

Cycle: 30, Proposal Category: GO (Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
01	(1) URANUS	WFC3/UVIS	1	22-Oct-2022 12:00:20.0	yes
02	(1) URANUS	WFC3/UVIS	1	22-Oct-2022 12:00:21.0	yes
03	(1) URANUS	WFC3/UVIS	1	22-Oct-2022 12:00:23.0	yes
04	(1) URANUS	WFC3/UVIS	1	22-Oct-2022 12:00:24.0	yes
05	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:25.0	yes
06	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:27.0	yes
07	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:28.0	yes

Proposal 17187 (STScI Edit Number: 2, Created: Saturday, October 22, 2022 at 11:00:36 AM Eastern Standard Time) - Overview

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used		OP Current with Visit?
08	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:29.0	yes
09	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:31.0	yes
10	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:32.0	yes
11	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:34.0	yes
12	(2) NEPTUNE	WFC3/UVIS	1	22-Oct-2022 12:00:35.0	yes

12 Total Orbits Used

ABSTRACT

The JWST will provide exceptional near- and mid-infrared spectral coverage of the Ice Giants via guaranteed time observations in Cycle 1 (Programs 1248 and 1249), capturing new, critical information on their atmospheric temperatures, their chemical structures, and the flow of energy between their cloud-forming weather layer and their middle and upper atmospheres. However, the JWST data cannot be interpreted reliably without context. JWST observations provide only brief snapshots of these two highly dynamic worlds, requiring temporal context to understand how the atmospheres have varied with time, and spatial context to understand the distribution of meteorological features during the JWST observations. The HST campaign offers a critical extension of spectral coverage into the visible that will be capable of detecting important features like dark spots and their bright cloud companions. HST is the only facility capable of the high-resolution at visible- specifically blue- wavelengths. We therefore propose a HST GO campaign using the WFC3 instrument in UVIS observing mode to provide complementary, comparative, and synergistic science alongside the JWST Cycle 1 Guaranteed-Time Observations (GTO) of these distant, cold, and exceptional worlds. From a strategic perspective, as the international planetary community looks ahead to future NASA and ESA missions to the ice giants, this combined Hubble and JWST campaign will pave the way for more robust understanding of these distant worlds.

OBSERVING DESCRIPTION

Four orbits for each visit for each planet. To match the JWST observing windows that occur in Cycle 30, we request 1 visit for Uranus and 2 for Neptune, totaling 12 orbits. With 16 to 17-hr rotation periods, each orbit should be separated by ~4 hours to give global coverage.

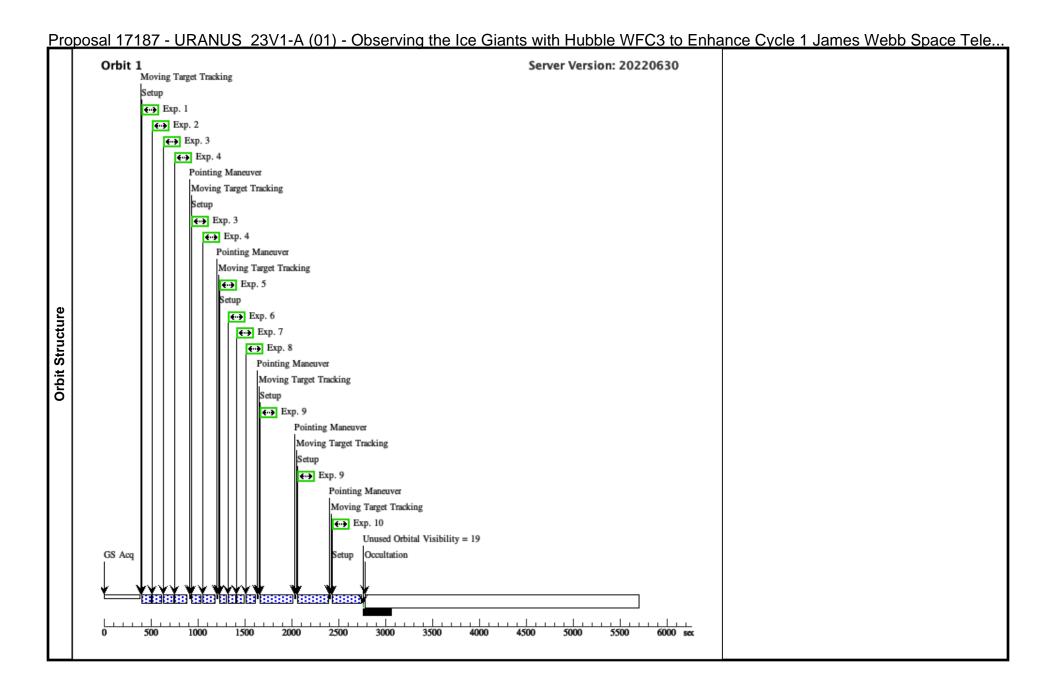
The filters were chosen to match these objectives and fit within an orbit. As Uranus and Neptune are small targets, we can use subarrays to minimize the readout time and maximize the number of images. We will exclusively use the C512C subarray, which also minimizes charge transfer losses due

Proposal 17187 (STScI Edit Number: 2, Created: Saturday, October 22, 2022 at 11:00:36 AM Eastern Standard Time) - Overview to its proximity to the readout amplifiers. Additionally, these are faint targets and will be dominated by pixel instability, so we will dither the observations to lessen this effect.

Proposal 17187 - URANUS 23V1-A (01) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele. Proposal 17187, URANUS_23V1-A (01), implementation **Diagnostic Status: Warning** Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 22-DEC-2022 AND 08-FEB-2023 Comments: Uranus in window 22-DEC-2022 to 08-FEB-2023 as close as possible to the JWST observations in program 1248. 4 orbits. Visit 4 after visit 1 by between 9 and 11 orbits. All visits spaced out as evenly as possible within the 17 hour 14 minute Uranian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1orbit gaps are too close. Impingement into SAA is OK if the above timing gaps cannot prevent it. We can tolerate gyro bias updates to ease the contiguous orbit constraints, and will work with our program contacts to fit them in. 3-gyro mode may be necessary as this is a moving target. (F763M (01.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (01.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657N (01.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F487N (01.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (01.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser Diagnostic (F547M (01.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (01.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (01.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N_quadD (01.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N_quadD (01.009)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another (FO619N quadA (01.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FO619N quadA (01.010)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant. **Primary Pattern Secondary Pattern** Exposures (1) (3-4)Pattern Type=WFC3-UVIS-DITHER-Coordinate Frame=POS-TARG LINE Pattern Orientation=46.84 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false **Patterns** Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-Coordinate Frame=POS-TARG (9) (2)LINE Pattern Orientation=46.84 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=0.725 Line Spacing= **System Targets** Name Level 1 Level 2 Level 3 Window **Ephem Center URANUS** STD=URANUS **EARTH** Comments: Description=PLANET URANUS Solar

Proposal 17187 - URANUS 23V1-A (01) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele...

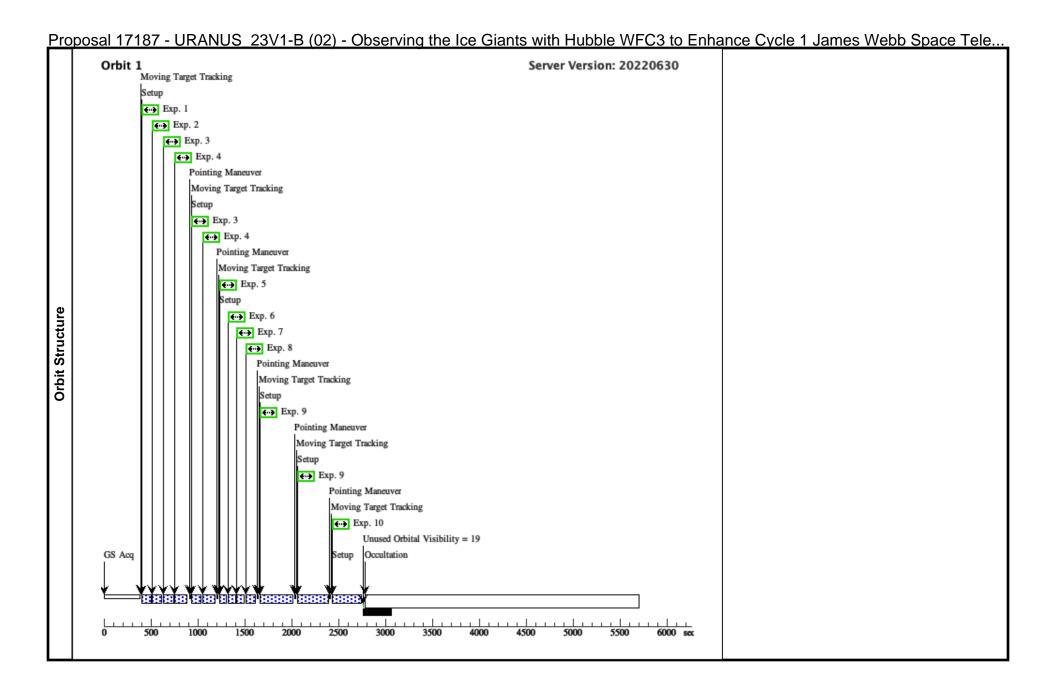
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	25 Secs (25 Secs) [==>]	[1]
2	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	35 Secs (35 Secs) <i>[==>]</i>	[1]
3	F657N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-A (01) (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
4 6 5	F487N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-A (01) (1)	60 Secs (120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
	F467M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	14 Secs (14 Secs) [==>]	[1]
6	F547M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	6 Secs (6 Secs) [==>]	[1]
7	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	25 Secs (25 Secs) [==>]	[1]
8	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-A (01)	35 Secs (35 Secs) [==>]	[1]
9	FQ727N_qu adD	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -24,+28	Sequence 1-10 Non-I nt in URANUS_23V 1-A (01) Pattern 2, Exps 9-9 i n Sequence 1-10 No n-Int in URANUS_2 3V1-A (01) (2)	160 Secs (320 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	FQ619N_qu adA	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +19,-23	· · · · · · ·	144 Secs (144 Secs) <i>I</i> ==> <i>I</i>	[1]



Proposal 17187 - URANUS 23V1-B (02) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele. Proposal 17187, URANUS_23V1-B (02), implementation **Diagnostic Status: Warning** Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01 BY 1.9 Orbits TO 3.1 Orbits; BETWEEN 22-DEC-2022 AND 08-FEB-2023 Comments: Uranus in window 22-DEC-2022 to 08-FEB-2023 as close as possible to the JWST observations in program 1248. 4 orbits. Visit 4 after visit 1 by between 9 and 11 orbits. All visits spaced out as evenly as possible within the 17 hour 14 minute Uranian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1orbit gaps are too close. Impingement into SAA is OK if the above timing gaps cannot prevent it. We can tolerate gyro bias updates to ease the contiguous orbit constraints, and will work with our program contacts to fit them in. 3-gyro mode may be necessary as this is a moving target. (F763M (02.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (02.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657N (02.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F487N (02.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F467M (02.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser Diagnostic (F547M (02.006)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F763M (02.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (02.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N_quadD (02.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FQ727N_quadD (02.009)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another (FO619N quadA (02.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (FO619N quadA (02.010)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant. **Primary Pattern Secondary Pattern** Exposures (1) (3-4)Pattern Type=WFC3-UVIS-DITHER-Coordinate Frame=POS-TARG LINE Pattern Orientation=46.84 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false **Patterns** Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-Coordinate Frame=POS-TARG (9) (2)LINE Pattern Orientation=46.84 Purpose=DITHER Angle Between Sides= Number Of Points=2 Center Pattern=false Point Spacing=0.725 Line Spacing= **System Targets** Name Level 1 Level 2 Level 3 Window **Ephem Center URANUS** STD=URANUS **EARTH** Comments: Description=PLANET URANUS Solar

Proposal 17187 - URANUS 23V1-B (02) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele...

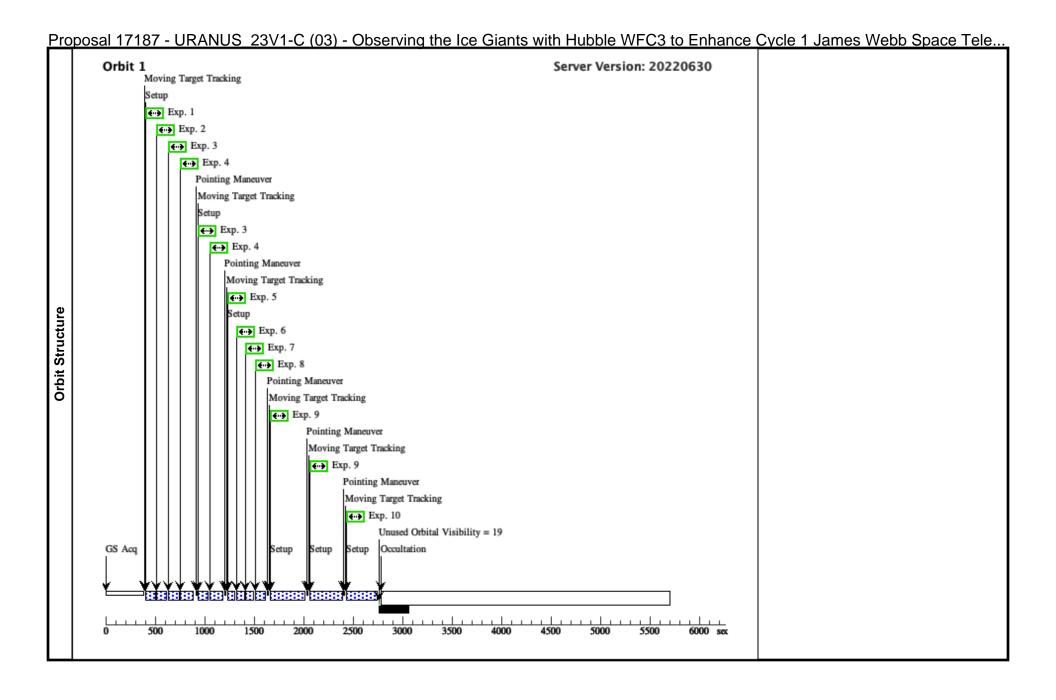
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	25 Secs (25 Secs) [==>]	[1]
2	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	35 Secs (35 Secs) <i>I</i> ==> <i>I</i>	[1]
3	F657N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-B (02) (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
4	F487N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-B (02) (1)	60 Secs (120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
5	F467M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	14 Secs (14 Secs) [==>]	[1]
6	F547M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	6 Secs (6 Secs) [==>]	[1]
7	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	25 Secs (25 Secs) [==>]	[1]
8	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	35 Secs (35 Secs) [==>]	[1]
9	FQ727N_qu adD	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -24,+28	Sequence 1-10 Non-I nt in URANUS_23V 1-B (02) Pattern 2, Exps 9-9 i n Sequence 1-10 No n-Int in URANUS_2 3V1-B (02) (2)	160 Secs (320 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	FQ619N_qu adA	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +19,-23	Sequence 1-10 Non-I nt in URANUS_23V 1-B (02)	144 Secs (144 Secs) [==>]	[1]



Pro	posal 1	7187 - URANUS 23V1-0	C (03) - Observing the Ice	Giants with Hubble WFC3	<u>to Enhance Cycle 1 Jan</u>	nes Webb Space Tele
	Proposal 17	7187, URANUS_23V1-C (03), impleme	entation			Sat Oct 22 16:00:36 GMT 2022
	Diagnostic	Status: Warning				
	Scientific In	nstruments: WFC3/UVIS				
٦,		•	O 3.1 Orbits; BETWEEN 22-DEC-2022			
Visit	Comments:	Uranus in window 22-DEC-2022 to 08-1	FEB-2023 as close as possible to the JWST	T observations in program 1248.		
[sit 4 after visit 1 by between 9 and 11 orb ire too close.	its. All visits spaced out as evenly as poss	ible within the 17 hour 14 minute Uranian da	y, with ideally 2- or 3-orbit gaps betwe	en them (ideal spacing is 4 hours). 1-
	Impingemen	nt into SAA is OK if the above timing gap	s cannot prevent it. We can tolerate gyro	bias updates to ease the contiguous orbit con	straints, and will work with our progra	m contacts to fit them in.
		e may be necessary as this is a moving to				
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Diagnostics			-	subexposure. See extended explanation in the	•	
<u>a</u> j.		• • • • • • • • • • • • • • • • • • • •	•	subexposure. See extended explanation in the	•	
_	_		-	or a short subexposure. See extended explanation of the state of the s		11.63
	(FQ/2/N_q quadrant.	quadD (03.009)) Warning (Form): POS T	ARG & PATTERN should be used carefu	ally with WFC3 quad filters to avoid placing t	he target on the vignetted part of the fig	eld of view or moving it to another
	1	quadA (03.010)) Warning (Form): FLAS	H level may be too low for this exposure o	or a short subexposure. See extended explana	tion in the diagnostic browser	
	_			ally with WFC3 quad filters to avoid placing t	_	eld of view or moving it to another
_	quadrant.	D: D:44		g		P
	(1)	Primary Pattern Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary Pattern		Exposures (3-4)
	(1)	LINE	Pattern Orientation=46.84			(3-4)
		Purpose=DITHER	Angle Between Sides=			
۱ "		Number Of Points=2	Center Pattern=false			
ΙË		Point Spacing=0.145	Center I attern—raise			
Patterns		Line Spacing=				
Pa	(2)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG			(9)
		LINE Purpose=DITHER	Pattern Orientation=46.84			
		Number Of Points=2	Angle Between Sides=			
		Point Spacing=0.725	Center Pattern=false			
		Line Spacing=				
s	# N	lame Level 1	Level 2	Level 3	Window	Ephem Center
je	(1) U	URANUS STD=URANUS	Ecver 2	Devel 6	William W	EARTH
ar.	Comments:	Description=PLANET URANUS				23.2002.2
Solar System Targets		^				
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Proposal 17187 - URANUS 23V1-C (03) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele...

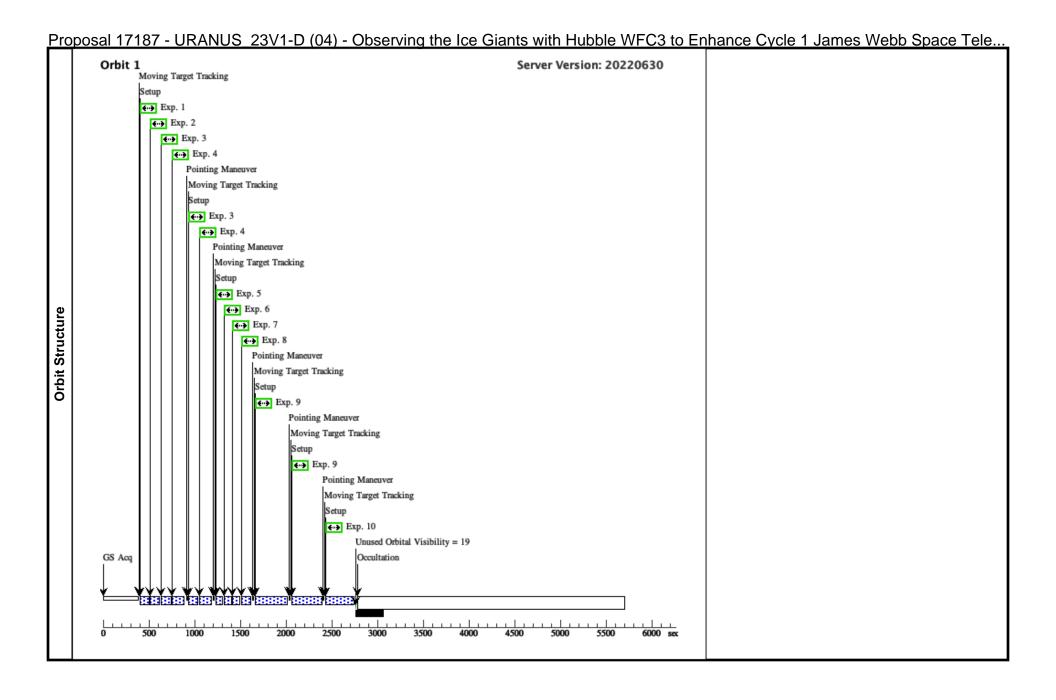
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V	25 Secs (25 Secs) I = > 1	
							1-C (03)	[==>]	[1]
2	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V		
			U VIS2-M312C-SUB				1-C (03)	[==>]	[1]
3	F657N	(1) URANUS	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	40 Secs (80 Secs)	
			UVIS2-M512C-SUB				nt in URANUS_23V 1-C (03)	[==>(Pattern 1)]	
							Pattern 1, Exps 3-4 i	[==>(Pattern 2)]	[1]
							n Sequence 1-10 No n-Int in URANUS_2		[1]
							3V1-C (03) (1)		
4	F487N	(1) URANUS	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in URANUS_23V 1-C (03)	$[==>(Pattern\ 1)]$	
							Pattern 1, Exps 3-4 i	[==>(Pattern 2)]	
S							n Sequence 1-10 No n-Int in URANUS 2		[1]
ת בי							3V1-C (03) (1)		
SO 5	F467M	(1) URANUS	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I	14 Secs (14 Secs)	
Exposures 5			UVIS2-M512C-SUB				nt in URANUS_23V 1-C (03)	[==>]	[1]
6	F547M	(1) URANUS	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
			UVIS2-M512C-SUB				nt in URANUS_23V 1-C (03)	[==>]	[1]
7	F763M	(1) URANUS	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	25 Secs (25 Secs)	
			UVIS2-M512C-SUB				nt in URANUS_23V 1-C (03)	[==>]	[1]
8	F845M	(1) URANUS	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I	35 Secs. (35 Secs.)	
	10.01.1	(1) 614 11 (65	UVIS2-M512C-SUB	10.01.1	CR DI EII 110		nt in URANUS_23V	[==>1	[1]
9	FO727N av	ı (1) URANUS	WFC3/UVIS, ACCUM,	F0727N	CR-SPLIT=NO	POS TARG -24,+28	1-C (03) Sequence 1-10 Non-I	160 Secs (320 Secs)	[1]
,	adD	(I) OKANOS	UVIS-QUAD-SUB	1.Q/2/11	CK-SI LII=NO	105 TARG -24,+26	nt in URANUS_23V	[==>(Pattern 1)]	
							1-C (03)	[==>(Pattern 2)]	
							Pattern 2, Exps 9-9 i n Sequence 1-10 No	[>(1 anem 2)]	[1]
							n-Int in URANUS_2		
1.0	EO610N	(1) LID ANILIE	WEC2/LIVIE ACCUM	E0610N	CR-SPLIT=NO	DOCTADO 110 22	3V1-C (03) (2)	144 Sags (144 Sags)	
10	adA	ı (1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CK-SPLIT=NU	POS TARG +19,-23	nt in URANUS_23V	144 Secs (144 Secs) I ==> I	647
			-				1-C (03)	[>]	[1]



Pro	posal 1	<u> 7187 - URANUS 23V1-I</u>	0 (04) - Observing the Ice	Giants with Hubble WFC3	<u>to Enhance Cycle 1 Jan</u>	nes Webb Space Tele
	Proposal 17	7187, URANUS_23V1-D (04), impleme	entation			Sat Oct 22 16:00:36 GMT 2022
	Diagnostic	Status: Warning				
	Scientific In	nstruments: WFC3/UVIS				
٦,		•	O 3.1 Orbits; BETWEEN 22-DEC-2022			
Visit	Comments:	Uranus in window 22-DEC-2022 to 08-1	FEB-2023 as close as possible to the JWST	Tobservations in program 1248.		
		sit 4 after visit 1 by between 9 and 11 orb tre too close.	its. All visits spaced out as evenly as poss	ible within the 17 hour 14 minute Uranian da	y, with ideally 2- or 3-orbit gaps betwe	en them (ideal spacing is 4 hours). 1-
	Impingemen	nt into SAA is OK if the above timing gap	s cannot prevent it. We can tolerate gyro	bias updates to ease the contiguous orbit con	straints, and will work with our progra	m contacts to fit them in.
		e may be necessary as this is a moving to				
				subexposure. See extended explanation in the	=	
				subexposure. See extended explanation in the	=	
			-	subexposure. See extended explanation in the	=	
۱.,			-	subexposure. See extended explanation in the	=	
Diagnostics		_	-	subexposure. See extended explanation in the	_	
St			-	subexposure. See extended explanation in the	•	
١Ĕ			-	subexposure. See extended explanation in the	•	
<u>a</u> j.			•	subexposure. See extended explanation in the	•	
_	_	·	-	or a short subexposure. See extended explana		11.63
	(FQ/2/N_q quadrant.	[uadD (04.009)) Warning (Form): POS I	ARG & PATTERN should be used carefu	ally with WFC3 quad filters to avoid placing t	he target on the vignetted part of the fig	eld of view or moving it to another
	(FQ619N_q	uadA (04.010)) Warning (Form): FLAS	H level may be too low for this exposure o	or a short subexposure. See extended explana	tion in the diagnostic browser	
	_	·	-	illy with WFC3 quad filters to avoid placing t		eld of view or moving it to another
_	quadrant.	D		G 1 D		F
	(1)	Primary Pattern Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary Pattern		Exposures (3-4)
	(1)	LINE	Pattern Orientation=46.84			(3-4)
		Purpose=DITHER	Angle Between Sides=			
۸ ا		Number Of Points=2	Center Pattern=false			
ΙË		Point Spacing=0.145	Center I attern—raise			
Patterns		Line Spacing=				
Pa	(2)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG			(9)
		LINE	Pattern Orientation=46.84			
		Purpose=DITHER Number Of Points=2	Angle Between Sides=			
			Center Pattern=false			
		Point Spacing=0.725 Line Spacing=				
s	# N	Tame Level 1	Level 2	Level 3	Window	Ephem Center
ğ	(1) U	IRANUS STD=URANUS	Ecvel 2	Level 3	Williadw	EARTH
arç	Comments:	Description=PLANET URANUS				2711111
Solar System Targets		,				
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Proposal 17187 - URANUS 23V1-D (04) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tele...

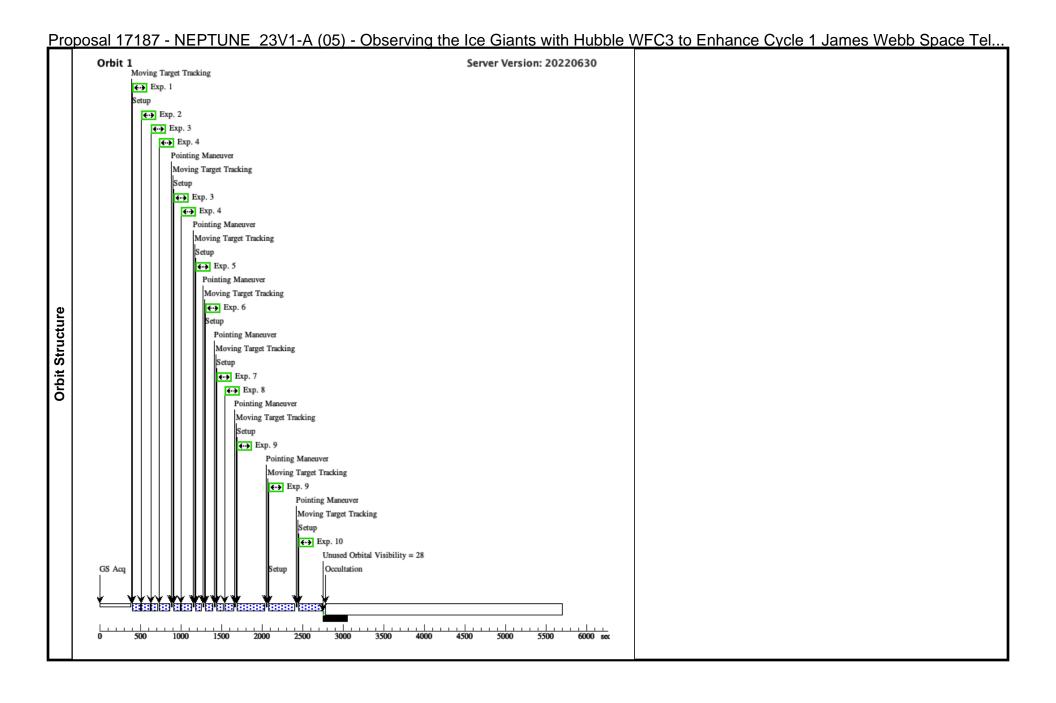
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	25 Secs (25 Secs) [==>]	[1]
2	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	35 Secs (35 Secs) [==>]	[1]
3	F657N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-D (04) (1)	40 Secs (80 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
4	F487N	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in URANUS_2 3V1-D (04) (1)	60 Secs (120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
5	F467M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	14 Secs (14 Secs) [==>]	[1]
6	F547M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	6 Secs (6 Secs) [==>]	[1]
7	F763M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	25 Secs (25 Secs) [==>]	[1]
8	F845M	(1) URANUS	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	35 Secs (35 Secs) [==>]	[1]
9	FQ727N_qu adD	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -24,+28	Sequence 1-10 Non-I nt in URANUS_23V 1-D (04) Pattern 2, Exps 9-9 i n Sequence 1-10 No n-Int in URANUS_2 3V1-D (04) (2)	160 Secs (320 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	FQ619N_qu adA	(1) URANUS	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +19,-23	Sequence 1-10 Non-I nt in URANUS_23V 1-D (04)	144 Secs (144 Secs) [==>]	[1]



<u>Pro</u>	posal 1	<u> 7187 - NEPTUNE 23V1-</u>	A (05) - Observing the Ice	e Giants with Hubble WFC3 to	<u>Enhance Cycle 1 Ja</u>	<u>imes Webb Space Tel</u>
	Proposal 17	7187, NEPTUNE_23V1-A (05), implem	entation			Sat Oct 22 16:00:36 GMT 2022
	Diagnostic S	Status: Warning				
	Scientific In	struments: WFC3/UVIS				
ų.	Special Req	uirements: BETWEEN 01-JAN-2023:00:	00:00 AND 15-FEB-2023:00:00:00			
Visit	Comments: 2022 OPAL	Neptune in first window 01-NOV-2022 to Neptune and window 2 in 2023).	19-DEC-2022 (very flexible due to JWST	observations not being sceduled in this window,	just needs to be separated in time	as much as possible from both the
		it 4 after visit 1 by between 9 and 11 orbi re too close.	its. All visits spaced out as evenly as possi	ble within the 16 hour 6 minute Neptunian day, w	rith ideally 2- or 3-orbit gaps betw	een them (ideal spacing is 4 hours). 1-
		nt into SAA is OK if the above timing gaps cssary as this is a moving target.	s cannot prevent it. We can tolerate gyro b	ias updates to ease the contiguous orbit constrain	nts, and will work with our progra	m contacts to fit them in. 3-gyro mode
	(F763M (05	.001)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the dia	gnostic browser	
			•	subexposure. See extended explanation in the dia	•	
				subexposure. See extended explanation in the diag	=	
			·	ubexposure. See extended explanation in the diag		
CS			•	subexposure. See extended explanation in the diag	•	
Sti			·	ubexposure. See extended explanation in the diag		
<u>n</u>		•	•	subexposure. See extended explanation in the dia	~	
Diagnostics			•	subexposure. See extended explanation in the dia	•	
	_	=		r a short subexposure. See extended explanation		
	(FQ727N_q quadrant.	uadD (05.009)) Warning (Form): POS TA	ARG & PATTERN should be used careful	lly with WFC3 quad filters to avoid placing the ta	arget on the vignetted part of the fi	eld of view or moving it to another
		uadA (05.010)) Warning (Form): FLASH	I level may be too low for this exposure or	r a short subexposure. See extended explanation	in the diagnostic browser	
	_	=		lly with WFC3 quad filters to avoid placing the ta		eld of view or moving it to another
	quadrant.			1		-
	#	Primary Pattern		Secondary Pattern		Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-LINE	Coordinate Frame=POS-TARG			(3-4)
		Purpose=DITHER	Pattern Orientation=46.84			
		Number Of Points=2	Angle Between Sides=			
su.		Point Spacing=0.145	Center Pattern=false			
ţe		Line Spacing=				
Patterns	(2)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG			(9)
		LINE	Pattern Orientation=46.84			
		Purpose=DITHER	Angle Between Sides=			
		Number Of Points=2 Point Spacing=0.725	Center Pattern=false			
		Line Spacing=				
ets	# N	ame Level 1	Level 2	Level 3	Window	Ephem Center
get		EPTUNE STD=NEPTUNE				EARTH
ā		Description=PLANET NEPTUNE				
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Solar System Targ						

Proposal 17187 - NEPTUNE 23V1-A (05) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

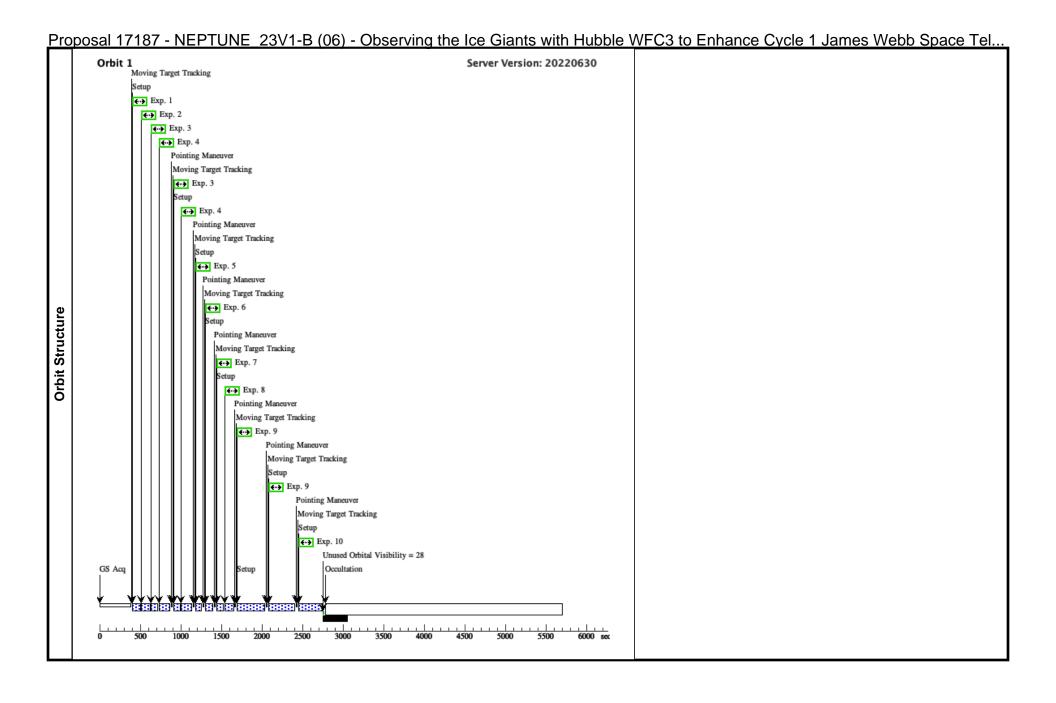
#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-A (05)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-A (05)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO			15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-A (05)	$[==>(Pattern\ 1)]$	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V1-A (05) (1)		
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-A (05)	$[==>(Pattern\ 1)]$	
							Pattern 1, Exps 3-4 i	$[==>(Pattern\ 2)]$	
တ္သ							n Sequence 1-10 No		[1]
a l							n-Int in NEPTUNE_ 23V1-A (05) (1)		
Exposures 5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
ᅉ			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-A (05)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
			UVIS2-C512C-SUB				nt in NEPTUNE_23 V1-A (05)	[==>]	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs. (20 Secs.)	
ľ	1,00111	(2) 1.21 101.2	UVIS2-M512C-SUB	1,00111	on brain in		nt in NEPTUNE_23	[==>1	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO		V1-A (05) Sequence 1-10 Non-I		[1]
0	F643WI	(2) NEPTUNE	UVIS2-M512C-SUB	F643WI	CR-SPLIT=NO		nt in NEPTUNE_23	$\int_{-\infty}^{\infty} 40 \operatorname{Secs} ^{2}$	
_							V1-A (05)		[1]
9	FQ727N_qu adD	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -25,+28	Sequence 1-10 Non-I nt in NEPTUNE 23	,	
	adD		evis gene ses				V1-A (05)	$[==>(Pattern\ 1)]$	
							Pattern 2, Exps 9-9 i	$[==>(Pattern\ 2)]$	[1]
							n Sequence 1-10 No n-Int in NEPTUNE		[1]
							23V1-A (05) (2)		
10		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24		120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB				nt in NEPTUNE_23 V1-A (05)	[==>]	[1]



Proposed 17/87, NEPTUNE, 23V-18-00, implementation Sat Oct 22 16:00-16 GMT 3022	<u>Prc</u>	posal 1	<u>7187 - NEPTUNE 23V1-</u>	B (06) - Observing the Ic	<u>e Giants with Hubble WFC</u>	<u> 3 to Enhance Cycle 1 Ja</u>	<u>mes Webb Space Tel</u>				
Special Requirements: AFTER 05 BY 1.9 Orbits TO 3.1 Orbits; BETWEEN 01-JAN-2023.00.00.00 AND 15-FEB-2023.00.00.00 Special Requirements: AFTER 05 BY 1.9 Orbits TO 3.1 Orbits; BETWEEN 01-JAN-2023.00.00.00 AND 15-FEB-2023.00.00.00 Comments: Neptune in first window 01-NOV-2022 to 19-DEC-2022 (very flexible due to JWST observations not being seedaled in this window, just needs to be separated in time as much as possible from both the 2022 (PML Neptune and window 2 in 2023). A orbits: Visit of the visit is the whereove 0 and 11 orbits. All visits spaced out as evenly as possible within the 16 hour 6 minute Neptunian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1-orbit gaps are too close. Indigenous into SAA is OK if the above timing sups cannot prevent it. We can tolerate gare bias updates to ease the configuous orbit constraints, and will work with our program contacts to fit them in: 3-gyro mode now he necessary as this is a morning terees. Indigenous into SAA is OK if the above timing sups cannot prevent it. We can tolerate gare bias updates to ease the configuous orbit constraints, and will work with our program contacts to fit them in: 3-gyro mode now he necessary as this is an oring teree. Indigenous into SAA is OK if the above timing sups cannot prevent it. We can tolerate gare bias updates to ease the configuous orbit constraints, and will work with our program contacts to fit them in: 3-gyro mode now he necessary as this is an oring teree. Indigenous into SAA is OK if the above intiming sups cannot prevent it. We can tolerate gare bias updates to ease the configuous orbit constraints, and will work with our program contacts to fit them in: 3-gyro mode now he necessary as this is an oring tereor to close. Indigenous interest in the diagnostic browser (F453M (06.002)) Warning (Form): ELASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F673M (06.003)) Warning (Form): ELASH level may be too low for this		Proposal 17	7187, NEPTUNE_23V1-B (06), implem	entation			Sat Oct 22 16:00:36 GMT 2022				
Security Requirements AFTER 05 BY 19 Orbits TO 3.1 Orbits BETWEEN 01.3AN-2023/000.000 AND 15-FEB-2023.000.000 Comments: Neptome in first window 01.80V-2022 to 19-DEC-2022 (very flexible due to 1983 observations not being seeduled in this window, just needs to be separated in time as much as possible from both the 2022 074x1. Neptome and window? 2n 2023). 4 orbits: Visit 4 ofter visit 1 by between 9 and 11 orbits. All visits spaced out as evenly as possible within the 16 hour 6 minute Neptomian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1-orbit gaps to close. Improprement into SAA is 0K if the above inlining gaps cannot prevent it. We can tolerate gyro bias updates to ease the contiguous orbit constraints, and will work with our program contacts to fit them in. 3-gyro mode on the constraints of the above inlining space cannot prevent it. We can tolerate gyro bias updates to ease the contiguous orbit constraints, and will work with our program contacts to fit them in. 3-gyro mode on the constraints of the constraints of the diagnostic browser (F457M (06.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form):		Diagnostic S	Status: Warning								
weeks. Negtone: in first window 01-MOV-2022 to 19-DEC-2022 (very flexible due to JWST observations not being seeduled in this window, just needs to be separated in time as much as possible from both the 2022 OPAR. Neptone and window 2 in 2023; 4 orbits. Visit 4 after visit 1 by between 9 and 11 orbits. All visits spaced out as evenly as possible within the 16 hour 6 minute Neptonian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1-orbit gaps are too close. (P653M (6000)) Warning from): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (60.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (60.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (60.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657M (60.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657M (60.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657M (60.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F6727PA, quad) (60.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F6727PA, quad) (60.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F6727PA, quad) (60.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browse		Scientific In	struments: WFC3/UVIS								
4 orbits. Visit 4 after visit 1 by between 9 and 11 orbits. All visits spaced out as evenly as possible within the 16 hour 6 minute Neptunian day, with ideally 2- or 3-orbit gaps between them (ideal spacing is 4 hours). 1-orbit gaps are too closes. (P645M (06.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F657M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F077N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F077N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F079N_quadA (06.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F069N_quadA (06.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F069N_quadA (06.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F069N_quadA (06.010)) Warning (Form): FLASH level may be too low for this exposure		Special Req	uirements: AFTER 05 BY 1.9 Orbits To	O 3.1 Orbits; BETWEEN 01-JAN-2023:	00:00:00 AND 15-FEB-2023:00:00:00						
Impingement into SAA is OK if the above timing gaps cannot prevent it. We can tolerate gyro bias updates to ease the contiguous orbit constraints, and will work with our program contacts to fit them in. 3-gyro mode may be necessary as this is a moving target. (P753M (06.001)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F457M (06.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F57M (06.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F57M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F75M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F75M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F7072TN, quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F7072TN, quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F7072TN, quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F7072TN, quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F7072TN, quadD (06.009)) Warning (F7072TN, quadD (06.009)) Warning (F	Visit			o 19-DEC-2022 (very flexible due to JWS)	T observations not being sceduled in this win	ndow, just needs to be separated in time	as much as possible from both the				
Pattern Patt				its. All visits spaced out as evenly as poss	rible within the 16 hour 6 minute Neptunian	day, with ideally 2- or 3-orbit gaps betw	een them (ideal spacing is 4 hours). 1-				
(F845M (06.002)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F847M (06.003)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F847M (06.004)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F847M (06.005)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (06.007)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (06.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (06.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F845M (06.008)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.009)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser (F0727N_quadD (06.0010				s cannot prevent it. We can tolerate gyro	bias updates to ease the contiguous orbit co	nstraints, and will work with our progra	m contacts to fit them in. 3-gyro mode				
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Point Spacing=0.725 Line Spacing=			-	Angle Between Sides=							
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# Name Level 1 Level 2 Level 5 Window Epinein Center (2) NEPTUNE STD=NEPTUNE Comments: Description=PLANET NEPTUNE EARTH	G	# N		Lovel 2	Lovel 2	Window	Enham Cantan				
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Proposal 17187 - NEPTUNE 23V1-B (06) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

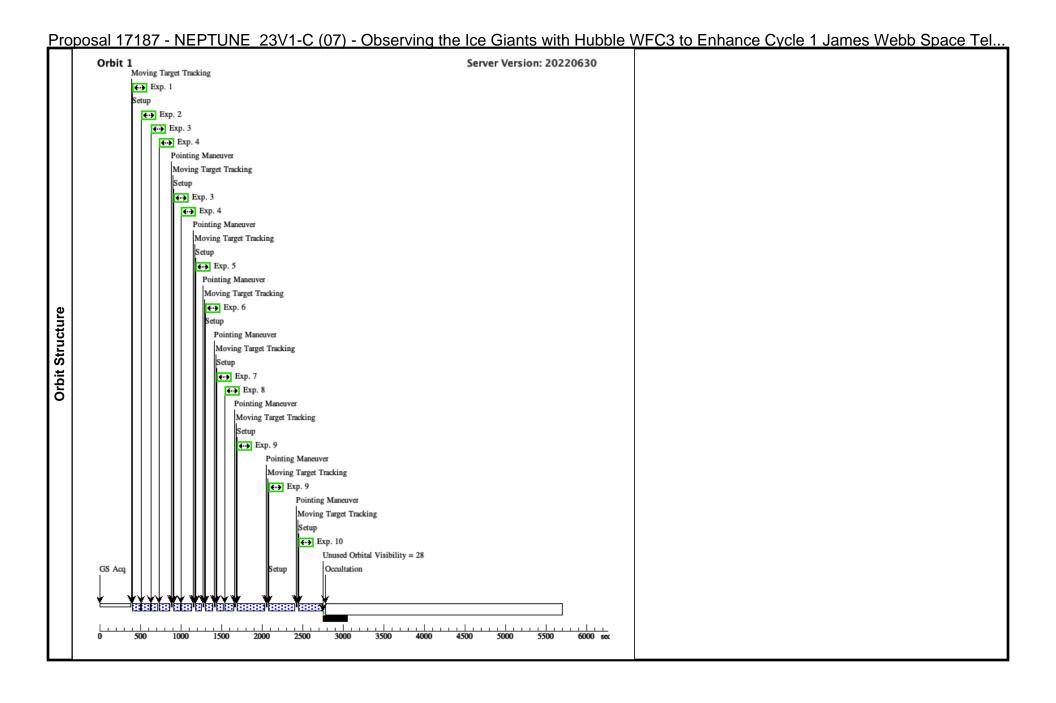
#	#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	[==>]	[1]
2	2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
L				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	[==>]	[1]
3	3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO			15 Secs (30 Secs)	
				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	$[==>(Pattern\ 1)]$	
								Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
								n Sequence 1-10 No		[1]
								n-Int in NEPTUNE_ 23V1-B (06) (1)		
4	4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	$[==>(Pattern\ 1)]$	
								Pattern 1, Exps 3-4 i	$[==>(Pattern\ 2)]$	
S								n Sequence 1-10 No		[1]
n L								n-Int in NEPTUNE_ 23V1-B (06) (1)		
SO	5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
Exposures				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	[==>]	[1]
	6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
				UVIS2-C512C-SUB				nt in NEPTUNE_23 V1-B (06)	[==>]	[1]
7	7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
				UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-B (06)	[==>]	[1]
5	8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
ľ		10.01.1	(2) 1 (21 101 (2	UVIS2-M512C-SUB	10.011	on brain in		nt in NEPTUNE_23	[==>1	[1]
	9	FO727N au	(2) NEPTUNE	WFC3/UVIS. ACCUM.	FO727N	CR-SPLIT=NO	POS TARG -25.+28	V1-B (06) Sequence 1-10 Non-I		[1]
	,	adD	(2) NEI TONE	UVIS-QUAD-SUB	1 Q/2/11	CK-SI EII = NO	105 TARG -25,126	nt in NEPTUNE_23	I = > (Pattern 1)1	
								V1-B (06)	[==>(Pattern 2)]	
								Pattern 2, Exps 9-9 i n Sequence 1-10 No	[>(1 anem 2)]	[1]
								n-Int in NEPTUNE_		
H	10	FOCION	(A) MEDELDIE	WEGGINIG A COURT	FOCION	CD CDI III NO	DOGELDG CO CL	23V1-B (06) (2)	120.5 (120.5)	
	10	FQ619N_qu adA	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-I nt in NEPTUNE 23	` ′	+
								V1-B (06)	[==>]	[1]



<u>Pro</u>	oposal 1	7187 - NEPTUNE 23V1-	-C (07) - Observing the Ice	e Giants with Hubble WFC3	to Enhance Cycle 1 Ja	ames Webb Space Tel				
	Proposal 17	7187, NEPTUNE_23V1-C (07), implem	entation			Sat Oct 22 16:00:36 GMT 2022				
	Diagnostic	Status: Warning								
	Scientific In	nstruments: WFC3/UVIS								
ـ ا	Special Req	uirements: AFTER 06 BY 1.9 Orbits TO	O 3.1 Orbits; BETWEEN 01-JAN-2023:0	00:00:00 AND 15-FEB-2023:00:00:00						
Visit		Neptune in first window 01-NOV-2022 to Neptune and window 2 in 2023).	o 19-DEC-2022 (very flexible due to JWST	Tobservations not being sceduled in this windo	w, just needs to be separated in time	as much as possible from both the				
	4 orbits. Vis orbit gaps a		its. All visits spaced out as evenly as possi	ible within the 16 hour 6 minute Neptunian day	, with ideally 2- or 3-orbit gaps betw	een them (ideal spacing is 4 hours). 1-				
		nt into SAA is OK if the above timing gap: essary as this is a moving target.	s cannot prevent it. We can tolerate gyro l	bias updates to ease the contiguous orbit constr	aints, and will work with our progra	m contacts to fit them in. 3-gyro mode				
	(F763M (07	7.001)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the o	liagnostic browser					
	(F845M (07	(.002)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the o	liagnostic browser					
	(F467M (07	(.003)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the o	liagnostic browser					
	(F487N (07.	.004)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the d	liagnostic browser					
CS	(F547M (07		•	subexposure. See extended explanation in the o	•					
Sti	(F657N (07.			subexposure. See extended explanation in the d	-					
≗	(F763M (07		•	subexposure. See extended explanation in the c	•					
Diagnostics	(F845M (07	,,	•	subexposure. See extended explanation in the c	· ·					
l≏										
	(FQ727N_quadD (07.009)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.									
	1 *	uadA (07.010)) Warning (Form): FLASH	H level may be too low for this exposure o	or a short subexposure. See extended explanation	on in the diagnostic browser					
	_	·		lly with WFC3 quad filters to avoid placing the		eld of view or moving it to another				
H	quadrant.	D.:		C d P-44		E				
	(1)	Primary Pattern Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary Pattern		Exposures (3-4)				
	(1)	LINE	Pattern Orientation=46.84			(3-4)				
		Purpose=DITHER	Angle Between Sides=							
س		Number Of Points=2	Center Pattern=false							
Įξ		Point Spacing=0.145								
Patterns		Line Spacing=								
P _B	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE	Coordinate Frame=POS-TARG			(9)				
		Purpose=DITHER	Pattern Orientation=46.84							
		Number Of Points=2	Angle Between Sides=							
		Point Spacing=0.725	Center Pattern=false							
		Line Spacing=								
ts	# N	lame Level 1	Level 2	Level 3	Window	Ephem Center				
§	(2) N	IEPTUNE STD=NEPTUNE				EARTH				
Ta	Comments:	Description=PLANET NEPTUNE								
Ĕ										
Ste										
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a										
Solar System Targets										

Proposal 17187 - NEPTUNE 23V1-C (07) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

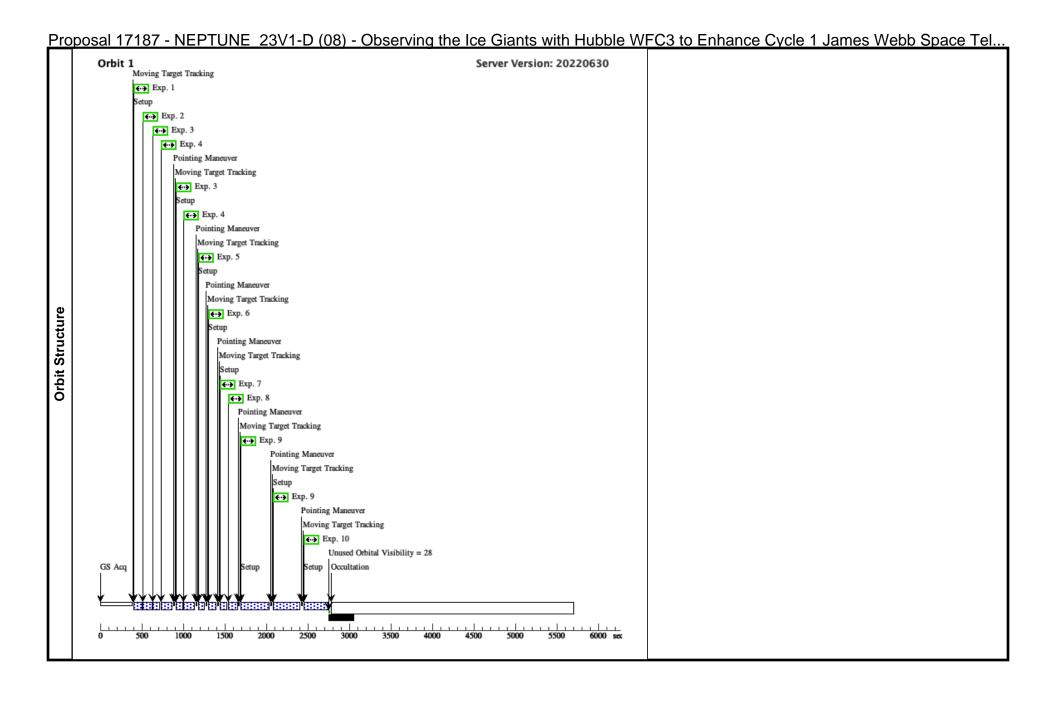
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO			15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>(Pattern 1)]	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V1-C (07) (1)		
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>(Pattern 1)]	
							Pattern 1, Exps 3-4 i	$[==>(Pattern\ 2)]$	617
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V1-C (07) (1)		
5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
5			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
			UVIS2-C512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]
9		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ727N	CR-SPLIT=NO	POS TARG -25,+28	Sequence 1-10 Non-I	150 Secs (300 Secs)	
	adD		UVIS-QUAD-SUB				nt in NEPTUNE_23 V1-C (07)	$[==>(Pattern\ 1)]$	
							Pattern 2. Exps 9-9 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V1-C (07) (2)		
10		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-I	120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB				nt in NEPTUNE_23 V1-C (07)	[==>]	[1]



Pro	oposal 1	7187 - NEPTUNE 23V1-	D (08) - Observing the Ice	e Giants with Hubble WFC3	to Enhance Cycle 1 Ja	ames Webb Space Tel					
	Proposal 17	7187, NEPTUNE_23V1-D (08), implem	entation			Sat Oct 22 16:00:37 GMT 2022					
	Diagnostic	Status: Warning									
	Scientific In	nstruments: WFC3/UVIS									
_ ا	Special Req	uirements: AFTER 07 BY 1.9 Orbits TO	O 3.1 Orbits; BETWEEN 01-JAN-2023:0	00:00:00 AND 15-FEB-2023:00:00:00							
Visit		Neptune in first window 01-NOV-2022 to Neptune and window 2 in 2023).	o 19-DEC-2022 (very flexible due to JWST	Tobservations not being sceduled in this window	v, just needs to be separated in time	as much as possible from both the					
	4 orbits. Vis orbit gaps a		its. All visits spaced out as evenly as possi	ible within the 16 hour 6 minute Neptunian day,	with ideally 2- or 3-orbit gaps betw	een them (ideal spacing is 4 hours). 1-					
		nt into SAA is OK if the above timing gaps essary as this is a moving target.	s cannot prevent it. We can tolerate gyro l	bias updates to ease the contiguous orbit constr	aints, and will work with our progra	m contacts to fit them in. 3-gyro mode					
	(F763M (08	3.001)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the d	iagnostic browser						
	(F845M (08	3.002)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the d	iagnostic browser						
	(F467M (08	3.003)) Warning (Form): FLASH level ma	ay be too low for this exposure or a short s	subexposure. See extended explanation in the d	iagnostic browser						
	(F487N (08	.004)) Warning (Form): FLASH level ma	y be too low for this exposure or a short s	subexposure. See extended explanation in the di	agnostic browser						
CS	(F547M (08		•	subexposure. See extended explanation in the d	•						
Sti	(F657N (08.		=	subexposure. See extended explanation in the di	-						
🖺	(F763M (08		•	subexposure. See extended explanation in the d	•						
Diagnostics	(F845M (08		•	subexposure. See extended explanation in the d	•						
l□	_			r a short subexposure. See extended explanatio							
	(FQ727N_q quadrant.	(FQ727N_quadD (08.009)) Warning (Form): POS TARG & PATTERN should be used carefully with WFC3 quad filters to avoid placing the target on the vignetted part of the field of view or moving it to another quadrant.									
	1 *	quadA (08.010)) Warning (Form): FLASH	H level may be too low for this exposure o	r a short subexposure. See extended explanatio	n in the diagnostic browser						
	_			lly with WFC3 quad filters to avoid placing the		eld of view or moving it to another					
┡	quadrant.	In :		G 1 P "		n.					
	# (1)	Primary Pattern Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary Pattern		(3-4)					
	(1)	LINE	Pattern Orientation=46.84			(3-4)					
		Purpose=DITHER	Angle Between Sides=								
۱,,		Number Of Points=2	Center Pattern=false								
Ξ		Point Spacing=0.145	Center I uttern—turse								
Patterns		Line Spacing=									
Pa	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE	Coordinate Frame=POS-TARG			(9)					
		Purpose=DITHER	Pattern Orientation=46.84								
		Number Of Points=2	Angle Between Sides=								
		Point Spacing=0.725	Center Pattern=false								
		Line Spacing=									
ts	# N	Name Level 1	Level 2	Level 3	Window	Ephem Center					
g	(2) N	NEPTUNE STD=NEPTUNE				EARTH					
Solar System Targets	Comments:	Description=PLANET NEPTUNE									
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Ste											
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Proposal 17187 - NEPTUNE 23V1-D (08) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

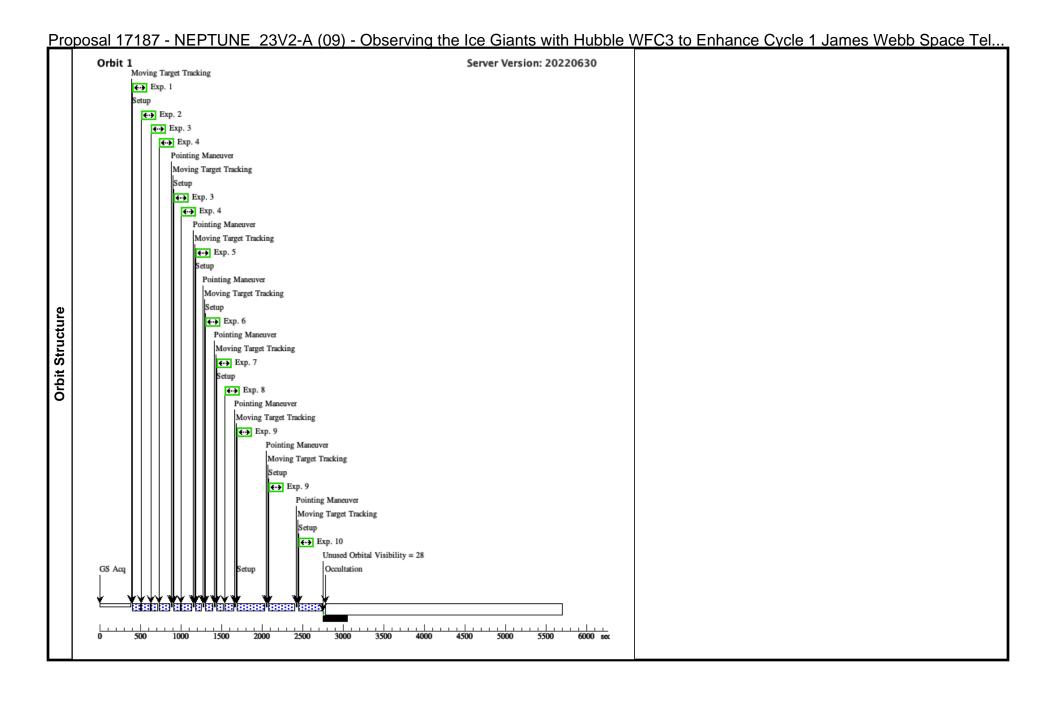
#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08)	20 Secs (20 Secs) [==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO			40 Secs (40 Secs) [==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08) Pattern 1, Exps 3-4 i n Sequence 1-10 No n-Int in NEPTUNE_ 23V1-D (08) (1)	15 Secs (30 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F487N	CR-SPLIT=NO		Sequence 1-10 Non-Int in NEPTUNE_23 V1-D (08) Pattern 1, Exps 3-4 in Sequence 1-10 Non-Int in NEPTUNE_23V1-D (08) (1)	60 Secs (120 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08)	6 Secs (6 Secs) [==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-C512C-SUB	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08)	30 Secs (30 Secs) [==>]	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08)	20 Secs (20 Secs) [==>]	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08)	40 Secs (40 Secs) [==>]	[1]
9	FQ727N_qu adD	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -25,+28	Sequence 1-10 Non-I nt in NEPTUNE_23 V1-D (08) Pattern 2, Exps 9-9 i n Sequence 1-10 No n-Int in NEPTUNE_ 23V1-D (08) (2)	150 Secs (300 Secs) [==>(Pattern 1)] [==>(Pattern 2)]	[1]
10	FQ619N_qu adA	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ619N	CR-SPLIT=NO	POS TARG +20,-24		120 Secs (120 Secs) [==>]	[1]



Pro	posal 1	<u> 7187 - NEPTUNE 23V2-</u>	A (09) - Observing the Ice	e Giants with nubble WEGS to	Ennance Cycle 1 Ja	mes Webb Space Tel				
	Proposal 17	7187, NEPTUNE_23V2-A (09), implem	entation			Sat Oct 22 16:00:37 GMT 2022				
	Diagnostic (Status: Warning								
	Scientific In	struments: WFC3/UVIS								
∺̈́		uirements: BETWEEN 13-JUN-2023 AN								
Visit	Comments:	Neptune in first window 13-JUN-2023 to	26-JUN-2023 - as close as possible to the	e JWST observations in program 1249.						
	4 orbits. Vis orbit gaps a		its. All visits spaced out as evenly as possi	ible within the 16 hour 6 minute Neptunian day, wi	th ideally 2- or 3-orbit gaps betwe	een them (ideal spacing is 4 hours). I-				
	may be nece	essary as this is a moving target.		bias updates to ease the contiguous orbit constrain		n contacts to fit them in. 3-gyro mode				
			· ·	subexposure. See extended explanation in the diag						
			· ·	subexposure. See extended explanation in the diag						
			· ·	subexposure. See extended explanation in the diag						
٫٫			·	subexposure. See extended explanation in the diag						
<u>نڌ</u> ا			· ·	subexposure. See extended explanation in the diag						
Diagnostics			·	subexposure. See extended explanation in the diag subexposure. See extended explanation in the diag						
g			· ·	subexposure. See extended explanation in the diag						
Jia			· ·	or a short subexposure. See extended explanation in						
-	_	_		ally with WFC3 quad filters to avoid placing the tar		eld of view or moving it to another				
	(FQ619N_quadA (09.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser									
	(FQ619N_q		•	ally with WFC3 quad filters to avoid placing the tar	•	eld of view or moving it to another				
┝	quadrant. #	Primary Pattern		Secondary Pattern		Exposures				
	(1)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary rattern		(3-4)				
	(1)	LINE	Pattern Orientation=46.84		l					
	1	Purpose=DITHER	Angle Between Sides=		l					
1	Ĭ	Number Of Points=2	8		•					
S	ļ		Center Pattern=false							
- suus	ļ	Point Spacing=0.145	Center Pattern=false							
atterns		Point Spacing=0.145 Line Spacing=								
Patterns	(2)	Point Spacing=0.145	Coordinate Frame=POS-TARG			(9)				
Patterns	(2)	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG Pattern Orientation=46.84			(9)				
Patterns	(2)	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides=			(9)				
Patterns	(2)	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER	Coordinate Frame=POS-TARG Pattern Orientation=46.84			(9)				
	(2)	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides=			(9)				
	# N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides=	Level 3	Window	Ephem Center				
	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Imme Level 1 EPTUNE STD=NEPTUNE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	``				
	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	Ephem Center				
	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Imme Level 1 EPTUNE STD=NEPTUNE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	Ephem Center				
	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Imme Level 1 EPTUNE STD=NEPTUNE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	Ephem Center				
	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Imme Level 1 EPTUNE STD=NEPTUNE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	Ephem Center				
Solar System Targets Patterns	# N (2) N	Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Imme Level 1 EPTUNE STD=NEPTUNE	Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3	Window	Ephem Center				

Proposal 17187 - NEPTUNE 23V2-A (09) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

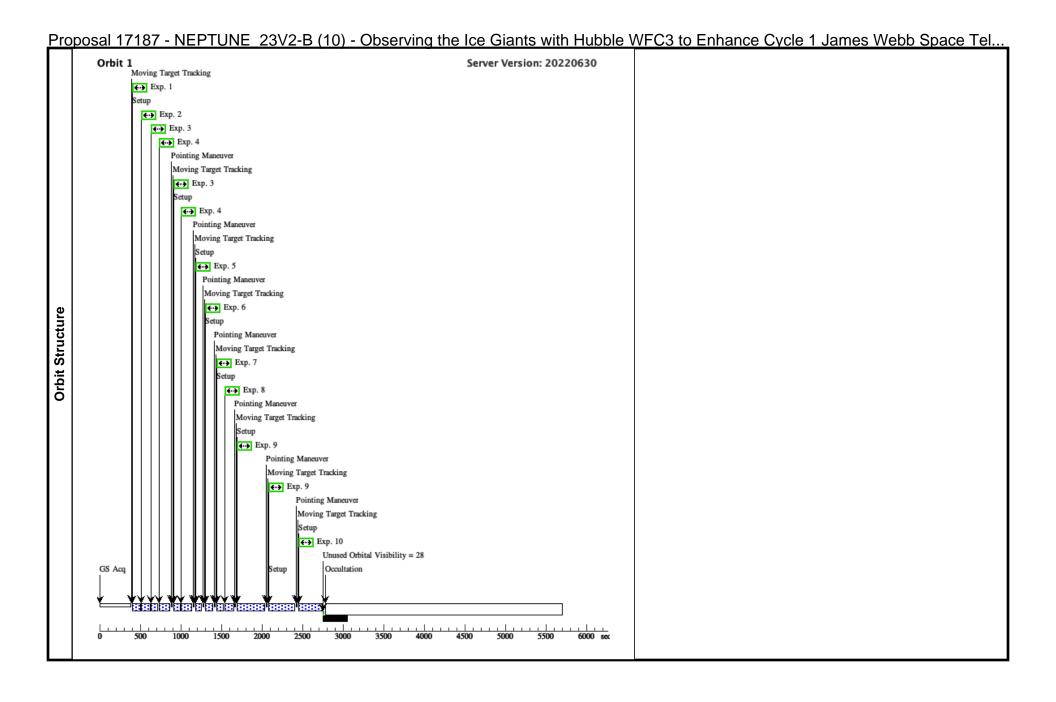
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I	15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	$[==>(Pattern\ 1)]$	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-A (09) (1)		
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>(Pattern 1)]	
							Pattern 1, Exps 3-4 i	[==>(Pattern 2)]	F117
: l							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-A (09) (1)		
5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
5			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
			UVIS2-C512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I	40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-A (09)	[==>]	[1]
9		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ727N	CR-SPLIT=NO	POS TARG -25,+28	Sequence 1-10 Non-I	150 Secs (300 Secs)	
	adD		UVIS-QUAD-SUB				nt in NEPTUNE_23 V2-A (09)	$[==>(Pattern\ 1)]$	
							Pattern 2. Exps 9-9 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-A (09) (2)		
10		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-I	120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB				nt in NEPTUNE_23 V2-A (09)	f==>1	[1]



<u>Pro</u>	posai 1	<u> 1181 - NEPTUNE 23V2</u>	·B (10) - Observing the ice	<u>e Giants with Hubble WFC</u>	<u>3 to Ennance Cycle i Ja</u>	mes webb Space rei
		7187, NEPTUNE_23V2-B (10), implem				Sat Oct 22 16:00:37 GMT 2022
	Diagnostic	Status: Warning				
	Scientific In	nstruments: WFC3/UVIS				
ij	Special Req	quirements: AFTER 09 BY 1.9 Orbits To	O 3.1 Orbits; BETWEEN 13-JUN-2023 A	ND 26-JUN-2023		
Visit	Comments:	Neptune in first window 13-JUN-2023 to	26-JUN-2023 - as close as possible to the	JWST observations in program 1249.		
1		sit 4 after visit 1 by between 9 and 11 orb ure too close.	its. All visits spaced out as evenly as possil	ble within the 16 hour 6 minute Neptunian o	day, with ideally 2- or 3-orbit gaps betwe	een them (ideal spacing is 4 hours). 1-
		nt into SAA is OK if the above timing gap essary as this is a moving target.	s cannot prevent it. We can tolerate gyro b	ias updates to ease the contiguous orbit co	nstraints, and will work with our progran	n contacts to fit them in. 3-gyro mode
	(F763M (10	0.001)) Warning (Form): FLASH level m	ay be too low for this exposure or a short s	ubexposure. See extended explanation in t	he diagnostic browser	
	(F845M (10	0.002)) Warning (Form): FLASH level m	ay be too low for this exposure or a short s	ubexposure. See extended explanation in t	he diagnostic browser	
				ubexposure. See extended explanation in t	=	
				abexposure. See extended explanation in the	=	
cs				ubexposure. See extended explanation in t	=	
sti				abexposure. See extended explanation in the	=	
Diagnostics		_		ubexposure. See extended explanation in t	_	
iag			-	ubexposure. See extended explanation in t	•	
			•	a short subexposure. See extended explan	•	
	(FQ727N_q quadrant.	quadD (10.009)) Warning (Form): POS T	ARG & PATTERN should be used careful	ly with WFC3 quad filters to avoid placing	the target on the vignetted part of the fie	eld of view or moving it to another
	(FQ619N_q	quadA (10.010)) Warning (Form): FLASI	H level may be too low for this exposure or	a short subexposure. See extended explan	ation in the diagnostic browser	
		quadA (10.010)) Warning (Form): POS T	ARG & PATTERN should be used careful	ly with WFC3 quad filters to avoid placing	the target on the vignetted part of the fie	eld of view or moving it to another
	quadrant. #	Primary Pattern		Secondary Pattern		Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG	Secondary 1 attern		(3-4)
	(1)	LINE	Pattern Orientation=46.84			(3 4)
		Purpose=DITHER	Angle Between Sides=			
"		Number Of Points=2	Center Pattern=false			
rns		Point Spacing=0.145	Center I ditern—Idise			
Patterns		Line Spacing=				
Pa	(2)	Pattern Type=WFC3-UVIS-DITHER-LINE	Coordinate Frame=POS-TARG			(9)
		Purpose=DITHER	Pattern Orientation=46.84			
		Number Of Points=2	Angle Between Sides= Center Pattern=false			
		Point Spacing=0.725	Center Pattern=raise			
		Line Spacing=				
gets	# N	Name Level 1	Level 2	Level 3	Window	Ephem Center
	(2) N	NEPTUNE STD=NEPTUNE				EARTH
Tal	Comments:	Description=PLANET NEPTUNE				
Solar System Tar						
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Proposal 17187 - NEPTUNE 23V2-B (10) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

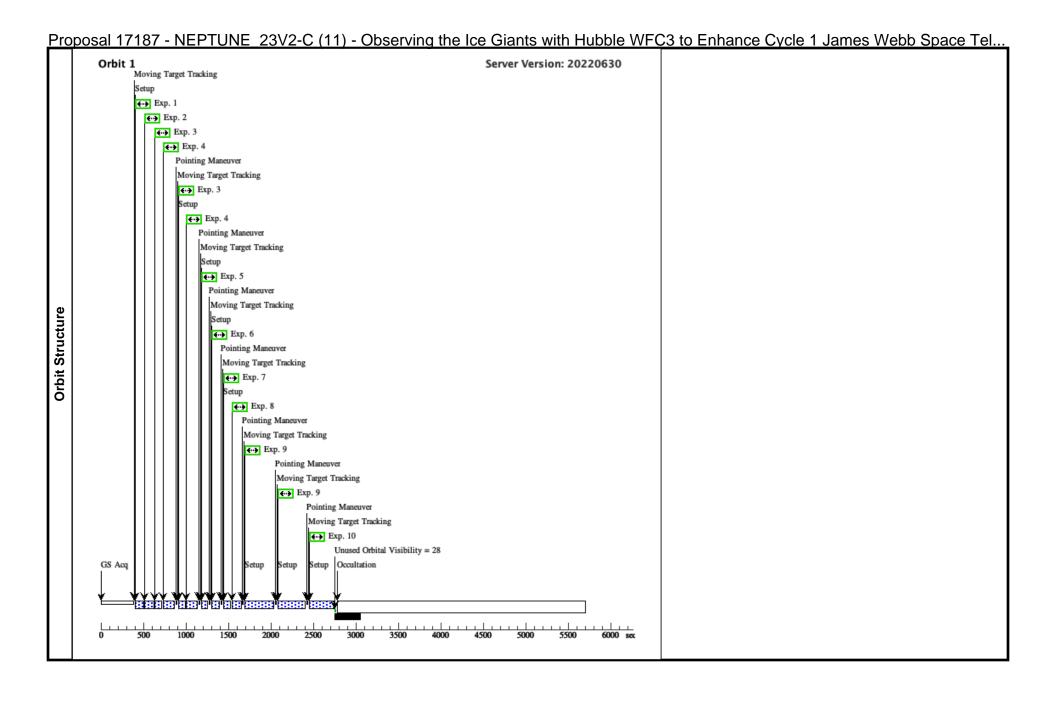
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-B (10)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-B (10)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I	15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-B (10)	[==>(Pattern 1)]	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-B (10) (1)		
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-B (10)	$[==>(Pattern\ 1)]$	
							Pattern 1, Exps 3-4 i	$[==>(Pattern\ 2)]$	
တ္သ							n Sequence 1-10 No		[1]
a l							n-Int in NEPTUNE_ 23V2-B (10) (1)		
Exposures 5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
:			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-B (10)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
			UVIS2-C512C-SUB				nt in NEPTUNE_23 V2-B (10)	[==>]	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
	-,	(_/ : : - :	UVIS2-M512C-SUB	- , , , , , ,			nt in NEPTUNE_23	[==>1	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO		V2-B (10)		[1]
0	F843IVI	(2) NEPTUNE	UVIS2-M512C-SUB	F643WI	CR-SPLIT=NO		nt in NEPTUNE_23	$\int_{-\infty}^{\infty} 40 \operatorname{Secs} ^{2}$	
-							V2-B (10)		[1]
9	FQ727N_qu adD	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS-QUAD-SUB	FQ727N	CR-SPLIT=NO	POS TARG -25,+28	Sequence 1-10 Non-I nt in NEPTUNE 23	,	
	auD		UVIS-QUAD-SUB				V2-B (10)	$[==>(Pattern\ 1)]$	
							Pattern 2, Exps 9-9 i	$[==>(Pattern\ 2)]$	[1]
							n Sequence 1-10 No n-Int in NEPTUNE		[1]
							23V2-B (10) (2)		
10		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24		120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB				nt in NEPTUNE_23 V2-B (10)	[==>]	[1]



<u> </u>	<u>posal 1</u>	<u> 7187 - NEPTUNE 23V2-</u>	C(11) - Observing the ic	e Giants with Hubble WFC3 to E	<u>Innance Cycle i Jai</u>	<u>mes vvebb Space Tel</u>				
	Proposal 17	7187, NEPTUNE_23V2-C (11), implem	entation			Sat Oct 22 16:00:37 GMT 2022				
	Diagnostic 5	Status: Warning								
		nstruments: WFC3/UVIS								
∺			O 3.1 Orbits; BETWEEN 13-JUN-2023 A							
Visit	Comments:	Neptune in first window 13-JUN-2023 to	26-JUN-2023 - as close as possible to the	e JWST observations in program 1249.						
	4 orbits. Vis orbit gaps a		its. All visits spaced out as evenly as possi	ible within the 16 hour 6 minute Neptunian day, with	ideally 2- or 3-orbit gaps between	en them (ideal spacing is 4 hours). 1-				
	may be nece	essary as this is a moving target.		bias updates to ease the contiguous orbit constraints,		a contacts to fit them in. 3-gyro mode				
			· ·	subexposure. See extended explanation in the diagno						
			· ·	subexposure. See extended explanation in the diagno						
			· ·	subexposure. See extended explanation in the diagno						
ر ا			·	subexposure. See extended explanation in the diagno subexposure. See extended explanation in the diagno						
≝			· ·	subexposure. See extended explanation in the diagno						
Diagnostics			·	subexposure. See extended explanation in the diagno						
Ιĝ			· ·	subexposure. See extended explanation in the diagno						
Dia			· ·	or a short subexposure. See extended explanation in the						
-	_	·		ally with WFC3 quad filters to avoid placing the targe	=	d of view or moving it to another				
	(FQ619N_quadA (11.010)) Warning (Form): FLASH level may be too low for this exposure or a short subexposure. See extended explanation in the diagnostic browser									
	(FQ619N_quadrant.	uadA (11.010)) Warning (Form): POS T.	ARG & PATTERN should be used carefu	ally with WFC3 quad filters to avoid placing the targe	et on the vignetted part of the fiel	d of view or moving it to another				
	#	Primary Pattern		Secondary Pattern	1	Exposures				
	(1)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG			(3-4)				
		LINE	Pattern Orientation=46.84		i .					
			1 attern Orientation=40.04							
		Purpose=DITHER	Angle Between Sides=							
us		Purpose=DITHER Number Of Points=2								
terns		Purpose=DITHER Number Of Points=2 Point Spacing=0.145	Angle Between Sides=							
atterns	(2)	Purpose=DITHER Number Of Points=2	Angle Between Sides=			(9)				
Patterns	(2)	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing=	Angle Between Sides= Center Pattern=false			(9)				
Patterns	(2)	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG			(9)				
Patterns	(2)	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84			(9)				
Patterns	(2)	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides=			(9)				
		Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing=	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3						
	# N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing=	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides=	Level 3	Window	Ephem Center				
	# N (2) N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing=	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3						
	# N (2) N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Level 1 EPTUNE STD=NEPTUNE	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3		Ephem Center				
	# N (2) N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Level 1 EPTUNE STD=NEPTUNE	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3		Ephem Center				
	# N (2) N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Level 1 EPTUNE STD=NEPTUNE	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3		Ephem Center				
Solar System Targets Patterns	# N (2) N	Purpose=DITHER Number Of Points=2 Point Spacing=0.145 Line Spacing= Pattern Type=WFC3-UVIS-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.725 Line Spacing= Level 1 EPTUNE STD=NEPTUNE	Angle Between Sides= Center Pattern=false Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false	Level 3		Ephem Center				

Proposal 17187 - NEPTUNE 23V2-C (11) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-C (11)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-C (11)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO		Sequence 1-10 Non-I	15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-C (11)	$[==>(Pattern\ 1)]$	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-C (11) (1)		
1	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
-	1 40/11	(2) NEI TONE	UVIS2-M512C-SUB	140/1	CK-51 EIT=NO		nt in NEPTUNE_23	[==>(Pattern 1)]	
							V2-C (11)	[==>(Pattern 2)]	
							Pattern 1, Exps 3-4 i n Sequence 1-10 No	[>(1 aliem 2)]	[1]
							n-Int in NEPTUNE_		
							23V2-C (11) (1)		
5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I		
5			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-C (11)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
			UVIS2-C512C-SUB				nt in NEPTUNE_23 V2-C (11)	I = => J	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-C (11)	[==>]	[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	1 1
	10.01.1	(2) 1 (21 101 (2	UVIS2-M512C-SUB	10.011	on brain in		nt in NEPTUNE_23	[==>1	[1]
9	EO727N au	(2) NEPTUNE	WFC3/UVIS. ACCUM.	FO727N	CR-SPLIT=NO	POS TARG -25.+28	V2-C (11) Sequence 1-10 Non-I		[1]
9	adD	(2) NEPTUNE	UVIS-QUAD-SUB	FQ/2/IN	CR-SPLIT=NO	POS TARO -25,+28	nt in NEPTUNE_23	[==>(Pattern 1)]	
							V2-C (11)	2 /3	
							Pattern 2, Exps 9-9 i	$[==>(Pattern\ 2)]$	[1]
							n Sequence 1-10 No n-Int in NEPTUNE		, ,
							23V2-C (11) (2)		
10		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24		120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB				nt in NEPTUNE_23 V2-C (11)	f==>1	[1]



<u>Prc</u>	posal 1	7187 - NEPTUNE 23V2-	-D (12) - Observing the Ic	e Giants with Hubble WFC3	3 to Enhance Cycle 1 Jar	nes Webb Space Tel
		7187, NEPTUNE_23V2-D (12), implem				Sat Oct 22 16:00:37 GMT 2022
	Diagnostic S	Status: Warning				
		nstruments: WFC3/UVIS				
∺		•	O 3.1 Orbits; BETWEEN 13-JUN-2023 A			
Visit	Comments: 1	Neptune in first window 13-JUN-2023 to	o 26-JUN-2023 - as close as possible to the	e JWST observations in program 1249.		
	4 orbits. Visi orbit gaps at		its. All visits spaced out as evenly as poss.	sible within the 16 hour 6 minute Neptunian do	zy, with ideally 2- or 3-orbit gaps betwee	en them (ideal spacing is 4 hours). 1-
L	may be nece	essary as this is a moving target.		bias updates to ease the contiguous orbit cons		contacts to fit them in. 3-gyro mode
			•	subexposure. See extended explanation in the	•	
			_	subexposure. See extended explanation in the	=	
			_	subexposure. See extended explanation in the	=	
٫ ا			-	subexposure. See extended explanation in the	=	
<u>ٽ</u> [_	subexposure. See extended explanation in the subexposure. See extended explanation in the	=	
ost			-	subexposure. See extended explanation in the	=	
g			_	subexposure. See extended explanation in the subexposure. See extended explanation in the	=	
Diagnostics			_	or a short subexposure. See extended explanation in	=	
-	_			ully with WFC3 quad filters to avoid placing t	_	d of view or moving it to another
	(FQ619N_q	uadA (12.010)) Warning (Form): FLASI	H level may be too low for this exposure of	or a short subexposure. See extended explana	tion in the diagnostic browser	
	(FQ619N_quadrant.	quadA (12.010)) Warning (Form): POS T	ARG & PATTERN should be used carefu	ully with WFC3 quad filters to avoid placing t	he target on the vignetted part of the field	d of view or moving it to another
\vdash	#	Primary Pattern		Secondary Pattern		Exposures
	(1)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG		((3-4)
		LINE	Pattern Orientation=46.84			
		Purpose=DITHER Number Of Points=2	Angle Between Sides=			
ျှ		Point Spacing=0.145	Center Pattern=false			
Ţ.		Line Spacing=				
Patterns	(2)	Pattern Type=WFC3-UVIS-DITHER-	Coordinate Frame=POS-TARG			(9)
"		LINE	Pattern Orientation=46.84			- /
		Purpose=DITHER	Angle Between Sides=			
		Number Of Points=2	Center Pattern=false			
		Point Spacing=0.725				
Ŋ	# N	Line Spacing= Name Level 1	Level 2	Level 3	Window	Ephem Center
gets		NEPTUNE STD=NEPTUNE	20102	20.02	11 222-0 11	EARTH
ā		Description=PLANET NEPTUNE				
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Proposal 17187 - NEPTUNE 23V2-D (12) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel...

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Secs (20 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-D (12)	[==>]	[1]
2	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F845M	CR-SPLIT=NO			40 Secs (40 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-D (12)	[==>]	[1]
3	F467M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F467M	CR-SPLIT=NO			15 Secs (30 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-D (12)	$[==>(Pattern\ 1)]$	
							Pattern 1. Exps 3-4 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-D (12) (1)		
4	F487N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F487N	CR-SPLIT=NO		Sequence 1-10 Non-I	60 Secs (120 Secs)	
			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-D (12)	$[==>(Pattern\ 1)]$	
							Pattern 1, Exps 3-4 i	$[==>(Pattern\ 2)]$	
တ္က							n Sequence 1-10 No		[1]
e l							n-Int in NEPTUNE_ 23V2-D (12) (1)		
Exposures 5	F547M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F547M	CR-SPLIT=NO		Sequence 1-10 Non-I	6 Secs (6 Secs)	
ᅉ			UVIS2-M512C-SUB				nt in NEPTUNE_23 V2-D (12)	[==>]	[1]
6	F657N	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F657N	CR-SPLIT=NO		Sequence 1-10 Non-I	30 Secs (30 Secs)	
		. ,	UVIS2-C512C-SUB				nt in NEPTUNE_23 V2-D (12)	f==>1	[1]
7	F763M	(2) NEPTUNE	WFC3/UVIS, ACCUM,	F763M	CR-SPLIT=NO		Sequence 1-10 Non-I	20 Sees (20 Sees)	[-]
'	1.703101	(2) NEI TONE	UVIS2-M512C-SUB	1 703WI	CR-SI LI I = NO		nt in NEPTUNE_23	[==>]	
-							V2-D (12)		[1]
8	F845M	(2) NEPTUNE	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F845M	CR-SPLIT=NO		Sequence 1-10 Non-I nt in NEPTUNE_23	· · · · · · · · · · · · · · · · · · ·	
			C VIS2 M312C SCB				V2-D (12)	[==>]	[1]
9		(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ727N	CR-SPLIT=NO	POS TARG -25,+28		150 Secs (300 Secs)	
	adD		UVIS-QUAD-SUB				nt in NEPTUNE_23 V2-D (12)	[==>(Pattern 1)]	
							Pattern 2. Exps 9-9 i	$[==>(Pattern\ 2)]$	
							n Sequence 1-10 No		[1]
							n-Int in NEPTUNE_ 23V2-D (12) (2)		
10	FQ619N_qu	(2) NEPTUNE	WFC3/UVIS, ACCUM,	FQ619N	CR-SPLIT=NO	POS TARG +20,-24	Sequence 1-10 Non-I	120 Secs (120 Secs)	
	adA		UVIS-QUAD-SUB	-			nt in NEPTUNE_23 V2-D (12)	[==>]	[1]

Proposal 17187 - NEPTUNE 23V2-D (12) - Observing the Ice Giants with Hubble WFC3 to Enhance Cycle 1 James Webb Space Tel... Server Version: 20220630 Moving Target Tracking € Exp. 1 Setup € Exp. 2 €--> Exp. 3 €--> Exp. 4 Pointing Maneuver Moving Target Tracking €--> Exp. 3 Setup ←→ Exp. 4 Pointing Maneuver Moving Target Tracking €--> Exp. 5 Setup Pointing Maneuver Moving Target Tracking **Orbit Structure** €--**>** Exp. 6 Pointing Maneuver Moving Target Tracking €--> Exp. 7 Setup €--> Exp. 8 Pointing Maneuver Moving Target Tracking Setup €--> Exp. 9 Pointing Maneuver Moving Target Tracking Setup €-- Exp. 9 Pointing Maneuver Moving Target Tracking Setup €--> Exp. 10 Unused Orbital Visibility = 28 GS Acq Occultation 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sex