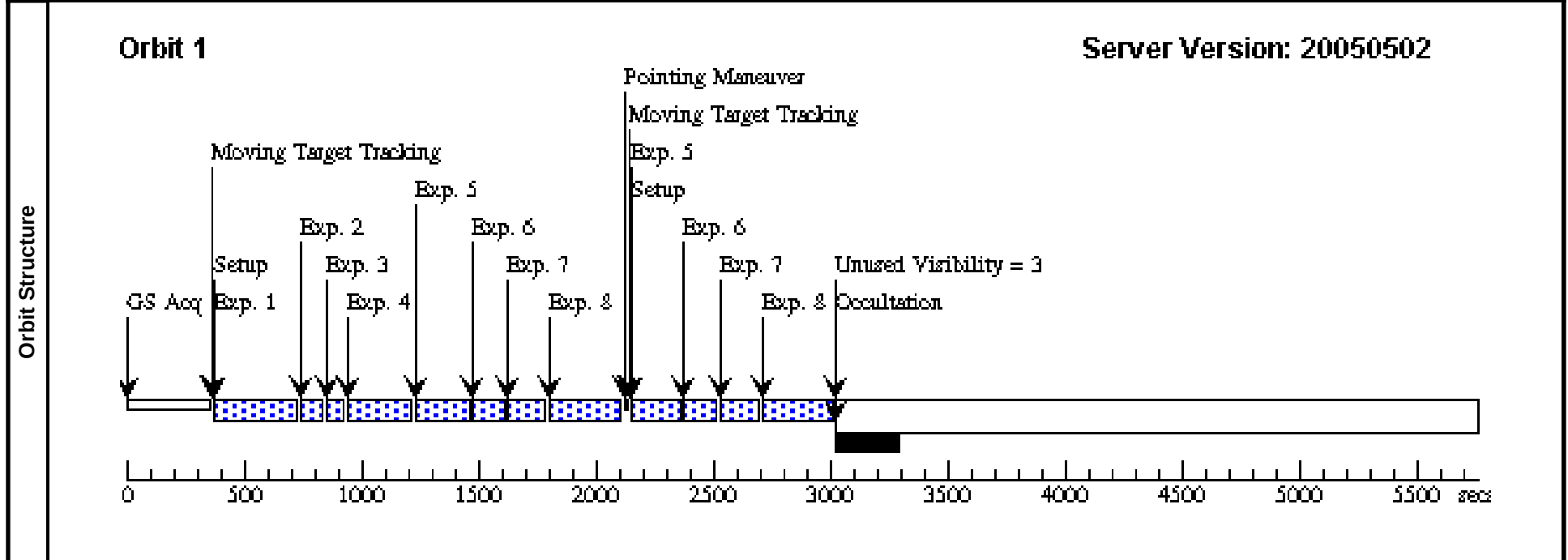


Proposal 10473 - Visit 3B - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 3B				Thu Jul 07 01:01:59 GMT 2005					
	Diagnostic Status: No Diagnostics									
	Scientific Instruments: ACS/HRC									
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 21-AUG-2005:00:00:00 AND 23-AUG-2005:00:00:00; ON HOLD									
	Comments: Uranian rings with phase angle near 0.5 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 32 or 3B. Visit 32 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3B instead if Visit 32 is too difficult to schedule. On Hold Comments: Use in place of Visit 32 if Visit 32 is too difficult to schedule.									
Patterns	#	Primary Pattern			Secondary Pattern		Exposures			
	(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)			
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window				
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0			
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.									
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	CLEAR, 24 0 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO			240.0 Secs	
									[==>]	[1]
	2	F475W, 15 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO			15.0 Secs	
									[==>]	[1]
	3	F606W, 10 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO			10.0 Secs	
									[==>]	[1]

Proposal 10473 - Visit 3B - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	4	F330W, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO			195.0 Secs [=>]	[1]
	5	F475W, 130 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	130.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	80.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	70.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	240.0 Secs [=>(Pattern 1)] [=>(Pattern 2)]	[1]



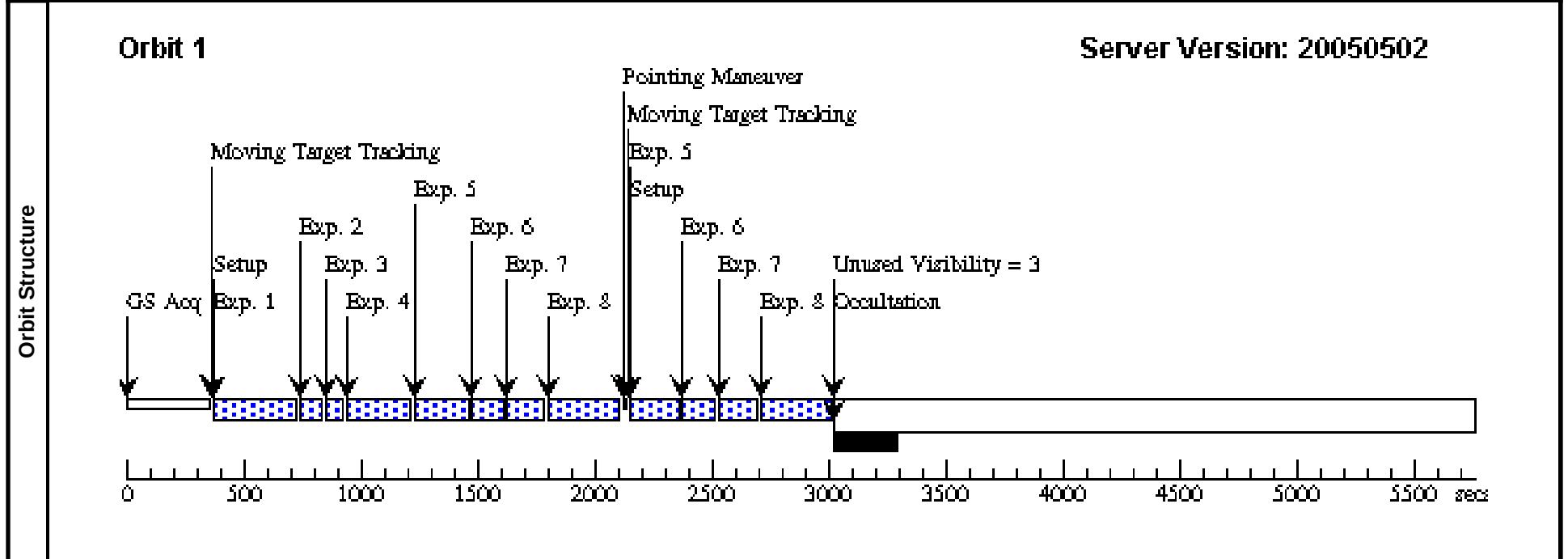
Proposal 10473 - Visit 33 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Thu Jul 07 01:01:59 GMT 2005

Visit	Proposal 10473, Visit 33										Thu Jul 07 01:01:59 GMT 2005	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/HRC											
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 27-AUG-2005:23:57:00 AND 28-AUG-2005:00:41:00; BETWEEN 28-AUG-2005:03:43:00 AND 28-AUG-2005:04:27:00; BETWEEN 28-AUG-2005:07:29:00 AND 28-AUG-2005:08:13:00; BETWEEN 28-AUG-2005:11:16:00 AND 28-AUG-2005:12:00:00; BETWEEN 28-AUG-2005:15:02:00 AND 28-AUG-2005:15:46:00; BETWEEN 28-AUG-2005:18:48:00 AND 28-AUG-2005:19:32:00; BETWEEN 28-AUG-2005:22:34:00 AND 28-AUG-2005:23:18:00											
Comments: Uranian rings with phase angle near 0.2 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 33 or 3C. Visit 33 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3C instead if Visit 33 is too difficult to schedule.												
Patterns	#	Primary Pattern				Secondary Pattern				Exposures		
	(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=												
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window						
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0					
Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.												
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit		
	1	CLEAR, 240 sec	(2) 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	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs			
									[>=>]	[1]		
3	F606W, 10 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	10.0 Secs				
								[>=>]	[1]			

Proposal 10473 - Visit 33 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	4	F330W, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	195.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 1-8 Non-Int	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-8 Non-Int	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
								Pattern 5-8 (1)		

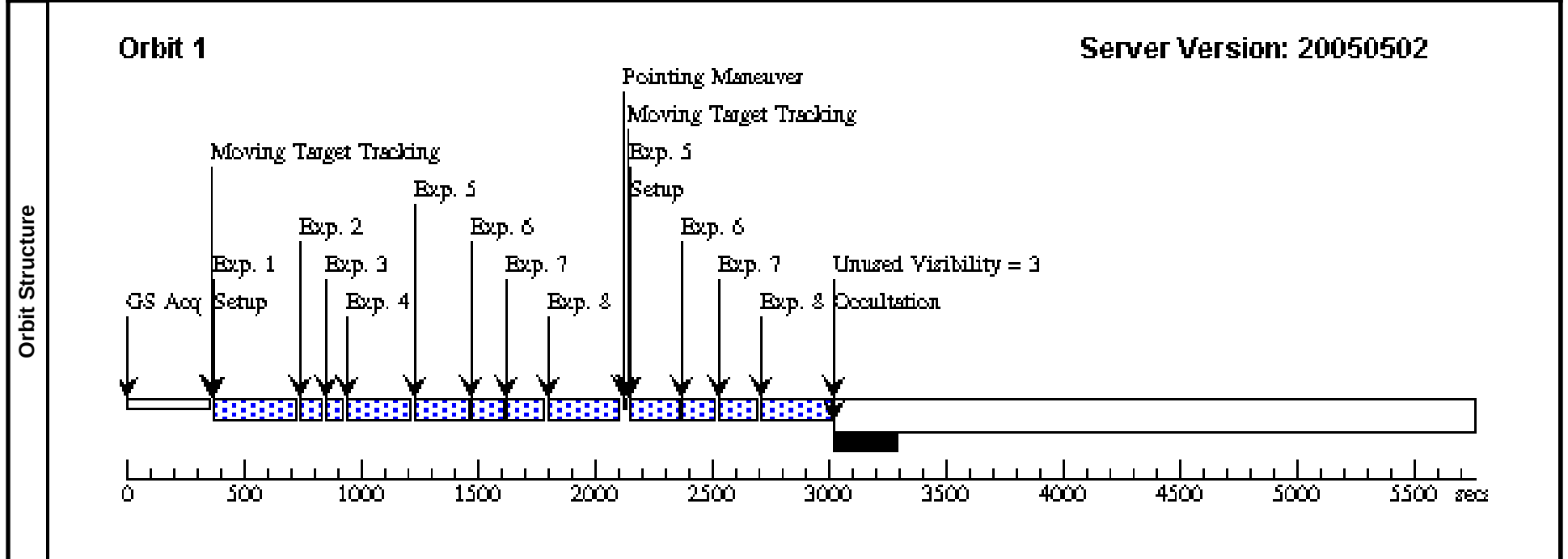


Proposal 10473 - Visit 3C - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 3C										Thu Jul 07 01:02:00 GMT 2005	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/HRC											
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 28-AUG-2005:00:00:00 AND 29-AUG-2005:00:00:00; ON HOLD											
	Comments: Uranian rings with phase angle near 0.2 degrees. Rings oriented parallel to the HRC x-axis. Schedule either visit 33 or 3C. Visit 33 is strongly preferred but has strict timing constraints defined by the requirement to capture a particular orbiting target. Use Visit 3C instead if Visit 33 is too difficult to schedule. On Hold Comments: Use in place of Visit 33 if Visit 33 is too difficult to schedule.											
Patterns	#	Primary Pattern					Secondary Pattern			Exposures		
	(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=												
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window						
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0					
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]		Orbit	
	1	CLEAR, 24 0 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO				240.0 Secs	[1]	
	[==>]											
	2	F475W, 15 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO				15.0 Secs	[1]	
	[==>]											
3	F606W, 10 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO				10.0 Secs	[1]		
[==>]												

Proposal 10473 - Visit 3C - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	4	F330W, 195 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO			195.0 Secs [==>]	[1]
	5	F475W, 130 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	130.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	6	F606W, 80 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	80.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	7	F814W, 70 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	70.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	8	CLEAR, 240 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 5-8 (1)	240.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[1]

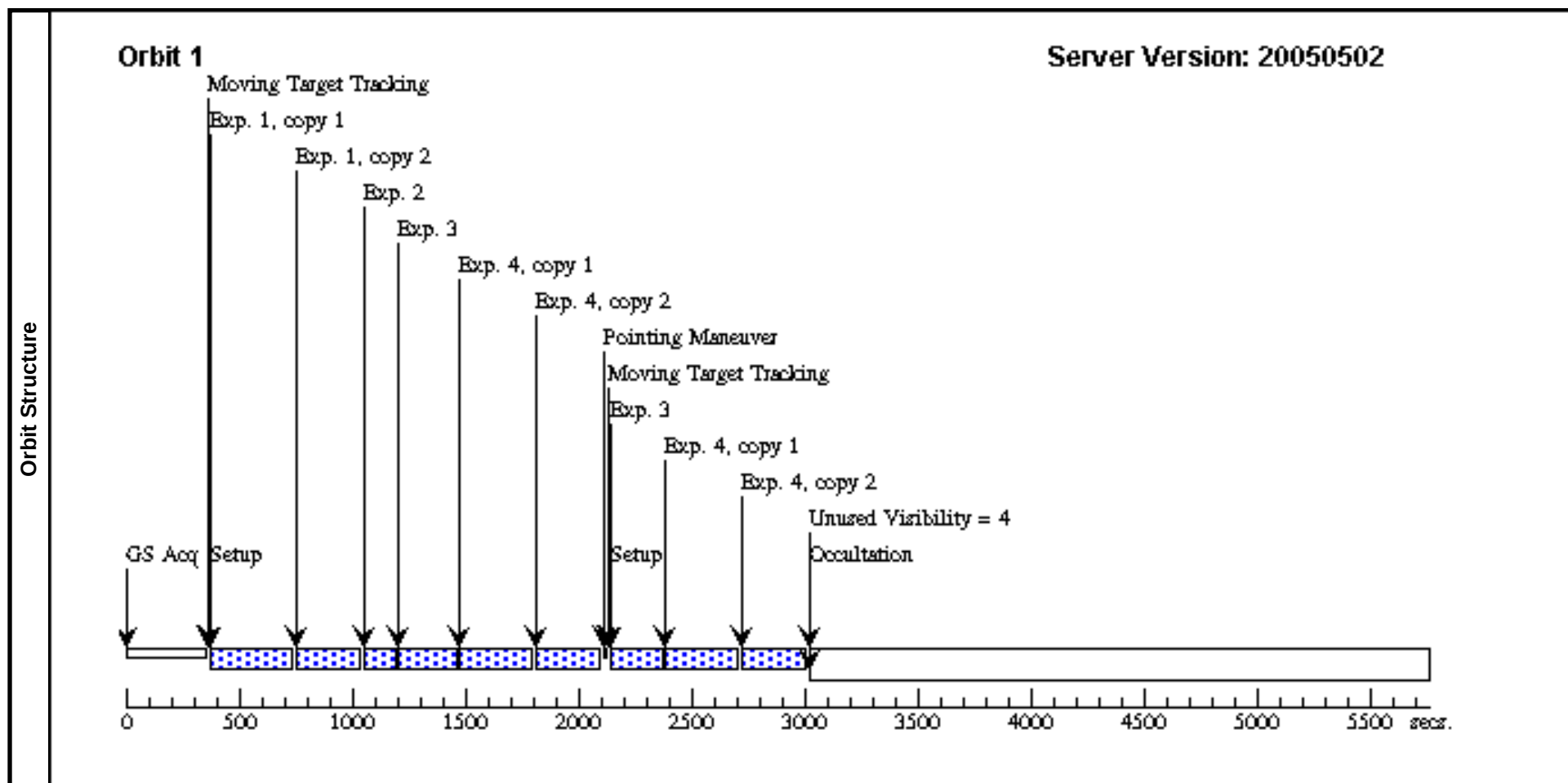


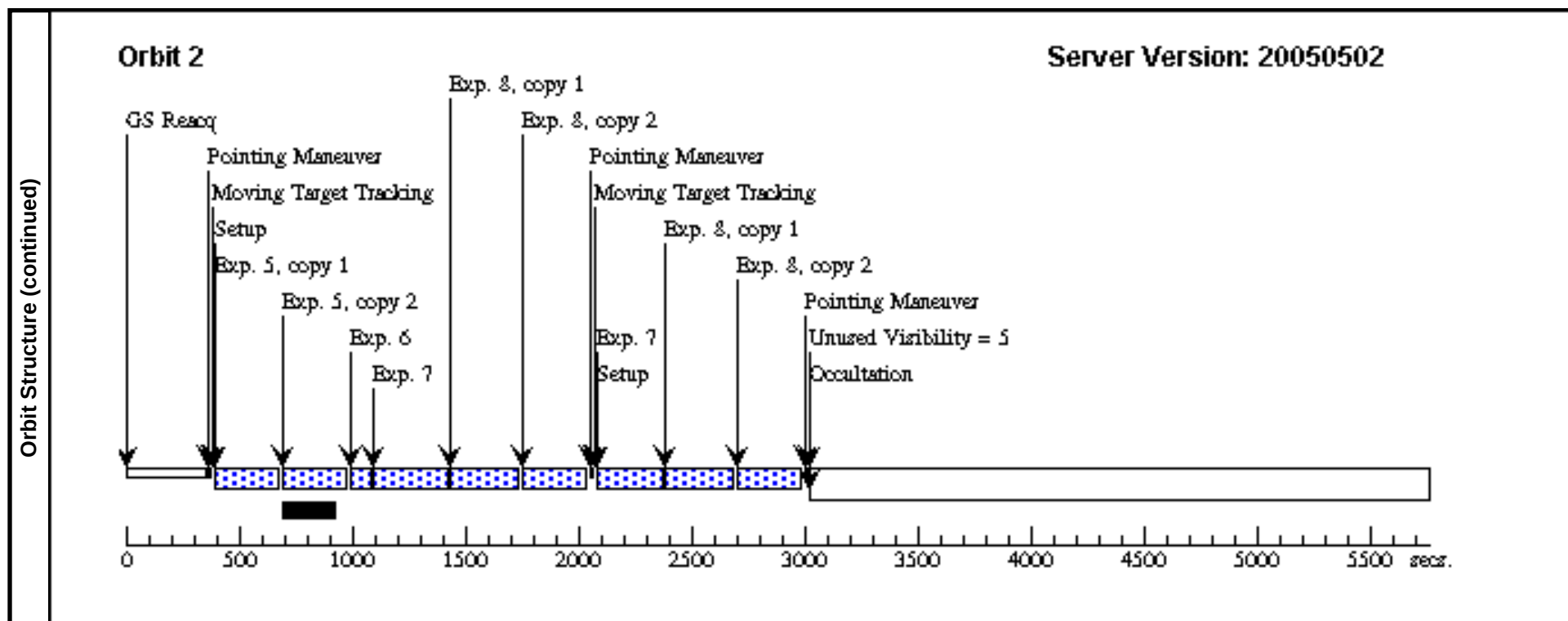
Proposal 10473 - Visit 34 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

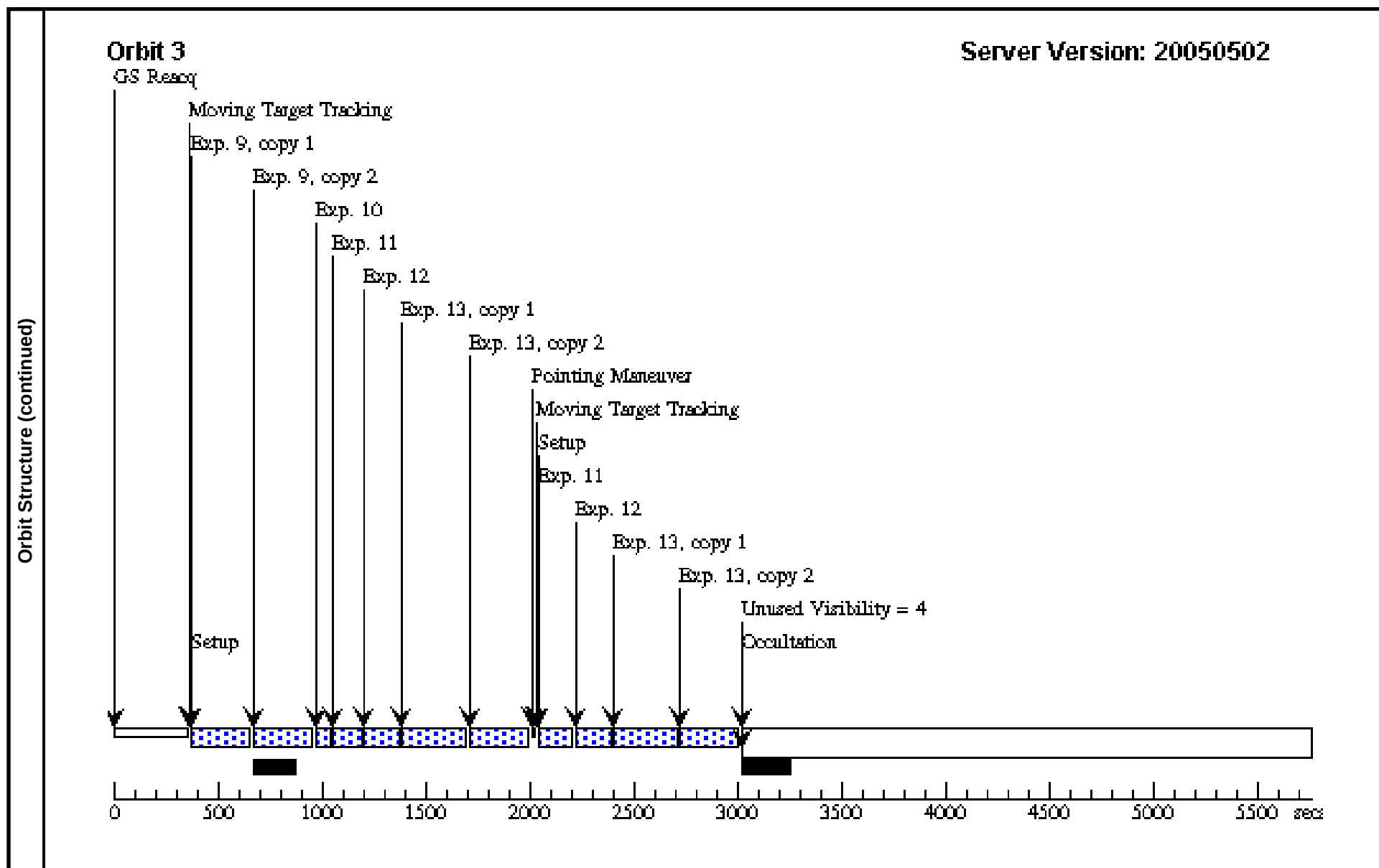
Visit	Proposal 10473, Visit 34										Thu Jul 07 01:02:00 GMT 2005
	Diagnostic Status: No Diagnostics										
	Scientific Instruments: ACS/HRC										
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 30-AUG-2005:00:00:00 AND 03-SEP-2005:00:00:00										
	Comments: Uranian rings with phase angle near or below 0.1 degrees. Rings oriented parallel to the HRC x-axis. Three consecutive orbits to search for small satellites.										
Patterns	#	Primary Pattern				Secondary Pattern				Exposures	
	(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						(3-4), (7-8), (11-13)	
Solar System Targets	#	Name	Level 1	Level 2		Level 3		Window			
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS					NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0			
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.										
Exposures	#	Label	Target	Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	CLEAR, 2 x 250 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX		CLEAR	CR-SPLIT=NO		Sequence 1-4 Non-Int	250.0 Secs X 2	
										[==>(Copy 1)]	[1]
										[==>(Copy 2)]	
	2	F814W, 75 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX		F814W	CR-SPLIT=NO		Sequence 1-4 Non-Int	75.0 Secs	
									[==>]	[1]	
3	F475W, 150 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX		F475W	CR-SPLIT=NO		Sequence 1-4 Non-Int	150.0 Secs		
								Pattern 3-4 (1)	[==>(Pattern 1)]	[1]	
									[==>(Pattern 2)]		

Proposal 10473 - Visit 34 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	4	CLEAR, 2 x 250 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 1-4 Non-Int Pattern 3-4 (1)	250.0 Secs X 2 [==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)]	[1]
	5	CLEAR, 2 x 250 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 5-8 Non-Int	250.0 Secs X 2 [==>(Copy 1)] [==>(Copy 2)]	[2]
	6	F475W, 15 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 5-8 Non-Int	15.0 Secs [==>]	[2]
	7	F330W, 235 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 7-8 (1)	235.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[2]
	8	CLEAR, 2 x 250 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 5-8 Non-Int Pattern 7-8 (1)	250.0 Secs X 2 [==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)]	[2]
	9	CLEAR, 2 x 250 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 9-13 Non-Int	250.0 Secs X 2 [==>(Copy 1)] [==>(Copy 2)]	[3]
	10	F606W, 10 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 9-13 Non-Int	10.0 Secs [==>]	[3]
	11	F606W, 100 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 9-13 Non-Int Pattern 11-13 (1)	100.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[3]
	12	F814W, 75 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F814W	CR-SPLIT=NO		Sequence 9-13 Non-Int Pattern 11-13 (1)	75.0 Secs [==>(Pattern 1)] [==>(Pattern 2)]	[3]
	13	CLEAR, 2 x 250 sec	(2) URANUS-NO-M OONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	CLEAR	CR-SPLIT=NO		Sequence 9-13 Non-Int Pattern 11-13 (1)	250.0 Secs X 2 [==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)]	[3]







Proposal 10473 - Visit 35 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Visit	Proposal 10473, Visit 35										Thu Jul 07 01:02:03 GMT 2005	
	Diagnostic Status: No Diagnostics											
	Scientific Instruments: ACS/HRC											
	Special Requirements: SCHED 100%; ORIENT 247.0D TO 253.0 D; BETWEEN 15-JUN-2006:00:00:00 AND 22-JUN-2006:00:00:00											
	Comments: Uranian rings after solar conjunction, with phase angle near maximum of 2.8 degrees. Rings open to Earth by only 2.9 degrees. Rings oriented parallel to the HRC x-axis.											
Patterns	#	Primary Pattern				Secondary Pattern				Exposures		
	(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)		
Solar System Targets	#	Name	Level 1	Level 2	Level 3	Window						
	(2)	URANUS-NO-MOONS-NEARBY	STD=URANUS				NOT OLG OF ARIEL BETWEEN 0.0 27.4, NOT OLG OF ARIEL BETWEEN 155.3 204.7, NOT OLG OF ARIEL BETWEEN 335.3 360.0, NOT OLG OF UMBRIEL BETWEEN 0.0 19.4, NOT OLG OF UMBRIEL BETWEEN 160.6 199.4, NOT OLG OF UMBRIEL BETWEEN 340.6 360.0, NOT OLG OF TITANIA BETWEEN 0.0 11.7, NOT OLG OF TITANIA BETWEEN 168.3 191.7, NOT OLG OF TITANIA BETWEEN 348.3 360.0, NOT OLG OF OBERON BETWEEN 0.0 8.7, NOT OLG OF OBERON BETWEEN 171.3 188.7, NOT OLG OF OBERON BETWEEN 351.3 360.0					
	Comments: Ariel, Umbriel, Titania and Oberon are required to be more than 88,000 km from the center of Uranus in projected distance along the ring ansa. This guarantees that any vertical diffraction spike falls beyond the orbit of Puck.											
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit		
	1	CLEAR, 24 0 sec	(2) 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	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F475W	CR-SPLIT=NO		Sequence 1-8 Non-Int	15.0 Secs			
									[==>]	[1]		
	3	F606W, 10 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F606W	CR-SPLIT=NO		Sequence 1-8 Non-Int	10.0 Secs			
								[==>]	[1]			
	4	F330W, 195 sec	(2) URANUS-NO-MOONS-NEARBY	ACS/HRC, ACCUM, HRC-FIX	F330W	CR-SPLIT=NO		Sequence 1-8 Non-Int	195.0 Secs			
									[==>]	[1]		

Proposal 10473 - Visit 35 - Rings of Uranus: Dynamics, Particle Properties and Shepherding Moons

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	5	F475W, 130 sec	(2) 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	(2) 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	(2) 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	(2) 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]
Orbit 1 Server Version: 20050502										