



1177 - MIRI observations of transiting exoplanets

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>
MIRI LRS Transiting Planets				
	1	WASP-80b TRANS	MIRI Low Resolution Spectroscopy	(1) WASP-80
	2	WASP-80b EMIS	MIRI Low Resolution Spectroscopy	(1) WASP-80
	3	WASP-69 b EMIS	MIRI Low Resolution Spectroscopy	(2) WASP-69
	4	GJ 436b EMIS	MIRI Low Resolution Spectroscopy	(3) GJ-436
	5	GJ 436b EMIS	MIRI Low Resolution Spectroscopy	(3) GJ-436
	6	HAT-P-26 b TRANS	MIRI Low Resolution Spectroscopy	(4) HAT-P-26B
MIRIM Transiting Planets				
	7	TRAPPIST-1 b Sec Ecl ipse	MIRI Imaging	(5) TRAPPIST-1B
	8	TRAPPIST-1 b Sec Ecl ipse	MIRI Imaging	(5) TRAPPIST-1B
	9	TRAPPIST-1 b Sec Ecl ipse	MIRI Imaging	(5) TRAPPIST-1B
	10	TRAPPIST-1 b Sec Ecl ipse	MIRI Imaging	(5) TRAPPIST-1B

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
	11	TRAPPIST-1 b Sec Ecl ipse	MIRI Imaging	(5) TRAPPIST-1B

ABSTRACT

We will observe the 5 - 15 micron spectra or photometry of a set of transiting planets that are less massive and cooler than ones spectrally characterized so far with HST and Spitzer. These planets fall mostly in the temperature range 400 – 1000 K with 1 – 200 Earth mass. We seek to obtain transmission and emission spectra (both for at least one planet) to probe a wide range of atmospheric pressures (altitudes) and surface regions. Simulations of these spectra and information retrievals show that we can measure mixing ratios of dominant molecular species, measure metallicities, determine pressure-temperature profiles, and perhaps detect new species not seen before in exoplanet atmospheres. We plan to observe four ice or gas giant planet spectra with the MIRI LRS and make 5 secondary eclipse observations of TRAPPIST-1 b using the MIRI imager in the F1500W filter. These 11 MIRI observations are conducted under T. Greene's GTO program and correspond to Observation IDs GREENE_0001-11 in the summary observation specification spreadsheet submitted in March 2017 with one change: HAT-P-19 b has been replaced with WASP-69 b. The TRAPPIST-1 observations and spectroscopic observations of WASP-107b are being done in collaboration with the European MIRI GTO team (Wright PI). The other observations are being done in collaboration with NIRCам GTO team (M. Rieke PI). We will use state-of-the-art modeling and retrieval framework to derive physical and chemical properties from the combined NIRCам and MIRI exoplanet spectra.

OBSERVING DESCRIPTION

This file contains the specifications of the MIRI component of our transiting planet spectroscopy and imaging photometry program.

Time-series observations will be taken using either the MIRI LRS in slitless mode (targets WASP-80 b, HAT-P-19 b, GJ 436 b, and HAT-P-26 b) or with the MIRI imager (TRAPPIST-1 b). Each science observation consists of a single exposure. The time-series templates in APT 25.2.2 (latest version) are incomplete for both of these modes so there are errors. We do not allow parallel observations (in line with other JWST time-series modes). We require precise target acquisition for all observations, a standard component of all other JWST time-series observations.

These observations have 2 types of timing constraints:

1. Precise timing starts phased with observing either transits or secondary eclipses as desired
2. PA constraints to avoid spectral contamination from nearby bright stars.

PA constraints for the MIRI Imager observations of TRAPPIST-1 are set to get a nearby K = 13.5 2MASS star in the imager field at the same time. I may wish to change this in the future to get a slightly brighter star instead. That will require entering a significant coordinate offset and changing the

PA constraints.

I also specified V3 PA = 0 to 359.5 deg for otherwise unconstrained observations in order to achieve better visibilities (better guide star access)

We have chosen exposure parameters to achieve about 55 - 65% full-well (~110,000 - 135,00) electrons for the science integrations and slightly lower for target acquisition integrations.

This is a summary of our 11 observations. All

Obs#	Obs ID	TARGET	PHASE*	MODE / SUBARRAY**
1	GREENE_0002	WASP-80 b	1.0	LRS SLITLESSPRISM
2	GREENE_0001	WASP-80 b	0.5	LRS SLITLESSPRISM
3	GREENE_0003	WASP-69 b	0.5	LRS SLITLESSPRISM
4	GREENE_0004	GJ 436 b	0.5	LRS SLITLESSPRISM
5	GREENE_0005	GJ 436 b	0.5	LRS SLITLESSPRISM
6	GREENE_0006	HAT-P-26 b	1.0	LRS SLITLESSPRISM
7	GREENE_0007	TRAPPIST-1 b	0.5	MIRIM FULL
8	GREENE_0008	TRAPPIST-1 b	0.5	MIRIM FULL
9	GREENE_0009	TRAPPIST-1 b	0.5	MIRIM FULL
10	GREENE_0010	TRAPPIST-1 b	0.5	MIRIM FULL
11	GREENE_0011	TRAPPIST-1 b	0.5	MIRIM FULL

*PHASE 0.5 corresponds to a secondary eclipse observation and 1.0 corresponds to a transit. Each observation has precise phase constraints.

** ALL Modes are time-series observations with precision target acquisition, do dither, no parallels

In APT25.2.4, each observation gives errors for not dithering and exceeding 10,000 s. We have been assured that these limitations will be lifted once proper time-series modes are implemented, well before Cycle 1.

Proposal 1177 - Observation 1 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 1: WASP-80b TRANS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(WASP-80b TRANS (Obs 1)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(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)	WASP-80	RA: 20 12 40.0319 (303.1667996d) Dec: -02 08 39.97 (-2.14444d) Equinox: J2000		Proper Motion RA: -0.008856802653901206 sec of time/yr Proper Motion Dec: -0.050428999907126126 arcsec/yr Parallax: 0.0200565" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.(Gaia 2015.5 Epoch)								
	Category=Star								
	Description=[Exoplanet Systems, K dwarfs, K stars]								
Acquisition	Extended=NO								
	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F1000W	FAST	12	1	1	1.908	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
	1	FAST	12	1	1	1.908	24835.8		

Proposal 1177 - Observation 1 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	27	5006	5006	1	1	21496.164	24835.6
Special Requirements	Phase 0.94754 to 0.96114 with period 3.06785234 Days and zero-phase 2456487.42501 HJD Aperture PA Range 82.015224 to 94.015224 Degrees (V3 77.565519 to 89.565519) Aperture PA Range 111.015224 to 172.015224 Degrees (V3 106.565519 to 167.565519) Aperture PA Range 262.015224 to 273.015224 Degrees (V3 257.565519 to 268.565519) Aperture PA Range 291.015224 to 352.015224 Degrees (V3 286.565519 to 347.565519) Time Series Observation No Parallel								

Proposal 1177 - Observation 2 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 2: WASP-80b EMIS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(WASP-80b EMIS (Obs 2)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.								
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous		
	(1)	WASP-80	RA: 20 12 40.0319 (303.1667996d) Dec: -02 08 39.97 (-2.14444d) Equinox: J2000		Proper Motion RA: -0.008856802653901206 sec of time/yr Proper Motion Dec: -0.050428999907126126 arcsec/yr Parallax: 0.0200565" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.(Gaia 2015.5 Epoch)								
	Category=Star								
	Description=[Exoplanet Systems, K dwarfs, K stars] Extended=NO								
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F1000W	FAST	12	1	1	1.908	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations		Total Exposure Time		ETC Wkbk.Calc ID
	1	FAST	12	1	1		1.908		24835.8

Proposal 1177 - Observation 2 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	27	5006	5006	1	1	21496.164	24835.6
Special Requirements	Phase 0.44754 to 0.46114 with period 3.06785234 Days and zero-phase 2456487.42501 HJD Aperture PA Range 82.015224 to 94.015224 Degrees (V3 77.565519 to 89.565519) Aperture PA Range 111.015224 to 172.015224 Degrees (V3 106.565519 to 167.565519) Aperture PA Range 262.015224 to 273.015224 Degrees (V3 257.565519 to 268.565519) Aperture PA Range 291.015224 to 352.015224 Degrees (V3 286.565519 to 347.565519) Time Series Observation No Parallel								

Proposal 1177 - Observation 3 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 3: WASP-69 b EMIS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(WASP-69 b EMIS (Obs 3)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.								
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous		
	(2)	WASP-69	RA: 21 00 6.2319 (315.0259663d) Dec: -05 05 41.49 (-5.09486d) Equinox: J2000		Proper Motion RA: 0.0022539720183223475 sec of time/yr Proper Motion Dec: -0.09343599992917007 arcsec/yr Parallax: 0.0199871" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.(Gaia 2015.5 Epoch)								
	Category=Star Description=[Exoplanet Systems, K dwarfs, K stars] Extended=NO								
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F1000W	FAST	10	1	1	1.59	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations		Total Exposure Time		ETC Wkbk.Calc ID
	1	FAST	10	1	1		1.59		24835.8

Proposal 1177 - Observation 3 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	14	10050	10050	1	1	22376.928	24835.11
Special Requirements	Phase 0.45713 to 0.46791 with period 3.8681382 Days and zero-phase 2455748.83422 HJD Time Series Observation No Parallel								

Proposal 1177 - Observation 4 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 4: GJ 436b EMIS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(GJ 436b EMIS (Obs 4)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.								
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous		
	(3)	GJ-436	RA: 11 42 12.1287 (175.5505362d) Dec: +26 42 11.04 (26.70307d) Equinox: J2000		Proper Motion RA: 0.06679350522402193 sec of time/yr Proper Motion Dec: -814.030 mas/yr Parallax: 0.1025015" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database and Gaia for the parallax.(Gaia 2015.5 Epoch)								
	Category=Star								
	Description=[Exoplanet Systems, M dwarfs, M stars]								
Acquisition	Extended=NO								
	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F1500W	FAST	10	1	1	1.59	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
	1	FAST	10	1	1	1.59	24835.8		

Proposal 1177 - Observation 4 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	5	21691	21691	1	1	17248.683	24835.2
Special Requirements	Phase 0.53496 to 0.55073 with period 2.64388312 Days and zero-phase 2454510.80162 HJD Aperture PA Range 0 to 359.5 Degrees (V3 355.550295 to 355.050295) Time Series Observation No Parallel								

Proposal 1177 - Observation 5 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 5: GJ 436b EMIS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(GJ 436b EMIS (Obs 5)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.								
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous		
	(3)	GJ-436	RA: 11 42 12.1287 (175.5505362d) Dec: +26 42 11.04 (26.70307d) Equinox: J2000		Proper Motion RA: 0.06679350522402193 sec of time/yr Proper Motion Dec: -814.030 mas/yr Parallax: 0.1025015" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database and Gaia for the parallax.(Gaia 2015.5 Epoch)								
	Category=Star								
	Description=[Exoplanet Systems, M dwarfs, M stars] Extended=NO								
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F1500W	FAST	10	1	1	1.59	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations		Total Exposure Time		ETC Wkbk.Calc ID
	1	FAST	10	1	1		1.59		24835.8

Proposal 1177 - Observation 5 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	5	21691	21691	1	1	17248.683	24835.2
Special Requirements	Phase 0.53496 to 0.55073 with period 2.64388312 Days and zero-phase 2454510.80162 HJD Aperture PA Range 0 to 359.5 Degrees (V3 355.550295 to 355.050295) Time Series Observation No Parallel								

Proposal 1177 - Observation 6 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 6: HAT-P-26 b TRANS								Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning								
	Observing Template: MIRI Low Resolution Spectroscopy								
	Comments: All LRS observations are done in time-series mode with precision target acquisition and no dithers								
Diagnostics	(HAT-P-26 b TRANS (Obs 6)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.								
	(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)	HAT-P-26B	RA: 14 12 37.5722 (213.1565508d) Dec: +04 03 33.90 (4.05942d) Equinox: J2000		Proper Motion RA: 37.8 mas/yr Proper Motion Dec: -142.9 mas/yr Parallax: 0.0070" Epoch of Position: 2015.5				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.								
	HAT-P-26 b: K = 9.6 mag, T* = 5079 K, Tpl = 1000 K, Rp = 6.2 Re, Mp = 19 Me (Gaia 2015.5 Epoch) Category=Star Description=[Exoplanet Systems, Exoplanets, K dwarfs, K stars] Extended=NO								
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	F560W	FAST	12	1	1	1.908	24835.8
Template	Subarray								
	SLITLESSPRISM								
Dithers	#	Dither Type	No. Spectral Steps		Spectral Step Offset		No. Spatial Steps		Spatial Step Offset
	1	NONE							
Confirmation	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
	1	FAST	12	1	1	1.908	24835.8		

Proposal 1177 - Observation 6 - MIRI observations of transiting exoplanets

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FAST	90	1678	1678	1	1	24018.221	24835.1
Special Requirements	Phase 0.95862 to 0.96847 with period 4.2345023 Days and zero-phase 2455304.65218 HJD Aperture PA Range 17.015224 to 155.015224 Degrees (V3 12.565519 to 150.565519) Aperture PA Range 200.015224 to 335.015224 Degrees (V3 195.565519 to 330.565519) Time Series Observation No Parallel								

Proposal 1177 - Observation 7 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 7: TRAPPIST-1 b Sec Eclipse										Tue Jun 11 16:00:14 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
	<i>Comments: All MIRI Imager observations are done in time-series mode with precision target acquisition and no dithers</i> <i>PA constraints are set for the object to be near the center and to get the nearby 2MASS K = 13.5 star in the field</i> <i>Offsets are set to minimal values to serve as a placeholder in I decide to move the star elsewhere in the array, pending on-orbit performance</i>										
Diagnostics	(TRAPPIST-1 b Sec Eclipse (Obs 7)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.										
	(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)	TRAPPIST-1B	RA: 23 06 30.3341 (346.6263921d)				Proper Motion RA: 930.9 mas/yr				
			Dec: -05 02 36.46 (-5.04346d)				Proper Motion Dec: -479.4 mas/yr				
			Equinox: J2000				Parallax: 0.0804"				
							Epoch of Position: 2015.5				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database (Gaia 2015.5 Epoch)</i> <i>TRAPPIST-1 star and b planet</i> <i>Category=Star</i> <i>Description=[Exoplanet Systems, Exoplanets, M dwarfs, M stars]</i> <i>Extended=NO</i>										
Template	Subarray										
	FULL										
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1500W	FAST	14	404	1	None	1	404	15695.626	24835.4
Special Requirements	Phase 0.41578 to 0.44339 with period 1.51087081 Days and zero-phase 2457322.51736 HJD										
	Aperture PA Range 74.449705 to 154.449705 Degrees (V3 70.0 to 150.0) Aperture PA Range 254.449705 to 334.449705 Degrees (V3 250.0 to 330.0) Offset 0.5 arcsec, 0.5 arcsec Time Series Observation No Parallel										

Proposal 1177 - Observation 8 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 8: TRAPPIST-1 b Sec Eclipse										Tue Jun 11 16:00:15 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
	<i>Comments: All MIRI Imager observations are done in time-series mode with precision target acquisition and no dithers</i> <i>PA constraints are set for the object to be near the center and to get the nearby 2MASS K = 13.5 star in the field</i> <i>Offsets are set to minimal values to serve as a placeholder in I decide to move the star elsewhere in the array, pending on-orbit performance</i>										
Diagnostics	(TRAPPIST-1 b Sec Eclipse (Obs 8)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.										
	(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)	TRAPPIST-1B	RA: 23 06 30.3341 (346.6263921d)				Proper Motion RA: 930.9 mas/yr				
			Dec: -05 02 36.46 (-5.04346d)				Proper Motion Dec: -479.4 mas/yr				
			Equinox: J2000				Parallax: 0.0804"				
							Epoch of Position: 2015.5				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database (Gaia 2015.5 Epoch)</i> <i>TRAPPIST-1 star and b planet</i> <i>Category=Star</i> <i>Description=[Exoplanet Systems, Exoplanets, M dwarfs, M stars]</i> <i>Extended=NO</i>										
Template	Subarray										
	FULL										
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1500W	FAST	14	404	1	None	1	404	15695.626	24835.4
Special Requirements	Phase 0.41578 to 0.44339 with period 1.51087081 Days and zero-phase 2457322.51736 HJD Aperture PA Range 74.449705 to 154.449705 Degrees (V3 70.0 to 150.0) Aperture PA Range 254.449705 to 334.449705 Degrees (V3 250.0 to 330.0) Offset 0.5 arcsec, 0.5 arcsec Time Series Observation No Parallel										

Proposal 1177 - Observation 9 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 9: TRAPPIST-1 b Sec Eclipse										Tue Jun 11 16:00:15 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
	<i>Comments: All MIRI Imager observations are done in time-series mode with precision target acquisition and no dithers</i> <i>PA constraints are set for the object to be near the center and to get the nearby 2MASS K = 13.5 star in the field</i> <i>Offsets are set to minimal values to serve as a placeholder in I decide to move the star elsewhere in the array, pending on-orbit performance</i>										
Diagnostics	(TRAPPIST-1 b Sec Eclipse (Obs 9)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.										
	(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates				Targ. Coord. Corrections		Miscellaneous		
	(5)	TRAPPIST-1B	RA: 23 06 30.3341 (346.6263921d)				Proper Motion RA: 930.9 mas/yr				
			Dec: -05 02 36.46 (-5.04346d)				Proper Motion Dec: -479.4 mas/yr				
			Equinox: J2000				Parallax: 0.0804"				
							Epoch of Position: 2015.5				
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database (Gaia 2015.5 Epoch)</i> <i>TRAPPIST-1 star and b planet</i> <i>Category=Star</i> <i>Description=[Exoplanet Systems, Exoplanets, M dwarfs, M stars]</i> <i>Extended=NO</i>										
Template	Subarray										
	FULL										
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1500W	FAST	14	404	1	None	1	404	15695.626	24835.4
Special Requirements	Phase 0.41578 to 0.44339 with period 1.51087081 Days and zero-phase 2457322.51736 HJD Aperture PA Range 74.449705 to 154.449705 Degrees (V3 70.0 to 150.0) Aperture PA Range 254.449705 to 334.449705 Degrees (V3 250.0 to 330.0) Offset 0.5 arcsec, 0.5 arcsec Time Series Observation No Parallel										

Proposal 1177 - Observation 10 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 10: TRAPPIST-1 b Sec Eclipse										Tue Jun 11 16:00:15 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
	<i>Comments: All MIRI Imager observations are done in time-series mode with precision target acquisition and no dithers PA constraints are set for the object to be near the center and to get the nearby 2MASS K = 13.5 star in the field Offsets are set to minimal values to serve as a placeholder in I decide to move the star elsewhere in the array, pending on-orbit performance</i>										
Diagnostics	(TRAPPIST-1 b Sec Eclipse (Obs 10)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure.										
	(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(5)	TRAPPIST-1B	RA: 23 06 30.3341 (346.6263921d) Dec: -05 02 36.46 (-5.04346d) Equinox: J2000			Proper Motion RA: 930.9 mas/yr Proper Motion Dec: -479.4 mas/yr Parallax: 0.0804" Epoch of Position: 2015.5					
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database (Gaia 2015.5 Epoch)</i>										
	<i>TRAPPIST-1 star and b planet Category=Star Description=[Exoplanet Systems, Exoplanets, M dwarfs, M stars] Extended=NO</i>										
Template	Subarray										
	FULL										
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1500W	FAST	14	404	1	None	1	404	15695.626	24835.4
Special Requirements	Phase 0.41578 to 0.44339 with period 1.51087081 Days and zero-phase 2457322.51736 HJD										
	Aperture PA Range 74.449705 to 154.449705 Degrees (V3 70.0 to 150.0) Aperture PA Range 254.449705 to 334.449705 Degrees (V3 250.0 to 330.0) Offset 0.5 arcsec, 0.5 arcsec Time Series Observation No Parallel										

Proposal 1177 - Observation 11 - MIRI observations of transiting exoplanets

Observation	Proposal 1177, Observation 11: TRAPPIST-1 b Sec Eclipse										Tue Jun 11 16:00:15 GMT 2019
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
	<i>Comments: All MIRI Imager observations are done in time-series mode with precision target acquisition and no dithers</i> <i>PA constraints are set for the object to be near the center and to get the nearby 2MASS K = 13.5 star in the field</i> <i>Offsets are set to minimal values to serve as a placeholder in I decide to move the star elsewhere in the array, pending on-orbit performance</i>										
Diagnosics	(TRAPPIST-1 b Sec Eclipse (Obs 11)) Warning (Form): Exposure Duration exceeds the limit of 10000.0 seconds. Above this limit it is possible that a High Gain Antenna move may occur during the exposure. (Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(5)	TRAPPIST-1B	RA: 23 06 30.3341 (346.6263921d) Dec: -05 02 36.46 (-5.04346d) Equinox: J2000			Proper Motion RA: 930.9 mas/yr Proper Motion Dec: -479.4 mas/yr Parallax: 0.0804" Epoch of Position: 2015.5					
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database (Gaia 2015.5 Epoch)</i> <i>TRAPPIST-1 star and b planet</i> <i>Category=Star</i> <i>Description=[Exoplanet Systems, Exoplanets, M dwarfs, M stars]</i> <i>Extended=NO</i>										
Template	Subarray										
	FULL										
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	F1500W	FAST	14	404	1	None	1	404	15695.626	24835.4
Special Requirements	Phase 0.41578 to 0.44339 with period 1.51087081 Days and zero-phase 2457322.51736 HJD Aperture PA Range 74.449705 to 154.449705 Degrees (V3 70.0 to 150.0) Aperture PA Range 254.449705 to 334.449705 Degrees (V3 250.0 to 330.0) Offset 0.5 arcsec, 0.5 arcsec Time Series Observation No Parallel										