



1198 - IFU spectroscopy of the host galaxies of strongly lensed quasars

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>
SDSS J1206				
	2		NIRCam Imaging	(3) SDSS-J1206+4332
	1		NIRSpec IFU Spectroscopy	(3) SDSS-J1206+4332
WFI 2033				
	4		NIRCam Imaging	(4) LQAC-308-047-001
	5		NIRSpec IFU Spectroscopy	(4) LQAC-308-047-001
HE 0435				
	7		NIRCam Imaging	(5) HE-0435-1223
	8		NIRSpec IFU Spectroscopy	(5) HE-0435-1223
PG 1115				
	10		NIRCam Imaging	(6) HB89-1115+080
	11		NIRSpec IFU Spectroscopy	(6) HB89-1115+080

ABSTRACT

We will study the interaction of the host spheroid and central black hole by obtaining NIRCam images and NIRSpec IFU datacubes on 4 multiply imaged QSOs and on their lens galaxies. The main purpose of these observations is to take advantage of the gravitational stretching of the host galaxy to effectively obtain spatially resolved spectroscopic data at higher rest frame angular resolution than otherwise possible. We will also obtain

spatially resolved data on the lens galaxy. The spectroscopic data will allow us to determine abundances, abundance ratios, and kinematical information.

This version of the APT uses no target acquisition and 2 by 2 dithering with the IFU. My plan is to ultimately use WATA on suitable off-target objects and 4 point small step cycle dithering.

GTO submission IDs : STIAVELLI_0011 through 0022.

OBSERVING DESCRIPTION

We will obtain IFU data at $R \sim 1000$ for 4 multiply imaged QSOs chosen to be at similar redshift (around $z \sim 1.7$). Three of the QSOs are quads while one of them (J1206-4332) is a double with a quadruply lensed host galaxy. The aim of the program is to:

- 1- measure kinematics and emission line strengths of the QSO host as close to the QSO as possible. Lines within the wavelength range include [OII], [OIII], Hbeta and Halpha;
- 2- if host absorption lines in the Fe-Mgb region are detectable, measure their line strengths and derive stellar kinematical information on the host;
- 3- measure the spatially resolved stellar kinematics (velocity and velocity dispersion) of the lens galaxy using the Ca triplet lines.

For the velocity dispersion we will use synthetic templates.

Proposal 1198 - Observation 2 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 2										Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(3)	SDSS-J1206+4332	RA: 12 06 29.6472 (181.6235300d)								
			Dec: +43 32 17.56 (43.53821d)								
			Equinox: J2000								
	Comments: This object was generated by the targetselector and retrieved from the NED database.										
	Category=Galaxy										
	Description=[Elliptical galaxies, Quasars]										
	Extended=Unknown										
Template	Module					Subarray					
	ALL					FULL					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	INTRAMODULE		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	F115W	F356W	SHALLOW2	9	1	4	4	1846.724		
	2	F150W	F277W	SHALLOW2	9	1	4	4	1846.724		
Special Requirements	Offset 55.0 arcsec, 35.0 arcsec										

Proposal 1198 - Observation 1 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 1												Tue Feb 20 23:01:10 GMT 2018	
	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				
	(3)	SDSS-J1206+4332		RA: 12 06 29.6472 (181.6235300d) Dec: +43 32 17.56 (43.53821d) Equinox: J2000 <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> <i>Category=Galaxy</i> <i>Description=[Elliptical galaxies, Quasars]</i> <i>Extended=Unknown</i>										
Template	TA Method NONE													
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	G140M/F100LP		NRSIRS2	24	2	false	true	NONE	4	8	14122.046		

Proposal 1198 - Observation 4 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 4										Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
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		
	(4)	LQAC-308-047-001	RA: 20 33 41.9400 (308.4247500d)								
			Dec: -47 23 42.68 (-47.39519d)								
			Equinox: J2000								
			Comments: This object was generated by the targetselector and retrieved from the NED database. Category=Galaxy Description=[Elliptical galaxies, Quasars] Extended=Unknown								
Template	Module					Subarray					
	ALL					FULL					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	INTRAMODULE		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	F115W	F356W	SHALLOW2	9	1	4	4	1846.724		
	2	F150W	F277W	SHALLOW2	9	1	4	4	1846.724		
Special Requirements	Offset 55.0 arcsec, 35.0 arcsec										

Proposal 1198 - Observation 5 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 5											Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
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		
	(4)	LQAC-308-047-001	RA: 20 33 41.9400 (308.4247500d)									
			Dec: -47 23 42.68 (-47.39519d)									
			Equinox: J2000									
	Comments: This object was generated by the targetselector and retrieved from the NED database.											
	Category=Galaxy											
	Description=[Elliptical galaxies, Quasars]											
	Extended=Unknown											
Template	TA Method											
	NONE											
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	G140M/F100LP	NRSIRS2	24	2	false	true	NONE	4	8	14122.046	

Proposal 1198 - Observation 7 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 7										Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning Observing Template: NIRCam Imaging										
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		
	(5)	HE-0435-1223	RA: 04 38 14.7864 (69.5616100d) Dec: -12 17 14.93 (-12.28748d) Equinox: J2000 <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> <i>Category=Galaxy</i> <i>Description=[Elliptical galaxies, Quasars]</i> <i>Extended=Unknown</i>								
Template	Module ALL					Subarray FULL					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	INTRAMODULE		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	F115W	F356W	SHALLOW2	9	1	4	4	1846.724		
	2	F150W	F277W	SHALLOW2	9	1	4	4	1846.724		
Special Requirements	Offset 55.0 arcsec, 35.0 arcsec										

Proposal 1198 - Observation 8 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 8											Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning											
Diagnostics	Observing Template: NIRSpec IFU Spectroscopy											
	(Visit 8:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous		
	(5)	HE-0435-1223	RA: 04 38 14.7864 (69.5616100d) Dec: -12 17 14.93 (-12.28748d) Equinox: J2000									
Template	Comments: This object was generated by the targetselector and retrieved from the NED database.											
	Category=Galaxy Description=[Elliptical galaxies, Quasars] Extended=Unknown											
Dithers	TA Method											
	NONE											
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	G140M/F100LP	NRSIRS2	24	2	false	true	NONE	4	8	14122.046	

Proposal 1198 - Observation 10 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 10										Tue Feb 20 23:01:10 GMT 2018
	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. (Visit 10:3) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Visit 10:4) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(6)	HB89-1115+080	RA: 11 18 16.9512 (169.5706300d) Dec: +07 45 58.18 (7.76616d) Equinox: J2000								
	Comments: This object was generated by the targetselector and retrieved from the NED database.										
	Category=Galaxy										
	Description=[Elliptical galaxies, Quasars]										
	Extended=Unknown										
Template	Module					Subarray					
	ALL					FULL					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	INTRAMODULE		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	F115W	F356W	SHALLOW2	9	1	4	4	1846.724		
	2	F150W	F277W	SHALLOW2	9	1	4	4	1846.724		
Special Requirements	Group Visits within 53.0 Days Visits Same PA Offset 55.0 arcsec, 35.0 arcsec										

Proposal 1198 - Observation 11 - IFU spectroscopy of the host galaxies of strongly lensed quasars

Observation	Proposal 1198, Observation 11											Tue Feb 20 23:01:10 GMT 2018
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
Diagnostics	(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous		
	(6)	HB89-1115+080	RA: 11 18 16.9512 (169.5706300d)				Dec: +07 45 58.18 (7.76616d)			Equinox: J2000		
	Equinox: J2000											
	Comments: This object was generated by the targetselector and retrieved from the NED database.											
	Category=Galaxy											
	Description=[Elliptical galaxies, Quasars]											
	Extended=Unknown											
Template	TA Method											
	NONE											
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	G140M/F100LP	NRSIRS2	24	2	false	true	NONE	4	8	14122.046	