



2288 - Formation and impact of silicate clouds on L dwarfs

Cycle: 1, Proposal Category: GO

INVESTIGATORS

<i>Name</i>	<i>Institution</i>
Dr. Joshua D. Lothringer (PI)	Utah Valley University
Dr. Jeff A. Valenti (CoI) (CoPI) (Contact)	Space Telescope Science Institute
Dr. Peter Gao (CoI)	Carnegie Institution of Washington
Dr. Mark S. Marley (CoI)	University of Arizona
Dr. Sarah E. Moran (CoI)	University of Arizona
Prof. David K. Sing (CoI)	The Johns Hopkins University
Dr. Hannah Wakeford (CoI) (ESA Member)	University of Bristol

OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
2148+4003				
	2	NIRSpec Slit	NIRSpec Fixed Slit Spectroscopy	(1) 2148+4003
	1	MIRI MRS	MIRI Medium Resolution Spectroscopy	(1) 2148+4003
0624-4521				
	3	NIRSpec Slit	NIRSpec Fixed Slit Spectroscopy	(2) 0624-4521
	4	MIRI MRS	MIRI Medium Resolution Spectroscopy	(2) 0624-4521

ABSTRACT

We will obtain R~2700 spectra from 1-28 μm of two ~L6 brown dwarfs with S/N~100 or better shortward of 10 μm . In existing IRS spectra, 2MASS 2148+4005 has a broad 8-10 μm absorption feature suggestive of silicates, while the otherwise similar 2MASS 0624-4521 has weak silicate absorption at best. We will use these spectra to distinguish sharp molecular features from broad absorption (e.g., due to silicates), to study cloud formation in L dwarfs, to detect trace species that would be diluted at low resolution, to probe different layers in the photosphere, to constrain

physical properties, to uncover deficiencies in atmosphere models, and to identify flaws in existing opacity data (e.g., line broadening). We encourage rapid independent analysis and publication of these data by the community to provide a strong foundation for the next round of observing proposals.

OBSERVING DESCRIPTION

We will obtain spectra with three NIRSpec settings (G140H/F100LP, G235H, G395H) and with all three MRS settings (short, medium, long). For each setting, we will observe at four dither positions to improve calibration and mitigate bad pixels. We split dithers for the NIRSpec settings between two slits (S200A1, S200A2) to fill the wavelength gap between detectors. The result will be continuous wavelength coverage from 1-28 micron at R~2700.

For the MRS observations, we obtain simultaneous imaging in the three longest wavelength filters (F1800W, F2100W, and F2550W) with short ramps (5 groups) repeated 10 times. Our goal is to detect deviations from Rayleigh Jeans, e.g., due to emission from warm dust or very high extinction.

We use the "Sequence Observations Non-interruptible" special requirement to specify that the MIRI visit for a target should immediately follow the corresponding NIRSpec visit. Within each visit, we order settings in ascending wavelength order. This enables us to use the wavelength overlap between consecutive settings (even across instruments) to measure target variability and/or to check consistency of flux calibration.

We perform target acquisition for each NIRSpec visit, but skip target acquisition for the MIRI visit. The sequence non-interruptible special requirement (for astrophysical reasons) means centering in the MRS aperture will be perfectly adequate without a target acquisition.

Proposal 2288 - Targets - Formation and impact of silicate clouds on L dwarfs

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	2148+4003	RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000	Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016	
<p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 1954170404122975232, ra=327.07239546429, dec=+40.06851779302, epoch=2016.0</i> <i>ra_error=0.2342 mas, dec_error=0.2807 mas</i> <i>pmra=772.176 mas/yr, pmdec=458.243 mas/yr</i> <i>parallax=123.6752 mas</i> <i>bp=21.34, g=19.7926, rp=18.199</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8226, rp=18.0836</i> <i>2MASS 21481633+4003594, J=14.147, H=12.783, K=11.765</i> <i>AllWISE J214817.01+400404.1, W1=10.756, W2=10.243, W3=9.631, W4=9.066</i> <i>Spitzer/IRS spectrum shows silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>				
(2)	0624-4521	RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000	Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016	
<p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 5556620540565785600, ra=96.19120978812, dec=-45.36352820070, epoch=2016.0</i> <i>ra_error=0.3122 mas, dec_error=0.3951 mas</i> <i>pmra=-35.950 mas/yr, pmdec=378.531 mas/yr</i> <i>parallax=82.0248 mas</i> <i>bp=21.50, g=19.7960, rp=18.221</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8417, rp=18.0632</i> <i>2MASS J06244595-4521548, J=14.480, H=13.335, K=12.595</i> <i>AllWISE J062445.90-452150.7, W1=11.851, W2=11.490, W3=10.760, W4=9.197</i> <i>Spitzer/IRS spectrum shows weak or no silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>				

Fixed Targets

Proposal 2288 - Observation 2 - Formation and impact of silicate clouds on L dwarfs

Thu Sep 14 22:00:29 GMT 2023

Observation	<p>Proposal 2288, Observation 2: NIRSpec Slit</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>																															
Diagnostics	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.																															
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th colspan="4">Targ. Coord. Corrections</th> <th colspan="4">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>2148+4003</td> <td>RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000</td> <td colspan="4">Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016</td> <td colspan="4"></td> </tr> </tbody> </table> <p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 1954170404122975232, ra=327.07239546429, dec=+40.06851779302, epoch=2016.0</i> <i>ra_error=0.2342 mas, dec_error=0.2807 mas</i> <i>pmra=772.176 mas/yr, pmdec=458.243 mas/yr</i> <i>parallax=123.6752 mas</i> <i>bp=21.34, g=19.7926, rp=18.199</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8226, rp=18.0836</i> <i>2MASS 21481633+4003594, J=14.147, H=12.783, K=11.765</i> <i>AllWISE J214817.01+400404.1, W1=10.756, W2=10.243, W3=9.631, W4=9.066</i> <i>Spitzer/IRS spectrum shows silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>										#	Name	Target Coordinates	Targ. Coord. Corrections				Miscellaneous				(1)	2148+4003	RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000	Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016							
#	Name	Target Coordinates	Targ. Coord. Corrections				Miscellaneous																									
(1)	2148+4003	RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000	Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016																													
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID																					
	1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	125764.20																					
Template	Slit					Subarray																										
	S200A1 and S200A2					FULL																										
Dithers	#	Primary Dither Positions				Sub-Pixel Pattern																										
	1	2				NONE																										

Proposal 2288 - Observation 2 - Formation and impact of silicate clouds on L dwarfs

Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex p	#	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395H/F290LP	S200A1	NRSIRS2RAPID	5	1	1	NONE	2	2	175.067	125764.16
	2	G395H/F290LP	S200A2	NRSIRS2RAPID	5	1	2	NONE	2	2	175.067	
	3	G235H/F170LP	S200A2	NRSIRS2RAPID	5	1	3	NONE	2	2	175.067	
	4	G235H/F170LP	S200A1	NRSIRS2RAPID	5	1	4	NONE	2	2	175.067	125764.17
	5	G140H/F100LP	S200A1	NRSIRS2RAPID	5	1	5	NONE	2	2	175.067	125764.18
	6	G140H/F100LP	S200A2	NRSIRS2RAPID	5	1	6	NONE	2	2	175.067	
Special Requirements	Sequence Observations 1, 2, Non-interruptible											

Proposal 2288 - Observation 1 - Formation and impact of silicate clouds on L dwarfs

Thu Sep 14 22:00:29 GMT 2023

Observation	<p>Proposal 2288, Observation 1: MIRI MRS</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Medium Resolution Spectroscopy</p>																										
	<p>(MIRI MRS (Obs 1)) Warning (Form): Imager Filter overlap.</p> <p>(MIRI MRS (Obs 1)) Warning (Form): Imager Filter overlap.</p> <p>(MIRI MRS (Obs 1)) Warning (Form): Imager Filter overlap.</p> <p>(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>																										
Diagnostics																											
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>2148+4003</td> <td>RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000</td> <td>Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016</td> <td></td> </tr> </tbody> </table> <p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 1954170404122975232, ra=327.07239546429, dec=+40.06851779302, epoch=2016.0</i> <i>ra_error=0.2342 mas, dec_error=0.2807 mas</i> <i>pmra=772.176 mas/yr, pmdec=458.243 mas/yr</i> <i>parallax=123.6752 mas</i> <i>bp=21.34, g=19.7926, rp=18.199</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8226, rp=18.0836</i> <i>2MASS 21481633+4003594, J=14.147, H=12.783, K=11.765</i> <i>AllWISE J214817.01+400404.1, W1=10.756, W2=10.243, W3=9.631, W4=9.066</i> <i>Spitzer/IRS spectrum shows silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>									#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous	(1)	2148+4003	RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000	Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016									
	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous																						
(1)	2148+4003	RA: 21 48 17.3749 (327.0723954d) Dec: +40 04 6.66 (40.06852d) Equinox: J2000	Proper Motion RA: 772.176 mas/yr Proper Motion Dec: 458.243 mas/yr Parallax: 0.1236752" Epoch of Position: 2016																								
Acquisition	<table border="1"> <thead> <tr> <th>#</th> <th>Target</th> <th>Filter</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAME</td> <td>F1500W</td> <td>FAST</td> <td>4</td> <td>1</td> <td>1</td> <td>11.1</td> <td>125764.2</td> </tr> </tbody> </table>									#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	1	SAME	F1500W	FAST	4	1	1	11.1	125764.2
	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID																		
1	SAME	F1500W	FAST	4	1	1	11.1	125764.2																			
Template	Primary Channel		Simultaneous Imaging		Imager Subarray		Grating Wheel Direction																				
	All MRS		YES		FULL		NEUTRAL																				
Dithers	<table border="1"> <thead> <tr> <th>#</th> <th>Dither Type</th> <th>Optimized For</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4-Point</td> <td>POINT SOURCE</td> <td>NEGATIVE</td> </tr> </tbody> </table>									#	Dither Type	Optimized For	Direction	1	4-Point	POINT SOURCE	NEGATIVE										
	#	Dither Type	Optimized For	Direction																							
1	4-Point	POINT SOURCE	NEGATIVE																								

Proposal 2288 - Observation 1 - Formation and impact of silicate clouds on L dwarfs

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
	Spectral Elements	1		IMAGER	F2550W	FASTR1	5	8	1	Dither 1	4	32	521.708
1		LONG(C)	MRSLONG		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.11
1		LONG(C)	MRSSHORT		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.5
2			IMAGER	F2100W	FASTR1	5	8	1	Dither 1	4	32	521.708	
2		MEDIUM(B)	MRSLONG		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.10
2		MEDIUM(B)	MRSSHORT		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.4
3			IMAGER	F1800W	FASTR1	5	8	1	Dither 1	4	32	521.708	
3		SHORT(A)	MRSLONG		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.9
3		SHORT(A)	MRSSHORT		FASTR1	50	1	1	Dither 1	4	4	555.008	125764.3
Special Requirements	Sequence Observations 1, 2, Non-interruptible												

Proposal 2288 - Observation 3 - Formation and impact of silicate clouds on L dwarfs

Thu Sep 14 22:00:29 GMT 2023

Observation	<p>Proposal 2288, Observation 3: NIRSpec Slit</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>																																
	<p>(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>																																
Diagnostics																																	
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th colspan="4">Targ. Coord. Corrections</th> <th colspan="4">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>0624-4521</td> <td>RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000</td> <td colspan="4">Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016</td> <td colspan="4"></td> </tr> </tbody> </table> <p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 5556620540565785600, ra=96.19120978812, dec=-45.36352820070, epoch=2016.0</i> <i>ra_error=0.3122 mas, dec_error=0.3951 mas</i> <i>pmra=-35.950 mas/yr, pmdec=378.531 mas/yr</i> <i>parallax=82.0248 mas</i> <i>bp=21.50, g=19.7960, rp=18.221</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8417, rp=18.0632</i> <i>2MASS J06244595-4521548, J=14.480, H=13.335, K=12.595</i> <i>AllWISE J062445.90-452150.7, W1=11.851, W2=11.490, W3=10.760, W4=9.197</i> <i>Spitzer/IRS spectrum shows weak or no silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>											#	Name	Target Coordinates	Targ. Coord. Corrections				Miscellaneous				(2)	0624-4521	RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000	Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016							
	#	Name	Target Coordinates	Targ. Coord. Corrections				Miscellaneous																									
(2)	0624-4521	RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000	Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016																														
Acquisition	<table border="1"> <thead> <tr> <th>#</th> <th>Target</th> <th>TA Method</th> <th>Subarray</th> <th>Filter</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAME</td> <td>WATA</td> <td>SUB32</td> <td>F110W</td> <td>NRSRAPID</td> <td>3</td> <td>1</td> <td>1</td> <td>0.08</td> <td>125765.20</td> </tr> </tbody> </table>											#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	125765.20
	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID																						
1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	125765.20																							
Template	<table border="1"> <thead> <tr> <th>Slit</th> <th>Subarray</th> </tr> </thead> <tbody> <tr> <td>S200A1 and S200A2</td> <td>FULL</td> </tr> </tbody> </table>											Slit	Subarray	S200A1 and S200A2	FULL																		
	Slit	Subarray																															
S200A1 and S200A2	FULL																																
Dithers	<table border="1"> <thead> <tr> <th>#</th> <th>Primary Dither Positions</th> <th>Sub-Pixel Pattern</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>2</td> <td>NONE</td> </tr> </tbody> </table>											#	Primary Dither Positions	Sub-Pixel Pattern	1	2	NONE																
	#	Primary Dither Positions	Sub-Pixel Pattern																														
1	2	NONE																															

Proposal 2288 - Observation 3 - Formation and impact of silicate clouds on L dwarfs

	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Exp	#	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1	G140H/F100LP	S200A1	NRSIRS2RAPID	7	1	1	NONE	2	2	233.422	125765.18
	2	G140H/F100LP	S200A2	NRSIRS2RAPID	7	1	2	NONE	2	2	233.422	
	3	G235H/F170LP	S200A2	NRSIRS2RAPID	6	1	3	NONE	2	2	204.244	
	4	G235H/F170LP	S200A1	NRSIRS2RAPID	6	1	4	NONE	2	2	204.244	125765.17
	5	G395H/F290LP	S200A1	NRSIRS2RAPID	5	1	5	NONE	2	2	175.067	125765.16
	6	G395H/F290LP	S200A2	NRSIRS2RAPID	5	1	6	NONE	2	2	175.067	
Special Requirements	Sequence Observations 3, 4, Non-interruptible											

Proposal 2288 - Observation 4 - Formation and impact of silicate clouds on L dwarfs

Thu Sep 14 22:00:29 GMT 2023

Observation	<p>Proposal 2288, Observation 4: MIRI MRS</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Medium Resolution Spectroscopy</p>																												
	<p>(MIRI MRS (Obs 4)) Warning (Form): Imager Filter overlap.</p> <p>(MIRI MRS (Obs 4)) Warning (Form): Imager Filter overlap.</p> <p>(MIRI MRS (Obs 4)) Warning (Form): Imager Filter overlap.</p> <p>(Visit 4:1) Warning (Form): Data Excess over lower threshold</p> <p>(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>																												
Diagnostics																													
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>0624-4521</td> <td>RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000</td> <td>Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016</td> <td></td> </tr> </tbody> </table> <p><i>Comments: 2022-Oct-03: Switched from Gaia EDR3 to Gaia DR3</i> <i>Gaia DR3 5556620540565785600, ra=96.19120978812, dec=-45.36352820070, epoch=2016.0</i> <i>ra_error=0.3122 mas, dec_error=0.3951 mas</i> <i>pmra=-35.950 mas/yr, pmdec=378.531 mas/yr</i> <i>parallax=82.0248 mas</i> <i>bp=21.50, g=19.7960, rp=18.221</i></p> <p><i>Gaia DR2 1954170404122975232, bp=21.7468, g=19.8417, rp=18.0632</i> <i>2MASS J06244595-4521548, J=14.480, H=13.335, K=12.595</i> <i>AllWISE J062445.90-452150.7, W1=11.851, W2=11.490, W3=10.760, W4=9.197</i> <i>Spitzer/IRS spectrum shows weak or no silicate absorption 8-10 μm</i> <i>Category=Star</i> <i>Description=[Brown dwarfs]</i> <i>Extended=NO</i></p>									#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous	(2)	0624-4521	RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000	Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016											
	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous																								
(2)	0624-4521	RA: 06 24 45.8903 (96.1912096d) Dec: -45 21 48.70 (-45.36353d) Equinox: J2000	Proper Motion RA: -35.950 mas/yr Proper Motion Dec: 378.531 mas/yr Parallax: 0.0820248" Epoch of Position: 2016																										
Acquisition	<table border="1"> <thead> <tr> <th>#</th> <th>Target</th> <th>Filter</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC</th> <th>Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAME</td> <td>F1500W</td> <td>FAST</td> <td>4</td> <td>1</td> <td>1</td> <td>11.1</td> <td></td> <td>125765.2</td> </tr> </tbody> </table>									#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC	Wkbk.Calc ID	1	SAME	F1500W	FAST	4	1	1	11.1		125765.2
	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC	Wkbk.Calc ID																			
1	SAME	F1500W	FAST	4	1	1	11.1		125765.2																				
Template	Primary Channel		Simultaneous Imaging		Imager Subarray		Grating Wheel Direction																						
	All MRS		YES		FULL		NEUTRAL																						
Dithers	<table border="1"> <thead> <tr> <th>#</th> <th>Dither Type</th> <th>Optimized For</th> <th>Direction</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4-Point</td> <td>POINT SOURCE</td> <td>NEGATIVE</td> </tr> </tbody> </table>									#	Dither Type	Optimized For	Direction	1	4-Point	POINT SOURCE	NEGATIVE												
	#	Dither Type	Optimized For	Direction																									
1	4-Point	POINT SOURCE	NEGATIVE																										

Proposal 2288 - Observation 4 - Formation and impact of silicate clouds on L dwarfs

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
	Spectral Elements	1		IMAGER	F1800W	FASTR1	5	25	1	Dither 1	4	100	1653.924
1		SHORT(A)	MRSLONG		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.9
1		SHORT(A)	MRSSHORT		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.3
2			IMAGER	F2100W	FASTR1	5	25	1	Dither 1	4	100	1653.924	
2		MEDIUM(B)	MRSLONG		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.10
2		MEDIUM(B)	MRSSHORT		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.4
3			IMAGER	F2550W	FASTR1	5	25	1	Dither 1	4	100	1653.924	
3		LONG(C)	MRSLONG		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.11
3		LONG(C)	MRSSHORT		FASTR1	150	1	1	Dither 1	4	4	1665.024	125765.5
Special Requirements		Sequence Observations 3, 4, Non-interruptible											