



4645 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Cycle: 3, Proposal Category: GO

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Matthew Belyakov (PI)	California Institute of Technology
M. Ryleigh Davis (CoI) (CoPI) (Contact)	California Institute of Technology
Dr. Michael E Brown (CoI)	California Institute of Technology
Dr. Ian Wong (CoI)	Space Telescope Science Institute

OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	1	Puck	NIRSpec IFU Spectroscopy	(1) Puck
	2	Portia	NIRSpec IFU Spectroscopy	(2) PORTIA
	3	Miranda	NIRSpec IFU Spectroscopy	(3) Miranda
	14	Miranda	NIRSpec IFU Spectroscopy	(3) Miranda
	4	Sycorax	NIRSpec IFU Spectroscopy	(4) Sycorax
	13	Sycorax	NIRSpec IFU Spectroscopy	(4) Sycorax
	5	Caliban	NIRSpec IFU Spectroscopy	(5) Caliban
	6	Galatea-1	NIRSpec IFU Spectroscopy	(6) Galatea
	7	Galatea-2	NIRSpec IFU Spectroscopy	(6) Galatea
	8	Larissa-1	NIRSpec IFU Spectroscopy	(7) Larissa
	9	Larissa-2	NIRSpec IFU Spectroscopy	(7) Larissa
	10	Proteus - Leading	NIRSpec IFU Spectroscopy	(8) Proteus
	11	Proteus - Trailing	NIRSpec IFU Spectroscopy	(8) Proteus

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
	12	Nereid	NIRSpec IFU Spectroscopy	(9) Nereid

ABSTRACT

Decades of ground-based observations, spacecraft exploration, and now NIRSpec data from JWST have characterized the Jovian and Saturnian satellite systems, leading to ground-breaking discoveries about the gas giants and their satellites. By contrast, observations of the Uranian and Neptunian systems are sparse, with ground-based observations of all but the brightest satellites hindered by their significantly farther distance and no dedicated spacecraft exploration. This lack of data, particularly of the fainter satellites, has made reconstructing the histories and current compositions of the ice giants' systems challenging, leaving vital open questions unanswered. We therefore propose to observe a representative sample of small interior, mid-sized, and irregular satellites of Uranus and Neptune with JWST/NIRSpec, seeking to answer open questions on the composition of the ice giants' subnebulae, to understand the specific compositions of the key satellites Miranda and Proteus, and to trace the individual evolutions of the two systems. JWST/NIRSpec is uniquely suited to probe the compositions of these faint Uranian and Neptunian satellites. The ices of these objects are expected to have strong absorption features in the 2.5-5.0 micron range, which cannot be studied from the ground due to telluric absorption. In the context of the NASA Planetary Science decadal survey's focus on Uranus and proposed Uranian orbiter mission, obtaining an understanding of the ice giants is now more vital than ever. These proposed observations will provide the single best opportunity to characterize targets of interests for future missions to Uranus and Neptune.

OBSERVING DESCRIPTION

This medium program obtains NIRSpec observations of several small interior satellites of Uranus and Neptune, three irregular satellites, and the mid-sized moons Miranda and Proteus. Observations will be taken at a single phase in the PRISM mode, except for Proteus where we target both leading and trailing hemisphere observations, and Miranda which is bright enough to require NIRSpec IFU G235M and G395M spectra. We do not target leading/trailing observations for Miranda, as the sub-observer latitude is currently 70 degrees N and will not be below 30 degrees N for another two decades. We target a S/N capable of determining the presence and specific state of material on these satellites, paying particular attention to the water ice Fresnel peak at 3.1 microns, the CO₂ and 13-CO₂ absorptions near 4.26 and 4.38 microns, the CO absorption at 4.675 microns, the NH₃ fundamental at 2.96, the OHN features between 3.05-3.2, and the methanol absorptions near 2.3 microns. Our S/N and associated exposure times are determined empirically using the ETC and publicly available NIRSpec observations from KBO program 2418 and 1-5 micron spectra of Saturn's B-ring and several small Saturnian satellites from Cassini VIMS, which include a variety of distinct spectral signatures which we may find in our target spectra.

The observations of the Neptunian interior satellites are targeted when the satellites are within ~0.55" of their maximum separation from Neptune, to

JWST Proposal 4645 (Created: Wednesday, September 11, 2024, 1:00:28PM Eastern Standard Time) - Overview

minimize scattered light contamination from the planet. Additionally, due to their short orbital periods, we split the observations of Galatea and Larissa into two 2-point dithers to ensure that they do not pass too close to Neptune during an exposure. Additionally, we specify for our satellites a minimum separation from other nearby satellites to prevent scattered light contamination and ensure they are well-separated. For all satellites besides Galatea and Larissa, we use a 4-point dither to ensure proper background removal and select the NRSIRS2RAPID readout mode for optimal noise performance, except where the data volume is too large. This results in a total science time of 11.79 hours and a total charge time of 26.71 hours.

Proposal 4645 - Targets - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Solar System Targets	#	Name	Level 1	Level 2	Level 3
	(1)	Puck	STD=URANUS	STD=PUCK	
	<i>Comments: Extended=NO</i>				
	(2)	PORTIA	STD=URANUS	STD=PORTIA	
	<i>Comments: Extended=NO</i>				
	(3)	Miranda	STD=URANUS	STD=MIRANDA	
	<i>Comments: Extended=NO</i>				
	(4)	Sycorax	STD=URANUS	STD=SYCORAX	
	<i>Comments: Extended=NO</i>				
	(5)	Caliban	STD=URANUS	STD=CALIBAN	
<i>Comments: Extended=NO</i>					
(6)	Galatea	STD=NEPTUNE	STD=GALATEA		
<i>Comments: Extended=NO</i>					
(7)	Larissa	STD=NEPTUNE	STD=LARISSA		
<i>Comments: Extended=NO</i>					
(8)	Proteus	STD=NEPTUNE	STD=PROTEUS		
<i>Comments: Extended=NO</i>					
(9)	Nereid	STD=NEPTUNE	STD=NEREID		
<i>Comments: Extended=NO</i>					

Proposal 4645 - Observation 1 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 1: Puck</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
Diagnostics	<p>(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Puck (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(1)	Puck	STD=URANUS				STD=PUCK					
	<i>Comments: Extended=NO</i>											
Template	TA Method											
	NONE											
Dithers	#	Dither Type			Size	Starting Point			Number of Points	Points		
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPI D	28	1	false	true	NONE	4	4	1692.311	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Puck BY URANUS FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE PUCK FROM JWST LESS THAN 0.075</p> <p>SEPARATION OF Puck Miranda FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Puck ARIEL FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Puck UMBRIEL FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Puck PORTIA FROM JWST GREATER THAN 1.5"</p>											

Proposal 4645 - Observation 2 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 2: Portia Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Portia (Obs 2)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnostics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(2)	PORTIA	STD=URANUS			STD=PORTIA						
<i>Comments: Extended=NO</i>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point		Number of Points		Points			
	1	CYCLING		SMALL	1		7					
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	70	1	false	true	NONE	7	7	7250.678	
Special Requirements	SEPARATION OF PORTIA Puck FROM JWST GREATER THAN 1.5" SEPARATION OF PORTIA Miranda FROM JWST GREATER THAN 10" SEPARATION OF PORTIA ARIEL FROM JWST GREATER THAN 10" SEPARATION OF PORTIA UMBRIEL FROM JWST GREATER THAN 10" DEFAULT WINDOW: NOT OCCULTATION OF PORTIA BY URANUS FROM JWST DEFAULT WINDOW: ANGULAR RATE PORTIA FROM JWST LESS THAN 0.075											

Proposal 4645 - Observation 3 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 3: Miranda Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Miranda (Obs 3)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnosics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(3)	Miranda	STD=URANUS			STD=MIRANDA						
Comments: Extended=NO												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G235M/F170LP	NRSIRS2RAPI D	24	1	false	true	NONE	4	4	1458.889	
	2	G395M/F290LP	NRSIRS2RAPI D	20	1	false	true	NONE	4	4	1225.467	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Miranda BY URANUS FROM JWST DEFAULT WINDOW: ANGULAR RATE MIRANDA FROM JWST LESS THAN 0.075 SEPARATION OF Miranda ARIEL FROM JWST GREATER THAN 10" SEPARATION OF Miranda UMBRIEL FROM JWST GREATER THAN 10" SEPARATION OF Miranda Puck FROM JWST GREATER THAN 10"											

Proposal 4645 - Observation 14 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 14: Miranda</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
	<p>(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Miranda (Obs 14)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Diagnostics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(3)	Miranda	STD=URANUS			STD=MIRANDA						
<p><i>Comments: Extended=NO</i></p>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G235M/F170LP	NRSIRS2RAPI D	24	1	false	true	NONE	4	4	1458.889	
	2	G395M/F290LP	NRSIRS2RAPI D	20	1	false	true	NONE	4	4	1225.467	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Miranda BY URANUS FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE MIRANDA FROM JWST LESS THAN 0.075</p> <p>SEPARATION OF Miranda ARIEL FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Miranda UMBRIEL FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Miranda Puck FROM JWST GREATER THAN 10"</p>											

Proposal 4645 - Observation 4 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 4: Sycorax</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
Diagnostics	<p>(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Sycorax (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(4)	Sycorax	STD=URANUS				STD=SYCORAX					
	<i>Comments: Extended=NO</i>											
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points		Points		
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	50	1	false	true	NONE	4	4	2976.134	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Sycorax BY URANUS FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE SYCORAX FROM JWST LESS THAN 0.075</p>											

Proposal 4645 - Observation 13 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 13: Sycorax Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Sycorax (Obs 13)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnostics												
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(4)	Sycorax	STD=URANUS				STD=SYCORAX					
Comments: Extended=NO												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	50	1	false	true	NONE	4	4	2976.134	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Sycorax BY URANUS FROM JWST DEFAULT WINDOW: ANGULAR RATE SYCORAX FROM JWST LESS THAN 0.075											

Proposal 4645 - Observation 5 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 5: Caliban Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Caliban (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnostics												
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(5)	Caliban	STD=URANUS				STD=CALIBAN					
<i>Comments: Extended=NO</i>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	CYCLING		MEDIUM	1			8				
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2	17	1	false	true	NONE	8	8	10037.156	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Caliban BY URANUS FROM JWST DEFAULT WINDOW: ANGULAR RATE CALIBAN FROM JWST LESS THAN 0.075											

Proposal 4645 - Observation 6 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 6: Galatea-1</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
	<p>(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Galatea-1 (Obs 6)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Diagnostics												
Solar System Targets	#	Name	Level 1				Level 2			Level 3		
	(6)	Galatea	STD=NEPTUNE				STD=GALATEA					
<p><i>Comments: Extended=NO</i></p>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	70	1	false	true	NONE	4	4	4143.245	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Galatea BY NEPTUNE FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE GALATEA FROM JWST LESS THAN 0.075</p> <p>SEPARATION OF Galatea NEPTUNE FROM JWST LOCAL MAXIMUM 0.55"</p> <p>SEPARATION OF Galatea DESPINA FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Galatea Larissa FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Galatea Proteus FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Galatea NAIAD FROM JWST GREATER THAN 1"</p> <p>SEPARATION OF Galatea THALASSA FROM JWST GREATER THAN 1"</p>											

Proposal 4645 - Observation 7 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 7: Galatea-2 Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Galatea-2 (Obs 7)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnosics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(6)	Galatea	STD=NEPTUNE			STD=GALATEA						
Comments: Extended=NO												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points		Points		
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	70	1	false	true	NONE	4	4	4143.245	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Galatea BY NEPTUNE FROM JWST DEFAULT WINDOW: ANGULAR RATE GALATEA FROM JWST LESS THAN 0.075 SEPARATION OF Galatea NEPTUNE FROM JWST LOCAL MAXIMUM 0.55" SEPARATION OF Galatea DESPINA FROM JWST GREATER THAN 1.5" SEPARATION OF Galatea Larissa FROM JWST GREATER THAN 1.5" SEPARATION OF Galatea Proteus FROM JWST GREATER THAN 1.5" SEPARATION OF Galatea NAIAD FROM JWST GREATER THAN 1" SEPARATION OF Galatea THALASSA FROM JWST GREATER THAN 1"											

Proposal 4645 - Observation 8 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 8: Larissa-1 Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 8:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Larissa-1 (Obs 8)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnostics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(7)	Larissa	STD=NEPTUNE			STD=LARISSA						
<i>Comments: Extended=NO</i>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point		Number of Points		Points			
	1	CYCLING		MEDIUM	1		3					
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	63	1	false	true	NONE	3	3	2801.067	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Larissa BY NEPTUNE FROM JWST DEFAULT WINDOW: ANGULAR RATE LARISSA FROM JWST LESS THAN 0.075 SEPARATION OF Larissa NEPTUNE FROM JWST LOCAL MAXIMUM 0.6" SEPARATION OF Larissa DESPINA FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa Galatea FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa Proteus FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa NAIAD FROM JWST GREATER THAN 1" SEPARATION OF Larissa THALASSA FROM JWST GREATER THAN 1"											

Proposal 4645 - Observation 9 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 9: Larissa-2 Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Larissa-2 (Obs 9)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnosics												
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(7)	Larissa	STD=NEPTUNE			STD=LARISSA						
<i>Comments: Extended=NO</i>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point		Number of Points		Points			
	1	CYCLING		MEDIUM	4		3					
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	63	1	false	true	NONE	3	3	2801.067	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Larissa BY NEPTUNE FROM JWST DEFAULT WINDOW: ANGULAR RATE LARISSA FROM JWST LESS THAN 0.075 SEPARATION OF Larissa NEPTUNE FROM JWST LOCAL MAXIMUM 0.6" SEPARATION OF Larissa DESPINA FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa Galatea FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa Proteus FROM JWST GREATER THAN 1.5" SEPARATION OF Larissa NAIAD FROM JWST GREATER THAN 1" SEPARATION OF Larissa THALASSA FROM JWST GREATER THAN 1"											

Proposal 4645 - Observation 10 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 10: Proteus - Leading</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
	<p>(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Proteus - Leading (Obs 10)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Diagnostics												
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(8)	Proteus	STD=NEPTUNE				STD=PROTEUS					
<p><i>Comments: Extended=NO</i></p>												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	20	1	false	true	NONE	4	4	1225.467	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Proteus BY NEPTUNE FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE PROTEUS FROM JWST LESS THAN 0.075</p> <p>CENTRAL MERIDIAN LONGITUDE OF Proteus FROM JWST BETWEEN 70 110</p> <p>SEPARATION OF Proteus DESPINA FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Proteus Larissa FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Proteus Galatea FROM JWST GREATER THAN 1.5"</p> <p>SEPARATION OF Proteus TRITON FROM JWST GREATER THAN 10"</p> <p>SEPARATION OF Proteus NAIAD FROM JWST GREATER THAN 1"</p> <p>SEPARATION OF Proteus THALASSA FROM JWST GREATER THAN 1"</p>											

Proposal 4645 - Observation 11 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	Proposal 4645, Observation 11: Proteus - Trailing Diagnostic Status: Warning Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Proteus - Trailing (Obs 11)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.											
Diagnostics												
Solar System Targets	#	Name	Level 1				Level 2				Level 3	
	(8)	Proteus	STD=NEPTUNE				STD=PROTEUS					
Comments: Extended=NO												
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	20	1	false	true	NONE	4	4	1225.467	
Special Requirements	DEFAULT WINDOW: NOT OCCULTATION OF Proteus BY NEPTUNE FROM JWST DEFAULT WINDOW: ANGULAR RATE PROTEUS FROM JWST LESS THAN 0.075 CENTRAL MERIDIAN LONGITUDE OF Proteus FROM JWST BETWEEN 250 290 SEPARATION OF Proteus DESPINA FROM JWST GREATER THAN 1.5" SEPARATION OF Proteus Larissa FROM JWST GREATER THAN 1.5" SEPARATION OF Proteus Galatea FROM JWST GREATER THAN 1.5" SEPARATION OF Proteus TRITON FROM JWST GREATER THAN 10" SEPARATION OF Proteus NAIAD FROM JWST GREATER THAN 1" SEPARATION OF Proteus THALASSA FROM JWST GREATER THAN 1"											

Proposal 4645 - Observation 12 - Reconstructing the Histories of the Ice Giant Systems through Small Satellite Observations

Wed Sep 11 18:00:29 GMT 2024

Observation	<p>Proposal 4645, Observation 12: Nereid</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec IFU Spectroscopy</p>											
Diagnostics	<p>(Visit 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Nereid (Obs 12)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>											
Solar System Targets	#	Name	Level 1			Level 2			Level 3			
	(9)	Nereid	STD=NEPTUNE			STD=NEREID						
	<i>Comments: Extended=NO</i>											
Template	TA Method											
	NONE											
Dithers	#	Dither Type		Size	Starting Point			Number of Points	Points			
	1	4-POINT-DITHER										
Spectral Elements	#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	PRISM/CLEAR	NRSIRS2RAPID	10	1	false	true	NONE	4	4	641.911	
Special Requirements	<p>DEFAULT WINDOW: NOT OCCULTATION OF Nereid BY NEPTUNE FROM JWST</p> <p>DEFAULT WINDOW: ANGULAR RATE NEREID FROM JWST LESS THAN 0.075</p> <p>SEPARATION OF Nereid NEPTUNE FROM JWST GREATER THAN 1"</p>											