



1205 - Formation Histories and Stellar Masses of Very High-z Quasars

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
Dr. George Rieke (PI)	University of Arizona	ghrieke@gmail.com
Dr. Stacey Alberts (CoI)	University of Arizona	salberts@email.arizona.edu
Ms. Irene Shivaie (CoI)	University of Arizona	ishivaie@as.arizona.edu
Jianwei Lyu (CoI)	University of Arizona	jianwei@email.arizona.edu

OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	1	J120441.73-002149.6	NIRSpec IFU Spectroscopy	(1) J120441.73-002149.6
	2	2MJ12040377+001913 4	NIRSpec IFU Spectroscopy	(2) 2MJ12040377+0019134
	3	J134040.24+281328.1	NIRSpec IFU Spectroscopy	(3) J134040.24+281328.1
	4	2MJ13403522+274850 1	NIRSpec IFU Spectroscopy	(4) 2MJ13403522+2748501
	5	J033829.31+002156.26	NIRSpec IFU Spectroscopy	(5) J033829.31+002156.26
	6	2MJ03391626+004202 3	NIRSpec IFU Spectroscopy	(6) 2MJ03391626+0042023
	7	J073103.12+445949.4	NIRSpec IFU Spectroscopy	(7) J073103.12+445949.4
	8	2MJ07313244+451041 6	NIRSpec IFU Spectroscopy	(8) 2MJ07313244+4510416
	9	J162100.70+515544.8	NIRSpec IFU Spectroscopy	(9) J162100.70+515544.8
	10	2MJ16205978+520623 2	NIRSpec IFU Spectroscopy	(10) 2MJ16205978+5206232
	11	J120441-image	NIRCam Imaging	(1) J120441.73-002149.6

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
	12	2MJ12040377_image	NIRCam Imaging	(2) 2MJ12040377+0019134
	13	J13404024_image	NIRCam Imaging	(3) J134040.24+281328.1
	14	2MJ13403522_imaging	NIRCam Imaging	(4) 2MJ13403522+2748501
	15	J033829_imaging	NIRCam Imaging	(5) J033829.31+002156.26
	16	2MJ03391626_imaging	NIRCam Imaging	(6) 2MJ03391626+0042023
	17	J073103_image	NIRCam Imaging	(7) J073103.12+445949.4
	18	2MJ07313244_image	NIRCam Imaging	(8) 2MJ07313244+4510416
	19	J162100_image	NIRCam Imaging	(9) J162100.70+515544.8
	20	2MJ16205978_image	NIRCam Imaging	(10) 2MJ16205978+5206232

ABSTRACT

Attempts to image the hosts of very high redshift quasars have been frustratingly difficult. What detections there are have been made in the near infrared, i.e., rest frame ultraviolet. Hence, it is difficult to interpret the results: a small amount of very recent star formation could dominate the signals. Nonetheless, the limits have raised the question of whether the local Magorrian relation holds this early in galaxy evolution. Dynamical masses from the 157 micron [CII] line, indicate a roughly normal (i.e., Magorrian) ratio of total mass to black hole mass (but of course, with no measure of the relative mass in dark matter, stars, and gas). In this program (ID 1205), we will use a combination of IFU spectroscopy and NIRCam imaging to search much more deeply and definitively for host galaxies around five high redshift quasars.

OBSERVING DESCRIPTION

We have selected five of these quasars to image with NIRCam using medium band filters, one that will include H alpha and another to sample nearby continuum. Together these images (at about 4.3 microns observed) will let us search very deeply for an extended galaxy around the quasar, and to test this identification since a significant fraction of the flux in the H alpha band will come from the emission line and hence be point-like (adding to the point-like quasar continuum). However, images do not provide a totally reliable indication if faint extended emission around the quasar is due to gas, scattered light, or stars. If the star formation has been rapid enough to support the Magorrian relation, the M/L of the stellar population should be small, and it is possible that spectroscopy of the integrated quasar/host light with JWST could detect prominent absorption features associated with the stars. We will image the quasars using the NIRSpect IFU at a spectral resolution of $R = 1000$ and in band II, 1.7 - 3.17 microns. We have selected the integration time for each target to achieve a high signal to noise measurement of any stellar population resolved around the quasar, if it is a reasonable fraction of the mass predicted by the Magorrian relation. If the stars are all hidden in the point spread function, the signal to noise will be higher still, sufficient to detect the higher level Balmer absorptions as well as the Balmer break. To enhance our analysis of the spectra, we are also imaging with NIRCam at 2.1 microns, and as a separate experiment at 0.7 microns, both simultaneously with the imaging in the long wavelength arm

of the instrument.

We have selected quasar targets to place the H alpha and the continuum between 0.35 and 0.45 microns optimally, which emphasizes redshifts of 5 - 5.5. Our targets are J120441.73-002149.6, J134040.24+281323.1, J033829.31+002156.26, J073103.12+445949.4, and J162100.70+515544.8. To calibrated the PSFs, we have selected the stars, respectively, of 2MJ12040377+0019134, 2MJ13403522+2748501, 2MJ03391625+0042023, 2MJ07313244+4510416, and 2MJ16205978+5206232. These stars are of types B through F and should have minimal spectral features at the wavelengths of interest in the quasars.

Proposal 1205 - Observation 1 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 1: J120441.73-002149.6											Tue Feb 20 23:04:08 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			
	(1)	J120441.73-002149.6	RA: 12 04 41.7300 (181.1738750d) Dec: -00 21 49.60 (-.36378d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB2048	F110W	NRS	3	1	1	11.746	12587.0	
Dithers	#	Dither Type		Size	Starting Point			Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSIRS2	35	1	false	true	NONE	4	4	10270.579	
Special Requirements	11 After 1											

Proposal 1205 - Observation 2 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 2: 2MJ12040377+0019134											Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
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			
	(2)	2MJ12040377+0019134	RA: 12 04 3.7700 (181.0157083d) Dec: +00 19 13.40 (.32039d) Equinox: J2000			Proper Motion RA: -2.1 mas/yr Proper Motion Dec: -8.9 mas/yr Epoch of Position: 2002						
	Comments: Category=Star Description=[F dwarfs] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSRAPID	10	2	false	true	NONE	4	8	944.836	
Special Requirements	2 After 12											

Proposal 1205 - Observation 3 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 3: J134040.24+281328.1										Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
Diagnostics	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous			
	(3)	J134040.24+281328.1	RA: 13 40 40.2400 (205.1676667d) Dec: +28 13 28.10 (28.22447d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB2048	F110W	NRS	3	1	1	11.746	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSIRS2	35	1	false	true	NONE	4	4	10270.579	
Special Requirements	13 After 3											

Proposal 1205 - Observation 4 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 4: 2MJ13403522+2748501										Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU 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			
	(4)	2MJ13403522+2748501	RA: 13 40 35.2200 (205.1467500d)			Proper Motion RA: -6.4 mas/yr						
			Dec: +27 48 50.10 (27.81392d)			Proper Motion Dec: 4.2 mas/yr						
			Equinox: J2000			Epoch of Position: 2000						
	Comments: Category=Star Description=[F dwarfs] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSRAPID	7	2	false	true	NONE	4	8	687.153	
Special Requirements	4 After 14											

Proposal 1205 - Observation 5 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 5: J033829.31+002156.26											Tue Feb 20 23:04:08 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			
	(5)	J033829.31+002156.26	RA: 03 38 29.3100 (54.6221250d) Dec: +00 21 56.26 (.36563d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB2048	F110W	NRS	3	1	1	11.746	12587.0	
Dithers	#	Dither Type		Size	Starting Point			Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSIRS2	35	1	false	true	NONE	4	4	10270.579	
Special Requirements	15 After 5											

Proposal 1205 - Observation 6 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 6: 2MJ03391626+0042023										Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU 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			
	(6)	2MJ03391626+0042023	RA: 03 39 16.2600 (54.8177500d)			Proper Motion RA: -0.9 mas/yr						
			Dec: +00 42 2.30 (.70064d)			Proper Motion Dec: -6.9 mas/yr						
			Equinox: J2000			Epoch of Position: 2000						
	Comments: Category=Star Description=[A dwarfs] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSRAPID	9	2	false	true	NONE	4	8	858.942	
Special Requirements	6 After 16											

Proposal 1205 - Observation 7 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 7: J073103.12+445949.4											Tue Feb 20 23:04:08 GMT 2018
	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		
	(7)	J073103.12+445949.4	RA: 07 31 3.1200 (112.7630000d) Dec: +44 59 49.40 (44.99706d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB2048	F110W	NRS	3	1	1	11.746	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSIRS2	30	1	false	true	NONE	4	4	8811.69	
Special Requirements	Aperture PA Range 258.892975 to 268.892975 Degrees (V3 120.0 to 130.0) 17 After 7											

Proposal 1205 - Observation 8 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 8: 2MJ07313244+4510416										Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
Diagnostics	(Visit 8:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous			
	(8)	2MJ07313244+4510416	RA: 07 31 32.4400 (112.8851667d) Dec: +45 10 41.60 (45.17822d) Equinox: J2000			Proper Motion RA: -5.9 mas/yr Proper Motion Dec: 1.5 mas/yr Epoch of Position: 2000						
	Comments: Category=Star Description=[F dwarfs] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSRAPID	7	2	false	true	NONE	4	8	687.153	
Special Requirements	8 After 18											

Proposal 1205 - Observation 9 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 9: J162100.70+515544.8										Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
Diagnostics	(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous			
	(9)	J162100.70+515544.8	RA: 16 21 0.7000 (245.2529167d) Dec: +51 55 44.80 (51.92911d) Equinox: J2000									
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB2048	F110W	NRS	3	1	1	11.746	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSIRS2	26	1	false	true	NONE	4	4	7644.578	
Special Requirements	19 After 9											

Proposal 1205 - Observation 10 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 10: 2MJ16205978+5206232											Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning											
	Observing Template: NIRSpec IFU Spectroscopy											
Diagnostics	(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections			Miscellaneous		
	(10)	2MJ16205978+5206232	RA: 16 20 59.7800 (245.2490833d) Dec: +52 06 23.30 (52.10647d) Equinox: J2000				Proper Motion RA: 1.2 mas/yr Proper Motion Dec: 0.1 mas/yr Epoch of Position: 2000					
	Comments: Category=Star Description=[F dwarfs] Extended=NO											
Acquisition	#	AcqTarget	TA Method	Acq Subarray	AcqFilter	Acq Readout Pattern	Acq Groups/Int	Acq Integrations/Exp	Acq Total Integrations	Acq Total Exposure Time	Acq ETC Wkbk.Calc ID	
	1	Same Target as Observation	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	12587.0	
Dithers	#	Dither Type		Size		Starting Point		Number of Points		Points		
	1	4-POINT-NOD										
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	G235M/F170LP	NRSRAPID	7	2	false	true	NONE	4	8	687.153	
Special Requirements	10 After 20											

Proposal 1205 - Observation 11 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 11: J120441-image										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
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		
	(1)	J120441.73-002149.6	RA: 12 04 41.7300 (181.1738750d)								
			Dec: -00 21 49.60 (-.36378d)								
			Equinox: J2000								
	<i>Comments:</i> <i>Category=Galaxy</i> <i>Description=[Active galactic nuclei, Quasars]</i> <i>Extended=NO</i>										
Template	Module B					Subarray SUB400P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	10	2	8	4	265.162		
	2	F210M	F430M	BRIGHT1	8	4	16	4	424.325		
Special Requirements	11 After 1 12 After 11										

Proposal 1205 - Observation 12 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 12: 2MJ12040377_image									Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(2)	2MJ12040377+0019134	RA: 12 04 3.7700 (181.0157083d)			Proper Motion RA: -2.1 mas/yr					
			Dec: +00 19 13.40 (.32039d)			Proper Motion Dec: -8.9 mas/yr					
			Equinox: J2000			Epoch of Position: 2002					
	Comments: Category=Star Description=[F dwarfs] Extended=NO										
Template	Module B					Subarray SUB160P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	5	4	16	4	44.664		
	2	F210M	F430M	BRIGHT1	5	4	16	4	44.664		
Special Requirements	2 After 12 12 After 11										

Proposal 1205 - Observation 13 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 13: J13404024_image										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(3)	J134040.24+281328.1	RA: 13 40 40.2400 (205.1676667d)								
			Dec: +28 13 28.10 (28.22447d)								
			Equinox: J2000								
Template	Comments:										
	Category=Galaxy										
	Description=[Active galactic nuclei, Quasars]										
	Extended=NO										
Module	B					Subarray					
						SUB400P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	7	2	8	4	185.663		
	2	F210M	F430M	BRIGHT1	7	4	16	4	371.325		
Special Requirements	13 After 3										
	14 After 13										

Proposal 1205 - Observation 14 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 14: 2MJ13403522_imaging									Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(4)	2MJ13403522+2748501	RA: 13 40 35.2200 (205.1467500d)			Proper Motion RA: -6.4 mas/yr					
			Dec: +27 48 50.10 (27.81392d)			Proper Motion Dec: 4.2 mas/yr					
			Equinox: J2000			Epoch of Position: 2000					
	Comments: Category=Star Description=[F dwarfs] Extended=NO										
Template	Module B					Subarray SUB160P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	9	2	8	4	40.165		
	2	F210M	F430M	BRIGHT1	9	2	8	4	40.165		
Special Requirements	4 After 14 14 After 13										

Proposal 1205 - Observation 15 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 15: J033829_imaging										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 15:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(5)	J033829.31+002156.26	RA: 03 38 29.3100 (54.6221250d)								
			Dec: +00 21 56.26 (.36563d)								
			Equinox: J2000								
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO										
Template	Module B					Subarray SUB400P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	8	4	16	4	424.325		
	2	F210M	F430M	BRIGHT1	9	4	16	4	477.325		
Special Requirements	15 After 5 16 After 15										

Proposal 1205 - Observation 16 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 16: 2MJ03391626_imaging										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(6)	2MJ03391626+0042023	RA: 03 39 16.2600 (54.8177500d)			Proper Motion RA: -0.9 mas/yr					
			Dec: +00 42 2.30 (.70064d)			Proper Motion Dec: -6.9 mas/yr					
			Equinox: J2000			Epoch of Position: 2000					
	Comments: Category=Star Description=[A dwarfs] Extended=NO										
Template	Module B					Subarray SUB160P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	5	4	16	4	44.664		
	2	F210M	F430M	BRIGHT1	5	4	16	4	44.664		
Special Requirements	6 After 16 16 After 15										

Proposal 1205 - Observation 17 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 17: J073103_image										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 17:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(7)	J073103.12+445949.4	RA: 07 31 3.1200 (112.7630000d)								
			Dec: +44 59 49.40 (44.99706d)								
			Equinox: J2000								
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO										
Template	Module B					Subarray SUB400P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	9	2	8	4	238.662		
	2	F210M	F430M	BRIGHT1	9	4	16	4	477.325		
Special Requirements	17 After 7 18 After 17										

Proposal 1205 - Observation 18 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 18: 2MJ07313244_image									Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 18:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(8)	2MJ07313244+4510416	RA: 07 31 32.4400 (112.8851667d)			Proper Motion RA: -5.9 mas/yr					
			Dec: +45 10 41.60 (45.17822d)			Proper Motion Dec: 1.5 mas/yr					
			Equinox: J2000			Epoch of Position: 2000					
	Comments: Category=Star Description=[F dwarfs] Extended=NO										
Template	Module B					Subarray SUB160P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F410M	BRIGHT1	5	4	16	4	44.664		
	2	F210M	F430M	BRIGHT1	5	4	16	4	44.664		
Special Requirements	8 After 18 18 After 17										

Proposal 1205 - Observation 19 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 19: J162100_image										Tue Feb 20 23:04:08 GMT 2018
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 19:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(9)	J162100.70+515544.8	RA: 16 21 0.7000 (245.2529167d)								
			Dec: +51 55 44.80 (51.92911d)								
			Equinox: J2000								
	Comments: Category=Galaxy Description=[Active galactic nuclei, Quasars] Extended=NO										
Template	Module B					Subarray SUB400P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F430M	BRIGHT1	7	4	16	4	371.325		
	2	F210M	F460M	BRIGHT1	9	4	16	4	477.325		
Special Requirements	19 After 9 20 After 19										

Proposal 1205 - Observation 20 - Formation Histories and Stellar Masses of Very High-z Quasars

Observation	Proposal 1205, Observation 20: 2MJ16205978_image									Tue Feb 20 23:04:08 GMT 2018	
	Diagnostic Status: Warning										
	Observing Template: NIRCam Imaging										
Diagnostics	(Visit 20:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections		Miscellaneous			
	(10)	2MJ16205978+5206232	RA: 16 20 59.7800 (245.2490833d)			Proper Motion RA: 1.2 mas/yr					
			Dec: +52 06 23.30 (52.10647d)			Proper Motion Dec: 0.1 mas/yr					
			Equinox: J2000			Epoch of Position: 2000					
	Comments: Category=Star Description=[F dwarfs] Extended=NO										
Template	Module B					Subarray SUB160P					
Dithers	#	Primary Dither Type		Primary Dithers		Subpixel Dither Type		Dither Size		Subpixel Positions	
	1	NONE				STANDARD				4	
Spectral Elements	#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F210M	F430M	BRIGHT1	5	4	16	4	44.664		
	2	F210M	F460M	BRIGHT1	5	4	16	4	44.664		
Special Requirements	10 After 20 20 After 19										