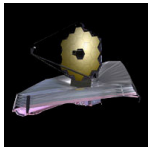

3777 - The LAHst of Us: a Sub-kiloparsec View Into The Origins Of a Strongly-Lensed Lyman Alpha Halo at z=3

Cycle: 2, Proposal Category: GO

INVESTIGATORS

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Observation Folder				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	1	mosaic	NIRSpec IFU Spectroscopy	(1) SGAS-J122651.3+215220

ABSTRACT

We propose a 4-tile NIRSpec IFU mosaic of the SGASJ1226 system at z=2.92, a pair of interacting star-forming galaxies that is highly magnified thanks to gravitational lensing. Deep and high-resolution VLT/MUSE data revealed a Lyman Alpha halo associated with the clumpy and blue merging galaxies, suggesting the presence of large-scale winds and H I gas reservoirs in their close environment. We will map all the strong rest-frame optical lines on 100-500 pc scales and constrain the conditions that give rise to the extended Lyman-a emission. Using the detailed, resolved nebular emission lines ratios and constraints on the stellar populations, we will: (i) Connect the physical conditions of the star-forming ISM to the extended Lyman-a emission; (ii) Constrain Ly emission mechanisms; (iii) Search for the drivers of the large scale outflow. Combining the proposed JWST data with a wealth of ancillary datasets, including ALMA, MUSE, HST and early-release JWST, offers the unique opportunity to peer with unprecedented detail into the origins of Lyman-a halos.

OBSERVING DESCRIPTION

We propose a 4x1 tile NIRSpec IFU mosaic covering SGASJ1226+21 at z=2.92, one of the best-studied and highly-lensed examples of a pair of merging LBGs bound to a Lyman Alpha Halo. Our observations are designed to measure and spatially resolve strong nebular emission lines from Hbeta to [N II] 6583 in the arc B. The proposed mosaic complements existing single pointing NIRspec IFU data that covers the other galaxy in the system.

The instrument is configured with the G235/F170LP grating/filter combination, yielding R~2700, enought to resolve the lines and reveal potential broad components with FWHM > 400 km/s.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	SGAS-J122651.3+215220	RA: 12 26 51.5252 (186.7146883d) Dec: +21 52 15.07 (21.87085d) Equinox: J2000	Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Galaxy
Description=[High-redshift galaxies, Lyman-alpha galaxies, Lyman-break galaxies]
Extended=YES

Observation

Proposal 3777, Observation 1: mosaic Thu May 11 04:01:46 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	SGAS-J122651.3+215220	RA: 12 26 51.5252 (186.7146883d) Dec: +21 52 15.07 (21.87085d) Equinox: J2000	Epoch of Position: 2015.5	

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Category=Galaxy
Description=[High-redshift galaxies, Lyman-alpha galaxies, Lyman-break galaxies]
Extended=YES

Template

TA Method
NONE

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift	Column shift	Tile Order
4	1	5.0	8.0	0.0	20.0	DEFAULT

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	4	

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G235H/F170LP	NRSIRS2	14	1	false	true	NONE	4	4	4143.245	

Special Requirements	Aperture PA Range 79.97253418 to 95.97253418 Degrees (V3 301.0 to 317.0) Aperture PA Range 260.0 to 275.0 Degrees (V3 121.02746582 to 136.02746582)