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Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

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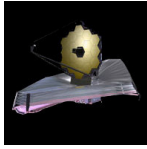
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1759 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation

Environments

Cycle: 1, Proposal Category: GO

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JWST Proposal 1759 (Created: Thursday, August 26, 2021 at 10:00:18 AM Eastern Standard Time) - Overview

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OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
G353.1+0.6				
	6	76	MIRI Medium Resolution Spectroscopy	(8) 76
	8	62	MIRI Medium Resolution Spectroscopy	(6) 62
	14	69	MIRI Medium Resolution Spectroscopy	(7) 69
	16	F51	MIRI Medium Resolution Spectroscopy	(10) F51
	10	86	MIRI Medium Resolution Spectroscopy	(9) 86
Pis24				
	19	F11	MIRI Medium Resolution Spectroscopy	(4) F11
	18	F16	MIRI Medium Resolution Spectroscopy	(5) F16
	3	11	MIRI Medium Resolution Spectroscopy	(1) 11
	4	34	MIRI Medium Resolution Spectroscopy	(2) 34
	5	39	MIRI Medium Resolution Spectroscopy	(3) 39
G353.1+0.7				
	11	122	MIRI Medium Resolution Spectroscopy	(13) 122
	20	123	MIRI Medium Resolution Spectroscopy	(14) 123
	12	94	MIRI Medium Resolution Spectroscopy	(11) 94
	21	105	MIRI Medium Resolution Spectroscopy	(12) 105
	13	F64	MIRI Medium Resolution Spectroscopy	(15) F64

ABSTRACT

Our knowledge about the formation history of planetary systems is obtained by comparing the demographics of proto-planetary disks with the exoplanetary system population. Most of the disks that we have been able to characterize to date are located in nearby low-mass star forming regions.

However, it is well known that most stars form in denser environments and therefore, it is questionable that the well studied population of planet forming disks is representative of those in which most exoplanets were assembled. Due to their large distances and high densities, so far it has been impossible to study the physical and chemical properties of proto-planetary disks in massive star-forming regions. We will exploit the unique resolution and sensitivity of JWST/MIRI to explore for the first time the impact of disk evaporation on the disk structure, warm disk chemistry, and dust mineralogy, all of which are important for planet formation models and exoplanet atmosphere composition. The derived physical and chemical properties will be compared to similar data of low-mass star forming regions of JWST GTO programmes.

OBSERVING DESCRIPTION

We request MIRI-MRS spectroscopy (5-28 micron) of 15 disk-bearing stars spanning a range of spectral types from A to M equally distributed between three sub-clusters in the star-forming complex NGC6357. To reach our science goals we require S/N~80 at 12.5 micron, and ~20 at 22.5 micron. The exposure time necessary to achieve our goals was calculated using the ETC; we simulated our targets with a typical T-tauri disk and scaled the model to the 8 micron flux of each source. The background level was calculated from Spitzer Ch4 and 24 micron images around our sources. The minimum S/N required is such that we can detect faint lines on top of the bright continuum.

We will use for the IFU Nod In Scene option for the background subtraction and the FAST readout mode in order to optimize the rejection of cosmic rays. We find that the optimal number of groups per integration to mitigate cosmic rays, but still have a reasonable exposure time is 40. This results in 40 groups per integration, 2 integrations per exposure, and 2 exposures per specification for each grating setting per source, resulting in a total exposure time of 45 minutes per source and a total of 11 hours of science exposure. Accounting for the overheads the total proposed time is 24.3 hours.

Proposal 1759 - Targets - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	11	RA: 17 24 33.8250 (261.1409375d) Dec: -34 11 54.83 (-34.19856d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(2)	34	RA: 17 24 44.6280 (261.1859500d) Dec: -34 11 0.68 (-34.18352d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(3)	39	RA: 17 24 47.1250 (261.1963542d) Dec: -34 15 41.02 (-34.26139d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(4)	F11	RA: 17 24 40.1440 (261.1672667d) Dec: -34 12 26.74 (-34.20743d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(5)	F16	RA: 17 24 41.6390 (261.1734958d) Dec: -34 12 49.99 (-34.21389d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(6)	62	RA: 17 25 18.2600 (261.3260833d) Dec: -34 27 27.96 (-34.45777d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(7)	69	RA: 17 25 30.2650 (261.3761042d) Dec: -34 23 8.62 (-34.38573d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				
(8)	76	RA: 17 25 34.2220 (261.3925917d) Dec: -34 23 24.47 (-34.39013d) Equinox: J2000		
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>				

Fixed Targets

Proposal 1759 - Targets - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

(9)	86	RA: 17 25 41.8550 (261.4243958d) Dec: -34 23 58.92 (-34.39970d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(10)	F51	RA: 17 25 34.0320 (261.3918000d) Dec: -34 23 35.28 (-34.39313d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(11)	94	RA: 17 25 50.3890 (261.4599542d) Dec: -34 15 42.98 (-34.26194d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(12)	105	RA: 17 25 55.2740 (261.4803083d) Dec: -34 15 47.76 (-34.26327d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(13)	122	RA: 17 26 2.0800 (261.5086667d) Dec: -34 16 44.79 (-34.27911d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(14)	123	RA: 17 26 3.3620 (261.5140083d) Dec: -34 16 41.45 (-34.27818d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		
(15)	F64	RA: 17 25 58.7230 (261.4946792d) Dec: -34 18 8.18 (-34.30227d) Equinox: J2000
<p><i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i></p>		

Proposal 1759 - Observation 6 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 6: 76 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous			
	(8)	76	RA: 17 25 34.2220 (261.3925917d) Dec: -34 23 24.47 (-34.39013d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel				Simultaneous Imaging				Imager Subarray				
	ALL				YES				FULL				
Dithers	#	Dither Type				Optimized For			Direction				
	1	4-Point				POINT SOURCE			NEGATIVE				
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 8 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 8: 62 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 8:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous			
	(6)	62	RA: 17 25 18.2600 (261.3260833d) Dec: -34 27 27.96 (-34.45777d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel				Simultaneous Imaging				Imager Subarray				
	ALL				YES				FULL				
Dithers	#	Dither Type				Optimized For			Direction				
	1	4-Point				POINT SOURCE			NEGATIVE				
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 14 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 14: 69 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(7)	69	RA: 17 25 30.2650 (261.3761042d) Dec: -34 23 8.62 (-34.38573d) Equinox: J2000 Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 16 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 16: F51 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(10)	F51	RA: 17 25 34.0320 (261.3918000d) Dec: -34 23 35.28 (-34.39313d) Equinox: J2000 Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 10 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 10: 86 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(9)	86	RA: 17 25 41.8550 (261.4243958d) Dec: -34 23 58.92 (-34.39970d) Equinox: J2000 Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 19 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 19: F11 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 19:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(4)	F11	RA: 17 24 40.1440 (261.1672667d) Dec: -34 12 26.74 (-34.20743d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description=/Molecular gas, Pre-main sequence stars/</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 18 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 18: F16 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 18:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(5)	F16	RA: 17 24 41.6390 (261.1734958d) Dec: -34 12 49.99 (-34.21389d) Equinox: J2000 Comments: Category=ISM Description= [Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 3 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 3: 11 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous			
	(1)	11	RA: 17 24 33.8250 (261.1409375d) Dec: -34 11 54.83 (-34.19856d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description=/Molecular gas, Pre-main sequence stars/</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel				Simultaneous Imaging				Imager Subarray				
	ALL				YES				FULL				
Dithers	#	Dither Type				Optimized For			Direction				
	1	4-Point				POINT SOURCE			NEGATIVE				
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 4 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 4: 34 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous			
	(2)	34	RA: 17 24 44.6280 (261.1859500d) Dec: -34 11 0.68 (-34.18352d) Equinox: J2000										
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>													
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel				Simultaneous Imaging				Imager Subarray				
	ALL				YES				FULL				
Dithers	#	Dither Type				Optimized For			Direction				
	1	4-Point				POINT SOURCE			NEGATIVE				
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 5 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 5: 39 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(3)	39	RA: 17 24 47.1250 (261.1963542d) Dec: -34 15 41.02 (-34.26139d) Equinox: J2000										
<i>Comments:</i> <i>Category=ISM</i> <i>Description=[Molecular gas, Pre-main sequence stars]</i>													
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 11 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 11: 122 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(13)	122	RA: 17 26 2.0800 (261.5086667d) Dec: -34 16 44.79 (-34.27911d) Equinox: J2000 Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 20 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 20: 123 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 20:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(14)	123	RA: 17 26 3.3620 (261.5140083d) Dec: -34 16 41.45 (-34.27818d) Equinox: J2000 Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel				Simultaneous Imaging				Imager Subarray				
	ALL				YES				FULL				
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 12 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 12: 94 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(11)	94	RA: 17 25 50.3890 (261.4599542d) Dec: -34 15 42.98 (-34.26194d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description=/Molecular gas, Pre-main sequence stars/</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 21 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 21: 105 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 21:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(12)	105	RA: 17 25 55.2740 (261.4803083d) Dec: -34 15 47.76 (-34.26327d) Equinox: J2000 <i>Comments:</i> <i>Category=ISM</i> <i>Description= [Molecular gas, Pre-main sequence stars]</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	

Proposal 1759 - Observation 13 - Physics and Chemistry of Planet-Forming Disks in Extreme Radiation Environments

Thu Aug 26 15:00:18 GMT 2021

Observation	Proposal 1759, Observation 13: F64 Diagnostic Status: Warning Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous				
	(15)	F64	RA: 17 25 58.7230 (261.4946792d) Dec: -34 18 8.18 (-34.30227d) Equinox: J2000			Comments: Category=ISM Description=[Molecular gas, Pre-main sequence stars]							
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
	1	SAME	FND	FAST	4	1	1	11.1	85345				
Template	Primary Channel			Simultaneous Imaging				Imager Subarray					
	ALL			YES				FULL					
Dithers	#	Dither Type			Optimized For			Direction					
	1	4-Point			POINT SOURCE			NEGATIVE					
Spectral Elements	#	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
	1		IMAGER	F560W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	1	SHORT(A)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	1	SHORT(A)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2		IMAGER	F770W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	2	MEDIUM(B)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	2	MEDIUM(B)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3		IMAGER	F1000W	FASTR1	40	1	1	Dither 1	4	4	444.006	
	3	LONG(C)	MRSLONG		FASTR1	40	2	1	Dither 1	4	8	899.113	
	3	LONG(C)	MRSSHORT		FASTR1	40	2	1	Dither 1	4	8	899.113	