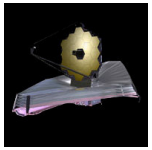

1176 - JWST Medium-Deep Fields -- Windhorst IDS GTO Program

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

Name	***Institution***
Prof. Rogier A. Windhorst (PI)	**Arizona State University**
Dr. Seth H. Cohen (CoI) (Contact)	Arizona State University
Dr. Rolf A. Jansen (CoI) (Contact)	Arizona State University
Dr. Madeline Marshall (CoI) (CSA Member) (Contact)	Dominion Astrophysical Observatory
Dr. Dan Coe (CoI) (Contact)	The Johns Hopkins University
Prof. Christopher Conselice (CoI) (ESA Member)	University of Manchester
Dr. Jose M. Diego (CoI) (ESA Member)	Instituto de Fisica de Cantabria
Prof. Simon P. Driver (CoI) (ESA Member)	University of St. Andrews
Dr. Kenneth James Duncan (CoI) (ESA Member)	University of Edinburgh, Institute for Astronomy
Prof. Steven L. Finkelstein (CoI)	University of Texas at Austin
Prof. Brenda Louise Frye (CoI)	University of Arizona
Dr. Norman Grogin (CoI)	Space Telescope Science Institute
Dr. William Clifford Keel (CoI)	University of Alabama
Dr. Anton M. Koekemoer (CoI)	Space Telescope Science Institute
Dr. Mira Mechtley (CoI)	Unaffiliated
Dr. Norbert Pirzkal (CoI) (ESA Member)	Space Telescope Science Institute - ESA - JWST
Dr. Russell E. Ryan Jr. (CoI)	Space Telescope Science Institute
Prof. J. Stuart B. Wyithe (CoI)	University of Melbourne
Prof. Haojing Yan (CoI)	University of Missouri - Columbia
Prof. Adi Zitrin (CoI)	Ben Gurion University of the Negev
Dr. Mehmet Alpaslan (CoI)	New York University
Dr. Teresa Ann Ashcraft (CoI)	University of Tampa
Prof. Thomas J. Broadhurst (CoI) (ESA Member)	University of the Basque Country

Name	***Institution***
Dr. Nimish P. Hathi (CoI)	Space Telescope Science Institute
Dr. Andrew M. Hopkins (CoI)	Australian Astronomical Observatory
Dr. Bhavin Joshi (CoI)	The Johns Hopkins University
Dr. Patrick Kelly (CoI)	University of Minnesota - Twin Cities
Dr. Duho Kim (CoI)	Chungnam National University
Ms. Rebecca L. Larson (CoI)	University of Texas at Austin
Dr. Rachael Livermore (CoI)	University of Melbourne
Dr. Adam Riess (CoI)	The Johns Hopkins University
Dr. Aaron Robotham (CoI)	University of Western Australia
Dr. Steve Rodney (CoI)	University of South Carolina
Prof. Huub Rottgering (CoI) (ESA Member)	Universiteit Leiden
Dr. Michael James Rutkowski (CoI)	Minnesota State University, Mankato
Dr. Brent Matthew Smith (CoI)	Arizona State University
Dr. Amber Straughn (CoI)	NASA Goddard Space Flight Center
Dr. Louis-Gregory Strolger (CoI)	Space Telescope Science Institute
Dr. Vithal Tilvi (CoI)	Arizona State University
Dr. Stephen Matthew Wilkins (CoI) (ESA Member)	University of Sussex

OBSERVATIONS

Folder	***Observation***	***Label***	***Observing Template***	***Science Target***
1: Lensing clusters				
	211	MACS0416-24	NIRCam Imaging	(9) MACSJ0416.1-2403
	212	MACS0416-24	NIRCam Imaging	(9) MACSJ0416.1-2403
	213	MACS0416-24	NIRCam Imaging	(9) MACSJ0416.1-2403
	221	Abell 2744	NIRCam Imaging	(10) ACO-2744
	231	MACS1149+22	NIRCam Imaging	(11) MACSJ1149+2223
	241	El Gordo	NIRCam Imaging	(12) EL-GORDO
	251	PLCK G165.7+67.0	NIRCam Imaging	(13) PLCK-G165.7+67.0
	261	GAMA 100033	NIRCam Imaging	(14) GAMA-100033
	271	RXC J1212+27	NIRCam Imaging	(15) CLG-J1212+2733
	281	PLCK G191.24+62.04	NIRCam Imaging	(25) PLCK-G191.24+62.04
3: WFC3 ERS Field				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	131	WFC3-ERS-FIELD	NIRCam Imaging	(16) WFC3-ERS-FIELD
4A: z=6 QSOs				
	311	NDWFS 1425	NIRSpec IFU Spectroscopy	(22) NDWFS-1425+3254-CENTRE
	321	SDSS 0005	NIRSpec IFU Spectroscopy	(24) SDSS-J0005-0006-CENTRE
	421	SDSS 0005	NIRSpec IFU Spectroscopy	(24) SDSS-J0005-0006-CENTRE
4C: Backlit galaxies				
	341	VV 191	NIRCam Imaging	(5) VV-191
4D: z=4-5 proto-cluster				
	361	TN-J1338-1942	NIRCam Imaging	(17) TN-J1338-1942

ABSTRACT

We will use ~62.0 hours of JWST IDS GTO time to observe a number of medium-deep fields to study the epoch of galaxy assembly, AGN growth and First Light in detail. This includes a combination of blank deep fields, best lensing clusters, and high-redshift Lyman-alpha galaxies, quasars, and radio galaxies. For details, see the attached PDF.

The observations of the NEP fields (the JWST North Ecliptic Pole Time-Domain Field and the IRAC Dark Field), originally part of this program and of GTO 1255, are now combined in a new program GTO 2738 (Co-PIs Windhorst and Hammel), and the associated time allocation was removed from the present program.

OBSERVING DESCRIPTION

WINDHORST IDS --- JWST GTO PROJECT TITLE:

The Webb Medium-Deep Fields: Galaxy Assembly, Supermassive Blackhole Growth, First Light and Reionization Studies

WINDHORST IDS --- JWST GTO SCIENCE SUMMARY:

Following our original JWST IDS proposal approved in 2002, we will use our allocated 110 hours of GTO time for a survey of Webb Medium-Deep Fields in JWST Cycle 1. Our ``WMDF" survey will image ~22 NIRCam fields in up to 8 filters to AB < 28.5-29 mag, totaling 220 arcmin^2 or 0.060 deg^2, or an area equivalent to ~44 HUDF/XDFs. In several of our NIRCam fields, coordinated NIRISS grism and imaging parallels will cover our previous NIRCam images, and/or UV-optical--near-IR images that are available from HST WFC3+ACS. The coordinated parallels will be used for

both object characterization and redshifts, and to expand the area and time-baseline of time-domain studies.

Our WMDF will image at least 13 independent lines-of-sight with NIRCam all over the sky, and is therefore much more robust against cosmic variance at AB < 28 mag than JWST programs that image only a few primary areas. The proposed coordinated parallel observations play a critical part in obtaining imaging and grism data that is as homogeneous as possible, over as large an area as possible, and in the least amount of time that is actually feasible with JWST.

Several of our WMDF fields will have a time-domain component on time-scales of hours to a year. We will use the WMDFs to study galaxy assembly and AGN growth over cosmic time. This includes galaxies and early AGN in the epoch of reionization at z > 6, including dust-obscured star-formation and AGN that may be hidden at visible wavelengths.

The WMDF time-domain component will allow us to find and study objects with high parallax in our solar system, Galactic brown dwarfs with high proper motion and/or atmospheric variability, variable weak AGN, high redshift supernovae, and time-varying objects seen behind lensing clusters, including possible cluster caustic transits.

Specifically, as in our original 2002 proposal, and our 2014, 2016, and 2018 resubmissions, our targets are a combination of high ecliptic latitude blank fields, some well known high redshift galaxies with AGN, including high redshift Lyman-alpha galaxies, protoclusters, quasars, and radio galaxies. To better study the First Light epoch, in light of developments with HST WFC3 over the past decade, the WMDF will also image several well-studied and also newly selected rich galaxy clusters that boost the signal of very faint z > 8 objects via their strong gravitational lensing effects. As a benchmark for the study of high redshift dusty environments, we will also study a nearby overlapping galaxy pair.

To encourage immediate use of JWST data by the community and follow-up proposals by both JWST ERS and Cycle 1 GO proposers, we will make the first epoch of our JWST NEP Time-Domain Field (TDF) public immediately (\# 111 in the PDF Tables). The other 3 JWST epochs will be released together with the v1 data products as soon as we have these. Also public rightaway will be 36 primary and 36 parallel Cycle 25 HST orbits in the WFC3/UVIS F275W and ACS/WFC B435+V606 filters, 600 ksec of NuSTAR 3-24 keV images, 900 ksec of Chandra ACIS 0.2-10 keV images, 31 hrs of JCMT/SCUBA-2 plus 40 hrs of SMA data at 0.85 mm and 30 hrs of IRAM/Nika2 images at 1-2 mm, as well as 70 hrs of VLA 3 GHz A+B-array images, 147 hrs of VLBA 4.5 GHz data at m.a.s. resolution to sub-microJy levels, and 75 hrs of LOFAR 150 MHz images including LOFAR VLBI. The presence of a 239 mJy quasar at z=1.4429 in the JWST NEP TDF that is unresolved at m.a.s. VLBI resolution will provide high resolution VLA/VLBA and LOFAR/VLBI images of very high dynamic range. Our data release will also include multi-epoch LBT/LBC +

Subaru/HSC Ugriz images to AB < 26.0-26.5 mag, multi-epoch GTC/HiPERCAM ugriz images to AB < 27 mag, MMT/MMIRS images to YJHK< 24-23 mag, plus JPAS 56-narrow band spectrophotometry plus MMT/Binospec and MMIRS spectra to 24-22 mag, to provide astrometric, photometric and spectroscopic calibration, respectively, of the first JWST NIRCam observations.

Here follow the relevant notes to our Observation Table submitted to STScI on June 19, 2019 and again on March 18, 2020:

(1) We will image with NIRCam in the standard 8 broad-band filter set, except for the shallowest targets, where we dropped some filters (which GOs can therefore propose to obtain in Cycle 1). For the NEP Time-Domain Field (TDF), we require coordinated parallel observations with NIRISS/WFSS (F150C and F150R grisms) for both object characterization and redshifts, and time-domain studies (direct images in F200W). Details and the scientific justification of the necessary coordinated parallels (CPARs) are given in Appendix A of the attached PDF. All coordinated parallels as schedulable with APT 2020.2 in Cycle 1 are indicated in the PDF Tables in parentheses.

(2) Where possible, we implemented coordinated parallel NIRISS imaging to overlap as much as possible with existing HST imaging. This is critical for our main science goal of finding high redshifts objects in the Medium-Deep Fields, and for our time-domain science, as explained in Appendix A. For the deeper as well as the shallower fields, coordinated parallel imaging is done in the 4 central NIRISS broad-band filters (F150W, F200W, F277W, F356W) to find high redshift objects with the JWST-unique filters. The F150W filter overlaps with previous HST WFC3/IR F160W images for additional time-domain science.

(3) All times listed in the PDF Tables are: (Net exposure times) / (Total charged calendar time) as reported by APT 2020.2 as of March 18, 2020. All times were calculated by APT 2020.2 in units of seconds. Only the total sum of 109.94 hr is given in hours. Details are given in the attached aptx file. We refer the reader to our submitted aptx file or PDF tables for the actual observations and their intended layout on the sky. Now the APT overheads have converged as of March, 2020, the APT should be accurate as of the submission date of March 18, 2020.

(4) We needed to drop one target in early 2020 to match our 110.0 hr allocation (the z=7.51 Lya galaxy, which GOs can therefore also propose to observe). No further changes in our GTO observing plan are anticipated. If the JWST overheads changes further before or after launch, STScI will incorporate such changes, which at this point are expected to minor. Hence, our science plan and our targets to be observed in the PDF Tables are final as of March, 2020. The listed coordinated parallels remain essential to the science goals of our WMDF project, and cannot be sacrificed, even if the overheads change somewhat from what we obtained with APT 2020.2 in the PDF Tables as of March 18, 2020.

(5) According to the JWST ETC, typical 5-sigma sensitivities obtained for point sources from our shallowest (~2 hr) to our deepest (< 6 hr) mosaics are <28.0-28.5 mag to <28.5-29.0 mag per target, respectively. Each of the two AB-magnitude ranges here indicate the typical depth variation from the less sensitive, reddest (3-5 micron) filters to the most sensitive, bluer (0.9-3 micron) NIRCam and NIRISS filters. Some variations in these sensitivity values will occur from field-to-field, depending on exactly how much time can be fit into the final APTs for each field within our total GTO allocation, and on the exact on-orbit Zodical and rogue-path and straylight contributions in each particular WMDF field.

(6) The only aspects in our aptx file that may change at this point are the initial ORIENTS and observation dates of targets that have a number of observations for time-domain purposes, and these will depend on the actual JWST launch date and the completion of its orbital verification period. Our list of targets and instrument modes and spectral elements per targets will not charge.

Further details can be obtained from the aptx and PDF files submitted to STScI on March 18, 2020.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	VV-191	RA: 13 48 22.0992 (207.0920800d) Dec: +25 40 40.01 (25.67778d) Equinox: J2000	Proper Motion RA: 0 Proper Motion Dec: 0	
Comments: This object was generated by the targetselector and retrieved from the NED database. *Category=Galaxy* *Description=[Elliptical galaxies, Spiral arms, Spiral galaxies]* *Extended=YES*				
(9)	MACSJ0416.1-2403	RA: 04 16 8.9000 (64.0370833d) Dec: -24 04 28.70 (-24.07464d) Equinox: J2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Coordinates updated to match HFF pointings as published in Lotz et al. (2017).* *Category=Clusters of Galaxies* *Description=[Rich clusters]*				
(10)	ACO-2744	RA: 00 14 10.1171 (3.5421546d) Dec: -30 23 16.49 (-30.38791d) Equinox: J2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Coordinates updated to match HFF pointings as published in Lotz et al. (2017).* *Category=Clusters of Galaxies* *Description=[Abell clusters, Rich clusters]*				
(11)	MACSJ1149+2223	RA: 11 49 36.4000 (177.4016667d) Dec: +22 23 59.00 (22.39972d) Equinox: J2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Coordinates updated to match HFF pointings as published in Lotz et al. (2017).* *Category=Clusters of Galaxies* *Description=[Rich clusters]*				
(12)	EL-GORDO	RA: 01 02 55.4000 (15.7308333d) Dec: -49 15 38.00 (-49.26056d) Equinox: J2000		
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Clusters of Galaxies* *Description=[Rich clusters]*				
(13)	PLCK-G165.7+67.0	RA: 11 27 15.0000 (171.8125000d) Dec: +42 28 31.00 (42.47528d) Equinox: J2000		
Comments: *Category=Clusters of Galaxies* *Description=[Rich clusters]*				
(14)	GAMA-100033	RA: 08 42 20.8930 (130.5870542d) Dec: +01 38 32.66 (1.64241d) Equinox: J2000		
Comments: *Category=Clusters of Galaxies* *Description=[Galaxy groups]*				

(15)	CLG-J1212+2733	RA: 12 12 19.2500 (183.0802083d) Dec: +27 33 8.70 (27.55242d) Equinox: J2000

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Clusters of Galaxies
Description=[Rich clusters]

(16)	WFC3-ERS-FIELD	RA: 03 32 42.3970 (53.1766542d) Dec: -27 42 7.93 (-27.70220d) Equinox: J2000

Comments:
Category=Galaxy
Description=[Field galaxies, High-redshift galaxies, Lyman-break galaxies]

(17)	TN-J1338-1942	RA: 13 38 26.1000 (204.6087500d) Dec: -19 42 28.00 (-19.70778d) Equinox: J2000

Comments:
Category=Clusters of Galaxies
Description=[High-redshift clusters]

(21)	NDWFS-1425+3254-QUASAR	RA: 14 25 16.3687 (216.3182029d) Dec: +32 54 9.30 (32.90258d) Equinox: J2000

Comments:
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Infrared galaxies, Quasars]
Extended=YES

(22)	NDWFS-1425+3254-CENTRE	RA: 14 25 16.4078 (216.3183658d) Dec: +32 54 9.58 (32.90266d) Equinox: J2000

Comments:
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Infrared galaxies, Quasars]
Extended=YES

(23)	SDSS-J0005-0006-QUASAR	RA: 00 05 52.3186 (1.4679942d) Dec: -00 06 56.20 (-.11561d) Equinox: J2000

Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Quasars]
Extended=YES

(24)	SDSS-J0005-0006-CENTRE	RA: 00 05 52.3403 (1.4680846d) Dec: -00 06 56.86 (-.11579d) Equinox: J2000

Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Quasars]
Extended=YES

	(25)	PLCK-G191.24+62.04	RA: 10 44 42.6000 (161.1775000d) Dec: +33 50 53.40 (33.84817d) Equinox: J2000
	Comments: *Category=Clusters of Galaxies* *Description=[High-redshift clusters, Rich clusters]*		

Observation

Proposal 1176, Observation 211: MACS0416-24

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: aligned to HFF WFC3/IR (allowing 90 deg rotations)
epoch 1 / 3 enabling search for transients

Diagnostics

(Visit 211:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	MACSJ0416.1-2403	RA: 04 16 8.9000 (64.0370833d) Dec: -24 04 28.70 (-24.07464d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Coordinates updated to match HFF pointings as published in Lotz et al. (2017).
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	9	1	4	4	3779.343	
2	F115W	F410M	MEDIUM8	9	1	4	4	3779.343	
3	F150W	F356W	MEDIUM8	7	1	4	4	2920.401	
4	F200W	F277W	MEDIUM8	7	1	4	4	2920.401	

Special Requirements

Aperture PA Range 19 to 23 Degrees (V3 19.0713531 to 23.0713531)
Aperture PA Range 109 to 113 Degrees (V3 109.0713531 to 113.0713531)
Aperture PA Range 199 to 203 Degrees (V3 199.0713531 to 203.0713531)
Aperture PA Range 289 to 293 Degrees (V3 289.0713531 to 293.0713531)
Offset 88.5 arcsec, 1.5 arcsec

Observation

Proposal 1176, Observation 212: MACS0416-24

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: aligned to HFF WFC3/IR (allowing 90 deg rotations)
epoch 2 / 3 enabling search for transients

Diagnostics

(Visit 212:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	MACSJ0416.1-2403	RA: 04 16 8.9000 (64.0370833d) Dec: -24 04 28.70 (-24.07464d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Coordinates updated to match HFF pointings as published in Lotz et al. (2017).
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	9	1	4	4	3779.343	
2	F115W	F410M	MEDIUM8	9	1	4	4	3779.343	
3	F150W	F356W	MEDIUM8	7	1	4	4	2920.401	
4	F200W	F277W	MEDIUM8	7	1	4	4	2920.401	

Special Requirements

Offset 88.5 arcsec, 1.5 arcsec

213 After 212 by 30 Days to 300 Days

Observation

Proposal 1176, Observation 213: MACS0416-24

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: aligned to HFF WFC3/IR (allowing 90 deg rotations)
epoch 3 / 3 enabling search for transients

Diagnostics

(Visit 213:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	MACSJ0416.1-2403	RA: 04 16 8.9000 (64.0370833d) Dec: -24 04 28.70 (-24.07464d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Coordinates updated to match HFF pointings as published in Lotz et al. (2017).
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	9	1	4	4	3779.343	
2	F115W	F410M	MEDIUM8	8	1	4	4	3349.872	
3	F150W	F356W	MEDIUM8	7	1	4	4	2920.401	
4	F200W	F277W	MEDIUM8	7	1	4	4	2920.401	

Special Requirements

Offset 88.5 arcsec, 1.5 arcsec

213 After 212 by 30 Days to 300 Days

Observation

Proposal 1176, Observation 221: Abell 2744 Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: aligned to HFF WFC3/IR (allowing 90 deg rotation)

Diagnostics

(Visit 221:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(10)	ACO-2744	RA: 00 14 10.1171 (3.5421546d) Dec: -30 23 16.49 (-30.38791d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Coordinates updated to match HFF pointings as published in Lotz et al. (2017).
Category=Clusters of Galaxies
Description=[Abell clusters, Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	8	1	4	4	3349.872	
2	F115W	F410M	MEDIUM8	8	1	4	4	3349.872	
3	F150W	F356W	MEDIUM8	6	1	4	4	2490.931	
4	F200W	F277W	MEDIUM8	6	1	4	4	2490.931	

Special Requirements

Aperture PA Range 5 to 10 Degrees (V3 5.0713531 to 10.0713531)
Aperture PA Range 95 to 100 Degrees (V3 95.0713531 to 100.0713531)
Aperture PA Range 185 to 190 Degrees (V3 185.0713531 to 190.0713531)
Aperture PA Range 275 to 280 Degrees (V3 275.0713531 to 280.0713531)
Offset 88.5 arcsec, 1.5 arcsec

Observation

Proposal 1176, Observation 231: MACS1149+22 Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: aligned to HFF WFC3/IR (as close as we could get PA ~ 270; roll for best alignment PA ~ 260 not schedulable)

Diagnostics

(Visit 231:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 231:1) Informational (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
(11)	MACSJ1149+2223	RA: 11 49 36.4000 (177.4016667d) Dec: +22 23 59.00 (22.39972d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Coordinates updated to match HFF pointings as published in Lotz et al. (2017).
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	8	1	4	4	3349.872	
2	F115W	F410M	MEDIUM8	8	1	4	4	3349.872	
3	F150W	F356W	MEDIUM8	6	1	4	4	2490.931	
4	F200W	F277W	MEDIUM8	6	1	4	4	2490.931	

Special Requirements

Aperture PA Range 249 to 270 Degrees (V3 249.0713531 to 270.0713531)
Offset -86.5 arcsec, -1.0 arcsec

Observation

Proposal 1176, Observation 241: El Gordo Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: Cluster centered within Module B to capture most/all of the lensing critical curve and known multiple images.
Also want to preserve full depth on the large arc just SE of center; some portions will fall in the short wavelength gaps in some exposures, depending on the roll angle.
Considered PA 243 – 305 given scheduling Jun 27 – Aug 22.

Diagnostics

(Visit 241:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	EL-GORDO	RA: 01 02 55.4000 (15.7308333d) Dec: -49 15 38.00 (-49.26056d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	6	1	4	4	2490.931	
2	F115W	F410M	MEDIUM8	6	1	4	4	2490.931	
3	F150W	F356W	SHALLOW4	9	1	4	4	1889.672	
4	F200W	F277W	SHALLOW4	10	1	4	4	2104.407	

Special Requirements

Aperture PA Range 82 to 138 Degrees (V3 82.0713531 to 138.0713531)
Aperture PA Range 172 to 243 Degrees (V3 172.0713531 to 243.0713531)
Aperture PA Range 276 to 302 Degrees (V3 276.0713531 to 302.0713531)
Aperture PA Range 327 to 76 Degrees (V3 327.0713531 to 76.0713531)
Offset 87.0 arcsec, 1.5 arcsec

Observation

Proposal 1176, Observation 251: PLCK G165.7+67.0

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: Primary targets are bright sub-mm lensed arcs located between brightest cluster galaxies.
Positioned near center of SW chip B3 to achieve full depth on those targets.
Also capturing two sub-mm sources positioned in SW chip A1.
Brightish star in module gap; area nearby less important in case affected by artifacts.

Diagnostics

(Visit 251:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(13)	PLCK-G165.7+67.0	RA: 11 27 15.0000 (171.8125000d) Dec: +42 28 31.00 (42.47528d) Equinox: J2000		

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

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	6	1	4	4	2490.931	
2	F115W	F410M	MEDIUM8	6	1	4	4	2490.931	
3	F150W	F356W	SHALLOW4	9	1	4	4	1889.672	
4	F200W	F277W	SHALLOW4	10	1	4	4	2104.407	

Special Requirements

Aperture PA Range 155 to 163 Degrees (V3 155.0713531 to 163.0713531)
Offset 60.0 arcsec, 25.0 arcsec
Background Limited. Background no more than 40th percentile above minimum

Observation

Proposal 1176, Observation 261: GAMA 100033

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 261:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(14)	GAMA-100033	RA: 08 42 20.8930 (130.5870542d) Dec: +01 38 32.66 (1.64241d) Equinox: J2000		

Comments:
Category=Clusters of Galaxies
Description=[Galaxy groups]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	6	1	4	4	2490.931	
2	F150W	F356W	SHALLOW4	9	1	4	4	1889.672	
3	F200W	F277W	SHALLOW4	9	1	4	4	1889.672	

Special Requirements

Offset 88.5 arcsec, 1.5 arcsec
Background Limited. Background no more than 10th percentile above minimum

Observation

Proposal 1176, Observation 271: RXC J1212+27 Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: Once a roll angle PA is assigned, we may tweak the pointing offset to ensure we cover the lensing critical curves and known sub-mm galaxies (SMGs) in this field.

Diagnostics

(Visit 271:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(15)	CLG-J1212+2733	RA: 12 12 19.2500 (183.0802083d) Dec: +27 33 8.70 (27.55242d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Clusters of Galaxies
Description=[Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	6	1	4	4	2490.931	
2	F150W	F356W	SHALLOW4	9	1	4	4	1889.672	
3	F200W	F277W	SHALLOW4	9	1	4	4	1889.672	

Special Requirements

Offset 88.5 arcsec, 1.5 arcsec
Background Limited. Background no more than 40th percentile above minimum

Observation

Proposal 1176, Observation 281: PLCK G191.24+62.04

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: Galaxy protocluster roughly centered within Module B.
Herschel sources will be captured by Module A.

Diagnostics

(Visit 281:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(25)	PLCK-G191.24+62.04	RA: 10 44 42.6000 (161.1775000d) Dec: +33 50 53.40 (33.84817d) Equinox: J2000		

Comments:
Category=Clusters of Galaxies
Description=[High-redshift clusters, Rich clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	6	1	4	4	2490.931	
2	F115W	F410M	MEDIUM8	6	1	4	4	2490.931	
3	F150W	F356W	SHALLOW4	9	1	4	4	1889.672	
4	F200W	F277W	SHALLOW4	10	1	4	4	2104.407	

Special Requirements

Aperture PA Range 126 to 130 Degrees (V3 126.0713531 to 130.0713531)
Offset 77.3 arcsec, 1.0 arcsec

Observation

Proposal 1176, Observation 131: WFC3-ERS-FIELD Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 131:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(16)	WFC3-ERS-FIELD	RA: 03 32 42.3970 (53.1766542d) Dec: -27 42 7.93 (-27.70220d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Field galaxies, High-redshift galaxies, Lyman-break galaxies]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	MEDIUM8	9	1	4	4	3779.343	
2	F115W	F410M	MEDIUM8	9	1	4	4	3779.343	
3	F150W	F356W	MEDIUM8	6	1	4	4	2490.931	
4	F200W	F277W	MEDIUM8	6	1	4	4	2490.931	

Special Requirements

Aperture PA Range 63 to 73 Degrees (V3 63.0713531 to 73.0713531)
Aperture PA Range 243 to 253 Degrees (V3 243.0713531 to 253.0713531)

Observation

Proposal 1176, Observation 311: NDWFS 1425

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 311:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(22)	NDWFS-1425+3254-CENTRE	RA: 14 25 16.4078 (216.3183658d) Dec: +32 54 9.58 (32.90266d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Infrared galaxies, Quasars]
Extended=YES

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	21 NDWFS-1425+3254-QUASAR	WATA	SUB2048	CLEAR	NRSRAPID	3	1	1	3.628	12034.1

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	PRISM/CLEAR	NRSIRS2RAPID	31	1	true	true	NONE	4	4	1867.378	
2	PRISM/CLEAR	NRSIRS2RAPID	31	1	false	true	NONE	4	4	1867.378	
3	PRISM/CLEAR	NRSIRS2RAPID	31	1	false	true	NONE	4	4	1867.378	

Special Requirements

Background Limited. Background no more than 40th percentile above minimum

Observation

Proposal 1176, Observation 321: SDSS 0005

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 321:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(24)	SDSS-J0005-0006-CENTRE	RA: 00 05 52.3403 (1.4680846d) Dec: -00 06 56.86 (-.11579d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Quasars]
Extended=YES

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	23 SDSS-J0005-0006-QUASAR	WATA	SUB2048	CLEAR	NRSRAPID	3	1	1	3.628	12035.3

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	PRISM/CLEAR	NRSIRS2RAPID	35	1	true	true	NONE	4	4	2100.8	
2	PRISM/CLEAR	NRSIRS2RAPID	35	1	false	true	NONE	4	4	2100.8	

Special Requirements

Background Limited. Background no more than 40th percentile above minimum

Observation

Proposal 1176, Observation 421: SDSS 0005

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Comments: Repeat of skipped observation 321.

Diagnostics

(Visit 421:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(24)	SDSS-J0005-0006-CENTRE	RA: 00 05 52.3403 (1.4680846d) Dec: -00 06 56.86 (-.11579d) Equinox: J2000		

Comments: This object was generated by the targetselector and retrieved from the NED database.
Category=Galaxy
Description=[Active galactic nuclei, High-redshift galaxies, Quasars]
Extended=YES

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	23 SDSS-J0005-0006-QUASAR	WATA	SUB2048	CLEAR	NRSRAPID	3	1	1	3.628	12035.3

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	PRISM/CLEAR	NRSIRS2RAPID	35	1	true	true	NONE	4	4	2100.8	
2	PRISM/CLEAR	NRSIRS2RAPID	35	1	false	true	NONE	4	4	2100.8	

Special Requirements

Background Limited. Background no more than 40th percentile above minimum

Observation

Proposal 1176, Observation 341: VV 191

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

(Visit 341:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	VV-191	RA: 13 48 22.0992 (207.0920800d) Dec: +25 40 40.01 (25.67778d) Equinox: J2000	Proper Motion RA: 0 Proper Motion Dec: 0	

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

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	NONE		STANDARD		3

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F090W	F444W	SHALLOW4	6	1	3	3	934.099	
2	F150W	F356W	SHALLOW4	6	1	3	3	934.099	

Special Requirements

Offset 59.35 arcsec, -32.94 arcsec

Observation

Proposal 1176, Observation 361: TN-J1338-1942

Wed Aug 09 22:00:48 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Comments: Target z=4.1 radio source positioned within SW detector A2.
Modules offset to capture surrounding protocluster overdensity
(high concentration of candidates + some spec-z confirmed in Module A, and some spec-z confirmed in Module B)
given expected roll angle range 287 – 307 given scheduling Jan 26 – Mar 6.

Diagnostics

(Visit 361:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(17)	TN-J1338-1942	RA: 13 38 26.1000 (204.6087500d) Dec: -19 42 28.00 (-19.70778d) Equinox: J2000		

Comments:
Category=Clusters of Galaxies
Description=[High-redshift clusters]

Template

Module	Subarray	Target Placement
ALL	FULL	Module Gap

Dithers

#	Primary Dither Type	Primary Dithers	Subpixel Dither Type	Dither Size	Subpixel Positions
1	INTRAMODULEBOX	4	STANDARD		1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	F150W	F300M	SHALLOW4	5	1	4	4	1030.73	
2	F182M	F335M	SHALLOW4	5	1	4	4	1030.73	
3	F210M	F360M	SHALLOW4	5	1	4	4	1030.73	

Special Requirements

Offset -123.0 arcsec, 35.0 arcsec
Background Limited. Background no more than 40th percentile above minimum