



1219 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

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OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
NIRSpec MSA of J1342				
	6	Quasar in S200A1 and S200A2	NIRSpec MultiObject Spectroscopy	(4) TARGET-OBSERVATION-6
NIRSpec IFU of J1342				
	7	NIRSpec IFU	NIRSpec IFU Spectroscopy	(2) ULASJ1342+0928
MIRI observations of J1342				
	4	J1342	MIRI Medium Resolution Spectroscopy	(2) ULASJ1342+0928
	5	J1342-Imager	MIRI Imaging	(5) ULASJ1342+0928-IMAGER

ABSTRACT

Update June 2019:

We have removed target j2348-3054 and added ULASJ1342+0928

NIRSpec-IFU observations now also include R100

Note that the 'charged time' is larger than the 'allocated time'

because we have internally redistributed the time among the NIRSpec-IFU GTO programmes

MIRI, with its spectral coverage from 5 to 28 μm and sensitivity, is the only instrument onboard JWST able to explore the optical and near-infrared spectrum and light distribution of galaxies and QSOs at redshifts above 6.7. A complete 5 to 28 spectrum (~ 0.6 to 3.5 microns rest-frame) of the highest redshift ($z=7.54$) QSO J1342+0928, will be obtained, together with F560W MIRI imaging of the host and surrounding field. In addition simultaneous MIRI imaging of a nearby field will be taken with the F560W and F1000W filters.

The same APT file includes the NIRSpec observation of the same target with the IFU with the G395H grating (aimed primarily at mapping the main optical nebular lines H β , [OIII], H α , [NII]) and with the fixed slit with the G140H and G235H gratings (aimed primarily at detecting IGM metal absorption systems). Simultaneously with the fixed slit observation (centered onto the quasar) the MSA will be used to observe galaxies imaged by the HST in the field of view, therefore these observations have been set up in MOS mode.

OBSERVING DESCRIPTION

NIRSpec MSA OBSERVATION

This corresponds to NIRSpec Proposal IDs: FERRUIT_4004 and FERRUIT_4104

(NIRSpec Contact Person: Chris Willott, chriswillott1@gmail.com)

The quasar will be placed in the fixed slits S200A1 and S200A2 whilst simultaneously configuring MSA shutters to target other galaxies identified in HST imaging. We use NIRSpec team software to design the MSA configurations and ensure they agree with positions in the APT MPT software.

We use the G140H/F070LP grating and filter combination to do spectroscopy at 0.7 to 1.8 microns. We realise there will be some spectral overlap at >1.4 microns but our prime targets have almost zero flux below 0.9 microns so this will not strongly affect the spectra. We also use the G235H/F170LP grating and filter combination to do spectroscopy at 1.7 to 3.1 microns.

NIRSpec IFU OBSERVATION

This corresponds to NIRSpec Proposal ID: FERRUIT_3054

(NIRSpec Contact Persons: Roberto Maiolino, r.maiolino@mrao.cam.ac.uk)

The NIRSpec IFU observation is done with the G395H grating and it is aimed aimed primarily at mapping the strongest optical nebular lines (Hbeta, [OIII], Halpha, [NII]).

We also include R100 observation (+ 1 leakcal) for the continuum (and the fluxes of other lines)

We are using no target acquisition (i.e. point-and-shoot).

At any of the constrained PA range there are Gaia GS that can be selected for guiding and which will ensure the proper location of the target within the IFU aperture, with the required accuracy.

We are using NRSIRS2RAPID for a better identification and rejection of cosmic rays.

MIRI OBSERVING DESCRIPTIONS:

This corresponds to MIRI Proposal ID: WRIGHT_0601 and WRIGHT_0602

(MIRI Contact Person: Javier Alvarez-Marquez, javier.alvarez@cab.inta-csic.es)

The purpose of the program is to get a full 5 - 30 um spectrum of J2348 using the 3 MRS configurations with simultaneous Imager observations (see additional note 1). In addition, we request the imaging of the target in two filters: F560W, F770W.

The dithering strategies (4-pt, point source) were selected to optimize the PSF and detector effects in all MRS channels, and IMAGER filters. These strategies could be subject to change without modifying the total time.

Proposal 1219 - Targets - NIRSpec and MIRI spectroscopy of QSOs - part #3

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
	(2)	ULASJ1342+0928	RA: 13 42 8.0970 (205.5337375d) Dec: +09 28 38.28 (9.47730d) Equinox: J2000		
	Comments: Category=Galaxy Description=[Quasars] Extended=YES				
	(4)	TARGET-OBSERVATION-6	RA: 13 42 11.2177 (205.5467404d) Dec: +09 27 14.36 (9.45399d) Equinox: J2000		
	Comments: This target was generated automatically for MSA Observation 6 Category=Galaxy Description=[High-redshift galaxies, Primordial galaxies, Quasars] Extended=YES				
	(5)	ULASJ1342+0928-IMAGER	RA: 13 42 7.1000 (205.5295833d) Dec: +09 28 48.00 (9.48000d) Equinox: J2000		
	Comments: Category=Galaxy Description=[Quasars] Extended=NO				

Proposal 1219 - Observation 6 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Observation	Proposal 1219, Observation 6: Quasar in S200A1 and S200A2										Wed Jun 26 18:01:05 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: NIRSpec MultiObject Spectroscopy										
Diagnostics	(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(4)	TARGET-OBSERVATION-6	RA: 13 42 11.2177 (205.5467404d) Dec: +09 27 14.36 (9.45399d) Equinox: J2000								
	Comments: This target was generated automatically for MSA Observation 6 Category=Galaxy Description=[High-redshift galaxies, Primordial galaxies, Quasars] Extended=YES										
Acquisition	#	Reference Star Bin	Target	Filter	MSA Configuration	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1		SAME	F140X	Auto Acq MSA Config	NRS	3	1	4	558.312	
Template	TA Method				Obtain Confirmation Images				Science Aperture		
	MSATA				No				MSA Center		
Reference Stars											
Spectral Elements	#	Grating/Filter	MSA Configuration	Readout Pattern	Groups/Int	Integrations/Exp	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G140H/F070LP	Configuration: p1c0	NRSIRS2RAPID	65	2	NONE	3	6	5777.2	
	2	G235H/F170LP	Configuration: p1c0	NRSIRS2RAPID	65	1	NONE	3	3	2888.6	
	3	G235H/F170LP	Configuration: p2c0	NRSIRS2RAPID	65	1	NONE	3	3	2888.6	
	4	G140H/F070LP	Configuration: p2c0	NRSIRS2RAPID	65	2	NONE	3	6	5777.2	

Proposal 1219 - Observation 6 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Special Requirements	MSA Planned Aperture PA 259.492 to 259.492 Degrees (V3 120.99966 to 120.99966)
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Proposal 1219 - Observation 7 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Observation	Proposal 1219, Observation 7: NIRSpec IFU											Wed Jun 26 18:01:05 GMT 2019	
	Diagnostic Status: Warning												
	Observing Template: NIRSpec IFU Spectroscopy												
Diagnostics	(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.												
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections				Miscellaneous		
	(2)	ULASJ1342+0928	RA: 13 42 8.0970 (205.5337375d) Dec: +09 28 38.28 (9.47730d) Equinox: J2000										
	Comments: Category=Galaxy Description=[Quasars] Extended=YES												
Template	TA Method												
	NONE												
Dithers	#	Dither Type			Size	Starting Point			Number of Points		Points		
	1	CYCLING			MEDIUM	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	G395H/F290LP	NRSIRS2RAPID	185	1	false	true	NONE	4	4	10854.134		
	2	PRISM/CLEAR	NRSIRS2RAPID	62	1	false	true	NONE	4	4	3676.4		
	3	PRISM/CLEAR	NRSIRS2RAPID	62	1	true	false	NONE	1	1	919.1		

Proposal 1219 - Observation 4 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Observation	Proposal 1219, Observation 4: J1342												Wed Jun 26 18:01:05 GMT 2019	
	Diagnostic Status: Warning													
	Observing Template: MIRI Medium Resolution Spectroscopy													
Diagnostics	(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.													
Fixed Targets	#	Name			Target Coordinates			Targ. Coord. Corrections			Miscellaneous			
	(2)	ULASJ1342+0928			RA: 13 42 8.0970 (205.5337375d) Dec: +09 28 38.28 (9.47730d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Quasars] Extended=YES													
Acquisition	#	Target												
	1	NONE												
Template	AcqFilter	Primary Channel				Simultaneous Imaging				Imager Subarray				
	F560W	ALL				YES				FULL				
Dithers	#	Dither Type				Optimized For				Direction				
	1	4-Point				POINT SOURCE				POSITIVE				
Spectral Elements	#	Wavelength Range	Detector	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1		IMAGER	F560W	FAST	103	3	1	Dither 1	4	12	3429.949		
	1	SHORT(A)	MRSLONG		SLOW	36	1	1	Dither 1	4	4	3440.148		
	1	SHORT(A)	MRSSHORT		SLOW	36	1	1	Dither 1	4	4	3440.148		
	2		IMAGER	F1000W	FAST	103	3	1	Dither 1	4	12	3429.949		
	2	MEDIUM(B)	MRSLONG		SLOW	36	1	1	Dither 1	4	4	3440.148		
	2	MEDIUM(B)	MRSSHORT		SLOW	36	1	1	Dither 1	4	4	3440.148		
	3		IMAGER	F1000W	FAST	103	3	1	Dither 1	4	12	3429.949		
	3	LONG(C)	MRSLONG		SLOW	36	1	1	Dither 1	4	4	3440.148		
	3	LONG(C)	MRSSHORT		SLOW	36	1	1	Dither 1	4	4	3440.148		

Proposal 1219 - Observation 4 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Special Requirements

Aperture PA Range 90 to 150 Degrees (V3 90.0 to 150.0)
Background Limited. Background no more than 40% above minimum
Group Observations 4, 5, Non-interruptible

Proposal 1219 - Observation 5 - NIRSpec and MIRI spectroscopy of QSOs - part #3

Observation	Proposal 1219, Observation 5: J1342-Imager										Wed Jun 26 18:01:05 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
Diagnostics	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(5)	ULASJ1342+0928-IMAGER	RA: 13 42 7.1000 (205.5295833d)								
			Dec: +09 28 48.00 (9.48000d)								
			Equinox: J2000								
Template	Comments: Category=Galaxy Description=[Quasars] Extended=NO										
	Subarray										
	FULL										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	4-Point-Sets	1	4		8	1	POINT SOURCE	POSITIVE	SMALL	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F560W	FAST	95	1	1	Dither 1	4	4	1054.515	
Special Requirements	Aperture PA Range 94.449705 to 154.449705 Degrees (V3 90.0 to 150.0) Background Limited. Background no more than 40% above minimum Group Observations 4, 5, Non-interruptible										