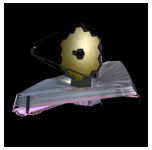

1210 - NIRCam-NIRSpec galaxy assembly survey - GOODS-S - part #1b

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

Name	*Institution*	*E-Mail*
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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Observation Folder				
	1	JADES Deep/HST (Obs 1) Replan	NIRSpec MultiObject Spectroscopy	(2) DEEP-HST-V1-CLEAN

ABSTRACT

We will conduct an ambitious deep-field survey to study the formation and evolution of galaxies from z 12 to z 2. Our program combines NIRSpec, NIRCam, and MIRI data, alongside the deepest data from HST, Chandra, ALMA, and JVLA, to produce an unprecedented view of high-redshift galaxies. The program is a collaboration of the NIRSpec and NIRCam GTO teams, and it combines imaging and spectroscopy as well as full use of coordinated parallel observations to get the best out of all three instruments. Indeed, to pursue a detailed understanding of galaxy evolution, the combination of imaging and spectroscopy is critical. By bringing these data sets together on a single field, we will carry out systematic investigations far beyond the sum of the parts.

This survey will provide the rest-frame optical data of sufficient area, depth, and spectral resolutions to map galaxy population properties, including the joint distribution of stellar mass, luminosity, star formation rate, stellar ages, sizes, metallicity, nuclear activity, gas kinematics, and outflows, over a wide range of redshifts. Broadly speaking, spectroscopy (at R = 100, 1000, and 2700) provides precise and robust redshifts, measurement of the stellar continuum, and emission lines to z 10 and beyond. The emission lines allow us to diagnose the galaxies' star formation rate (SFR), metallicities, chemical abundances, the ISM dust-reddening, and the ISM excitation, including signatures of AGNs. Low-resolution spectroscopy (R=100) for the brighter objects can also diagnose the stellar populations (especially the stellar age distribution). High-resolution spectroscopy

(R=2700) can diagnose internal galaxy kinematics and outflows.
The multi-wavelength NIRCam imaging will allow the detection, selection and characterization of galaxies to z = 15 and perhaps beyond. It will determine colors, morphological structure, and color gradients, while supplying photometric redshifts, stellar mass, and star formation rate estimates along with measures of equivalent widths of the strongest emission lines. The depth reached is unparalleled and will lead to luminosity functions to substantially higher redshift and lower mass than can be done with HST. Deep MIRI imaging will enable a rest-frame infrared view of subset of our sample, testing the assumptions of our UV/optical modeling and revealing heavily obscured stellar populations and nuclear activity. Combination with external data from Chandra, JVLA, and ALMA will further explore nuclear activity and dusty star formation. We expect that this carefully constructed survey will provide a primary legacy dataset for many years to come.

Warning: The pointing positions in this APT file are not yet final as the positions depend upon the field orientation which in turn depends on the as yet undetermined date of observation. Additionally, the NIRSpec MOS target catalog included in this APT file is a placeholder for the actual catalog that will be revised depending upon the final pointing positions. An explanation of these issues and full field NIRSpec MOS target catalogs are available at https://issues.cosmos.esa.int/jwst-nirspecwiki/pages/viewpage.action?pageId=3473486

OBSERVING DESCRIPTION
Prism and grating observations with NIRSpec in GOODS-S with NIRCam in parallel.

3 dither positions (resulting in 3 MSA configurations). Dither sizes and exact pointing locations are not final. The dithers were created using slightly different central positions for the MSA search grid in the MPT Planner. At each position, a MSA configuration was created for the PRISM/CLEAR setup and the gratings separately. This results in 6 plans which were then merged into one observation.

At each dither position, 3 nods are performed for each of the prism and grating setups. Each prism and grating setup has 2 integrations of 19 groups. The prism has 4 sequences at each position to build up signal-to-noise. The automatic visit splitting of the APT splits the total observations by dither in this setup, i.e. each visit represents one dither position in this setup. Some spectral overlap will be allowed for the gratings with the aim of obtaining spectra of many of the same sources in the prism and gratings.

NIRCam imaging observations are carried out in parallel.

PA Range special requirements have been defined to ensure the highest priority targets can be observed simultaneously. There are good scheduling

opportunities throughout the cycle.

The current setup displayed in the observations is for NIRSpec Aperture PA of 44.5 degrees, V3PA=266 degrees.

A note on NIRSpec MSA catalog and configurations

A target catalog is included in this APT file. This catalog was used to generate the dummy MSA configurations without any target prioritisation. Therefore the targets selected by the MPT in this file do not indicate the actual highest priority targets that will be observed.
The actual targets entering the MSA shutters will be defined, with target prioritisation, only after the instrument distortion is characterized during commissioning and an ORIENT has been assigned.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	DEEP-HST-V1-CLEAN	RA: 03 32 36.1210 (53.1505042d) Dec: -27 47 27.10 (-27.79086d) Equinox: J2000		

Comments:
Description=[]

Observation

Proposal 1210, Observation 1: JADES Deep/HST (Obs 1) Replan Wed Oct 19 15:00:44 GMT 2022

Diagnostic Status: Warning

Observing Template: NIRSpec MultiObject Spectroscopy

Coordinated Parallel Template(s): NIRCam Imaging

Diagnostics	(JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#1) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#1) has 7 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#2) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#2) has 7 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#3) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#3) has 7 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#4) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1G (#4) has 7 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#5) has 23 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#5) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#6) has 23 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#6) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#7) has 23 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#7) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#8) has 23 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p1P (#8) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#13) has 24 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#13) has 9 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#14) has 24 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#14) has 9 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#15) has 24 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#15) has 9 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#16) has 24 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2G (#16) has 9 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#10) has 20 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#10) has 28 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#11) has 20 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#11) has 28 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#12) has 20 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#12) has 28 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#9) has 20 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p2P (#9) has 28 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#17) has 10 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#17) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#18) has 10 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#18) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#19) has 10 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#19) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#20) has 10 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3G (#20) has 23 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#21) has 28 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#21) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#22) has 28 master background shutters affected by failed open or closed shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#22) has 29 primary slit traces affected by failed open shutters. (JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#23) has 28 master background shutters affected by failed open or closed shutters.

(JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#23) has 29 primary slit traces affected by failed open shutters.
(JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#24) has 28 master background shutters affected by failed open or closed shutters.
(JADES Deep/HST (Obs 1) Replan (Obs 1)) Warning (Form): Config p3P (#24) has 29 primary slit traces affected by failed open shutters.
(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 1:1) Warning (Form): The recommended value is 8 Reference Stars for this template.
(Visit 1:2) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 1:2) Warning (Form): The recommended value is 8 Reference Stars for this template.
(Visit 1:3) Warning (Form): Overheads are provisional until the Visit Planner has been run.
(Visit 1:3) Warning (Form): The recommended value is 8 Reference Stars for this template.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	DEEP-HST-V1-CLEAN	RA: 03 32 36.1210 (53.1505042d) Dec: -27 47 27.10 (-27.79086d) 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: CLEAR; Readout: NRSRAPIDD6; 5 sources in 3 quads; [Optimal TA Accuracy]	SAME	CLEAR	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
2	Filter: CLEAR; Readout: NRSRAPIDD6; 5 sources in 3 quads; [Optimal TA Accuracy]	SAME	CLEAR	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	
3	Filter: CLEAR; Readout: NRSRAPIDD6; 6 sources in 4 quads; [Optimal TA Accuracy]	SAME	CLEAR	Auto Acq MSA Config	NRSRAPIDD6	3	1	4	687.153	

Template

NIRSpec MultiObject Spectroscopy	NIRCam Imaging
TA Method: MSATA	Module: ALL
Obtain Confirmation Images: No	Subarray: FULL
Science Aperture: MSA Center	
Primary Candidate List: DEEP-HST-V1-CLEAN (13119 sources)	
Filler Candidate List: null	
Spectral Overlap Map: jwst-nirspec-hr	
Spectral Overlap Threshold: 1.5	

Proposal 1210 - Observation 1 - NIRCam-NIRSpec galaxy assembly survey - GOODS-S - part #1b

Reference Stars

Visit	ID	RA	Dec	Magnitude	Visit	ID	RA	Dec	Magnitude
1	6623	53.149870	-27.787522	25.215	1	11200	53.129049	-27.806437	25.116
1	9301	53.166728	-27.804240	25.005	1	35950	53.109410	-27.808495	25.437
1	10926	53.130416	-27.814584	23.850					
Visit	**ID**	**RA**	**Dec**	**Magnitude**	**Visit**	**ID**	**RA**	**Dec**	**Magnitude**
2	9301	53.166728	-27.804240	25.005	2	35950	53.109410	-27.808495	25.437
2	10926	53.130416	-27.814584	23.850	2	39147	53.111896	-27.776046	25.323
2	11200	53.129049	-27.806437	25.116					
Visit	**ID**	**RA**	**Dec**	**Magnitude**	**Visit**	**ID**	**RA**	**Dec**	**Magnitude**
3	6623	53.149870	-27.787522	25.215	3	11200	53.129049	-27.806437	25.116
3	9301	53.166728	-27.804240	25.005	3	16385	53.116447	-27.771904	24.622
3	10926	53.130416	-27.814584	23.850	3	35950	53.109410	-27.808495	25.437

Dithers

#	Dither Type
1	NONE

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 (G140M/F070LP)	p1G	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
2	2 (G235M/F170LP)	p1G	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
3	3 (G395H/F290LP)	p1G	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
4	4 (G395M/F290LP)	p1G	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
5	5 (PRISM/CLEAR)	p1P	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
6	5 (PRISM/CLEAR)	p1P	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
7	5 (PRISM/CLEAR)	p1P	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
8	5 (PRISM/CLEAR)	p1P	3 Shutter Slitlet	53.14104208333333 Degrees -27.791602777777 77 Degrees	99.57896660956264			3	6	8403.201
9	5 (PRISM/CLEAR)	p2P	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
10	5 (PRISM/CLEAR)	p2P	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
11	5 (PRISM/CLEAR)	p2P	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
12	5 (PRISM/CLEAR)	p2P	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
13	1 (G140M/F070LP)	p2G	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
14	2 (G235M/F170LP)	p2G	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652222222 24 Degrees	99.57905020662704			3	6	8403.201

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 (G395H/F290LP)	p2G	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652222222 24 Degrees	99.57905020662704			3	6	8403.201
16	4 (G395M/F290LP)	p2G	3 Shutter Slitlet	53.14086208333333 Degrees -27.791652777777 756 Degrees	99.57905020595469			3	6	8403.201
17	4 (G395M/F290LP)	p3G	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201
18	3 (G395H/F290LP)	p3G	3 Shutter Slitlet	53.14099958333333 Degrees -27.791823888888 87 Degrees	99.57898609413856			3	6	8403.201
19	2 (G235M/F170LP)	p3G	3 Shutter Slitlet	53.14099958333333 Degrees -27.791823888888 87 Degrees	99.57898609413856			3	6	8403.201
20	1 (G140M/F070LP)	p3G	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201
21	5 (PRISM/CLEAR)	p3P	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201
22	5 (PRISM/CLEAR)	p3P	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201
23	5 (PRISM/CLEAR)	p3P	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201
24	5 (PRISM/CLEAR)	p3P	3 Shutter Slitlet	53.14099958333333 Degrees -27.791825000000 017 Degrees	99.57898609279403			3	6	8403.201

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	F090W	F335M	DEEP8	7	2	6	3	8278.05	
2	F090W	F277W	DEEP8	7	2	6	3	8278.05	
3	F115W	F277W	DEEP8	7	2	6	3	8278.05	
4	F115W	F356W	DEEP8	7	2	6	3	8278.05	
5	F115W	F444W	DEEP8	7	2	6	3	8278.05	
6	F150W	F444W	DEEP8	7	2	6	3	8278.05	
7	F150W	F410M	DEEP8	7	2	6	3	8278.05	
8	F200W	F410M	DEEP8	7	2	6	3	8278.05	
9	F200W	F410M	DEEP8	7	2	6	3	8278.05	
10	F150W	F410M	DEEP8	7	2	6	3	8278.05	
11	F150W	F444W	DEEP8	7	2	6	3	8278.05	
12	F115W	F444W	DEEP8	7	2	6	3	8278.05	
13	F115W	F356W	DEEP8	7	2	6	3	8278.05	
14	F115W	F277W	DEEP8	7	2	6	3	8278.05	
15	F090W	F277W	DEEP8	7	2	6	3	8278.05	
16	F090W	F335M	DEEP8	7	2	6	3	8278.05	
17	F090W	F335M	DEEP8	7	2	6	3	8278.05	
18	F090W	F277W	DEEP8	7	2	6	3	8278.05	
19	F115W	F356W	DEEP8	7	2	6	3	8278.05	
20	F115W	F356W	DEEP8	7	2	6	3	8278.05	
21	F150W	F444W	DEEP8	7	2	6	3	8278.05	
22	F150W	F444W	DEEP8	7	2	6	3	8278.05	
23	F200W	F410M	DEEP8	7	2	6	3	8278.05	
24	F200W	F410M	DEEP8	7	2	6	3	8278.05	

Special Requirements

Group Visits within 53.0 Days
Visits Same PA
No Parallel
Background Limited. Background no more than 40th percentile above minimum
MSA Scheduled Aperture PA 99.5745697 to 99.5745697 Degrees (V3 321.0 to 321.0)