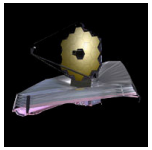

1188 - Spectroscopy of Young, Widely Separated Exoplanets

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

Name	*Institution*
Dr. Klaus Werner Hodapp (PI)	**University of Hawaii**
Dr. Charles A. Beichman (CoI)	Jet Propulsion Laboratory
Dr. Pierre-Olivier Lagage (CoI) (ESA Member)	Commissariat a l'Energie Atomique (CEA)
Dr. Marie Ygouf (CoI)	Jet Propulsion Laboratory
Dr. Jean-Baptiste Ruffio (CoI)	University of California - San Diego
Dr. Marcia J. Rieke (CoI)	University of Arizona

OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
HR8799-bc				
	1	HR8799-bc-Alt-PA1	NIRSpec IFU Spectroscopy	(1) HD-218396
	2	HR8799-bc-Alt-PA2	NIRSpec IFU Spectroscopy	(1) HD-218396
HR8799-ced				
	4	HR8799-ced-Alt-PA1	NIRSpec IFU Spectroscopy	(1) HD-218396
	5	HR8799-ced-Alt-PA2	NIRSpec IFU Spectroscopy	(1) HD-218396
	6	HR8799-ced-Alt-PA2	NIRSpec IFU Spectroscopy	(1) HD-218396
2M2236-b				
	7	2M2236-b-PA1	NIRSpec IFU Spectroscopy	(2) UCAC4-690-119045-B
	8	2M2236-b-PA2	NIRSpec IFU Spectroscopy	(2) UCAC4-690-119045-B
	9	2MASSJ2236 LRS	MIRI Low Resolution Spectroscopy	(6) 2MASS-J2236+4751-B-MIRI
GU-Psc-b				
	10	GU-Psc-b	NIRSpec IFU Spectroscopy	(3) GU-PSC-B
	11	GU-PSCb LRS	MIRI Low Resolution Spectroscopy	(3) GU-PSC-B

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	12	GU-Psc-B Imaging	MIRI Imaging	(3) GU-PSC-B

ABSTRACT

We will obtain NIRSpec IFU R=1000 spectra of a sample of exoplanets that are spatially sufficiently separated from their primary star to allow direct imaging spectroscopy. The sample will comprise exoplanets of different masses and ages, most of which have already been studied spectroscopically in the 1.0 - 2.5 m range. NIRSpec will allow to extend the measurements into the 3 – 5 m range with a substantial sensitivity advantage over competing ground-based systems.

The main goal is understanding the spectra of self-luminous, fairly young exoplanets below the deuterium burning limit throughout their contraction and cooling. Can metallicity or isotopic composition be determined and do those give clues about the formation mechanism?

We will observe the following exoplanets:
HR 8799 b, c, d, and e (if possible)
2MJ2236 b
GU Psc b
HD 106906 b, as part of Program 1277

Revised version 2021 03 15

We have changed the detector operation mode,
have eliminated the leakcal exposures,
have added one additional position angle for HR8799,
have updated positions, proper motions etc. with Gaia astrometry, where possible
have added WATA acquisition observations, where useful,
and have eliminated the PSF reference observation on UPS-Peg, since this star
would saturate the detector.

Revised Version 2021 06 08
We changed the grating for all spectroscopic observations to the higher resolution G395H.

The higher resolution was chosen to allow newly developed methods for spectral modeling
to work better.

Revision 20210609
For HR8799, we have changed the detector readout to 2 groups, 3 or 4 integrations, 20 dither positions,
to reduce the number of saturating pixels.

Revision 20230706
For HR8799, we have made minor (< 500 mas) adjustments to the IFU pointing relative to the star HR 8799,
to better position the planets within the IFU.
The new coordinates are based yet unpublished VLT/GRAVITY interferometry and are more
precise than previously available coordinates.

Revision 20230928:
We created a new target (#8) for the TA star for J2236b.
Coordinates for 2MASS-J2236+4751-B-MIRI were updated. This is the science target!
Offset was eliminated.
Filter for TA was changed to avoid saturation.

Revision 20240508:
Based on the experience with the first set of HR8799 observations obtained in 2023,
we have made the following changes:
- position the host star directly into the IFU, since this does not cause excessive stray light
- all four planets will be in the IFU at the same time
- we now use 4 groups per integration instead of 2
- and we have reduced the number of dithers to stay within the allocated observing time

OBSERVING DESCRIPTION

For those exoplanets that are close enough to their host star so that the sensitivity is limited by the contrast with the host star PSF, we have selected specific position angles (PA) that avoid the diffraction spikes of the host star and still allow some PA variation (roll maneuver) to do ADI subtraction. These specific PAs lead to narrow observing windows.

The current version of the APT allows a range of PAs to be defined, but is does not allow to give sets of alternative PA and offset values. It would help with the scheduling of JWST if this capability would be available.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0 For the observations of planets b, c, d, appropriate offsets are defined as special requirements. Category=Star Description=[Exoplanets]			
(2)	UCAC4-690-119045-B	RA: 22 36 24.8845 (339.1036854d) Dec: +47 51 39.44 (47.86096d) Equinox: J2000	Proper Motion RA: 62.6 mas/yr Proper Motion Dec: -30.5 mas/yr Epoch of Position: 2016.0	
	Comments: The coordinates are those of the exoplanet "b" based on the relative astrometry by Bowler et al. 2016, resulting in "b" being 2.6", -2.6" from the star, or 0.259s, -2.6" Host star is 2MASS J22362452 +4751425 = UCAC4 690-119045 with proper motion 62.9, -30.5 mas/y at 22 36 24.525488 +47 51 42.53125 (J2000.0) (Gaia DR2, epoch 2000.0) 22 36 24.6255 +47 51 42.04 (J2000.0) (Gaia DR3, epoch 2016.0) The Exoplanet is at an offset of +2.6 arcsec, -2.6 arcsec from the star. Category=Star Description=[Exoplanets] Extended=NO			
(3)	GU-PSC-B	RA: 01 12 36.4800 (18.1520000d) Dec: +17 04 31.80 (17.07550d) Equinox: J2000	Proper Motion RA: 98 mas/yr Proper Motion Dec: -92 mas/yr Parallax: 0.021" Epoch of Position: 2000	
	Comments: The coordinates are for the component b, the exoplanet. These are the coordinates based on the astrometry by Naud et al. 2014. Coordinates and proper motion epoch is 2000, confirmed by comparison with the Gaia DR2 coordinates as reported by Simbad, which are in epoch 2000.0 The object will be centered in the IFU without target acquisition procedure. There are no very bright stars in the MSA area at the PA chosen for our observations. Category=Star Description=[Exoplanets] Extended=NO			
(4)	UPS-PEG	RA: 23 25 22.7835 (351.3449313d) Dec: +23 24 14.76 (23.40410d) Equinox: J2000		
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Category=Star Description=[Exoplanets]			
(6)	2MASS-J2236+4751-B-MIRI	RA: 22 36 24.7831 (339.1032629d) Dec: +47 51 39.89 (47.86108d) Equinox: J2000	Proper Motion RA: 62.6 mas/yr Proper Motion Dec: -30.5 mas/yr Parallax: 0.0143956" Epoch of Position: 2000	
	Comments: These are the coordinates of the science target object, the exoplanet. These coordinates were computed from the Simbad position of the TA star plus the offsets from Bowler et al. 2017. Proper motion and parallax were copied from the host star (also TA star). Proper mostion between host and exoplanet are common, no orbital motion is known. Category=Star Description=[Exoplanets] Extended=NO			

	(7)	WATA-STAR-FOR-HR8799	RA: 23 07 25.6313 (346.8567971d) Dec: +21 09 12.40 (21.15344d) Equinox: J2000	Proper Motion RA: -2.70 mas/yr Proper Motion Dec: 6.55 mas/yr Parallax: 0.00058" Epoch of Position: 2016.0
	Comments: This is a Gaia EDR3 star. The coordinates are from the EDR3 catalog. *Category=Calibration* *Description=[Astrometric]* *Extended=NO*			
	(8)	TA-star	RA: 22 36 24.5258 (339.1021908d) Dec: +47 51 42.53 (47.86181d) Equinox: J2000	Proper Motion RA: 62.674 mas/yr Proper Motion Dec: -30.483 mas/yr Parallax: 0.0143956" Epoch of Position: 2000.0
	Comments: This is the host star of the target exoplanet. The coordinates are the latest, including Gaia DR3, from Simbad. *This star is used as the acquisition target.* *The star is named "TA star" for clarity, even though this name was not used in the proposal.* *Category=Star* *Description=[K dwarfs]* *Extended=NO*			

Observation

Proposal 1188, Observation 1: HR8799-bc-Alt-PA1 Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(HR8799-bc-Alt-PA1 (Obs 1)) Warning (Form): The order of link [PA Offset 2 from 1] combined with the order of the SEQ NON-INT reduces scheduling flexibility.

(HR8799-bc-Alt-PA1 (Obs 1)) Warning (Form): The slew between the acquisition exposure and the farthest science exposure is 73.006 Arcsec (larger than the recommended limit of 50.000 Arcsec) and may result in reduced or no schedulability. See more information in the diagnostic browser.

(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 1:1) Warning (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

(HR8799-bc-Alt-PA1 (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0
For the observations of planets b, c, d, appropriate offsets are defined as special requirements.
Category=Star
Description=[Exoplanets]

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	7 WATA-STAR-FOR-HR8799	WATA	SUB32	F140X	NRSRAPIDD6	3	1	1	0.26	72663

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	23	

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	G395H/F290LP	NRSIRS2RAPID	4	4	false	true	NONE	23	92	6710.889	

Special Requirements	
	Aperture PA Range 6 to 16 Degrees (V3 227.02835083 to 237.02835083) Offset 0.5 arcsec, 0.0 arcsec Sequence Observations 1, 2, Non-interruptible Aperture PA Offset 2 from 1 by 10 to 16 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 2: HR8799-bc-Alt-PA2 Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(HR8799-bc-Alt-PA2 (Obs 2)) Warning (Form): The order of link [PA Offset 2 from 1] combined with the order of the SEQ NON-INT reduces scheduling flexibility.

(HR8799-bc-Alt-PA2 (Obs 2)) Warning (Form): The slew between the acquisition exposure and the farthest science exposure is 115.970 Arcsec (larger than the recommended limit of 50.000 Arcsec) and may result in reduced or no schedulability. See more information in the diagnostic browser.

(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(Visit 2:1) Warning (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

(HR8799-bc-Alt-PA2 (Obs 2)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0
For the observations of planets b, c, d, appropriate offsets are defined as special requirements.
Category=Star
Description=[Exoplanets]

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	7 WATA-STAR-FOR-HR8799	WATA	SUB32	F140X	NRSRAPIDD6	3	1	1	0.26	72663

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	23	

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	G395H/F290LP	NRSIRS2RAPID	4	4	false	true	NONE	23	92	6710.889	

Special Requirements	
	Offset 0.5 arcsec, 0.0 arcsec Sequence Observations 1, 2, Non-interruptible Aperture PA Offset 2 from 1 by 10 to 16 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 4: HR8799-ced-Alt-PA1

Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(HR8799-ced-Alt-PA1 (Obs 4)) Warning (Form): The order of link [PA Offset 5 from 4, PA Offset 6 from 4] combined with the order of the SEQ NON-INT reduces scheduling flexibility.

(HR8799-ced-Alt-PA1 (Obs 4)) Warning (Form): The slew between the acquisition exposure and the farthest science exposure is 75.948 Arcsec (larger than the recommended limit of 50.000 Arcsec) and may result in reduced or no schedulability. See more information in the diagnostic browser.

(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR8799-ced-Alt-PA1 (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0
For the observations of planets b, c, d, appropriate offsets are defined as special requirements.
Category=Star
Description=[Exoplanets]

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	7 WATA-STAR-FOR-HR8799	WATA	SUB32	CLEAR	NRSRAPIDD6	3	1	1	0.26	72663

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	20	

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	G395H/F290LP	NRSIRS2RAPID	2	3	false	true	NONE	20	60	2626.0	

Special Requirements

Aperture PA Range 0 to 2 Degrees (V3 221.02835083 to 223.02835083)
Offset -1.6 arcsec, 0.0 arcsec

Sequence Observations 4, 5, 6, Non-interruptible
Aperture PA Offset 5 from 4 by 5 to 7 Degrees (Same offsets in V3)
Aperture PA Offset 6 from 4 by 10 to 12 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 5: HR8799-ced-Alt-PA2

Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(HR8799-ced-Alt-PA2 (Obs 5)) Warning (Form): The order of link [PA Offset 5 from 4] combined with the order of the SEQ NON-INT reduces scheduling flexibility.

(HR8799-ced-Alt-PA2 (Obs 5)) Warning (Form): The slew between the acquisition exposure and the farthest science exposure is 118.051 Arcsec (larger than the recommended limit of 50.000 Arcsec) and may result in reduced or no schedulability. See more information in the diagnostic browser.

(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR8799-ced-Alt-PA2 (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0
For the observations of planets b, c, d, appropriate offsets are defined as special requirements.
Category=Star
Description=[Exoplanets]

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	7 WATA-STAR-FOR-HR8799	WATA	SUB32	CLEAR	NRSRAPIDD6	3	1	1	0.26	72663

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	20	

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	G395H/F290LP	NRSIRS2RAPID	2	3	false	true	NONE	20	60	2626.0	

Special Requirements

Offset -1.6 arcsec, 0.0 arcsec

Sequence Observations 4, 5, 6, Non-interruptible
Aperture PA Offset 5 from 4 by 5 to 7 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 6: HR8799-ced-Alt-PA2

Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(HR8799-ced-Alt-PA2 (Obs 6)) Warning (Form): The order of link [PA Offset 6 from 4] combined with the order of the SEQ NON-INT reduces scheduling flexibility.

(HR8799-ced-Alt-PA2 (Obs 6)) Warning (Form): The slew between the acquisition exposure and the farthest science exposure is 118.051 Arcsec (larger than the recommended limit of 50.000 Arcsec) and may result in reduced or no schedulability. See more information in the diagnostic browser.

(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR8799-ced-Alt-PA2 (Obs 6)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	HD-218396	RA: 23 07 28.7155 (346.8696479d) Dec: +21 08 3.30 (21.13425d) Equinox: J2000	Proper Motion RA: 108.301 mas/yr Proper Motion Dec: -49.48 mas/yr Parallax: 0.024" Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
These are the coordinates of the host star HR8799 in J2000.0, epoch 2000.0
For the observations of planets b, c, d, appropriate offsets are defined as special requirements.
Category=Star
Description=[Exoplanets]

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	7 WATA-STAR-FOR-HR8799	WATA	SUB32	CLEAR	NRSRAPIDD6	3	1	1	0.26	72663

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	20	

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	G395H/F290LP	NRSIRS2RAPID	2	3	false	true	NONE	20	60	2626.0	

Special Requirements

Offset -1.6 arcsec, 0.0 arcsec

Sequence Observations 4, 5, 6, Non-interruptible
Aperture PA Offset 6 from 4 by 10 to 12 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 7: 2M2236-b-PA1

Mon May 13 22:00:20 GMT 2024

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
(2)	UCAC4-690-119045-B	RA: 22 36 24.8845 (339.1036854d)	Proper Motion RA: 62.6 mas/yr	
		Dec: +47 51 39.44 (47.86096d)	Proper Motion Dec: -30.5 mas/yr	
		Equinox: J2000	Epoch of Position: 2016.0	

Comments: The coordinates are those of the exoplanet "b" based on the relative astrometry by Bowler et al. 2016, resulting in "b" being 2.6", -2.6" from the star, or 0.259s, -2.6"
Host star is 2MASS J22362452 +4751425 = UCAC4 690-119045 with proper motion 62.9, -30.5 mas/y at 22 36 24.525488 +47 51 42.53125 (J2000.0) (Gaia DR2, epoch 2000.0)
22 36 24.6255 +47 51 42.04 (J2000.0) (Gaia DR3, epoch 2016.0)

The Exoplanet is at an offset of +2.6 arcsec, -2.6 arcsec from the star.
Category=Star
Description=[Exoplanets]
Extended=NO

Template

TA Method
NONE

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	10	

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	G395H/F290LP	NRSIRS2RAPID	8	1	false	true	NONE	10	10	1313.0	

Special Requirements	
	Aperture PA Range 180 to 210 Degrees (V3 41.02835083 to 71.02835083) Aperture PA Offset 8 from 7 by 10 to 12 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 8: 2M2236-b-PA2

Mon May 13 22:00:20 GMT 2024

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
(2)	UCAC4-690-119045-B	RA: 22 36 24.8845 (339.1036854d)	Proper Motion RA: 62.6 mas/yr	
		Dec: +47 51 39.44 (47.86096d)	Proper Motion Dec: -30.5 mas/yr	
		Equinox: J2000	Epoch of Position: 2016.0	

Comments: The coordinates are those of the exoplanet "b" based on the relative astrometry by Bowler et al. 2016, resulting in "b" being 2.6", -2.6" from the star, or 0.259s, -2.6"
Host star is 2MASS J22362452 +4751425 = UCAC4 690-119045 with proper motion 62.9, -30.5 mas/y at 22 36 24.525488 +47 51 42.53125 (J2000.0) (Gaia DR2, epoch 2000.0)
22 36 24.6255 +47 51 42.04 (J2000.0) (Gaia DR3, epoch 2016.0)

The Exoplanet is at an offset of +2.6 arcsec, -2.6 arcsec from the star.
Category=Star
Description=[Exoplanets]
Extended=NO

Template

TA Method
NONE

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	10	

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	G395H/F290LP	NRSIRS2RAPID	8	1	false	true	NONE	10	10	1313.0	

Special Requirements	Aperture PA Offset 8 from 7 by 10 to 12 Degrees (Same offsets in V3)

Observation

Proposal 1188, Observation 9: 2MASSJ2236 LRS Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Comments: Target acquisition is done on the host star UCAC4 690-119045 also called 2MASS-J2236+4751-B_MIRI (fixed target 6), the science target is the exoplanet UCAC4 690-119045-b (target 2).

To avoid saturation by the host star, we need to use a special PA for the MIRI observations of 2M2236.

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
(6)	2MASS-J2236+4751-B-MIRI	RA: 22 36 24.7831 (339.1032629d) Dec: +47 51 39.89 (47.86108d) Equinox: J2000	Proper Motion RA: 62.6 mas/yr Proper Motion Dec: -30.5 mas/yr Parallax: 0.0143956" Epoch of Position: 2000	

Comments: These are the coordinates of the science target object, the exoplanet. These coordinates were computed from the Simbad position of the TA star plus the offsets from Bowler et al. 2017. Proper motion and parallax were copied from the host star (also TA star). Proper mostion between host and exoplanet are common, no orbital motion is known.
Category=Star
Description=[Exoplanets]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	8 TA-star	F1500W	FAST	4	1	1	11.1	12738.7

Template

Subarray	Obtain Verification Image?
FULL	true

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	ALONG SLIT NOD				

Pointing Verification

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
1	FASTR1	10	10	10	1	1	302.479		F1500W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	FASTR1	80	4	8	1	2	1792.676	12738.8

Special Requirements

Aperture PA Range 134.5 to 136.5 Degrees (V3 129.74203 to 131.74203)

Observation

Proposal 1188, Observation 10: GU-Psc-b

Mon May 13 22:00:20 GMT 2024

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
(3)	GU-PSC-B	RA: 01 12 36.4800 (18.1520000d) Dec: +17 04 31.80 (17.07550d) Equinox: J2000	Proper Motion RA: 98 mas/yr Proper Motion Dec: -92 mas/yr Parallax: 0.021" Epoch of Position: 2000	

Comments: The coordinates are for the component b, the exoplanet.
These are the coordinates based on the astrometry by Naud et al. 2014.
Coordinates and proper motion epoch is 2000, confirmed by comparison with the Gaia DR2 coordinates as reported by Simbad, which are in epoch 2000.0
The object will be centered in the IFU without target acquisition procedure.
There are no very bright stars in the MSA area at the PA chosen for our observations.
Category=Star
Description=[Exoplanets]
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	CLEAR	NRSRAPIDD6	3	1	1	0.26	72673

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	10	

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	G395H/F290LP	NRSIRS2RAPID	8	1	false	true	NONE	10	10	1313.0	

Special Requirements	Sequence Observations 10, 11, 12, Non-interruptible

Observation

Proposal 1188, Observation 11: GU-PSCb LRS

Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution 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
(3)	GU-PSC-B	RA: 01 12 36.4800 (18.1520000d) Dec: +17 04 31.80 (17.07550d) Equinox: J2000	Proper Motion RA: 98 mas/yr Proper Motion Dec: -92 mas/yr Parallax: 0.021" Epoch of Position: 2000	

Comments: The coordinates are for the component b, the exoplanet.
These are the coordinates based on the astrometry by Naud et al. 2014.
Coordinates and proper motion epoch is 2000, confirmed by comparison with the Gaia DR2 coordinates as reported by Simbad, which are in epoch 2000.0
The object will be centered in the IFU without target acquisition procedure.
There are no very bright stars in the MSA area at the PA chosen for our observations.
Category=Star
Description=[Exoplanets]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	3 GU-PSC-B	F1000W	FASTGRPAVG	6	1	1	66.601	12738.1

Template

Subarray	Obtain Verification Image?
FULL	false

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	ALONG SLIT NOD				

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
1	FASTR1	160	2	4	1	2	1781.576	12738.2

Special Requirements	Sequence Observations 10, 11, 12, Non-interruptible

Observation

Proposal 1188, Observation 12: GU-Psc-B Imaging Mon May 13 22:00:20 GMT 2024

Diagnostic Status: Warning

Observing Template: MIRI Imaging

Comments: -800

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
(3)	GU-PSC-B	RA: 01 12 36.4800 (18.1520000d)	Proper Motion RA: 98 mas/yr	
		Dec: +17 04 31.80 (17.07550d)	Proper Motion Dec: -92 mas/yr	
		Equinox: J2000	Parallax: 0.021"	
			Epoch of Position: 2000	

Comments: The coordinates are for the component b, the exoplanet.
These are the coordinates based on the astrometry by Naud et al. 2014.
Coordinates and proper motion epoch is 2000, confirmed by comparison with the Gaia DR2 coordinates as reported by Simbad, which are in epoch 2000.0
The object will be centered in the IFU without target acquisition procedure.
There are no very bright stars in the MSA area at the PA chosen for our observations.
Category=Star
Description=[Exoplanets]
Extended=NO

Template

Subarray
FULL

Dithers

#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size
1	2-Point								DEFAULT

Spectral Elements

#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F1280W	FASTR1	50	1	1	Dither 1	2	2	277.504	12738.3
2	F1500W	FASTR1	50	1	1	Dither 1	2	2	277.504	12738.4
3	F1800W	FASTR1	50	1	1	Dither 1	2	2	277.504	12738.5
4	F2100W	FASTR1	25	8	1	Dither 1	2	16	1148.867	12738.6

Special Requirements	Sequence Observations 10, 11, 12, Non-interruptible