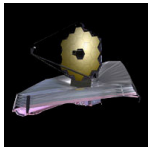

1281 - MIRI and NIRSPEC Transit Observations of HAT-P-12 b

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Transiting				
	1	HAT-P-12 b MIRI	MIRI Low Resolution Spectroscopy	(1) HAT-P-12
	2	HAT-P-12 b NIRSPEC long	NIRSpec Bright Object Time Series	(1) HAT-P-12
	3	HAT-P_12 b NIRISS	NIRISS Single-Object Slitless Spectroscopy	(1) HAT-P-12

ABSTRACT

We will characterize the atmosphere of the Saturn-mass exoplanet HAT-P-12 b (molecular content, hazes, pressure - temperature profile) by observing spectroscopically the star light transmitted through the atmosphere during a transit of the exoplanet in front of its host star.

OBSERVING DESCRIPTION

This is time series observations. The observations are time constrained; the observations have to start phased for transit of the exoplanet.

We plan to observe with the MIRI slitless LRS mode one transit of HAT-P-12b in front of its host star.

Due to detector saturation, we can't use the NIRSPEC prism mode to have the full wavelength coverage in one transit or one eclipse. Then we will devote two transits observations to get a medium resolution transmission spectrum over the 1.66 - 5.27 microns wavelength range.

No parallel observations for these observations which require very high stability.

Proposal 1281 - Targets - MIRI and NIRSPEC Transit Observations of HAT-P-12 b

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HAT-P-12	RA: 13 57 33.2749 (209.3886454d)	Proper Motion RA: -134.791 mas/yr	
		Dec: +43 29 35.92 (43.49331d)	Proper Motion Dec: -44.294 mas/yr	
		Equinox: J2000	Parallax: 0.0069763"	
			Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Exoplanets, K stars]
Extended=NO

Observation

Proposal 1281, Observation 1: HAT-P-12 b MIRI

Wed Jun 24 04:02:17 GMT 2020

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Diagnostics

(HAT-P-12 b MIRI (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)	HAT-P-12	RA: 13 57 33.2749 (209.3886454d) Dec: +43 29 35.92 (43.49331d) Equinox: J2000	Proper Motion RA: -134.791 mas/yr Proper Motion Dec: -44.294 mas/yr Parallax: 0.0069763" Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Exoplanets, K stars]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	1 HAT-P-12	F1000W	FAST	22	1	1	3.499	25116.10

Template

Subarray	Obtain Verification Image?
SLITLESSPRISM	true

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	NONE				

Pointing Verification

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	FAST	22	1	1	3.499	25116.10

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	FAST	150	930	930	1	1	22186.08	25116.7

Special Requirements

Phase 0.9524 to 0.9655 with period 3.21305756 Days and zero-phase 2456032.151332 HJD
Time Series Observation
No Parallel

Observation

Proposal 1281, Observation 2: HAT-P-12 b NIRSPEC long Wed Jun 24 04:02:17 GMT 2020

Diagnostic Status: Warning

Observing Template: NIRSpec Bright Object Time Series

Comments: ETC indicates that, for target acquisition, there is one saturated pixel at the end of first group. We can probably leave with that. Wer should come back on this potential issue later on.

Diagnostics

(HAT-P-12 b NIRSPEC long (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)	HAT-P-12	RA: 13 57 33.2749 (209.3886454d) Dec: +43 29 35.92 (43.49331d) Equinox: J2000	Proper Motion RA: -134.791 mas/yr Proper Motion Dec: -44.294 mas/yr Parallax: 0.0069763" Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Exoplanets, K stars]
Extended=NO

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	25116.5

Template

Subarray
SUB2048

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	G395M/F290LP	NRSRAPID	30	816	1	1	816	22833.704	25116.8

Special Requirements

Phase 0.9524 to 0.9655 with period 3.21305756 Days and zero-phase 2456032.151332 HJD
Time Series Observation
No Parallel

Observation

Proposal 1281, Observation 3: HAT-P_12 b NIRISS

Wed Jun 24 04:02:17 GMT 2020

Diagnostic Status: Warning

Observing Template: NIRISS Single-Object Slitless Spectroscopy

Diagnostics

(HAT-P_12 b NIRISS (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.

(Exposure) 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
(1)	HAT-P-12	RA: 13 57 33.2749 (209.3886454d) Dec: +43 29 35.92 (43.49331d) Equinox: J2000	Proper Motion RA: -134.791 mas/yr Proper Motion Dec: -44.294 mas/yr Parallax: 0.0069763" Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Exoplanets, K stars]
Extended=NO

Acquisition

#	Target	Acquisition Mode	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	SOSSFAINT	F480M	NISRAPID	11	1	1	0.622	25116.12

Template

Subarray	Include F277W Exposure?
SUBSTRIP256	false

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	NISRAPID	15	254	1	254	22332.818	25116.11

Special Requirements

Phase 0.9524 to 0.9655 with period 3.21305756 Days and zero-phase 2456032.151332 HJD
Aperture PA Range 292 to 180 Degrees (V3 291.43012982 to 179.43012982)
Time Series Observation
No Parallel