

1247 - Saturn

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

Name	Institution
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OBSERVATIONS

Folder	Observation	Label	Observing Template	Science Target
Saturn (Observations			
	301	System NIRCam 1	NIRCam Imaging	(637) SATURN-CENTRE
	312	Pandora NIRSpec	NIRSpec IFU Spectroscopy	(617) PANDORA
	314	Epimetheus NIRSpec	NIRSpec IFU Spectroscopy	(611) EPIMETHEUS
	414	Epimetheus NIRSpec R epeat of 314	NIRSpec IFU Spectroscopy	(611) EPIMETHEUS
	318	Pallene NIRSpec	NIRSpec IFU Spectroscopy	(633) PALLENE
	319	Telesto NIRSpec	NIRSpec IFU Spectroscopy	(613) TELESTO
	341	System NIRCam 2	NIRCam Imaging	(637) SATURN-CENTRE
	665	Saturn Background MI RI	MIRI Medium Resolution Spectroscopy	(2) SATURN-OFFSET
	330	Saturn Rings MIRI	MIRI Medium Resolution Spectroscopy	(600) SATURN-RINGS
	666	Saturn North Pole MIR I	MIRI Medium Resolution Spectroscopy	(634) SATURN-75N
	667	Saturn 45N MIRI	MIRI Medium Resolution Spectroscopy	(635) SATURN-45N
	568 Saturn 15N MIRI		MIRI Medium Resolution Spectroscopy	(636) SATURN-15N
	766	Saturn North Pole MIR I	MIRI Medium Resolution Spectroscopy	(634) SATURN-75N

ABSTRACT

Reconnaissance of the Saturn system with NIRCam will test the capacity of JWST to detect faint moons around bright planets, via comparison to the faint targets already detected by Cassini, which will be useful for ERS and GO observers of other planetary systems. Furthermore, the NIRCam images should be sensitive to discovering new moons significantly fainter than any that Cassini has discovered. Any such newly discovered moons would be important dynamical tracers of the current operations and past history of Saturn's planetary system. The NIRCam observations will also establish a baseline for continuing time-domain observations of the planet, rings, and satellites following the 2017 conclusion of the Cassini orbiter mission.

Deep spectra of selected small moons of Saturn (Epimetheus, Pandora, Pallene, and Telesto) with NIRSpec IFU will test the capacity of JWST to take deep spectra of faint targets near bright planets, which will be useful for ERS and GO observers of other planetary systems. The NIRSpec IFU spectra will enable cross-calibration with Cassini VIMS, and may improve on its signal-to-noise and spectral resolution (which would enable searches for finer spectral features).

Spectra of Saturn's main rings with MIRI MRS will test the capacity of JWST to take spatially resolved thermal spectra of icy ring systems, will enable cross-calibration with Cassini VIMS and CIRS, will fill a wavelength gap between those two instruments, and may improve on Cassini's signal-to-noise and spectral resolution.

A mosaic of Saturn's north polar region using MIRI spectro-spatial imaging (5-16 µm) will explore the continued evolution of the polar temperatures, aerosols, and composition, including (i) the expected growth of a wide, hot summer vortex in the stratosphere; (ii) variability within the polar cyclones associated with ammonia, phosphine and aerosols; and (iii) identification of any unique polar chemicals/haze species inaccessible to Cassini in the 5.5-7.5 µm region. These observations will establish a baseline for continuing time-domain observations of Saturn's seasonal atmosphere following the 2017 conclusion of the Cassini orbiter mission at northern summer solstice.

OBSERVING DESCRIPTION

Observations of the Saturn system - its atmosphere, rings and satellites.

Notes:

JWST Proposal 1247 (Created: Friday, June 16, 2023 at 6:00:26 PM Eastern Standard Time) - Overview

1. MIRI Saturn Scan: three overlapping footprints (based on the smallest MRS FOV) targetting the northern summer hemisphere. Top priority is a direct view of the northern summer pole and hexagon; secondary priority is to step along the prime meridian towards the equator. We originally intended for this to be a mosaic, but given that each MIRI disperser (SHORT/MEDIUM/LONG) would be seperated by too long for each tile, we had to specify each tile as a separate observation without interuption. The TORUS technique is used to ensure that the observations are pointing at the central meridian.

2. MIRI Saturation: The SHORT detectors (Channel 1 and 2) only saturate with ngroups>4, so we have specified 4 groups. For the LONG detectors (Channels 3 and 4), saturation can only be avoided with 2 groups.

3. MIRI dithering: A 4-point dither pattern has been used based on advice from STScI, but this should be optimised for image sampling in Channels 1 and 2, where the observations are least likely to saturate. If a the MIRI team assess that a 2-point dither would be preferred, then we request that this technique can be applied to increase the individual exposure times.

4. MIRI background: A single background exposure will be performed 90" to the north of Saturn, ensuring that no planetary satellites are present within the field of view.

5. Observations 301 (System NIRCam 1) and 341 (System NIRCam 2) would be best if a few hours apart. A natural way to do this is for the NIRSpec observations to be between them.

6. We want Titan to be far out of the FOV for the NIRCam and MIRI observations, thus the Orbital Longitude constraints.

7. We want all the bright moons to be at least 7 arcsec (in the case of Titan, 15 arcsec) from the FOV for the NIRSpec observations, thus the Separation constraints.

Proposal 1247 - Targets - Saturn

	#	Name	Level 1	Level 2	Level 3
	(2)	SATURN-OFFSET	STD=SATURN	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	ł
	Comments: E	Extended=YES			
	(600)	SATURN-RINGS	STD=SATURN	TYPE=TORUS,LONG=90,LAT=0,RAD=105000,PO E_LONG=0,POLE_LAT=+90,O_LONG=0,O_LAT=0 O_RAD=0	L),
	Comments: T Extended=U	Forus technique, 90 degrees fo nknown	or the west ring ansa.		
	(611)	EPIMETHEUS	STD=SATURN	STD=EPIMETHEUS	
	Comments: E	Extended=Unknown			
	(613)	TELESTO	STD=SATURN	STD=TELESTO	
	Comments: E	Extended=Unknown			
<u></u> its	(617)	PANDORA	STD=SATURN	STD=PANDORA	
ğ	Comments: E	Extended=Unknown			
Tai	(633)	PALLENE	STD=SATURN	STD=PALLENE	
Έ	Comments: E	Extended=Unknown			
Syste	(634)	SATURN-75N	STD=SATURN	TYPE=TORUS,LONG=0,LAT=75,RAD=54706,POL _LONG=0,POLE_LAT=90,O_LONG=0,O_LAT=0,O RAD=0	E _
Solar	Comments: M The longitude Extended=YI	Mosaic MIRI MRS observation e is not important, so we have ES	n of Saturn's north pole. used the TORUS technique (with the radius for a specific	latitude) to ensure pointing at the central meridian.	
	(635)	SATURN-45N	STD=SATURN	TYPE=TORUS,LONG=0,LAT=45,RAD=57088,POL _LONG=0,POLE_LAT=90,O_LONG=0,O_LAT=0,O RAD=0	E -
	Comments: S The longitude Extended=YI	Second step in MIRI central-m e is not important, so we have ES	eridian scan. used the TORUS technique (with the radius for a specific	latitude) to ensure pointing at the central meridian.	
	(636)	SATURN-15N	STD=SATURN	TYPE=TORUS,LONG=0,LAT=15,RAD=59811,POL _LONG=0,POLE_LAT=90,O_LONG=0,O_LAT=0,O RAD=0	E -
	Comments: T The longitude Extended=YI	Fhird step in MIRI MRS centra e is not important, so we have ES	nl-meridian scan. used the TORUS technique (with the radius for a specific	latitude) to ensure pointing at the central meridian.	
	(637)	SATURN-CENTRE	STD=SATURN		
	Comments: H	Extended=YES			

Proposal 1247 - Observation 301 - Saturn

uo	Proposal 12	247, Observation 301: Syst	em NIRCam 1						Fri Jun	16 23:00:26 GMT 2023
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Proposal 1247 - Observation 312 - Saturn

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obse	Comments: The orbital longitude c observation. Once the latter has b	constraint is depen een determined, w	dent on whether t we will need to rev	he IFU will be on the isit this constraint.	he left-hand	or the right-hand edge	of the MSA, as se	en on the image pla	ne, which means i	t is depending on th	e epoch of the
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Proposal 1247 - Observation 314 - Saturn

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e l	Observing	Template: NIRSpec IFU	Spectroscopy	1 . 1 .1	1 1511 111	1011		C.J. MCA		1 . 1		1 6 4
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cs	(Visit 314:1) Warning (Form): Ove	erheads are provisi	onal until the Vis	it Planner has been	run.						
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Proposal 1247 - Observation 414 - Saturn

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a,	Comments: Extended=Unknown										
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Proposal 1247 - Observation 318 - Saturn

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Proposal 1247 - Observation 319 - Saturn

tion	Proposal 1247, Observation 319: Diagnostic Status: Warning	: Telesto NIRSpec								Fri Jun 16 23	:00:26 GMT 2023
va	Observing Template: NIRSpec IF	U Spectroscopy									
Obsei	Comments: The orbital longitude of observation. Once the latter has b	constraint is depen been determined, w	dent on whether t e will need to revi	he IFU will be on th isit this constraint.	he left-hand	or the right-hand edge	of the MSA, as s	een on the image pla	ne, which means i	t is depending on th	e epoch of the
cs	(Visit 319:1) Warning (Form): Ov	erheads are provisi	onal until the Vis	it Planner has been	run.						
sti	(Telesto NIRSpec (Obs 319)) Info	rmational (Form): '	The Visit Planner	and Spike may pro	duce differe	nt schedulability results	3.				
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jet:	(613) TELESTO	STD-	-SATURN			STD-TELESTO			Level 5		
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Proposal 1247 - Observation 341 - Saturn

u	Proposal 1247, Obser	vation 341: Syste	m NIRCam 2						Fri Jun	16 23:00:26 GMT 2023
vati	Diagnostic Status: Wa	arning								
Ser.	Observing Template: N	IRCam Imaging								
l ő										
s	(Visit 341:1) Warning	(Form): Overhead	s are provisional until	the Visit Planner has b	een run.					
stic	(System NIRCam 2 (O	bs 341)) Informati	ional (Form): The Visi	t Planner and Spike m	ay produce differe	nt schedulability results.				
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s S	# Name		Level 1			Level 2		Level 3		
get	(637) SATUR	N-CENTRE	STD=SATURN	[201012				
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Ш	2 F	212N	F323N+F322W2	BRIGHT1	2	4	8	2	322.103	
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n be	NOT ORBITAL LONG	GITUDE OF TITA	AN FROM JWST BET AN FROM JWST BET	WEEN 110 250 WEEN 290 360						
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cia	DEFAULT WINDOW	: SEPARATION (OF SATURN-CENTR	E TITAN FROM JWS	ST GREATER TH	AN 10"				
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Proposal 1247 - Observation 665 - Saturn

5	P	roposal 1247,	Observation 6	65: Saturn Back	kground MIRI								Fri Jun 162	3:00:26 GMT 2023
atic	D	Diagnostic Stat	us: Warning											
Š	0	Observing Tem	plate: MIRI Me	dium Resolution	Spectroscopy									
SS														
ō														
cs	()	Visit 665:1) W	arning (Form):	Overheads are pr	rovisional until t	ne Visit Plann	er has been run.							
sti	(5	Saturn Backgro	ound MIRI (Obs	s 665)) Informati	onal (Form): Th	e Visit Planne	r and Spike may pro	duce different scho	edulability resu	ılts.				
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its	#	1	Name]	Level 1			Level 2			Leve	el 3		
l 9	(2	2) 5	SATURN-OFFS	SET	STD=SATURN			TYPE=POS	_ANGLE,RAI	D=60,ANG=0,I	REF=NORTH			
a,	С	Comments: Exte	ended=YES											
ľε														
Ē														
چ ا														
12														
<u> </u>														
Ň														
5	#							Target						
ĬŤ	1							NONE						
E:														
0	·													
₹														
ate	A	cqFilter		Prir	nary Channel		Simultane	ous Imaging		Imager Subar	ray	Grating	g Wheel Direct	on
d	F	1000W		ALI			NO			FULL		NEUTR	AL	
e l														
F														
ţ	#		Wavelength	Detector	Filter	Readout	Groups/Int	Integrations/E	Exposures/D	it Dither	Total Dithers	Total Integrations	Total	ETC Wikhk Cale ID
e			Kange			1 attern		хр				integrations	Time	WKUK.Call ID
۳ I	1		LONG(C)	MRSLONG		FASTR1	5	8	1	None	1	8	130.427	
Π	1		LONG(C)	MRSSHORT		FASTR1	5	8	1	None	1	8	130.427	
a	2		MEDIUM(B)	MRSLONG		FASTR1	5	8	1	None	1	8	130.427	
<u>t</u>	2		MEDIUM(B)	MRSSHORT		FASTR1	5	8	1	None	1	8	130.427	
be be	3		SHORT(A)	MRSLONG		FASTR1	5	8	1	None	1	8	130.427	
ر م	3		SHORT(A)	MRSSHORT		FASTR1	5	8	1	None	1	8	130.427	

Proposal 1247 - Observation 665 - Saturn

 group Observations 330, 665, 666, 667, 668, Non-interruptible

 DEFAULT WINDOW: ANGULAR RATE SATURN-OFFSET FROM JWST LESS THAN 0.03

 DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-OFFSET BY TITAN FROM JWST

 NOT TRANSIT OF TITAN ACROSS SATURN-OFFSET FROM JWST

Proposal 1247 - Observation 330 - Saturn

L C	Proposal 124	7, Observation 3	30: Saturn Ring	s MIRI								Fri Jun 16 2	3:00:26 GMT 2023
Ĕ	Diagnostic St	atus: Warning											
Ž	Observing Ter	nplate: MIRI Mee	dium Resolution	Spectroscopy									
se													
ð													
S	(Visit 330:1)	Warning (Form):	Overheads are pro	ovisional until	the Visit Planner	has been run.							
ŝ	(Saturn Rings	MIRI (Obs 330))	Informational (F	form): The Vis	it Planner and Sp	ike may produce o	lifferent schedulab	ility results.					
ĝ													
ag													
ā													
its	#	Name	Ι	Level 1			Level 2			Leve	el 3		
р Эб	(600)	SATURN-RING	s s	STD=SATURN	1		TYPE=TO	RUS,LONG=90,I	LAT=0,RAD	=105000,POL			
a I							E_LONG=0	J,POLE_LAT=+9	90,0_LONG=	=0,0_LA1=0,			
Έ	Comments: To	orus technique, 90	degrees for the	west ring ansa			_						
ste	Extended=Un	known		-									
Ś													
a													
100													
5													
<u>ē</u>	#						Target	t					
sit	1						NONE						
Ē													
Ŭ∀													
ē	AcaFilter		Prin	ary Channel		Simultan	ous Imaging	In	nagor Subar	rov	Grating	wheel Direct	ion
lat	F1000W			lai y Chaimei		NO		II	III I	Tay			
l d	11000 W		ALL	1		NO		1	JLL		NEOTR	AL	
e l													
- s	#			Dithor '	Fwno		Ontim	ized For		Di	raction		
er	1			A-Point	гуре		EXTE	NDED SOURCE			EGATIVE		
国	1			4 I Ollit			LATE	WEED SOURCE		11	LOMITVE		
						~ ~							
ents	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/E xp	h h	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Ĕ	1	LONG(C)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708	
Ш	1	LONG(C)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708	
ਗੁ	2	MEDIUM(B)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708	
ŭ	2	MEDIUM(B)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708	
be	3	SHORT(A)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708	
l w	3	SHORT(A)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708	

Proposal 1247 - Observation 330 - Saturn

Special Requirements Group Observations 330, 665, 666, 667, 668, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE SATURN-RINGS FROM JWST LESS THAN 0.03 DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-RINGS BY TITAN FROM JWST SEPARATION OF SATURN-RINGS TITAN FROM JWST GREATER THAN 10"

Proposal 1247 - Observation 666 - Saturn

L C	Proposal 1247	, Observation 6	66: Saturn Nortl	h Pole MIRI								Fri Jun 16 23	3:00:26 GMT 2023	
Ĕ	Diagnostic Sta	tus: Warning												
Ž	Observing Ten	nplate: MIRI Med	dium Resolution	Spectroscopy										
se	Comments: The targetted longitude can take any value - there is no requirement for a specific longitude, provided it is observed as close as possible to the central meridian.													
ا گ														
Ś	(Visit 666:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.													
ŭ.	(Saturn North I	Pole MIRI (Obs 6	566)) Information	nal (Form): The	e Visit Planner a	nd Spike may prod	luce different sched	lulability results						
Įğ														
ag														
ä														
ţ	#	Name	Ι	Level 1			Level 2			Leve	43			
ge	(634)	SATURN-75N	S	STD=SATURN	1		TYPE=TOF	RUS,LONG=0,L	AT=75,RAD=	54706,POLE				
a							_LONG=0,I	POLE_LAT=90	O_LONG=0,0	D_LAT=0,O_				
	Commonts: Ma	osaic MIRI MRS	observation of Sa	uturn's north no			KAD=0							
Ē	The longitude i	is not important,	so we have used	the TORUS tec	chnique (with the	radius for a specij	fic latitude) to ensi	ure pointing at th	ne central meri	dian.				
Š	Extended=YES													
1														
l a														
Ň														
5	#						Target							
Ē	1						NONE							
ni:														
<u>छ</u>														
◄														
ate	AcqFilter		Prin	nary Channel		Simultaneous Imaging Imager Subarray					Grating Wheel Direction			
l ä	F1000W		ALL			NO FULL				NEUTRAL				
l E														
Ĕ														
si	#			Dither 7	Гуре		Optim	ized For		Di	rection			
Ē	1			4-Point			EXTE	NDED SOURCH	3	NI	EGATIVE			
ā														
ω	#	Wavelength	Detector	Filter	Readout	Groups/Int	Integrations/E	Exposures/Di	Dither	Total Dithers	Total	Total	ETC	
j,		Range			Pattern	-	хр	h			Integrations	Exposure	Wkbk.Calc ID	
Ĩ	1	LONG(C)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521 708	· · ·	
l 🗄	1	LONG(C)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
	2	MEDITIM(B)	MRSLONG		FASTR1	5	8	1	Dither 1		32	521.708		
Ĭ	2	MEDIUM(B)	MRSSHORT		FASTR1	5	8	1	Dither 1	- - 4	32	521.708		
l ĕ	3	SHORT(A)	MPSLONG		EASTD1	5	0	1	Dithon 1		22	521.700		
					L'ANTR'	1	ă.		i nner i	4	1/	ר∕ר <i>ו</i> ער		

Proposal 1247 - Observation 666 - Saturn

Group Observations 330, 665, 666, 667, 668, Non-interruptible
NOT TRANSIT OF TITAN ACROSS SATURN FROM JWST
DEFAULT WINDOW: NOT OCCULTATION OF SATURN-75N BY SATURN FROM JWST
DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-75N BY TITAN FROM JWST
DEFAULT WINDOW: SEPARATION OF SATURN-75N RHEA FROM JWST GREATER THAN 10"
DEFAULT WINDOW: SEPARATION OF SATURN-75N TITAN FROM JWST GREATER THAN 10"
DEFAULT WINDOW: ANGULAR RATE SATURN-75N FROM JWST LESS THAN 0.03

Proposal 1247 - Observation 667 - Saturn

L C	Proposal 1247	7, Observation 6	67: Saturn 45N 1	MIRI								Fri Jun 16 23	3:00:26 GMT 2023	
Diagnostic Status: Warning														
Ž	Observing Template: MIRI Medium Resolution Spectroscopy Comments: The targetted longitude can take any value - there is no requirement for a specific longitude, provided it is observed as close as possible to the central meridian.													
Se														
ð														
S	(Visit 667:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.													
sti I	(Saturn 45N MIRI (Obs 667)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.													
2														
ag														
ā														
ts	#	Name	I	evel 1			Level 2			Leve	4 3			
ge	(635)	SATURN-45N	S	TD=SATURN			TYPE=TOP	RUS,LONG=0,L	AT=45,RAD=	57088,POLE				
a							_LONG=0,1 RAD=0	POLE_LAT=90.	,O_LONG=0,C	_LAT=0,0_				
Έ	Comments: Se	cond step in MIR	I central-meridia	n scan.										
ŝt	The longitude	is not important,	so we have used i	the TORUS tech	nique (with the	radius for a specif	fic latitude) to ensi	ure pointing at th	ie central merio	dian.				
Š	Extended=TES)												
Ö														
5														
<u></u>	#						Target							
sit	1						NONE							
<u>in</u>														
Ŭ														
ð	AcaFilter		Prim	arv Channel		Simultano	ous Imaging	Tı	mager Subarr	9W	Grating	wheel Directi	on	
lat	F1000W			lary Channel		Simultaneous imaging imager Subarra			ray Graing wheel Direction					
l d	1 1000 W		ALL			NO					NEUTRAL			
ler l														
	#			Dithor T	vno		Ontim	ized For		Di	rection			
er.	1			4-Point	ypc		EXTE	NDED SOURCE	7	NE	FGATIVE			
画	1			4 I 0IIIt			LATE	IDED SOURCE	_	111	Lonnive			
	"			T 111			T () (T						-	
ents	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
Ĕ	1	LONG(C)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
l≞	1	LONG(C)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		
a	2	MEDIUM(B)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
E.	2	MEDIUM(B)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		
be	3	SHORT(A)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
S	3	SHORT(A)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		

Proposal 1247 - Observation 667 - Saturn

Its	Group Observations 330, 665, 666, 667, 668, Non-interruptible
Requiremen	NOT TRANSIT OF TITAN ACROSS SATURN FROM JWST DEFAULT WINDOW: NOT OCCULTATION OF SATURN-45N BY SATURN FROM JWST DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-45N BY TITAN FROM JWST DEFAULT WINDOW: SEPARATION OF SATURN-45N RHEA FROM JWST GREATER THAN 10" DEFAULT WINDOW: SEPARATION OF SATURN-45N TITAN FROM JWST GREATER THAN 10" DEFAULT WINDOW: ANGULAR RATE SATURN-45N FROM JWST LESS THAN 0.03
Special	

Proposal 1247 - Observation 668 - Saturn

		00001		Oatann											
5	Proposal 1247	Observation 6	68: Saturn 15N	MIRI								Fri Jun 16 2	23:00:26 GMT 2023		
Ĕ	Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy														
Ž															
se	Comments: The targetted longitude can take any value - there is no requirement for a specific longitude, provided it is observed as close as possible to the central meridian.														
ရ															
	(Saturn 15N MIRI (Obs 668)) Warning (Form): Groups/Int cannot be 1, Groups/Int = 2 requires permission and Groups/Int of 3-4 is allowed but not recommended.														
ر س	(Saturn 15N M	IRI (Obs 668)) V	Varning (Form):	Groups/Int cann	ot be 1, Groups	/Int = 2 requires pe	ermission and Grou	ps/Int of 3-4 is al	lowed but not	t recommended.					
ü.	(Saturn 15N M	IRI (Obs 668)) V	Varning (Form):	Groups/Int cann	ot be 1, Groups	/Int = 2 requires pe	ermission and Grou	ps/Int of 3-4 is al	lowed but not	t recommended.					
ost	(Saturn 15N M	IRI (Obs 668)) V	Varning (Form):	Groups/Int cann	ot be 1, Groups	Int = 2 requires po	ermission and Grou	ips/Int of 3-4 is al	lowed but not	t recommended.					
l G	(Saturn 15N M	IRI (Obs 668)) V	Varning (Form):	Groups/Int cann	ot be 1, Groups	/Int = 2 requires pe	ermission and Grou	ps/Int of 3-4 is al	lowed but not	t recommended.					
ja	(Saturn 15N M	IRI (Obs 668)) V	Varning (Form):	Groups/Int cann	ot be 1, Groups	Int = 2 requires pe	ermission and Grou	ps/Int of 3-4 is al	lowed but not	t recommended.					
	(Visit 668:1) W	arning (Form): (Overheads are pr	ovisional until t	he Visit Planner	has been run.		•							
	(Saturn 15N MIRI (Obs 668)) Informational (Form): The Visit Planner and Spike may produce different schedulability results														
ts	#	Name	I	Level 1			Level 2			Leve	el 3				
ge	(636)	SATURN-15N	S	STD=SATURN			TYPE=TOR	US,LONG=0,LA	T=15,RAD=5	59811,POLE					
Ta,							_LONG=0,I RAD=0	POLE_LAT=90,0	_LONG=0,0	_LAT=0,O_					
Ϊε	Comments: Thi	Comments: Third step in MIRI MRS central-meridian scap													
Ē	The longitude i	s not important,	so we have used	the TORUS tech	nique (with the	radius for a specij	fic latitude) to ensu	re pointing at the	central meric	lian.					
Š	Extended=YES														
100															
a															
Ň															
n	#						Target								
ij	1						NONE								
ni;															
5															
◄															
ate	AcqFilter		Prin	nary Channel		Simultane	ous Imaging	Im	ager Subarra	ay Grating Wheel Direction					
l d	F1000W		ALL			NO FULL					NEUTRAL				
eπ															
F				D:4											
ers	#			Ditner T	уре			Zed For							
l H	1			4-Point			EATER	NDED SOURCE		INI	EGATIVE				
ts	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/E	Exposures/Dit	Dither	Total Dithers	Total Integrations	Total Exposure	ETC Wkbk Calc ID		
len							P					Time			
e	1	LONG(C)	MRSLONG		FASTR1	4	10	1	Dither 1	4	40	543.908			
Ш	1	LONG(C)	MRSSHORT		FASTR1	4	10	1	Dither 1	4	40	543.908			
a	2	MEDIUM(B)	MRSLONG		FASTR1	4	10	1	Dither 1	4	40	543.908			
t d	2	MEDIUM(B)	MRSSHORT		FASTR1	4	10	1	Dither 1	4	40	543.908			
be	3	SHORT(A)	MRSLONG		FASTR1	4	10	1	Dither 1	4	40	543.908			
S	3	SHORT(A)	MRSSHORT		FASTR1	4	10	1	Dither 1	4	40	543.908			
-															

Proposal 1247 - Observation 668 - Saturn

ts	Group Observations 330, 665, 666, 667, 668, Non-interruptible
Š	
l e	NOT TRANSIT OF TITAN ACROSS SATURN FROM JWST
۲.	DEFAULT WINDOW: NOT OCCULTATION OF SATURN-15N BY SATURN FROM JWST
<u> </u>	DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-15N BY TITAN FROM JWST
Ē	DEFAULT WINDOW: SEPARATION OF SATURN-15N RHEA FROM JWST GREATER THAN 10"
ğ	DEFAULT WINDOW: SEPARATION OF SATURN-15N TITAN FROM JWST GREATER THAN 10"
~	DEFAULT WINDOW: ANGULAR RATE SATURN-15N FROM JWST LESS THAN 0.03
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Proposal 1247 - Observation 766 - Saturn

L C	Proposal 1247	, Observation 7	66: Saturn Nortl	1 Pole MIRI								Fri Jun 16 23	3:00:26 GMT 2023	
Ĕ	Diagnostic Sta	tus: Warning												
Ž	Observing Ten	nplate: MIRI Me	dium Resolution	Spectroscopy										
Comments: The targetted longitude can take any value - there is no requirement for a specific longitude, provided it is observed as close as possible to the central meridian.														
ð	This is a repea	t of failed visit 60	56.											
cs	(Visit 766:1) W	Varning (Form):	Overheads are pro	ovisional until t	he Visit Planner	has been run.								
sti	(Saturn North I	Pole MIRI (Obs '	766)) Information	al (Form): The	Visit Planner aı	nd Spike may prod	uce different scheo	lulability results.						
2														
iag														
ق														
ts	#	Name	Ι	evel 1			Level 2			Leve	el 3			
b	(634)	SATURN-75N	S	TD=SATURN			TYPE=TOF	RUS,LONG=0,L	AT=75,RAD=	54706,POLE				
a I							_LONG=0,I RAD=0	POLE_LAT=90,	O_LONG=0,C	D_LA1=0,0_				
Ξ	Comments: Mo	osaic MIRI MRS	observation of Sa	turn's north pol	e.									
ste	The longitude i	is not important,	so we have used	the TORUS tech	nique (with the	radius for a specij	fic latitude) to ensi	ire pointing at th	e central merio	dian.				
Ś	Extended=1E5													
ar														
1 2 2														
							T (
ē	#						Target							
sit	1						NONE							
<u> </u>														
Ŭ V														
ē	AcqFilter		Prim	ary Channel		Simultane	ous Imaging	Ir	nager Subarr	ay	Grating	g Wheel Directi	on	
at	F1000W		ALL	•		NO	8 8	F	ULL	- U	NEUTR	AL		
ΪĔ														
⊢														
rs	#			Dither T	уре		Optim	ized For		Di	rection			
Pe l	1			4-Point			EXTEN	NDED SOURCE	1	NI	EGATIVE			
Ξ														
s	#	Wavelength	Detector	Filter	Readout	Groups/Int	Integrations/E	Exposures/Dit	Dither	Total Dithers	Total	Total	ЕТС	
ent		Range			Pattern	-	хр	h			Integrations	Exposure Time	Wkbk.Calc ID	
Ĩ	1	LONG(C)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
Ш	1	LONG(C)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		
a	2	MEDIUM(B)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
l j	2	MEDIUM(B)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		
be	3	SHORT(A)	MRSLONG		FASTR1	5	8	1	Dither 1	4	32	521.708		
l N	3	SHORT(A)	MRSSHORT		FASTR1	5	8	1	Dither 1	4	32	521.708		

Proposal 1247 - Observation 766 - Saturn

NOT TRANSIT OF TITAN ACROSS SATURN FROM JWST DEFAULT WINDOW: NOT OCCULTATION OF SATURN-75N BY SATURN FROM JWST DEFAULT WINDOW: NOT ECLIPSE PENUMBRAL PARTIAL OF SATURN-75N BY TITAN FROM JWST DEFAULT WINDOW: SEPARATION OF SATURN-75N RHEA FROM JWST GREATER THAN 10" DEFAULT WINDOW: SEPARATION OF SATURN-75N TITAN FROM JWST GREATER THAN 10" DEFAULT WINDOW: ANGULAR RATE SATURN-75N FROM JWST LESS THAN 0.03