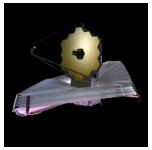

2180 - Structure formation and baryonic cycling in the edge-on galaxy NGC891

Cycle: 1, Proposal Category: GO

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Dr. Matthew Smith (CoI) (ESA Member)	Cardiff University

OBSERVATIONS

Folder	***Observation***	***Label***	***Observing Template***	***Science Target***
NIRCAM NGC891-disk				
	1	NIRCAM_Disk_North 1	NIRCam Imaging	(2) NGC891-DISK-NORTH1
	2	NIRCAM_Disk_North 2	NIRCam Imaging	(1) NGC891-DISK-NORTH
	3	NIRCAM_Disk_North 3	NIRCam Imaging	(3) NGC891-DISK-NORTH3
	4	NIRCAM_Background	NIRCam Imaging	(9) NGC891-BACKGROUND
MIRI IFU NGC891-halo				
	5	MIRI_MRS_halo_C_1 kpc	MIRI Medium Resolution Spectroscopy	(5) NGC891-C-EAST-1KPC
	6	MIRI_MRS_halo_C_2 kpc	MIRI Medium Resolution Spectroscopy	(6) NGC891-C-EAST-2KPC
	7	MIRI_MRS_halo_NE_ 1kpc	MIRI Medium Resolution Spectroscopy	(7) NGC891-NE-1KPC
	8	MIRI_MRS_halo_NE_ 2kpc	MIRI Medium Resolution Spectroscopy	(8) NGC891-NE-2KPC
	9	MIRI_MRS_backgroun d	MIRI Medium Resolution Spectroscopy	(9) NGC891-BACKGROUND
MIRI F770W NGC891-halo				
	10	MIRI_F770W_halo_str ip	MIRI Imaging	(4) NGC891-EXTRAPLANAR
	11	MIRI_F770W_backgro und	MIRI Imaging	(9) NGC891-BACKGROUND

ABSTRACT

Due to their inclined orientation, local edge-on galaxies provide unique laboratories to study vertical disk stratification and to probe the extent and the composition of the circumgalactic medium. One of the major challenges that current galaxy evolution models face involves properly characterising the efficiency of various feedback mechanisms in regulating galaxy's vertical disk scaleheights and in driving feedback-driven outflows. With our proposed high-sensitivity JWST observations of the nearby edge-on galaxy NGC891, we aim to (1.) resolve the vertical galaxy disk layering of stars and dust, and search for heavily observed star clusters with NIRCAM (F150W, F277W); (2.) probe the distribution and anisotropy of dust (MIRI F770W, F1000W, F1130W) and molecular gas (MIRI MRS IFU) in the circumgalactic medium, and link extraplanar chimneys of gas and dust to the heavily embedded star formation activity in the disk to constrain the efficiency of radiative and mechanical feedback mechanisms driving gaseous outflows; (3.) constrain the photo-ionisation sources (and pressure) and its variations with scaleheight in the extended diffuse ionised gas layer at two radial positions R=0kpc and R=10kpc (MIRI MRS IFU). Together, these JWST constraints on the vertical stellar disk structure, extraplanar gas and dust distribution, and the diffuse ionised gas layer will provide a unique set of constraints to test prescriptions of various feedback mechanisms and "bathtub" gas regulation in highly resolved (~1pc) simulations of patches of galaxy disks. These high-resolution simulations will lead to improved subgrid models for the next generation of large-scale cosmological simulations.

OBSERVING DESCRIPTION

We propose to observe the nearby edge-on galaxy NGC891 with NIRCAM imaging, MIRI imaging, and MIRI MRS IFU.

NIRCAM imaging: We will observe the northern part of NGC891's disk with three NIRCAM (F150W, F277W) 2x3 mosaics using the "SUB640" subarray to avoid saturation of the bright disk emission. Rather than a single strip along the disk, we will cover the northern disk with three individual mosaics to enable flexible scheduling. We request the INTRAMODULEBOX mode with 3 primary dithers and 2 small grid subpixel dithers to optimise the PSF sampling and limit bad pixels. To avoid saturation, while still reaching the required S/N level, we opt for the BRIGHT2 readout mode, 2 groups and 6 integrations (driven by the number of dithers).

MIRI imaging + NIRCAM parallels: We request MIRI F770W imaging (2x1 FULL mosaic) of an extraplanar strip out to 10kpc above the midplane to probe the emission of warm polycyclic aromatic hydrocarbons (PAHs) at 7.7 micron, which can be most efficiently detected with JWST compared to PAH features at longer wavelengths. We request 4-point dithers to reconstruct the PSF shape; and the FAST readout mode, 10 groups and a total of 80 integrations to avoid saturation. We request coordinated parallel observations of the stellar disk beyond R25 with two NIRCAM filters (F070W, F277W) to characterise the stellar populations and dust (through extinction) in galaxy outskirts. We request the MEDIUM8 readout mode

with 5 groups and 4 integrations (from the dithers) for the parallel NIRCAM observations to limit the telescope's data rate. To probe the stellar disk with the coordinated parallels and a strip of extraplanar dust roughly along the minor axis, we require some restriction on the V3 PAs (between 100 and 105 degrees). We will have a dedicated parallel observation to correct for the NIRCAM and MIRI background emission which will be linked to the science observations in a non-interruptible sequence.

MIRI MRS IFU + simultaneous MIRI imaging: We request 4 MIRI MRS single-field mosaics using all three gratings with the 4-point dithering scheme, and the SLOW readout mode with 10 groups and a total of 8 integrations. The SLOW readout mode is required to keep the data rate below the average of 0.65 MB/s over a 12h period. To avoid saturation during the simultaneous imaging, we will observe the MIRI (F770W, F1000W, F1130W) filters with the FAST readout mode, 10 groups and 56 integrations. Note that we scaled down the number of integrations for the imaging to reach an averaged data volume rate of 0.62 MB/s over a total observing period of over 13h (since the five IFU observations are linked in a sequence). It does not make full use of the imaging capabilities (only imaging for 4/5th of the available IFU observing time), but it avoids saturation and still allows the use of the FULL array to cover a large area. To remove the thermal background, we require a dedicated background observation with the same observing strategy as applied to the four "science" MIRI MRS IFUs.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	NGC891-DISK-NORTH	RA: 02 22 40.4700 (35.6686250d) Dec: +42 23 56.20 (42.39894d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies, Tidal tails]*				
(2)	NGC891-DISK-NORTH1	RA: 02 22 43.5206 (35.6813358d) Dec: +42 25 20.56 (42.42238d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy bulges, Galaxy disks, Spiral galaxies]*				
(3)	NGC891-DISK-NORTH3	RA: 02 22 37.0833 (35.6545137d) Dec: +42 22 33.71 (42.37603d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Spiral galaxies]*				
(4)	NGC891-EXTRAPLANAR	RA: 02 22 43.5952 (35.6816467d) Dec: +42 20 5.55 (42.33488d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies, Tidal tails]*				
(5)	NGC891-C-EAST-1KPC	RA: 02 22 32.7222 (35.6363425d) Dec: +42 20 20.33 (42.33898d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral arms]*				
(6)	NGC891-C-EAST-2KPC	RA: 02 22 33.7740 (35.6407250d) Dec: +42 20 17.05 (42.33807d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies]*				
(7)	NGC891-NE-1KPC	RA: 02 22 37.6347 (35.6568112d) Dec: +42 22 28.38 (42.37455d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies]*				
(8)	NGC891-NE-2KPC	RA: 02 22 38.2322 (35.6593008d) Dec: +42 22 22.31 (42.37286d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies]*				

	(9)	NGC891-BACKGROUND	RA: 02 24 39.1970 (36.1633208d) Dec: +42 11 38.07 (42.19391d) Equinox: J2000
	Comments: *Category=Galaxy* *Description=[Galaxy disks, Galaxy halos, Spiral galaxies]*		

Observation

Proposal 2180, Observation 1: NIRCAM_Disk_North1 Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Background Observations:[NIRCAM_Background (Obs 4)]

Diagnostics

(NIRCAM_Disk_North1 (Obs 1)) Warning (Form): Target requiring background exposure selected for template that doesn't require background exposure

(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 1:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	NGC891-DISK-NORTH1	RA: 02 22 43.5206 (35.6813358d) Dec: +42 25 20.56 (42.42238d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy bulges, Galaxy disks, Spiral galaxies]

Template

Module	Subarray	Target Placement
B	SUB640	Module Gap

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	3	10.0	10.0	0.0	0.0	DEFAULT

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	3	SMALL-GRID-DITHER		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	F150W	F277W	RAPID	4	1	6	6	125.698	54158

Special Requirements

Group Visits within 53.0 Days
Visits Same PA

Sequence Observations 1, 2, 3, 4, Non-interruptible

Observation

Proposal 2180, Observation 2: NIRCAM_Disk_North2 Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Background Observations:[NIRCAM_Background (Obs 4)]

Diagnostics

(NIRCAM_Disk_North2 (Obs 2)) Warning (Form): Target requiring background exposure selected for template that doesn't require background exposure

(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 2:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	NGC891-DISK-NORTH	RA: 02 22 40.4700 (35.6686250d) Dec: +42 23 56.20 (42.39894d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies, Tidal tails]

Template

Module	Subarray	Target Placement
B	SUB640	Module Gap

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	3	10.0	10.0	0.0	0.0	DEFAULT

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	3	SMALL-GRID-DITHER		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	F150W	F277W	RAPID	4	1	6	6	125.698	54158

Special Requirements

Group Visits within 53.0 Days
Visits Same PA

Sequence Observations 1, 2, 3, 4, Non-interruptible

Observation

Proposal 2180, Observation 3: NIRCAM_Disk_North3 Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Background Observations:[NIRCAM_Background (Obs 4)]

Diagnostics

(NIRCAM_Disk_North3 (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.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	NGC891-DISK-NORTH3	RA: 02 22 37.0833 (35.6545137d) Dec: +42 22 33.71 (42.37603d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Spiral galaxies]

Template

Module	Subarray	Target Placement
B	SUB640	Module Gap

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	3	10.0	10.0	0.0	0.0	DEFAULT

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	3	SMALL-GRID-DITHER		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	F150W	F277W	RAPID	4	1	6	6	125.698	54158

Special Requirements

Group Visits within 53.0 Days
Visits Same PA

Sequence Observations 1, 2, 3, 4, Non-interruptible

Observation

Proposal 2180, Observation 4: NIRCAM_Background Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Background Observation For: [NIRCAM_Disk_North1 (Obs 1), NIRCAM_Disk_North2 (Obs 2), NIRCAM_Disk_North3 (Obs 3)]

Diagnostics

(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	NGC891-BACKGROUND	RA: 02 24 39.1970 (36.1633208d) Dec: +42 11 38.07 (42.19391d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Template

Module	Subarray	Target Placement
B	SUB640	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		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	F150W	F277W	RAPID	4	3	6	2	125.698	

Special Requirements

Sequence Observations 1, 2, 3, 4, Non-interruptible

Observation

Proposal 2180, Observation 5: MIRI_MRS_halo_C_1kpc Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Medium Resolution Spectroscopy

Background Observations:[MIRI_MRS_background (Obs 9)]

Diagnostics

(MIRI_MRS_halo_C_1kpc (Obs 5)) Warning (Form): Imager Filter overlap.

(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(MIRI_MRS_halo_C_1kpc (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	NGC891-C-EAST-1KPC	RA: 02 22 32.7222 (35.6363425d) Dec: +42 20 20.33 (42.33898d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral arms]

Acquisition

#	Target
1	NONE

Template

AcqFilter	Primary Channel	Simultaneous Imaging	Imager Subarray	Grating Wheel Direction
F560W	All MRS	YES	FULL	NEUTRAL

Dithers

#	Dither Type	Optimized For	Direction
1	4-Point	EXTENDED SOURCE	NEGATIVE

Spectral Elements

#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1		IMAGER	F770W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
1	SHORT(A)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
1	SHORT(A)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2		IMAGER	F1130W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
2	MEDIUM(B)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2	MEDIUM(B)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3		IMAGER	F2100W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
3	LONG(C)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3	LONG(C)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158

Special Requirements	Sequence Observations 5, 6, 7, 8, 9, Non-interruptible Same Aperture PA 5, 6

Observation

Proposal 2180, Observation 6: MIRI_MRS_halo_C_2kpc Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Medium Resolution Spectroscopy

Background Observations:[MIRI_MRS_background (Obs 9)]

Diagnostics

(MIRI_MRS_halo_C_2kpc (Obs 6)) Warning (Form): Imager Filter overlap.

(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(MIRI_MRS_halo_C_2kpc (Obs 6)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(6)	NGC891-C-EAST-2KPC	RA: 02 22 33.7740 (35.6407250d) Dec: +42 20 17.05 (42.33807d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Acquisition

#	Target
1	NONE

Template

AcqFilter	Primary Channel	Simultaneous Imaging	Imager Subarray	Grating Wheel Direction
F560W	All MRS	YES	FULL	NEUTRAL

Dithers

#	Dither Type	Optimized For	Direction
1	4-Point	EXTENDED SOURCE	NEGATIVE

Spectral Elements

#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1		IMAGER	F770W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
1	SHORT(A)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
1	SHORT(A)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2		IMAGER	F1130W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
2	MEDIUM(B)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2	MEDIUM(B)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3		IMAGER	F2100W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
3	LONG(C)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3	LONG(C)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158

Special Requirements	Sequence Observations 5, 6, 7, 8, 9, Non-interruptible Same Aperture PA 5, 6

Observation

Proposal 2180, Observation 7: MIRI_MRS_halo_NE_1kpc Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Medium Resolution Spectroscopy

Background Observations:[MIRI_MRS_background (Obs 9)]

Diagnostics

(MIRI_MRS_halo_NE_1kpc (Obs 7)) Warning (Form): Imager Filter overlap.

(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(MIRI_MRS_halo_NE_1kpc (Obs 7)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(7)	NGC891-NE-1KPC	RA: 02 22 37.6347 (35.6568112d) Dec: +42 22 28.38 (42.37455d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Acquisition

#	Target
1	NONE

Template

AcqFilter	Primary Channel	Simultaneous Imaging	Imager Subarray	Grating Wheel Direction
F560W	All MRS	YES	FULL	NEUTRAL

Dithers

#	Dither Type	Optimized For	Direction
1	4-Point	EXTENDED SOURCE	NEGATIVE

Spectral Elements

#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1		IMAGER	F770W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
1	SHORT(A)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
1	SHORT(A)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2		IMAGER	F1130W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
2	MEDIUM(B)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2	MEDIUM(B)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3		IMAGER	F2100W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
3	LONG(C)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3	LONG(C)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158

Special Requirements	Sequence Observations 5, 6, 7, 8, 9, Non-interruptible Same Aperture PA 7, 8

Observation

Proposal 2180, Observation 8: MIRI_MRS_halo_NE_2kpc Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Medium Resolution Spectroscopy

Background Observations:[MIRI_MRS_background (Obs 9)]

Diagnostics

(MIRI_MRS_halo_NE_2kpc (Obs 8)) Warning (Form): Imager Filter overlap.

(Visit 8:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(MIRI_MRS_halo_NE_2kpc (Obs 8)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	NGC891-NE-2KPC	RA: 02 22 38.2322 (35.6593008d) Dec: +42 22 22.31 (42.37286d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Acquisition

#	Target
1	NONE

Template

AcqFilter	Primary Channel	Simultaneous Imaging	Imager Subarray	Grating Wheel Direction
F560W	All MRS	YES	FULL	NEUTRAL

Dithers

#	Dither Type	Optimized For	Direction
1	4-Point	EXTENDED SOURCE	NEGATIVE

Spectral Elements

#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1		IMAGER	F770W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
1	SHORT(A)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
1	SHORT(A)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2		IMAGER	F1130W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
2	MEDIUM(B)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
2	MEDIUM(B)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3		IMAGER	F2100W	FASTR1	10	14	1	Dither 1	4	56	1698.324	54158
3	LONG(C)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158
3	LONG(C)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	54158

Special Requirements	Sequence Observations 5, 6, 7, 8, 9, Non-interruptible Same Aperture PA 7, 8

Observation

Proposal 2180, Observation 9: MIRI_MRS_background Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Medium Resolution Spectroscopy

Background Observation For: [MIRI_MRS_halo_C_1kpc (Obs 5), MIRI_MRS_halo_C_2kpc (Obs 6), MIRI_MRS_halo_NE_1kpc (Obs 7), MIRI_MRS_halo_NE_2kpc (Obs 8)]

Diagnostics

(MIRI_MRS_background (Obs 9)) Warning (Form): Imager Filter overlap.

(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	NGC891-BACKGROUND	RA: 02 24 39.1970 (36.1633208d) Dec: +42 11 38.07 (42.19391d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Acquisition

#	Target
1	NONE

Template

AcqFilter	Primary Channel	Simultaneous Imaging	Imager Subarray	Grating Wheel Direction
F560W	All MRS	YES	FULL	NEUTRAL

Dithers

#	Dither Type	Optimized For	Direction
1	4-Point	EXTENDED SOURCE	NEGATIVE

Spectral Elements

#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1		IMAGER	F770W	FASTR1	10	14	1	Dither 1	4	56	1698.324	
1	SHORT(A)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	
1	SHORT(A)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	
2		IMAGER	F1130W	FASTR1	10	14	1	Dither 1	4	56	1698.324	
2	MEDIUM(B)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	
2	MEDIUM(B)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	
3		IMAGER	F2100W	FASTR1	10	14	1	Dither 1	4	56	1698.324	
3	LONG(C)	MRSLONG		SLOWR1	10	2	1	Dither 1	4	8	2006.753	
3	LONG(C)	MRSSHORT		SLOWR1	10	2	1	Dither 1	4	8	2006.753	

Special Requirements	Sequence Observations 5, 6, 7, 8, 9, Non-interruptible

Observation

Proposal 2180, Observation 10: MIRI_F770W_halo_strip Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Imaging

Background Observations:[MIRI_F770W_background (Obs 11)]

Coordinated Parallel Template(s): NIRCam Imaging

Diagnostics

(MIRI_F770W_halo_strip (Obs 10)) Warning (Form): Target requiring background exposure selected for template that doesn't require background exposure

(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 10:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	NGC891-EXTRAPLANAR	RA: 02 22 43.5952 (35.6816467d) Dec: +42 20 5.55 (42.33488d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies, Tidal tails]

Template

MIRI Imaging	NIRCam Imaging
Subarray: FULL	Module: ALL Subarray: FULL Target Placement: Module Gap

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	1	10.0	10.0	0.0	0.0	DEFAULT

Dithers

#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size
1	4-POINT-MIRI-F770W-WITH-NIRCam				6	1			DEFAULT

Spectral Elements

MIRI Imaging	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F770W	FASTR1	10	20	1	Dither 1	4	80	2430.935	54158

Spectral Elements

NIRCam Imaging	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F070W	F277W	MEDIUM8	5	1	4	4	2061.46	

Special Requirements	
	Group Visits within 53.0 Days Aperture PA Range 105 to 110 Degrees (V3 100.16455103 to 105.16455103) Visits Same PA No Parallel Attachments Sequence Observations 10, 11, Non-interruptible

Observation

Proposal 2180, Observation 11: MIRI_F770W_background Sat Sep 16 16:00:22 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Imaging

Background Observation For: [MIRI_F770W_halo_strip (Obs 10)]

Coordinated Parallel Template(s): NIRCam Imaging

Diagnostics

(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	NGC891-BACKGROUND	RA: 02 24 39.1970 (36.1633208d) Dec: +42 11 38.07 (42.19391d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Galaxy disks, Galaxy halos, Spiral galaxies]

Template

MIRI Imaging	NIRCam Imaging
Subarray: FULL	Module: ALL Subarray: FULL Target Placement: Module Gap

Dithers

#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size
1	4-POINT-MIRI-F770W-WITH-NIRCam				6	1			DEFAULT

Spectral Elements

MIRI Imaging	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F770W	FASTR1	10	20	1	Dither 1	4	80	2430.935	

Spectral Elements

NIRCam Imaging	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F070W	F277W	MEDIUM8	5	1	4	4	2061.46	

Special Requirements	
	No Parallel Attachments Sequence Observations 10, 11, Non-interruptible