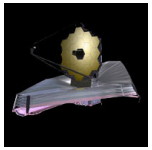

2561 - UNCOVER: Ultra-deep NIRCam and NIRSpec Observations Before the Epoch of Reionization

Cycle: 1, Proposal Category: GO

INVESTIGATORS

Name	*Institution*
Prof. Ivo Labbe (PI)	**Swinburne University of Technology**
Dr. Rachel Bezanson (CoI) (CoPI) (US Admin CoI) (Contact)	University of Pittsburgh
Prof. Marijn Franx (CoI) (ESA Member)	Universiteit Leiden
Dr. Katherine E. Whitaker (CoI)	University of Massachusetts - Amherst
Dr. Christina C Williams (CoI)	University of Arizona
Prof. Mariska Kriek (CoI) (ESA Member)	Leiden Observatory
Prof. Pieter van Dokkum (CoI)	Yale University
Prof. Pascal Oesch (CoI) (ESA Member)	University of Geneva, Department of Astronomy
Dr. Gabriel Brammer (CoI) (ESA Member)	University of Copenhagen, Niels Bohr Institute
Dr. Pratika Dayal (CoI) (ESA Member)	Kapteyn Astronomical Institute
Dr. Casey Papovich (CoI)	Texas A & M University
Dr. Susan Kassin (CoI)	Space Telescope Science Institute
Dr. Dan Coe (CoI) (ESA Member)	Space Telescope Science Institute - ESA - JWST
Prof. Karl Glazebrook (CoI)	Swinburne University of Technology
Dr. Joel Leja (CoI)	The Pennsylvania State University
Prof. Adi Zitrin (CoI)	Ben Gurion University of the Negev
Dr. Hakim Atek (CoI) (ESA Member)	CNRS, Institut d'Astrophysique de Paris
Prof. Michael Maseda (CoI)	University of Wisconsin - Madison
Prof. Erica Nelson (CoI)	University of Colorado at Boulder
Prof. Jenny Emma Greene (CoI)	Princeton University
Dr. Themiya Nanayakkara (CoI)	Swinburne University of Technology

Name	*Institution*
Dr. N. M. Forster Schreiber (CoI) (ESA Member)	Max-Planck-Institut fur extraterrestrische Physik
Dr. Sedona H. Price (CoI)	University of Pittsburgh
Prof. Alice E. Shapley (CoI)	University of California - Los Angeles
Prof. Robert Feldmann (CoI) (ESA Member)	Universitat Zurich
Dr. Adam Muzzin (CoI) (CSA Member)	York University
Dr. Danilo Marchesini (CoI)	Tufts University
Dr. Camilla Pacifici (CoI)	Space Telescope Science Institute
Dr. Mauro Stefanon (CoI) (ESA Member)	Universitat de Valencia
Dr. Stephanie Juneau (CoI)	NOIRLab - (AZ)
Dr. Edward N Taylor (CoI)	Swinburne University of Technology
Lamiya Mowla (CoI)	Wellesley College
Dr. Anna G de Graaff (CoI) (ESA Member)	Max Planck Institute for Astronomy
Prof. Marla C. Geha (CoI)	Yale University

OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
NIRCam prime + NIRISS parallel				
	1		NIRCam Imaging	(3) ABELL2744-PREIMG
	3		NIRCam Imaging	(6) ABELL2744-PREIMG-REPEAT1-19N47D
NIRSpec prime + NIRCam parallel				
	2	uncover nircam 13.8	NIRSpec MultiObject Spectroscopy	(1) uncover_nircam
	6	uncover nirspec rerepea test	NIRSpec MultiObject Spectroscopy	(7) uncover_nirspec_repeat

ABSTRACT

We propose an efficient public Treasury program that immediately establishes a NIRCam imaging deep field and ultra-deep low-resolution NIRSpec/PRISM follow-up spectroscopy in the gravitational lensing cluster Frontier Field Abell 2744. Assisted by strong lensing, these observations reach 1-2 magnitudes fainter than even the deepest ERS & GTO programs. Such depths are essential to achieve two core science goals of JWST: finding First Light galaxies during the Dark Ages at z>10 and studying the ultra-low luminosity galaxies at later times that were responsible for reionization. Offering the community early access to deep imaging of 4000 z>6 galaxies and spectroscopy of 500 galaxies ensures that this envisioned flagship science is guaranteed early in the mission, establishes from the start a vibrant and diverse user base for the observatory, and

optimizes the efficiency of JWST by providing targets for higher resolution spectroscopic follow up in subsequent cycles. In support of this, we included imaging parallels to enhance the deep imaging legacy on and around the cluster. Beyond the immediate science goals, these data will support a broad array of legacy science including stellar mass complete studies to z=10, the role of dust obscuration at high redshift, and the various pathways of quenching star formation. Our experienced team commits to rapidly releasing the imaging to the public before the Cycle 2 deadline followed by the delivery of a joint photometric and spectroscopic database.

OBSERVING DESCRIPTION

The basic plan is to first obtain deep 4-6 hour / filter NIRCam pre-imaging on the A2744 cluster to 29.5-30AB magnitude in 8 filters. Six months later, within cycle 1, we target sources detected in NIRCam with ultradeep 19 hour NIRSpec/PRISM low-resolution spectroscopy. In both observations we include deep parallel imaging (in NIRISS and NIRCam, respectively), to increase the area for deep photometric studies of high-redshift galaxies at mild lensing magnification 1.1-1.3x.

We forward model theoretical luminosity functions of Mason+2015 through the CATS v4.1 lens model of A2744 (Jauzac+2015) to predict the number of z=6-16 galaxies to our detection limit. The number of z>10 galaxies is maximized by a 2-pointing gap-filled NIRCam mosaic. To reach MUV=-14.0 at z=6-7 with less than <3 magnitudes of lensing (where models are considered robust, requires 29.8AB 5 sigma, which can be reached in ~4 hours per in F200W and ~6 hours in F115W according to JWST ETC 1.5.2.

The NIRCam imaging is designed to detect objects to the highest redshifts z=10-16 and ultra low luminosities MUV>-14 with gravitational lensing. NIRSpec/PRISM will deliver robust redshifts at z=1-20, measurements of the stellar continuum, emission lines to z<12, and Lyman break measurements z>12.

To ensure the broadest possible legacy science we image in all broadband NIRCam filters, except for optical bands if ultradeep ACS data is available. For the cluster pre-imaging map we use: F115W (6h) F150W (6h) F200W (4h): F277W (4h), F356W (4h), F444W (4h). Following the GTO best-practice we add the medium band F410M, which is sensitive to emission lines and improves photometric redshifts and stellar masses of high-z galaxies.

The NIRCam parallel (with NIRSpec/PRISM as primary) uses the same filters as our NIRCam pre-imaging, integrating 4.6h in F115W,F150W, adding deep F090W (5.3h), as no deep optical data exists, and 2.3h in F200W, F277W, F356W, F444W, F335M, F410M. For the NIRISS parallel we remove need to remove some filters as it lacks NIRCam's dichroic and flexibility in parallel mode is limited. We remove F277W and F410M which

have the least scientific impact, keeping F115W, F150W, F200W, F356W, F444W. For our favored roll angle, NIRISS fortuitously overlaps with the 42-orbit 29 AB F814W Hubble A2744 ACS parallel field, obviating the need for optical data.

A primary goal of UNCOVER is to take NIRSpec PRISM R=100 spectra to measure continuum redshifts of any faint high redshift object detected securely with NIRCam to ~10 sigma or ~29AB. In 20hours PRISM reaches a SNR~3 per resolution element for 29AB sources at 1.5 micron, which is sufficient for continuum redshifts. Emission lines can me measured at >5 sigma for any sources to 30AB and EW_{obs}>600A (typical sources should have lines 5x stronger than that).

NIRCam selected sources will be analyzed by constructing HST/ACS + JWST/NIRCam multiwavelength SEDs, detecting in F200W for young starforming galaxies at z=8-15 and z<4 quiescent galaxies, F277W for z=15-20, while selecting in F444W for mass-complete samples to z<10 (including quiescent and dusty galaxies at z>4). Redshift selection will be determined by the photometric redshift probability distribution using software such as EAZY (Brammer+2008).

To reach our key science goals and support a range of legacy science goals we prioritize spectroscopic targets according to scientific value and rarity: 1) any z>12 candidates, 2) z>9 galaxies prioritized by brightness, 3) z>6 Pop III candidate sources, 4) faint highly magnified z=6-7 galaxies, 5) quiescent galaxies z>4, 6) z>6 AGN, 7) dusty galaxies z>4, 8) low mass quiescent galaxies at z=1-4, 9) any unusual or unexpected sources, 10) Extreme emission line galaxies, 11) mass-selected galaxies sampled in bins of mass and redshift.

We estimate that we can accommodate 15-20 high priority sources to our full depth of 19 hours. Other sources require less exposure time. The NIRSpec integration times naturally split up in 7 dithered sequences of 2.7 hours each. We therefore design 7 masks with exposure time ranging from 2.7-19 hours, repeating the high priority objects. Given the high target density of some lower priority targets (there are 1000s of high-z emission line galaxies), we expect to fill each mask with ~100 targets for a total of 500 spectra in the spectroscopic sample.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	uncover_nircam	RA: 00 14 18.5231 (3.5771796d) Dec: -30 22 34.15 (-30.37615d) Equinox: J2000		
Comments: *Description=[]*				
(3)	ABELL2744-PREIMG	RA: 00 14 18.2514 (3.5760475d) Dec: -30 22 46.04 (-30.37946d) Equinox: J2000		
Comments: *Category=Clusters of Galaxies* *Description=[Abell clusters]*				
(6)	ABELL2744-PREIMG-REPEAT1-19N47D	RA: 00 14 21.0155 (3.5875646d) Dec: -30 21 35.83 (-30.35995d) Equinox: J2000		
Comments: *Category=Clusters of Galaxies* *Description=[Abell clusters]*				
(7)	uncover_nirspec_repeat	RA: 00 14 18.2261 (3.5759421d) Dec: -30 22 48.08 (-30.38002d) Equinox: J2000		
Comments: *Description=[]*				

Observation

Proposal 2561, Observation 1

Thu Jun 06 21:00:50 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Coordinated Parallel Template(s): NIRISS Imaging

Diagnostics

(Observation 1) Warning (Form): This observation is split across multiple visits using multiple filters. Not selecting the sequence option may result in execution of the visits in a non-numerical order and is not recommended.

(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.

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

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	ABELL2744-PREIMG	RA: 00 14 18.2514 (3.5760475d) Dec: -30 22 46.04 (-30.37946d) Equinox: J2000		

Comments:
Category=Clusters of Galaxies
Description=[Abell clusters]

Template

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

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	2	5.0	85.0	0.0	0.0	DEFAULT

Dithers

#	Primary Dither Type	Primary Dithers	Dither Size	Subpixel Positions	Coordinated Parallel Subpixel Selector	Dither Direct Images Primes
1	INTRAMODULEX	8		1	NIRCam Only	NO_DITHERING

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	F115W	F277W	MEDIUM8	8	1	8	8	6699.744	64243
2	F150W	F356W	MEDIUM8	8	1	8	8	6699.744	
3	F200W	F410M	MEDIUM8	8	1	8	8	6699.744	
4	F115W	F444W	MEDIUM8	5	1	8	8	4122.92	
5	F150W	F444W	MEDIUM8	5	1	8	8	4122.92	

Spectral Elements

NIRISS Imaging	Filter	Grism	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W		NIS	19	1	8	8	6613.85	64244
2	F150W		NIS	19	1	8	8	6613.85	
3	F200W		NIS	19	1	8	8	6613.85	
4	F356W		NIS	11	1	8	8	3865.237	
5	F444W		NIS	11	1	8	8	3865.237	

Special Requirements	
	Sequence Visits within 28.0 Days Aperture PA Range 35.88744876 to 45.88744876 Degrees (V3 35.9620257 to 45.9620257) Visits Same PA No Parallel Attachments Background Limited. Background no more than 20th percentile above minimum 2 After 1 by 60.0 Days to <None specified>

Observation

Proposal 2561, Observation 3

Thu Jun 06 21:00:50 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Coordinated Parallel Template(s): NIRISS Imaging

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
(6)	ABELL2744-PREIMG-REPEAT1-19N47D	RA: 00 14 21.0155 (3.5875646d) Dec: -30 21 35.83 (-30.35995d) Equinox: J2000		

Comments:
Category=Clusters of Galaxies
Description=[Abell clusters]

Template

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

Dithers

#	Primary Dither Type	Primary Dithers	Dither Size	Subpixel Positions	Coordinated Parallel Subpixel Selector	Dither Direct Images Primes
1	INTRAMODULEX	8		1	NIRCam Only	NO_DITHERING

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	F115W	F277W	MEDIUM8	8	1	8	8	6699.744	64243
2	F150W	F356W	MEDIUM8	8	1	8	8	6699.744	
3	F200W	F410M	MEDIUM8	8	1	8	8	6699.744	
4	F115W	F444W	MEDIUM8	5	1	8	8	4122.92	
5	F150W	F444W	MEDIUM8	5	1	8	8	4122.92	

Spectral Elements

NIRISS Imaging	Filter	Grism	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F115W		NIS	19	1	8	8	6613.85	64244
2	F150W		NIS	19	1	8	8	6613.85	
3	F200W		NIS	19	1	8	8	6613.85	
4	F356W		NIS	11	1	8	8	3865.237	
5	F444W		NIS	11	1	8	8	3865.237	

Special Requirements	
	Aperture PA Range 37 to 47 Degrees (V3 37.07457694 to 47.07457694) No Parallel Attachments Background Limited. Background no more than 50th percentile above minimum

Observation

Proposal 2561, Observation 2: uncover nircam 13.8 Thu Jun 06 21:00:50 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec MultiObject Spectroscopy

Coordinated Parallel Template(s): NIRCam Imaging

Comments: The target list and mask target position are preliminary.

NIRCam pre-imaging (observation 1) is taken in advance and will be used to provide the final target list of high redshift galaxies.

Therefore the final mask positions may move by a few arcmin for optimal placement within the NIRCam mosaic.

Diagnostics

(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#1) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#1) has 22 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#1) has 26 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#2) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#2) has 22 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#2) has 26 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#3) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#3) has 22 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa1 (#3) has 26 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#4) has 22 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#4) has 3 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#4) has 34 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#5) has 22 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#5) has 3 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#5) has 34 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#6) has 22 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa2 (#6) has 3 primary slits affected by failed closed shutters.
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(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#7) has 1 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#7) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#7) has 32 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#8) has 1 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#8) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#8) has 32 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#9) has 1 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#9) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa3 (#9) has 32 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa4 (#10) has 1 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa4 (#10) has 24 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa4 (#10) has 28 primary slit traces affected by failed open shutters.
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(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa4 (#11) has 24 master background shutters affected by failed open or closed shutters.
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(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa5 (#15) has 3 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa5 (#15) has 33 primary slit traces affected by failed open shutters.

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(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#16) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#16) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#17) has 19 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#17) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#17) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#18) has 19 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#18) has 2 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa6 (#18) has 31 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#19) has 16 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#19) has 3 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#19) has 34 primary slit traces affected by failed open shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#20) has 16 master background shutters affected by failed open or closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#20) has 3 primary slits affected by failed closed shutters.
(uncover nircam 13.8 (Obs 2)) Warning (Form): Config msa7 (#20) has 34 primary slit traces affected by failed open shutters.
(Visit 2:1) Warning (Form): Data Excess over lower threshold
(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 2:2) Warning (Form): Data Excess over lower threshold
(Visit 2:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 2:3) Warning (Form): Data Excess over lower threshold
(Visit 2:3) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 2:4) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 2:5) Warning (Form): Data Excess over lower threshold
(Visit 2:5) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	uncover_nircam	RA: 00 14 18.5231 (3.5771796d) Dec: -30 22 34.15 (-30.37615d) Equinox: J2000		

Comments:
Description=[]

Acquisition

NIRSpec MultiObject Spectroscopy	Reference Star Bin	Target	Filter	MSA Configuration	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 3 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
2	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 4 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
3	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 4 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
4	Filter: CLEAR; Readout: NRSRAPIDD6; 8 sources in 3 quads; [Optimal TA Accuracy]	SAME	CLEAR	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
5	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 4 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	

Template

NIRSpec MultiObject Spectroscopy	NIRCam Imaging
TA Method: MSATA	Module: ALL
Obtain Confirmation Images: After Target ACQ and New MSA Config	Subarray: FULL
Science Aperture: MSA Center	Target Placement: Module Gap
Primary Candidate List: uncover_nircam (1122 sources)	
Filler Candidate List: null	
Spectral Overlap Map: jwst-nirspec-hr	
Spectral Overlap Threshold: 1.5	

Reference Stars

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
1	2243	3.591488	-30.431959	24.05844585362915	1	15562	3.596312	-30.396365	24.11775215878901 7
1	2625	3.596101	-30.430048	23.90020795961962 8	1	16181	3.605208	-30.395379	23.25188540588679 2
1	2887	3.578512	-30.428794	23.63891004741215 7	1	18171	3.613261	-30.391097	24.19190290823762
1	5138	3.587063	-30.420671	23.37828496682906 4	1	29464	3.596362	-30.372641	23.92048714661765 6

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
2	11666	3.615079	-30.404380	22.87205272192260 4	2	18022	3.576655	-30.391370	24.08585938638986
2	15088	3.642466	-30.397339	23.13886605873969 4	2	26736	3.611094	-30.376581	22.92491194093213 7
2	15562	3.596312	-30.396365	24.11775215878901 7	2	37044	3.597615	-30.360088	22.86464237300656 8
2	17873	3.587276	-30.391621	24.17923927505887 2	2	38857	3.604864	-30.356730	23.81685181329074 3

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
3	16348	3.574002	-30.394799	24.07377916188152	3	37044	3.597615	-30.360088	22.86464237300656 8
3	17873	3.587276	-30.391621	24.17923927505887 2	3	37102	3.609843	-30.359923	24.28183897403707
3	26736	3.611094	-30.376581	22.92491194093213 7	3	38857	3.604864	-30.356730	23.81685181329074 3
3	33911	3.548311	-30.365480	24.23295337779807	3	46746	3.578149	-30.341588	23.59732677606250 6

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
4	22443	3.576157	-30.382755	24.77201515625887 8	4	46214	3.556592	-30.342725	25.04603050857335
4	24298	3.571672	-30.379683	23.21343802330842 7	4	47567	3.570430	-30.339481	25.02133773516795 8
4	32998	3.592284	-30.367190	25.11026487993759 2	4	47704	3.552108	-30.339172	25.55041325494309
4	42620	3.574433	-30.350095	24.37077876962765 5	4	49740	3.565380	-30.333714	24.99031915193790 4

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
5	15562	3.596312	-30.396365	24.11775215878901 7	5	30177	3.590973	-30.371515	23.88800471310679 5
5	17873	3.587276	-30.391621	24.17923927505887 2	5	31403	3.559369	-30.369993	23.62791254565403 4
5	18022	3.576655	-30.391370	24.08585938638986	5	37102	3.609843	-30.359923	24.28183897403707
5	29464	3.596362	-30.372641	23.92048714661765 6	5	46348	3.591422	-30.343635	23.13044194447296 3

Dithers

#	Dither Type
1	2-POINT-WITH-NIRCam-SIZE2

Confirmation

NIRSpec MultiObject Spectroscopy	Confirmation Type	Conf. Readout Pattern	Conf. Groups/Int	Conf. Integrations/Exp	Conf. Total Integrations	Conf. Total Exposure Time
1	msa1	NRSIRS2RAPID	6	1	2	204.244
2	msa2	NRSIRS2RAPID	6	1	2	204.244
3	msa3	NRSIRS2RAPID	6	1	2	204.244
4	msa4	NRSIRS2RAPID	6	1	2	204.244
5	msa5	NRSIRS2RAPID	6	1	2	204.244
6	msa6	NRSIRS2RAPID	6	1	2	204.244
7	msa7	NRSIRS2RAPID	6	1	2	204.244

Spectral Elements

NIRSpec MultiObject Spectroscopy	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
1	1 (PRISM/CLEAR)	msa1	3 Shutter Slitlet	3.583912791666667 Degrees -30.399861111111136 Degrees	44.57114485271582 5			6	6	3238.734
2	1 (PRISM/CLEAR)	msa1	3 Shutter Slitlet	3.583912791666667 Degrees -30.399861111111136 Degrees	44.57114485271582 5			6	6	3238.734
3	1 (PRISM/CLEAR)	msa1	3 Shutter Slitlet	3.583912791666667 Degrees -30.399861111111136 Degrees	44.57114485271582 5			6	6	3238.734
4	1 (PRISM/CLEAR)	msa2	3 Shutter Slitlet	3.608409791666664 Degrees -30.391133611111115 Degrees	44.55877295571023			6	6	3238.734
5	1 (PRISM/CLEAR)	msa2	3 Shutter Slitlet	3.608409791666664 Degrees -30.391133611111115 Degrees	44.55877295571023			6	6	3238.734
6	1 (PRISM/CLEAR)	msa2	3 Shutter Slitlet	3.608409791666664 Degrees -30.391133611111115 Degrees	44.55877295571023			6	6	3238.734
7	1 (PRISM/CLEAR)	msa3	3 Shutter Slitlet	3.5732805 Degrees -30.368674999999996 Degrees	44.57658758097344 5			6	6	3238.734
8	1 (PRISM/CLEAR)	msa3	3 Shutter Slitlet	3.5732805 Degrees -30.368674999999996 Degrees	44.57658758097344 5			6	6	3238.734
9	1 (PRISM/CLEAR)	msa3	3 Shutter Slitlet	3.5732805 Degrees -30.368674999999996 Degrees	44.57658758097344 5			6	6	3238.734
10	2 (PRISM/CLEAR)	msa4	3 Shutter Slitlet	3.558641916666667 Degrees -30.356406666666658 Degrees	44.58401711024244			6	6	5339.534
11	2 (PRISM/CLEAR)	msa4	3 Shutter Slitlet	3.558641916666667 Degrees -30.356406666666658 Degrees	44.58401711024244			6	6	5339.534
12	2 (PRISM/CLEAR)	msa4	3 Shutter Slitlet	3.558641916666667 Degrees -30.356406666666658 Degrees	44.58401711024244			6	6	5339.534
13	3 (PRISM/CLEAR)	msa5	3 Shutter Slitlet	3.5808445 Degrees -30.372304999999983 Degrees	44.57275421823969 5			6	6	5339.534
14	3 (PRISM/CLEAR)	msa5	3 Shutter Slitlet	3.5808445 Degrees -30.372304999999983 Degrees	44.57275421823969 5			6	6	5339.534

NIRSpec MultiObject Spectroscopy	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
15	3 (PRISM/CLEAR)	msa5	3 Shutter Slitlet	3.5808445 Degrees -30.372304999999983 Degrees	44.57275421823969 5			6	6	5339.534
16	3 (PRISM/CLEAR)	msa6	3 Shutter Slitlet	3.5803515833333335 Degrees -30.372163611111109 Degrees	44.57300382601669			6	6	5339.534
17	3 (PRISM/CLEAR)	msa6	3 Shutter Slitlet	3.5803515833333335 Degrees -30.372163611111109 Degrees	44.57300382601669			6	6	5339.534
18	3 (PRISM/CLEAR)	msa6	3 Shutter Slitlet	3.5803515833333335 Degrees -30.372163611111109 Degrees	44.57300382601669			6	6	5339.534
19	3 (PRISM/CLEAR)	msa7	3 Shutter Slitlet	3.5808445 Degrees -30.372304999999983 Degrees	44.57275421823969 5			6	6	5339.534
20	3 (PRISM/CLEAR)	msa7	3 Shutter Slitlet	3.5808445 Degrees -30.372304999999983 Degrees	44.57275421823969 5			6	6	5339.534

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	F115W	F277W	MEDIUM8	5	1	6	6	3092.19	
2	F150W	F356W	MEDIUM8	5	1	6	6	3092.19	
3	F200W	F444W	MEDIUM8	5	1	6	6	3092.19	
4	F115W	F277W	MEDIUM8	5	1	6	6	3092.19	
5	F150W	F356W	MEDIUM8	5	1	6	6	3092.19	
6	F200W	F444W	MEDIUM8	5	1	6	6	3092.19	
7	F115W	F277W	MEDIUM8	5	1	6	6	3092.19	
8	F150W	F356W	MEDIUM8	5	1	6	6	3092.19	
9	F200W	F444W	MEDIUM8	5	1	6	6	3092.19	
10	F115W	F277W	MEDIUM8	8	1	6	6	5024.808	
11	F150W	F356W	MEDIUM8	8	1	6	6	5024.808	
12	F200W	F444W	MEDIUM8	8	1	6	6	5024.808	
13	F090W	F410M	MEDIUM8	8	1	6	6	5024.808	
14	F090W	F480M	MEDIUM8	8	1	6	6	5024.808	
15	F115W	F277W	MEDIUM8	8	1	6	6	5024.808	
16	F150W	F356W	MEDIUM8	8	1	6	6	5024.808	
17	F200W	F444W	MEDIUM8	8	1	6	6	5024.808	
18	F115W	F277W	MEDIUM8	8	1	6	6	5024.808	
19	F150W	F356W	MEDIUM8	8	1	6	6	5024.808	
20	F200W	F444W	MEDIUM8	8	1	6	6	5024.808	

Special Requirements	
	Sequence Visits within 53.0 Days Aperture PA Range 44.5746 to 44.5746 Degrees (V3 266.0000303 to 266.0000303) [MSA Selected] Visits Same PA No Parallel Attachments Background Limited. Background no more than 20th percentile above minimum MSA Scheduled Aperture PA 44.5746 to 44.5746 Degrees (V3 266.0000303 to 266.0000303) 2 After 1 by 60.0 Days to <None specified>

Observation

Proposal 2561, Observation 6: uncover nirspec rerepeatest Thu Jun 06 21:00:50 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec MultiObject Spectroscopy

Coordinated Parallel Template(s): NIRCam Imaging

Diagnostics

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#1) has 2 filler slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#1) has 2 primary slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#1) has 21 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#1) has 32 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#1) has 32 primary slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#2) has 2 filler slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#2) has 2 primary slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#2) has 21 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#2) has 32 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#2) has 32 primary slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#3) has 2 filler slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#3) has 2 primary slits affected by failed closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#3) has 21 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#3) has 32 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa61 (#3) has 32 primary slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#4) has 34 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#4) has 43 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#4) has 43 primary slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#5) has 34 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#5) has 43 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#5) has 43 primary slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#6) has 34 master background shutters affected by failed open or closed shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#6) has 43 filler slit traces affected by failed open shutters.

(uncover nirspec rerepeatest (Obs 6)) Warning (Form): Config msa62 (#6) has 43 primary slit traces affected by failed open shutters.

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

(Visit 6:1) Warning (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

(Visit 6:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 6:2) Warning (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(7)	uncover_nirspec_repeat	RA: 00 14 18.2261 (3.5759421d) Dec: -30 22 48.08 (-30.38002d) Equinox: J2000		

Comments:
Description=[]

Acquisition

NIRSpec MultiObject Spectroscopy	Reference Star Bin	Target	Filter	MSA Configuration	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 3 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
2	Filter: F140X; Readout: NRSRAPIDD6; 8 sources in 4 quads; [Optimal TA Accuracy]	SAME	F140X	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	

Template

NIRSpec MultiObject Spectroscopy	NIRCam Imaging
TA Method: MSATA	Module: ALL
Obtain Confirmation Images: After Target ACQ and New MSA Config	Subarray: FULL
Science Aperture: MSA Center	Target Placement: Module Gap
Primary Candidate List: uncover_nirspec_repeat (796 sources)	
Filler Candidate List: uncover_nirspec_repeat (796 sources)	
Spectral Overlap Map: jwst-nirspec-prism	
Spectral Overlap Threshold: 1.5	

Reference Stars

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
1	10558	3.591484	-30.431960	24.05844585362915	1	22539	3.615081	-30.404380	22.872052721922604
1	11710	3.578511	-30.428795	23.638910047412157	1	26333	3.545101	-30.397374	24.335833625826233
1	14629	3.581199	-30.421073	24.171965684331944	1	26814	3.616097	-30.396460	24.66455941170389
1	14820	3.587062	-30.420671	23.378284966829064	1	29714	3.613262	-30.391097	24.19190290823762
Visit	**ID**	**RA**	**Dec**	**Magnitude**	**Visit**	**ID**	**RA**	**Dec**	**Magnitude**
2	29372	3.587273	-30.391622	24.179239275058872	2	47305	3.538795	-30.363373	24.350586357392817
2	29562	3.576657	-30.391373	24.08585938638986	2	51254	3.604865	-30.356732	23.816851813290743
2	41155	3.555209	-30.373255	24.573508318392406	2	52004	3.575733	-30.355537	24.506864202746936
2	46146	3.548312	-30.365480	24.23295337779807	2	58900	3.591422	-30.343637	23.130441944472963

Dithers

#	Dither Type
1	2-POINT-WITH-NIRCam-SIZE2

Confirmation

NIRSpec MultiObject Spectroscopy	Confirmation Type	Conf. Readout Pattern	Conf. Groups/Int	Conf. Integrations/Exp	Conf. Total Integrations	Conf. Total Exposure Time
1	msa61	NRSIRS2RAPID	6	1	2	204.244
2	msa62	NRSIRS2RAPID	6	1	2	204.244

Spectral Elements

NIRSpec MultiObject Spectroscopy	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
1	1 (PRISM/CLEAR)	msa61	3 Shutter Slitlet	3.584232083333333 Degrees -30.404650833333335 Degrees	50.62685694972375			6	6	5339.534
2	1 (PRISM/CLEAR)	msa61	3 Shutter Slitlet	3.584232083333333 Degrees -30.404650833333335 Degrees	50.62685694972375			6	6	5339.534
3	1 (PRISM/CLEAR)	msa61	3 Shutter Slitlet	3.584232083333333 Degrees -30.404650833333335 Degrees	50.62685694972375			6	6	5339.534
4	1 (PRISM/CLEAR)	msa62	3 Shutter Slitlet	3.576653000000003 Degrees -30.370007777777 8 Degrees	50.63076122324015			6	6	5339.534
5	1 (PRISM/CLEAR)	msa62	3 Shutter Slitlet	3.576653000000003 Degrees -30.370007777777 8 Degrees	50.63076122324015			6	6	5339.534
6	1 (PRISM/CLEAR)	msa62	3 Shutter Slitlet	3.576653000000003 Degrees -30.370007777777 8 Degrees	50.63076122324015			6	6	5339.534

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	F115W	F277W	MEDIUM8	8	1	6	6	5024.808	
2	F150W	F356W	MEDIUM8	8	1	6	6	5024.808	
3	F200W	F444W	MEDIUM8	8	1	6	6	5024.808	
4	F115W	F277W	MEDIUM8	8	1	6	6	5024.808	
5	F150W	F356W	MEDIUM8	8	1	6	6	5024.808	
6	F200W	F444W	MEDIUM8	8	1	6	6	5024.808	

Special Requirements

Group Visits within 53.0 Days
Visits Same PA
No Parallel Attachments
Background Limited. Background no more than 20th percentile above minimum
MSA Scheduled Aperture PA 50.6311 to 50.6311 Degrees (V3 272.0565 to 272.0565)