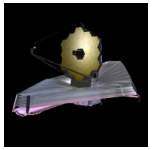

8217 - Pushing the limit of supermassive black holes correlations to ultramassive galaxies

Cycle: 4, Proposal Category: GO

INVESTIGATORS

Name	*Institution*
Dr. Dieu Duc Nguyen (PI)	**University of Michigan**
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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
2MASX-J13481074+0251102				
	1	2MASX-J13481074+0251102	NIRSpec IFU Spectroscopy	(1) 2MASX-J13481074+0251102
	2	2MASX-J13481074+0251102	NIRCam Imaging	(1) 2MASX-J13481074+0251102
2MASX-J12571157-1724344				
	3	2MASX-J12571157-1724344	NIRSpec IFU Spectroscopy	(2) 2MASX-J12571157-1724344
	4	2MASX-J12571157-1724344	NIRCam Imaging	(2) 2MASX-J12571157-1724344
2MASX-J22354078+0129053				
	5	2MASX-J22354078+0129053	NIRSpec IFU Spectroscopy	(3) 2MASX-J22354078+0129053
	6	2MASX-J22354078+0129053	NIRCam Imaging	(3) 2MASX-J22354078+0129053
2MASX-J04385250-2206391				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	7	2MASX-J04385250-2206391	NIRSpec IFU Spectroscopy	(4) 2MASX-J04385250-2206391
	8	2MASX-J04385250-2206391	NIRCam Imaging	(4) 2MASX-J04385250-2206391
2MASXJ10194430-0038173				
	9	2MASXJ10194430-0038173	NIRSpec IFU Spectroscopy	(5) 2MASXJ10194430-0038173
	10	2MASXJ10194430-0038173	NIRCam Imaging	(5) 2MASXJ10194430-0038173
2MASS-J12464745+0007029				
	11	2MASS-J12464745+0007029	NIRSpec IFU Spectroscopy	(6) 2MASS-J12464745+0007029
	12	2MASS-J12464745+0007029	NIRCam Imaging	(6) 2MASS-J12464745+0007029
2MASX-J00034964+0203594				
	13	2MASX-J00034964+0203594	NIRSpec IFU Spectroscopy	(7) 2MASX-J00034964+0203594
	14	2MASX-J00034964+0203594	NIRCam Imaging	(10) 2MASX-J15165808-0106394
2MASX-J12052321+1022461				
	15	2MASX-J12052321+1022461	NIRSpec IFU Spectroscopy	(8) 2MASX-J12052321+1022461
	16	2MASX-J12052321+1022461	NIRCam Imaging	(8) 2MASX-J12052321+1022461
2MASX-J15342642-0119003				
	17	2MASX-J15342642-0119003	NIRSpec IFU Spectroscopy	(9) 2MASX-J15342642-0119003
	18	2MASX-J15342642-0119003	NIRCam Imaging	(9) 2MASX-J15342642-0119003
2MASX-J15165808-0106394				
	19	2MASX-J15165808-0106394	NIRSpec IFU Spectroscopy	(10) 2MASX-J15165808-0106394
	20	2MASX-J15165808-0106394	NIRCam Imaging	(10) 2MASX-J15165808-0106394
2MASX-J01313288+0033210				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	21	2MASX-J01313288+0033210	NIRSpec IFU Spectroscopy	(11) 2MASX-J01313288+0033210
	22	2MASX-J01313288+0033210	NIRCam Imaging	(11) 2MASX-J01313288+0033210
2MASX-J15320112+2534178				
	23	2MASX-J15320112+2534178	NIRSpec IFU Spectroscopy	(12) 2MASX-J15320112+2534178
	24	2MASX-J15320112+2534178	NIRCam Imaging	(12) 2MASX-J15320112+2534178

ABSTRACT

Supermassive black holes (BH) are a crucial ingredient for galaxy evolution. They closely correlate with galaxy properties, especially velocity dispersion, below a critical stellar mass of about two hundred billion (2e11) Solar masses. But the situation is less clear and highly debated for larger galaxy masses. This uncertainty is due to the lack of nearby very massive galaxies for which their BH masses can be measured reliably with current instruments. With its stable and well-characterized PSF and high spatial resolution, JWST allows us to expand the volume where BH mass can be measured via stellar dynamics and reach the most massive galaxies. Here we propose to observe with JWST/NIRSpec and NIRCam the ultimate full-sky sample of 12 ultramassive galaxies accessible with JWST in various environments. We make detailed simulations of the BH extractions for all target galaxies and show that different BH formation scenarios provide unambiguously different results for the galaxy sample we propose. This program will provide a definitive view of this essential yet poorly-understood regime of ultramassive black holes.

OBSERVING DESCRIPTION

We propose to robustly measure supermassive black hole (BH) mass in a carefully selected full-sky sample of the 12 ultramassive galaxies (i.e., their stellar masses are larger than two thousand and five hundred billion (2.5e12) Solar masses) using NIRSpec and NIRCAM observations. These highest mass galaxies form the definitive sample of such galaxies accessible with JWST and are superior to others, e.g., MASSIVE (Ma et al. 2014) and M3G (Krajnovic et al. 2018). For example, our highest mass galaxies sample is not subject to seeing limited like these ground-based samples due to the atmosphere being contamination-free and covering the whole sky and a wide range of environments from isolations to dense clusters. Therefore, it is the best sample to understand BH growth mechanisms.

Specifically, we will use the JWST/NIRSpec integral field spectrograph (IFS) observational cube to extract the two-dimensional maps of the stellar (or gas when detected) kinematics within the nuclear portion of a galaxy. Also, we will use the NIRCAM observation to construct the mass profile of

the stellar component. A full justification of the required instrument configuration is provided later in the proposal, but we summarize them here as follows:

(1) The NIRSpec IFS with G235H/F170 LP grating: This observation has a spectral resolving power of R ~ 3000, which corresponds to the instrumental dispersion of sigma_instr ~58 km/s, perfectly matched the centers of massive galaxies where velocity dispersion ~300 km/s, and the spatial resolution of 0.1” within a single field-of-view of 3” x 3” of galaxy nuclei close to the BH, enough to resolve any BH with mass above one billion Solar masses. The wavelength coverage of (1.66-3.17 um) of NIRSpec can detect the CO-absorption features commonly used to measure the nuclear-stellar kinematics of the most massive galaxies. The stable and well-characterized point spread function (PSF), as well as the high angular resolution of JWST are crucial to probe the central cores of massive galaxies.

The proposed NIRSpec observations are designed to have sufficient S/N for resolving stellar kinematics over scales of 0.1" near the galaxy center. Thus, the total observing time is required for each galaxy by giving the input of surface brightness at the effective radius and Sersic index to the JWST/ETC. Based on the NIRSpec IFS simulations, achieving a high-S/N map of >= 40 per spaxel within the central 2" x 2" area (lower-S/N of spaxels outside that area will be binned together) is required to be able to measure V, sigma, h3, and h4 (Cappellari et al. 2011), which is required to constrain the nuclei kinematics, dynamics, and SMBH mass via the JAM models robustly, giving the estimated exposure time/total allocation time for NIRSpec data shown in Observing Summary.

(2) Besides NIRSpec, the NIRCAM observations in a wide field (129” x 129”) and long-wavelength channel of F250M filter (2.4-2.6 um) are necessary to model the stellar mass profile of the galaxy accurately. These observations are high spatial resolution and sampling (pixel size of 0”.063) that allow us to probe the galaxy-stellar mass profile down to the BH’s sphere of influence (SOI) scale, thus reducing the degeneracy between stellar mass and black hole mass. The short wavelength imaging channel will use the F115W filter (1-1.3 um) to simultaneously image bluer wavelengths, providing additional color information to constrain possible stellar population variations.

The F250M image is required with sufficient S/N to create an accurate mass-follow-light map for each galaxy. We will use both the long- (F250M) and the additional short-wavelength F115W (1.0-1.3 um) channels. These images will provide additional (F115W-F250M)-color information to constrain possible stellar population variations (Nguyen et al. 2019). Here, given the central surface brightness and the Sersic index and the number of groups per integration, the JWST/ETC provides the required S/N >= 5 per pixel over that subarray. This approach achieves an estimated exposure time/total allocation time for NIRCam data shown in Observing Summary.

References:

Cappellari et al. 2011, MNRAS, 413, 813

Krajnovic et al. 2018, MNRAS, 473, 5237

Ma et al. 2014, ApJ, 795, 158

Nguyen et al. 2019, ApJ, 872, 104

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	2MASX-J13481074+0251102	RA: 13 48 10.7179 (207.0446579d) Dec: +02 51 10.41 (2.85289d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]* *Extended=YES*				
(2)	2MASX-J12571157-1724344	RA: 12 57 11.5994 (194.2983308d) Dec: -17 24 34.40 (-17.40956d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(3)	2MASX-J22354078+0129053	RA: 22 35 40.8013 (338.9200054d) Dec: +01 29 5.61 (1.48489d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(4)	2MASX-J04385250-2206391	RA: 04 38 52.5262 (69.7188592d) Dec: -22 06 39.07 (-22.11085d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(5)	2MASXJ10194430-0038173	RA: 10 19 44.2663 (154.9344429d) Dec: -00 38 18.00 (-.63833d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(6)	2MASS-J12464745+0007029	RA: 12 46 47.4536 (191.6977233d) Dec: +00 07 2.82 (.11745d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(7)	2MASX-J00034964+0203594	RA: 00 03 49.6725 (.9569688d) Dec: +02 03 59.38 (2.06649d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				
(8)	2MASX-J12052321+1022461	RA: 12 05 23.2308 (181.3467950d) Dec: +10 22 46.19 (10.37950d) Equinox: J2000	Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*				

	(9)	2MASX-J15342642-0119003	RA: 15 34 26.4289 (233.6101204d) Dec: -01 19 0.21 (-1.31673d) Equinox: J2000	Epoch of Position: 2000
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*			
	(10)	2MASX-J15165808-0106394	RA: 15 16 58.0839 (229.2420163d) Dec: -01 06 38.87 (-1.11080d) Equinox: J2000	Epoch of Position: 2000
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*			
	(11)	2MASX-J01313288+0033210	RA: 01 31 32.9154 (22.8871475d) Dec: +00 33 21.53 (.55598d) Equinox: J2000	Epoch of Position: 2000
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*			
	(12)	2MASX-J15320112+2534178	RA: 15 32 1.1616 (233.0048400d) Dec: +25 34 17.97 (25.57166d) Equinox: J2000	Epoch of Position: 2000
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Galaxy* *Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]*			

Observation

Proposal 8217, Observation 1: 2MASX-J13481074+0251102

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	2MASX-J13481074+0251102	RA: 13 48 10.7179 (207.0446579d) Dec: +02 51 10.41 (2.85289d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]
Extended=YES

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 2: 2MASX-J13481074+0251102

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	2MASX-J13481074+0251102	RA: 13 48 10.7179 (207.0446579d) Dec: +02 51 10.41 (2.85289d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]
Extended=YES

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 193.01509521 Degrees (V3 0.0 to 193.0)
Aperture PA Range 199.01509521 to 221.01509521 Degrees (V3 199.0 to 221.0)
Aperture PA Range 240.01509521 to 359.01509521 Degrees (V3 240.0 to 359.0)
Offset -9.0 arcsec, -9.0 arcsec

Observation

Proposal 8217, Observation 3: 2MASX-J12571157-1724344 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	2MASX-J12571157-1724344	RA: 12 57 11.5994 (194.2983308d) Dec: -17 24 34.40 (-17.40956d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 4: 2MASX-J12571157-1724344 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

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
(2)	2MASX-J12571157-1724344	RA: 12 57 11.5994 (194.2983308d) Dec: -17 24 34.40 (-17.40956d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 117.01509521 Degrees (V3 0.0 to 117.0)
Aperture PA Range 126.01509521 to 126.01509521 Degrees (V3 126.0 to 126.0)
Aperture PA Range 132.01509521 to 359.01509521 Degrees (V3 132.0 to 359.0)
Offset -8.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 5: 2MASX-J22354078+0129053 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(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)	2MASX-J22354078+0129053	RA: 22 35 40.8013 (338.9200054d) Dec: +01 29 5.61 (1.48489d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 6: 2MASX-J22354078+0129053

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	2MASX-J22354078+0129053	RA: 22 35 40.8013 (338.9200054d) Dec: +01 29 5.61 (1.48489d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 142.01509521 Degrees (V3 0.0 to 142.0)
Aperture PA Range 153.01509521 to 155.01509521 Degrees (V3 153.0 to 155.0)
Aperture PA Range 158.01509521 to 359.01509521 Degrees (V3 158.0 to 359.0)
Offset 8.0 arcsec, 8.0 arcsec

Observation

Proposal 8217, Observation 7: 2MASX-J04385250-2206391 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(4)	2MASX-J04385250-2206391	RA: 04 38 52.5262 (69.7188592d) Dec: -22 06 39.07 (-22.11085d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 8: 2MASX-J04385250-2206391

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	2MASX-J04385250-2206391	RA: 04 38 52.5262 (69.7188592d) Dec: -22 06 39.07 (-22.11085d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 292.01509521 Degrees (V3 0.0 to 292.0)
Aperture PA Range 303.01509521 to 359.01509521 Degrees (V3 303.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 9: 2MASXJ10194430-0038173

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	2MASXJ10194430-0038173	RA: 10 19 44.2663 (154.9344429d) Dec: -00 38 18.00 (-.63833d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 10: 2MASXJ10194430-0038173 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	2MASXJ10194430-0038173	RA: 10 19 44.2663 (154.9344429d) Dec: -00 38 18.00 (-.63833d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 258.01509521 Degrees (V3 0.0 to 258.0)
Aperture PA Range 261.01509521 to 320.01509521 Degrees (V3 261.0 to 320.0)
Aperture PA Range 325.01509521 to 359.01509521 Degrees (V3 325.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 11: 2MASS-J12464745+0007029 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(6)	2MASS-J12464745+0007029	RA: 12 46 47.4536 (191.6977233d) Dec: +00 07 2.82 (.11745d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 12: 2MASS-J12464745+0007029 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

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
(6)	2MASS-J12464745+0007029	RA: 12 46 47.4536 (191.6977233d) Dec: +00 07 2.82 (.11745d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 159.01509521 Degrees (V3 0.0 to 159.0)
Aperture PA Range 163.01509521 to 359.01509521 Degrees (V3 163.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 13: 2MASX-J00034964+0203594 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(7)	2MASX-J00034964+0203594	RA: 00 03 49.6725 (.9569688d) Dec: +02 03 59.38 (2.06649d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 14: 2MASX-J00034964+0203594 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(10)	2MASX-J15165808-0106394	RA: 15 16 58.0839 (229.2420163d) Dec: -01 06 38.87 (-1.11080d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 29.01509521 Degrees (V3 0.0 to 29.0)
Aperture PA Range 39.01509521 to 359.01509521 Degrees (V3 39.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 15: 2MASX-J12052321+1022461 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 15:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	2MASX-J12052321+1022461	RA: 12 05 23.2308 (181.3467950d) Dec: +10 22 46.19 (10.37950d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 16: 2MASX-J12052321+1022461 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	2MASX-J12052321+1022461	RA: 12 05 23.2308 (181.3467950d) Dec: +10 22 46.19 (10.37950d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 359.01509521 Degrees (V3 0.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 17: 2MASX-J15342642-0119003 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 17:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	2MASX-J15342642-0119003	RA: 15 34 26.4289 (233.6101204d) Dec: -01 19 0.21 (-1.31673d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 18: 2MASX-J15342642-0119003 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 18:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	2MASX-J15342642-0119003	RA: 15 34 26.4289 (233.6101204d) Dec: -01 19 0.21 (-1.31673d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 88.01509521 Degrees (V3 0.0 to 88.0)
Aperture PA Range 102.01509521 to 103.01509521 Degrees (V3 102.0 to 103.0)
Aperture PA Range 107.01509521 to 359.01509521 Degrees (V3 107.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 19: 2MASX-J15165808-0106394

Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 19:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(10)	2MASX-J15165808-0106394	RA: 15 16 58.0839 (229.2420163d) Dec: -01 06 38.87 (-1.11080d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 20: 2MASX-J15165808-0106394 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 20:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(10)	2MASX-J15165808-0106394	RA: 15 16 58.0839 (229.2420163d) Dec: -01 06 38.87 (-1.11080d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 29.01509521 Degrees (V3 0.0 to 29.0)
Aperture PA Range 39.01509521 to 359.01509521 Degrees (V3 39.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 21: 2MASX-J01313288+0033210 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 21:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(11)	2MASX-J01313288+0033210	RA: 01 31 32.9154 (22.8871475d) Dec: +00 33 21.53 (.55598d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 22: 2MASX-J01313288+0033210 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 22:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(11)	2MASX-J01313288+0033210	RA: 01 31 32.9154 (22.8871475d) Dec: +00 33 21.53 (.55598d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 35.01509521 Degrees (V3 0.0 to 35.0)
Aperture PA Range 37.01509521 to 37.01509521 Degrees (V3 37.0 to 37.0)
Aperture PA Range 39.01509521 to 359.01509521 Degrees (V3 39.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec

Observation

Proposal 8217, Observation 23: 2MASX-J15320112+2534178 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 23:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	2MASX-J15320112+2534178	RA: 15 32 1.1616 (233.0048400d) Dec: +25 34 17.97 (25.57166d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

TA Method	HFF Readout Mode
NONE	false

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	4-POINT-DITHER				

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2RAPID	71	1	false	true	NONE	4	4	4201.6	

Observation

Proposal 8217, Observation 24: 2MASX-J15320112+2534178 Wed May 14 17:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 24:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	2MASX-J15320112+2534178	RA: 15 32 1.1616 (233.0048400d) Dec: +25 34 17.97 (25.57166d) Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[Elliptical galaxies, Giant elliptical galaxies, Giant galaxies]

Template

Module	Subarray
B	SUB640

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		SMALL-GRID-DITHER		8

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W	F250M	BRIGHT1	10	6	48	8	4019.389	

Special Requirements

Aperture PA Range 0.01509521 to 159.01509521 Degrees (V3 0.0 to 159.0)
Aperture PA Range 169.01509521 to 178.01509521 Degrees (V3 169.0 to 178.0)
Aperture PA Range 181.01509521 to 359.01509521 Degrees (V3 181.0 to 359.0)
Offset 9.0 arcsec, 9.0 arcsec