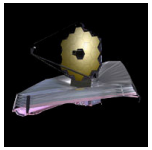

6796 - Resolving Multi-phase Outflow/Inflow via Gas Dynamics and Chemical Abundance Distribution in a Sub-L* Dwarf Galaxy at z=6.1

Cycle: 4, Proposal Category: GO

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
NIRCam				
	10	NIRCam short exposure	NIRCam Imaging	(1) sub_clusters
NIRSpec_MSA_stepping				
	1	G140H+G235H+G395H	NIRSpec MultiObject Spectroscopy	(5) MSA_z6

ABSTRACT

We propose deep high-resolution spectroscopy across ~0.7-5.3um with NIRSpec MSA, targeting remarkably bright (F150W=23.4mag), highly magnified (30-160x) multiple images of a sub-L* galaxy at z=6.072, RXCJ0600z6-ID3 and ID1,2 (~6"-long arc). Recent ALMA and MUSE observations have revealed significantly extended (~3"-6") and redshifted (~200-400 km/s) [CII]158um and Lya line structures around ID3, indicative of the presence of ongoing outflow/inflow. These two multiple images and associated extended nebular regions will be efficiently covered by stepped-MSA observations, providing the first spatially resolved views of a low-mass early galaxy, from the CGM, ISM, and individual star-cluster scales down to ~1-10pc. Our proposed deep spectroscopy across the rest-frame UV-optical range will enable the detection of key emission (e.g., HeII, CIII], NIII], [OII], [OIII], Ha) and absorption lines (e.g., O I, Si II, Si IV, CII, CIV) to achieve the following four major goals:

-Spatially resolve the multi-phase (ionized states/densities) gas outflow and inflow,
-Map out C/O, N/O, O/H distributions across the galaxy and study their connections with the stellar feedback and potential dilution of recent pristine

gas inflow
-Search for uniquely high N/O regions inside the galaxy and investigate where and how the proto globular clusters are formed
-Verify metal-free ionization in the extended Lya-emitting regions

These are achieved only by the unprecedented spatial and spectral capabilities enabled by JWST and strongly lensed brightest objects like our targets at z>6, which guarantees giant leaps in our understanding of the feedback mechanisms and baryon cycles in early galaxies.

OBSERVING DESCRIPTION

The key observables and scopes in each spec mode are summarized below:

1. G140H/F070LP (rest 990-1697 AA) : Emission) OIII], CIV, NIV, He II / Absorption) OI, Si II, Si IV, CII, CIV -> diffuse gas inflow/outflow, covering factor, electon density, ionization paramter

2. G140H/F100LP (rest 1430-2710 AA) : Emission) CIII], NIIII] -> C/O, N/O

3. G235H/F170LP (rest 2430-4570 AA) : Emission) [OII], MgII, Absorption) Mg II -> ionization parameter (with [OIII]), electron density

4. G395H/F290LP (rest 4143-7571 AA) : Emission) [OIII]4363, [OIII]5008,4960, Ha, Hb, He II -> O/H, Av, dense gas outflow

Both targets fall within the NIRSpec MSA FoV, and thus we employ the MSA stepping method (e.g., Barisic+24; see also #2123, #4291), instead of NIRSpec IFU.
We use 5 steps and 5 sub-grid dithers in each step. Using MSA planning tool with a specific PA angle which is available in our target coordinate, we confirm that the 5 step sufficiently covers both targets including the entire 6"-long arc in ID1,2 as well as ~3"-6" scale extended [CII]158um and Lya lines identified around ID3.
In addition to the ~3x better sensitivity in MSA than IFU, this extended structures makes our MSA-stepping method is >~ 5x more time efficient than IFU to achieve our request sensitivity per area.

For 1, we determine the request sensitivity to achieve S/N~4-5 per pixel to enable the absorption line studies.
For 2 and 3, the key scopes are based on the emission lines, and we determine the request sensitivity to achieve the emission line detection at S/N

>~4-5.
For 4, we determine the request sensitivity to achieve the outflowing broad [OIII] line detection at S/N>~4-5 after integrating over the line.

Note that our goal is to achieve the spatially-resolved measurements. Thus the request sensitivity is calculated based on a smaller aperture for the target which encloses ~10% of the total flux (i.e., we will achieve the above S/N >~4-5 detection experiment at least 10 spatially resolved elements in both ID1 and ID2,3)

Another note is that a recent paper found that this target lensing cluster has enormously extended high magnification areas from nearby sub clusters (Furtak+24).
While all the five multiple images have been spectroscopically confirmed and the latest lens model suggests the modest uncertainty (~20%) for our target system, despite its remarkably high magnifications (usually >100% for sources with mu>10), we also obtain short (~2hr; 5sigma~28mag in each filter) 2-point NIRCam exposure to fully cover the newly discovered regions to further refine the lens model and thus improve all our mesurement. We use the standard 8 NIRCam filters with F090W, F115W, F150W, F200W, F277W, F356W, F410M, F444W, which enables the robust cluster member galaxies and high-z lensed multiply imaged galaxies selection to refine the lens model.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	sub_clusters	RA: 06 00 9.5593 (90.0398304d) Dec: -20 08 11.02 (-20.13639d) Equinox: J2000		
Comments: *Category=Galaxy* *Description=[High-redshift galaxies]* *Extended=YES*				
(5)	MSA_z6	RA: 06 00 9.5675 (90.0398646d) Dec: -20 08 10.94 (-20.13637d) Equinox: J2000		
Comments: *Description=[]*				

Observation

Proposal 6796, Observation 10: NIRCam short exposure Thu Nov 20 23:00:32 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRCam Imaging

Diagnostics

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

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	sub_clusters	RA: 06 00 9.5593 (90.0398304d) Dec: -20 08 11.02 (-20.13639d) Equinox: J2000		

Comments:
Category=Galaxy
Description=[High-redshift galaxies]
Extended=YES

Template

Module	Subarray	Target Placement
ALL	FULL	Module A (A3 corner)

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
2	1	10.0	10.0	5.0	0.0	DEFAULT

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	Optional ETC ID
1	F090W	F410M	MEDIUM8	5	1	4	4	2061.46	
2	F115W	F444W	MEDIUM2	5	1	4	4	1803.777	
3	F150W	F356W	SHALLOW4	8	1	4	4	1674.936	
4	F200W	F277W	SHALLOW4	7	1	4	4	1460.201	

Special Requirements	
	Sequence Visits within 53 Days Aperture PA Range 37.16565232 to 37.16565232 Degrees (V3 37.3 to 37.3) Visits Same PA Offset 55.0 arcsec, -30.0 arcsec Fiducial Point Override NRCAS_FULL

Observation

Proposal 6796, Observation 1: G140H+G235H+G395H Thu Nov 20 23:00:32 GMT 2025

Diagnostic Status: Warning

Observing Template: NIRSpec MultiObject Spectroscopy

Diagnostics	(G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#1) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#10) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#11) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#12) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#13) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#14) has 3 master background shutters affected by failed open or closed shutters. (G140H+G235H+G395H (Obs 1)) Warning (Form): Config step1 (#15) has 3 master background shutters affected by failed open or closed shutters. 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(G140H+G235H+G395H (Obs 1)) Warning (Form): Config step5_temp (#97) has 3 master background shutters affected by failed open or closed shutters.
(G140H+G235H+G395H (Obs 1)) Warning (Form): Config step5_temp (#98) has 3 master background shutters affected by failed open or closed shutters.
(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.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	MSA_z6	RA: 06 00 9.5675 (90.0398646d) Dec: -20 08 10.94 (-20.13637d) Equinox: J2000		

Comments:
Description=[]

Acquisition

#	Reference Star Bin	Target	Filter	MSA Configuration	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1		SAME	F140X	Auto Acq MSA Config	NRSRAPID	3	1	4	171.788	
2		SAME	F140X	Auto Acq MSA Config	NRSRAPID	3	1	4	171.788	
3		SAME	F140X	Auto Acq MSA Config	NRSRAPID	3	1	4	171.788	

Template

TA Method	HFF Readout Mode	Obtain Confirmation Images	Science Aperture	Primary Candidate List	Filler Candidate List	Spectral Overlap Map	Spectral Overlap Threshold
MSATA	false	No	MSA Center	MSA_z6 (2 sources)		jwst-nirspec-hr	1.5

Reference Stars

Spectral Elements

#	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 (G140H/F070LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
2	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
3	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
4	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
5	1 (G140H/F070LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59525120687948	-4.333	-0.85	1	3	3763.934
6	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59525120687948	-4.333	-0.85	1	1	379.311
7	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59525120687948	-4.333	-0.85	1	1	379.311
8	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59525120687948	-4.333	-0.85	1	1	379.311
9	1 (G140H/F070LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.595234427836	-3.667	-0.85	1	3	3763.934
10	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.595234427836	-3.667	-0.85	1	1	379.311
11	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.595234427836	-3.667	-0.85	1	1	379.311
12	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.595234427836	-3.667	-0.85	1	1	379.311
13	1 (G140H/F070LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524443661633	-3.667	-0.35	1	3	3763.934
14	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524443661633	-3.667	-0.35	1	1	379.311

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
15	1 (G140H/F070LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59526121537994	-4.333	-0.35	1	3	3763.934
16	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59526121537994	-4.333	-0.35	1	1	379.311
17	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59526121537994	-4.333	-0.35	1	1	379.311
18	2 (G140H/F100LP)	step1		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59526121537994	-4.333	-0.35	1	1	379.311
19	1 (G140H/F070LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
20	2 (G140H/F100LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
21	1 (G140H/F070LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
22	2 (G140H/F100LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
23	1 (G140H/F070LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
24	2 (G140H/F100LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
25	1 (G140H/F070LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
26	2 (G140H/F100LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
27	1 (G140H/F070LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
28	2 (G140H/F100LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
29	3 (G235H/F170LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
30	3 (G235H/F170LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
31	3 (G235H/F170LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
32	3 (G235H/F170LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
33	3 (G235H/F170LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
34	4 (G395H/F290LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
35	4 (G395H/F290LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
36	4 (G395H/F290LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
37	4 (G395H/F290LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
38	4 (G395H/F290LP)	step2_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
39	1 (G140H/F070LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
40	2 (G140H/F100LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
41	1 (G140H/F070LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
42	2 (G140H/F100LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
43	1 (G140H/F070LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
44	2 (G140H/F100LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
45	1 (G140H/F070LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
46	2 (G140H/F100LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
47	1 (G140H/F070LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
48	2 (G140H/F100LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
49	3 (G235H/F170LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
50	3 (G235H/F170LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
51	3 (G235H/F170LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
52	3 (G235H/F170LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
53	3 (G235H/F170LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
54	4 (G395H/F290LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
55	4 (G395H/F290LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
56	4 (G395H/F290LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
57	4 (G395H/F290LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
58	4 (G395H/F290LP)	step3_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
59	1 (G140H/F070LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
60	2 (G140H/F100LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
61	1 (G140H/F070LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
62	2 (G140H/F100LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
63	1 (G140H/F070LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
64	2 (G140H/F100LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
65	1 (G140H/F070LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
66	2 (G140H/F100LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
67	1 (G140H/F070LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
68	2 (G140H/F100LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
69	3 (G235H/F170LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
70	3 (G235H/F170LP)	step4_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
71	3 (G235H/F170LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
72	3 (G235H/F170LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
73	3 (G235H/F170LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
74	4 (G395H/F290LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
75	4 (G395H/F290LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
76	4 (G395H/F290LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
77	4 (G395H/F290LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
78	4 (G395H/F290LP)	step4_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
79	1 (G140H/F070LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
80	2 (G140H/F100LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
81	1 (G140H/F070LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
82	2 (G140H/F100LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
83	1 (G140H/F070LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
84	2 (G140H/F100LP)	step5_temp		90.05389725 Degrees -20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311

#	Exposure Specification	MSA Configuration	Nod Pattern	Pointing	Aperture PA	Dispersion Offset (Shutters)	Cross-Dispersion Offset (Shutters)	Total Dithers	Total Integrations	Total Exposure Time
85	1 (G140H/F070LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
86	2 (G140H/F100LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
87	1 (G140H/F070LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	3	3763.934
88	2 (G140H/F100LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
89	3 (G235H/F170LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
90	3 (G235H/F170LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
91	3 (G235H/F170LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
92	3 (G235H/F170LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
93	3 (G235H/F170LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	379.311
94	4 (G395H/F290LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
95	4 (G395H/F290LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
96	4 (G395H/F290LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
97	4 (G395H/F290LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645
98	4 (G395H/F290LP)	step5_temp		90.05389725 Degrees - 20.123882222222 22 Degrees	201.59524782174017	-4.0	-0.6	1	1	1254.645

Special Requirements	
	After Date 01-JAN-2027 Group Visits within 53.0 Days Aperture PA Range 201.6 to 201.6 Degrees (V3 63.0254303 to 63.0254303) Visits Same PA MSA Planned Aperture PA 201.6000 to 201.6000 Degrees (V3 63.0254303 to 63.0254303)