



2130 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Magellanic Clouds

Cycle: 1, Proposal Category: GO

INVESTIGATORS

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Dr. Adam G Ginsburg (CoI)	University of Florida
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Prof. Xiaohui Fan (CoI)	University of Arizona

OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	3	NGC0598 MIRI Prime	MIRI Imaging	(2) NGC0598MIRI
	12	NGC0598 MIRI BRIG HT1 Prime	MIRI Imaging	(10) NGC0598MIRI-BRIGHT1
	13	NGC0598 MIRI BRIG HT2 Prime	MIRI Imaging	(11) NGC0598MIRI-BRIGHT2
	5	NGC0300 MIRI Prime	MIRI Imaging	(3) NGC0300MIRI
	1	NGC7793 MIRI Prime	MIRI Imaging	(1) NGC7793MIRI

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
	4	NGC0598SKY MIRI Prime	MIRI Imaging	(12) NGC0598SKYMIRI
	16	NGC0300SKY MIRI Prime	MIRI Imaging	(13) NGC0300SKYMIRI
	17	NGC7793SKY MIRI Prime	MIRI Imaging	(14) NGC7793SKYMIRI
Observation Folder				
	11	NGC0300 NIRCam Prime	NIRCam Imaging	(9) NGC0300NIRCAM
	7	NGC7793 NIRCam Prime	NIRCam Imaging	(7) NGC7793NIRCAM
	20	NGC0598 NIRCam Prime Repeat	NIRCam Imaging	(8) NGC0598NIRCAM
Observation Folder				
	14	NGC0598 NIRCam Prime	NIRCam Imaging	(8) NGC0598NIRCAM

ABSTRACT

We propose to begin the mid-infrared parsec-scale study of dust-enshrouded stellar populations in galaxies beyond the Magellanic Clouds. Building on methods established by Spitzer observations of the SMC and LMC, we will identify and characterize massive young stellar objects (MYSOs) and embedded star clusters, using NIRCam and MIRI imaging at 2, 4.4, 10, and 21 μm . We will observe an area of $\sim 2\text{-}3$ sq. kpc covering spiral features in each of 3 galaxies (M33, NGC 300, NGC 7793) at distances of $\sim 1, 2, 3$ Mpc. In each galaxy, we expect to find $> \sim 150$ clusters dominated by emission from individual MYSOs. Study of this early embedded phase, which lasts at most 2-3 Myr, hold critical clues to the conditions that ignite and extinguish star formation. Together with existing HST and ALMA CO imaging, we will build a foundational dataset to answer key questions on star formation at parsec scales, including the timescales for progression from molecular cloud to embedded cluster to revealed cluster; the rate and efficiency of star formation; and the form of the star formation law.

This program will serve as a pathfinder for study of the physical properties of MYSOs and embedded stellar clusters out to a few Mpc, and for interpretation of MIR imaging of clusters and clumps at larger distances. New SED modeling techniques are needed to interpret the photometry, which we are developing and will release as part of this program. The data broadly enable studies of all other objects tiny, dusty, and mid-infrared bright, including evolved stars. We thus will waive the proprietary period to facilitate community science and planning for spectroscopic and other follow-up studies.

OBSERVING DESCRIPTION

We will image well-studied spiral features in 3 nearby galaxies (M33, NGC 300, NGC 7793) using deep NIRCAM and MIRI four-band imaging at 2, 4.4, 10, and 21 microns. The target areas to be imaged were chosen to maximize overlap with HST+ALMA archival data.

To adequately sample the spiral features, we require 15, 3, and 1 MIRI pointing(s) in M33, NGC 300, and NGC 7793, respectively. NIRCAM imaging is planned over the same area.

We use F1000W and F2100W filters for MIRI observations of all targets. For NIRCAM imaging, we use F200W and F444W for NGC 300 and NGC 7793. For M33, we substitute F210M and F430M to help mitigate against bright object saturation concerns.

Total integration times for M33/NGC 300/NGC 7793 are

NIRCAM 387/344/600 sec

MIRI 278/666/1998 sec (F1000W) and 222/1332/3996 sec (F2100W)

To enable detection of faint sources without exceeding bright limits, we adopt a hybrid approach for both NIRCAM and MIRI imaging. For NIRCAM we will combine short exposures (with the fastest readout, RAPID) and longer observations (with slower readouts, BRIGHT2) to maximize recovered dynamic range in final drizzled image products. For MIRI we use a FULL/FAST/Ngroups=5 strategy, but in addition specifically target problematic bright areas (only two, both in M33) with devoted short/fast readout subarray (SUB256) observations in addition to our general mosaic.

The MIRI 4-point dither pattern, optimized for analysis of point sources, is used. For NIRCAM, INTRAMODULEBOX4 primary dither is used to maximize the area the area observed at full depth in NGC 300 and NGC 7793. Since the target region is much larger in M33, we use FULL/3TIGHT for the primary dither pattern, with 2 subpixel positions to build depth. In general, subpixel dithering is unnecessary because the PSF is well-sampled at F200W and F444W.

Mosaicing in M33 employs a MIRI 6x4 grid, for which we have only retained 15 tiles that probe our target area. For NGC 300 we require a 3x1 MIRI mosaic to cover the arm. Ample area in NGC 7793 is obtained in a single MIRI pointing. For MIRI mosaics, we use 10% tile overlap, and a 14% row shift (in the case of NGC 300). NIRCAM mosaicing is needed in M33 (5x1 grid) and NGC 300 (1x2 grid). In M33, row overlap is 8%; in

NGC 300, column overlap is 58%. The later provides contiguous coverage in NGC 300 along the mosaic column-oriented extent.

To map the spiral arm features, we impose orientation constraints. Each orientation constraint provides at least 20-day-wide observing windows. Our requirements are as follows:

M33: MIRI FULL mosaic = 242-246 aperture PA, NIRCAM mosaic = 239-240 aperture PA

M33: MIRI SUB256 observations of two bright areas = unconstrained in PA

NGC 300: MIRI mosaic = 292-298 aperture PA, NIRCAM mosaic = 22-27 aperture PA

NGC 7793: MIRI 271-279.5 aperture PA, NIRCAM = 34-40 aperture PA

Mosaics tiles in each galaxy are constrained to be in a non-interruptable sequence, as are the two MIRI subarray pointings for bright regions in M33.

Proposal 2130 - Targets - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Magellanic ...

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	NGC7793MIRI	RA: 23 57 51.2702 (359.4636258d) Dec: -32 35 56.82 (-32.59912d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(2)	NGC0598MIRI	RA: 01 33 45.2000 (23.4383333d) Dec: +30 33 0.00 (30.55000d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(3)	NGC0300MIRI	RA: 00 54 57.8285 (13.7409521d) Dec: -37 39 19.78 (-37.65549d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(7)	NGC7793NIRCAM	RA: 23 57 44.7364 (359.4364017d) Dec: -32 34 57.54 (-32.58265d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(8)	NGC0598NIRCAM	RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(9)	NGC0300NIRCAM	RA: 00 54 54.3968 (13.7266533d) Dec: -37 39 3.19 (-37.65089d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(10)	NGC0598MIRI-BRIGHT1	RA: 01 33 59.3122 (23.4971342d) Dec: +30 35 52.55 (30.59793d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				
(11)	NGC0598MIRI-BRIGHT2	RA: 01 33 29.8106 (23.3742108d) Dec: +30 31 49.81 (30.53050d) Equinox: J2000		
<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>				

Fixed Targets

Proposal 2130 - Targets - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Magellanic ...

(12)	NGC0598SKYMIRI	RA: 01 31 11.4804 (22.7978350d) Dec: +30 53 37.31 (30.89370d) Equinox: J2000
<p><i>Comments:</i> <i>Category=Unidentified</i> <i>Description=[Blank field]</i></p>		
(13)	NGC0300SKYMIRI	RA: 00 53 34.4288 (13.3934533d) Dec: -37 21 44.74 (-37.36243d) Equinox: J2000
<p><i>Comments:</i> <i>Category=Unidentified</i> <i>Description=[Blank field]</i></p>		
(14)	NGC7793SKYMIRI	RA: 23 57 17.9846 (359.3249358d) Dec: -32 29 19.53 (-32.48876d) Equinox: J2000
<p><i>Comments:</i> <i>Category=Unidentified</i> <i>Description=[Blank field]</i></p>		
(15)	NGC0598NIRCAM-Tile-3	RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000
<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>		
(16)	NGC0598NIRCAM-Tile-4	RA: 01 33 52.4266 (23.4684442d) Dec: +30 33 57.63 (30.56601d) Equinox: J2000
<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>		

Proposal 2130 - Observation 3 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Mon Oct 16 17:00:54 GMT 2023

Observation	Proposal 2130, Observation 3: NGC0598 MIRI Prime Diagnostic Status: Warning Observing Template: MIRI Imaging Background Observations:[NGC0598SKY MIRI Prime (Obs 4)]																										
	(NGC0598 MIRI Prime (Obs 3)) Warning (Form): Target requiring background exposure selected for template that doesn't require background exposure (Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:3) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:4) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:5) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:6) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:7) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:8) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:9) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:10) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:11) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:12) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:13) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:14) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 3:15) Warning (Form): Overheads are provisional until the Visit Planner has been run. (NGC0598 MIRI Prime (Obs 3)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.																										
Diagnosics																											
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>NGC0598MIRI</td> <td>RA: 01 33 45.2000 (23.4383333d) Dec: +30 33 0.00 (30.55000d) Equinox: J2000</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous	(2)	NGC0598MIRI	RA: 01 33 45.2000 (23.4383333d) Dec: +30 33 0.00 (30.55000d) Equinox: J2000			<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i>															
	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous																						
(2)	NGC0598MIRI	RA: 01 33 45.2000 (23.4383333d) Dec: +30 33 0.00 (30.55000d) Equinox: J2000																									
Template	Subarray																										
	FULL																										
Mosaic	<table border="1"> <thead> <tr> <th>Rows</th> <th>Columns</th> <th>Row Overlap %</th> <th>Column Overlap %</th> <th>Row shift (deg)</th> <th>Column shift (deg)</th> <th>Tile Order</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>4</td> <td>10.0</td> <td>10.0</td> <td>0.0</td> <td>0.0</td> <td>HILBERT_CURVE</td> </tr> </tbody> </table>	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order	6	4	10.0	10.0	0.0	0.0	HILBERT_CURVE												
	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order																				
6	4	10.0	10.0	0.0	0.0	HILBERT_CURVE																					
Dithers	<table border="1"> <thead> <tr> <th>#</th> <th>Dither Type</th> <th>Starting Point</th> <th>Number of Points</th> <th>Points</th> <th>Starting Set</th> <th>Number of Sets</th> <th>Optimized For</th> <th>Direction</th> <th>Pattern Size</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4-Point-Sets</td> <td></td> <td></td> <td></td> <td>1</td> <td>1</td> <td>POINT SOURCE</td> <td>POSITIVE</td> <td>DEFAULT</td> </tr> </tbody> </table>	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	1	4-Point-Sets				1	1	POINT SOURCE	POSITIVE	DEFAULT						
	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size																	
1	4-Point-Sets				1	1	POINT SOURCE	POSITIVE	DEFAULT																		

Proposal 2130 - Observation 3 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
		1	F1000W	FASTR1	16	2	1	Dither 1	4	8	366.305
	2	F2100W	FASTR1	8	2	1	Dither 1	4	8	188.703	
Special Requirements	<p>Group Visits within 1 Days Aperture PA Range 242 to 246 Degrees (V3 237.16455103 to 241.16455103) Visits Same PA</p> <p>Sequence Observations 3, 4, 12, 13, Non-interruptible Same Aperture PA 3, 4</p>										

Observation	<p>Proposal 2130, Observation 12: NGC0598 MIRI BRIGHT1 Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p>										
Diagnostics	(Visit 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(10)	NGC0598MIRI-BRIGHT1	RA: 01 33 59.3122 (23.4971342d) Dec: +30 35 52.55 (30.59793d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>										
Template	<p>Subarray SUB256</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	1	POINT SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	5	5	1	Dither 1	4	20	34.744	
	2	F2100W	FASTR1	5	5	1	Dither 1	4	20	34.744	
Special Requirements	Sequence Observations 3, 4, 12, 13, Non-interruptible										

Observation	<p>Proposal 2130, Observation 13: NGC0598 MIRI BRIGHT2 Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p>										
Diagnostics	(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(11)	NGC0598MIRI-BRIGHT2	RA: 01 33 29.8106 (23.3742108d) Dec: +30 31 49.81 (30.53050d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>										
Template	<p>Subarray SUB256</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	1	POINT SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	5	5	1	Dither 1	4	20	34.744	
	2	F2100W	FASTR1	5	5	1	Dither 1	4	20	34.744	
Special Requirements	Sequence Observations 3, 4, 12, 13, Non-interruptible										

Proposal 2130 - Observation 5 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Mon Oct 16 17:00:54 GMT 2023

Observation	Proposal 2130, Observation 5: NGC0300 MIRI Prime Diagnostic Status: Warning Observing Template: MIRI Imaging Background Observations:[NGC0300SKY MIRI Prime (Obs 16)]										
	(NGC0300 MIRI Prime (Obs 5)) Warning (Form): Target requiring background exposure selected for template that doesn't require background exposure (Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 5:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 5:3) Warning (Form): Overheads are provisional until the Visit Planner has been run. (NGC0300 MIRI Prime (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.										
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous				
	(3)	NGC0300MIRI	RA: 00 54 57.8285 (13.7409521d) Dec: -37 39 19.78 (-37.65549d) Equinox: J2000								
<i>Comments:</i> Category=Galaxy Description=[Field galaxies, Galaxy nuclei]											
Template	Subarray										
	FULL										
Mosaic	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order				
	3	1	10.0	10.0	14.0	0.0	ROW_ORDER				
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	2	POINT SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	16	2	1	Dither 1	8	16	732.611	
	2	F2100W	FASTR1	32	2	1	Dither 1	8	16	1443.021	
Special Requirements	Sequence Visits within 1 Days Aperture PA Range 292 to 298 Degrees (V3 287.16455103 to 293.16455103) Visits Same PA										
	Sequence Observations 5, 16, Non-interruptible Same Aperture PA 5, 16										

Proposal 2130 - Observation 1 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 1: NGC7793 MIRI Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p>										
Diagnostics	<p>(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(NGC7793 MIRI Prime (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(1)	NGC7793MIRI	RA: 23 57 51.2702 (359.4636258d) Dec: -32 35 56.82 (-32.59912d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>										
Template	<p>Subarray FULL</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	2	POINT SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	48	2	1	Dither 1	8	16	2153.431	
	2	F2100W	FASTR1	32	6	1	Dither 1	8	48	4373.463	
Special Requirements	<p>Aperture PA Range 271 to 279.5 Degrees (V3 266.16455103 to 274.66455103)</p> <p>Sequence Observations 1, 17, Non-interruptible</p> <p>Same Aperture PA 1, 17</p>										

Proposal 2130 - Observation 4 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 4: NGC0598SKY MIRI Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p> <p>Background Observation For: [NGC0598 MIRI Prime (Obs 3)]</p>										
Diagnostics	<p>(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(NGC0598SKY MIRI Prime (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(12)	NGC0598SKYMIRI	RA: 01 31 11.4804 (22.7978350d) Dec: +30 53 37.31 (30.89370d) Equinox: J2000								
	<p><i>Comments:</i> Category=Unidentified Description=[Blank field]</p>										
Template	<p>Subarray</p> <p>FULL</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	2	EXTENDED SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	12	1	1	Dither 1	8	8	266.404	
	2	F2100W	FASTR1	12	1	1	Dither 1	8	8	266.404	
Special Requirements	<p>Sequence Observations 3, 4, 12, 13, Non-interruptible</p> <p>Same Aperture PA 3, 4</p>										

Proposal 2130 - Observation 16 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 16: NGC0300SKY MIRI Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p> <p>Background Observation For: [NGC0300 MIRI Prime (Obs 5)]</p>										
Diagnostics	<p>(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(NGC0300SKY MIRI Prime (Obs 16)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(13)	NGC0300SKYMIRI	RA: 00 53 34.4288 (13.3934533d) Dec: -37 21 44.74 (-37.36243d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Unidentified</i> <i>Description=[Blank field]</i></p>										
Template	<p>Subarray FULL</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	2	EXTENDED SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	12	1	1	Dither 1	8	8	266.404	
	2	F2100W	FASTR1	12	1	1	Dither 1	8	8	266.404	
Special Requirements	<p>Sequence Observations 5, 16, Non-interruptible</p> <p>Same Aperture PA 5, 16</p>										

Proposal 2130 - Observation 17 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 17: NGC7793SKY MIRI Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Imaging</p>										
Diagnostics	<p>(Visit 17:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(NGC7793SKY MIRI Prime (Obs 17)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.</p>										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(14)	NGC7793SKYMIRI	RA: 23 57 17.9846 (359.3249358d) Dec: -32 29 19.53 (-32.48876d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Unidentified</i> <i>Description=[Blank field]</i></p>										
Template	<p>Subarray FULL</p>										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets				1	2	EXTENDED SOURCE	POSITIVE	DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1000W	FASTR1	12	1	1	Dither 1	8	8	266.404	
	2	F2100W	FASTR1	12	1	1	Dither 1	8	8	266.404	
Special Requirements	<p>Sequence Observations 1, 17, Non-interruptible Same Aperture PA 1, 17</p>										

Proposal 2130 - Observation 11 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 11: NGC0300 NIRCam Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCam Imaging</p>									
Diagnostics	<p>(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> <p>(Visit 11:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections			Miscellaneous		
	(9)	NGC0300NIRCAM	RA: 00 54 54.3968 (13.7266533d)							
			Dec: -37 39 3.19 (-37.65089d)							
			Equinox: J2000							
	<p><i>Comments:</i></p> <p><i>Category=Galaxy</i></p> <p><i>Description=[Field galaxies, Galaxy nuclei]</i></p>									
Template	Module		Subarray			Target Placement				
	ALL		FULL			Module Gap				
Mosaic	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order			
	1	2	0.0	58.0	0.0	0.0	DEFAULT			
Dithers	#	Primary Dither Type		Primary Dithers	Subpixel Dither Type		Dither Size	Subpixel Positions		
	1	INTRAMODULEBOX		4	STANDARD			1		
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	F200W	F444W	BRIGHT2	6	1	4	4	515.365	
Special Requirements	<p>Sequence Visits , Non-interruptible</p> <p>Aperture PA Range 22 to 27 Degrees (V3 22.0713531 to 27.0713531)</p> <p>Visits Same PA</p>									

Proposal 2130 - Observation 7 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Mag...

Mon Oct 16 17:00:54 GMT 2023

Observation	<p>Proposal 2130, Observation 7: NGC7793 NIRCAM Prime</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCAM Imaging</p>									
Diagnostics	(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections			Miscellaneous		
	(7)	NGC7793NIRCAM	RA: 23 57 44.7364 (359.4364017d) Dec: -32 34 57.54 (-32.58265d) Equinox: J2000							
	<p><i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Field galaxies, Galaxy nuclei]</i></p>									
Template	Module		Subarray			Target Placement				
	ALL		FULL			Module Gap				
Dithers	#	Primary Dither Type		Primary Dithers	Subpixel Dither Type		Dither Size	Subpixel Positions		
	1	INTRAMODULEBOX		4	STANDARD			1		
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	F200W	F444W	BRIGHT2	8	1	4	4	687.153	
Special Requirements	Aperture PA Range 34 to 40 Degrees (V3 34.0713531 to 40.0713531)									

Proposal 2130 - Observation 20 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Mon Oct 16 17:00:54 GMT 2023

Observation	Proposal 2130, Observation 20: NGC0598 NIRCam Prime Repeat Diagnostic Status: Warning Observing Template: NIRCam Imaging									
Diagnostics	(Visit 20:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
	(Visit 20:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
	(Visit 20:3) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
	(Visit 20:4) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
	(Visit 20:5) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
	(Visit 20:6) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous		
	(8)	NGC0598NIRCAM	RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000							
<i>Comments: Category=Galaxy Description=[Field galaxies, Galaxy nuclei]</i>										
Template	Module			Subarray			Target Placement			
	ALL			FULL			Module Gap			
Mosaic	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order			
	3	1	8.0	10.0	0.0	0.0	ROW_ORDER			
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size	Subpixel Positions	
	1	FULL		3TIGHT		STANDARD			2	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	F210M	F430M	BRIGHT2	6	1	6	6	773.047	

Proposal 2130 - Observation 20 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Special Requirements

Group Visits within 53.0 Days
Aperture PA Range 61.3286469 to 62.1286469 Degrees (V3 61.4 to 62.2)
Visits Same PA

Proposal 2130 - Observation 14 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Mon Oct 16 17:00:54 GMT 2023

Observation	Proposal 2130, Observation 14: NGC0598 NIRCAM Prime Diagnostic Status: Warning Observing Template: NIRCAM Imaging																				
	(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:2) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:3) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:4) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:5) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:6) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:7) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:8) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:9) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:10) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:11) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:12) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:13) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:14) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 14:15) Warning (Form): Overheads are provisional until the Visit Planner has been run.																				
Diagnostics																					
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(8)</td> <td>NGC0598NIRCAM</td> <td>RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000</td> <td></td> <td></td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous	(8)	NGC0598NIRCAM	RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000			<i>Comments:</i> Category=Galaxy Description=[Field galaxies, Galaxy nuclei]									
	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous																
(8)	NGC0598NIRCAM	RA: 01 33 44.3362 (23.4347342d) Dec: +30 32 57.00 (30.54917d) Equinox: J2000																			
Template	<table border="1"> <thead> <tr> <th>Module</th> <th>Subarray</th> <th>Target Placement</th> </tr> </thead> <tbody> <tr> <td>ALL</td> <td>FULL</td> <td>Module Gap</td> </tr> </tbody> </table>	Module	Subarray	Target Placement	ALL	FULL	Module Gap														
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	Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order														
5	1	8.0	10.0	0.0	0.0	DEFAULT															
Dithers	<table border="1"> <thead> <tr> <th>#</th> <th>Primary Dither Type</th> <th>Primary Dithers</th> <th>Subpixel Dither Type</th> <th>Dither Size</th> <th>Subpixel Positions</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>FULL</td> <td>3TIGHT</td> <td>STANDARD</td> <td></td> <td>2</td> </tr> </tbody> </table>	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions	1	FULL	3TIGHT	STANDARD		2								
	#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions															
1	FULL	3TIGHT	STANDARD		2																

Proposal 2130 - Observation 14 - Embedded Star Formation in Nearby Galaxies: The Advent of Parsec Scale Studies beyond the Ma...

Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
		1	F210M	F430M	BRIGHT2	6	1	6	6	773.047
Special Requirements	Sequence Visits , Non-interruptible Aperture PA Range 239 to 240 Degrees (V3 239.0713531 to 240.0713531) Visits Same PA Background Limited. Background no more than 40th percentile above minimum									