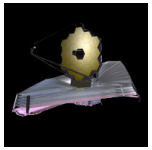

2965 - Clouds or Chemistry?: Pinpointing the drivers of variability across the L/T transition via the benchmark L/T binary WISE 1049AB

Cycle: 2, Proposal Category: GO

INVESTIGATORS

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Observation Folder				
	1		MIRI Low Resolution Spectroscopy	(1) WISE1049AB
	2	MIRI background observations	MIRI Low Resolution Spectroscopy	(1) WISE1049AB
	3		NIRSpec Bright Object Time Series	(1) WISE1049AB
	12	Repeat of Observationi 1	MIRI Low Resolution Spectroscopy	(1) WISE1049AB
	11	MIRI background observations - repeat of observation 2	MIRI Low Resolution Spectroscopy	(1) WISE1049AB
	13	Repeat of Observation 3	NIRSpec Bright Object Time Series	(1) WISE1049AB
	22	Repeat of Observationi 11	MIRI Low Resolution Spectroscopy	(2) WISE1049AB_Bedin+2024_MIRI
	21	MIRI background observations - repeat of observation 12	MIRI Low Resolution Spectroscopy	(3) WISE1049AB_BKG
	23	Repeat of Observation 13	NIRSpec Bright Object Time Series	(4) WISE1049AB_Bedin+2024_NIRSpec

ABSTRACT

We propose for 7 hours of MIRI LRS monitoring + 7 hours of NIRSPEC prism spectroscopic monitoring of the benchmark binary brown dwarf WISE 1049AB, the closest, brightest brown dwarfs known. Despite sharing the same age, and similar masses, effective temperatures, and viewing angles, WISE1049B is highly variable (5-15%) with a period of ~5 hours, while WISE1049A is <3% variable in the near-IR, with a period of ~7 hours. This is a unique opportunity to isolate two points along the critical L/T spectral type transition. JWST enables access to key molecular features across the near-IR with NIRSPEC and to the 10 um silicate feature with MIRI, which provide key tests for theoretical explanations of the observed variability, in particular: 1) variability due to temperature fluctuations from enhanced diabatic convection (Tremblin et al. 2020) will cause enhanced variability in methane absorption features, no variability in the silicate feature at 9-10 um, and a ~180 degree rotational phase shift between 1.1-1.7 um and 4-5 um lightcurves, while 2) variability due to high-altitude silicate clouds (Luna and Morley 2021) will produce no variability in methane absorption features but enhanced variability at 9-10 um. Our proposed observations will also determine the spatial extent of asymmetric top-of-atmosphere structures in WISE1049AB as a function of wavelength / depth and enable the first phase-resolved spectral retrieval analysis of variable brown dwarfs, as well as the most accurate measurement of bolometric luminosity for each of the components to date. The separation between components is decreasing; after Cycle 2, these observations will not be possible again until 2028.

OBSERVING DESCRIPTION

We propose in-depth characterization of the variability of both components of WISE 1049AB from 0.6-15 um. Our observations will cover at least full rotation period for each component (7 hours for the A component, 5 hours for the B) component with MIRI LRS slitless time-series monitoring from 5-15 um followed by a second full rotation period covered by NIRSPEC BOTS PRISM mode monitoring from 0.6-5.3 um. The MIRI detector requires 60 minutes to properly correct for ramp effects and allow the detector to settle before reaching the stability required for time series observations, thus we request 7 hours + 1.0 hours = 8 hours on-sky time with MIRI to cover this settling period. We estimate S/N and appropriate cadences for variability monitoring using Phoenix low temperatures models and the JWST ETC. As WISE 1049AB are the brightest two brown dwarfs in the sky, variability monitoring with extremely short cadences will be possible out to 11 um.

According to the best orbit fit from Lazorenko & Sahlmann 2018, WISE 1049B will be at a a position angle of 120.9±1.5 degrees and separation of 0.90±0.05” at the beginning of Cycle 2 (1 July 2023) and a position angle of 116 degrees and separation of 0.77” in March 2024. However, from the first attempt of this program taken in July 2023, we found that WISE 1049B was at a position angle of 113 degrees and separation of ~0.65". From HST WFC3 observations in January 2022 and May 2022, WISE 1049B was at a PA of 128 degrees and a separation of 1.04" in January 2022 and at a PA of 125.2 degrees and a separation of 0.98" in May 2022. Thus, based on the degree of movement in the HST epochs, we estimate a position angle of ~107 degrees of and a separation of 0.5-0.6" in March 2024. While both MIRI and NIRSPEC attain diffraction limited performance, as MIRI works at longer wavelengths, it will have a coarser resolution and thus, we set an APA constraint to ensure optimal separation of the components for MIRI during the observing window. The MIRI LRS mode disperses light along the instrumental y-axis, so we set an APA constraint to align the binary with the instrumental x-axis (object PA - 90 degrees), leading to an APA range of 357-37 degrees and one scheduling window in Cycle 2, in February/March 2024. NIRSPEC disperses along the instrumental y-axis and is oriented 135 degrees with respect to MIRI, thus, if the binary is aligned on the MIRI y-axis, it will be aligned at a roughly 45 degree angle relative to the NIRSPEC y-axis (with the two components offset in x-axis as well, thus requiring also a correction to the wavelengths during pipelining, which we have established how to do with the first epoch observations.) We will perform WATA to acquire WISE 1049AB with NIRSPEC, allowing the algorithm to center one of the two binary component, with the other trace falling either above or below on the detector. We expect a separation between traces of 0.36" to 0.43" during the ideal observing window in February / March 2024, which will still allow the traces to be easily resolved and will also ensure that both traces easily fall within the 1.6"x1.6" field-of-view for the NIRSPEC BOTS mode.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	
Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017. *Category=Star* *Description=[Brown dwarfs]* *Extended=NO*				
(2)	WISE1049AB_Bedin+2024_MIRI	RA: 10 49 18.7710 (162.3282125d) Dec: -53 19 9.88 (-53.31941d) Equinox: J2000	Proper Motion RA: -2768.511 mas/yr Proper Motion Dec: 358.472 mas/yr Parallax: 0.500993" Epoch of Position: 2000.0	
Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024. *Category=Star* *Description=[Brown dwarfs]* *Extended=NO*				
(3)	WISE1049AB_BKG	RA: 10 49 17.6557 (162.3235654d) Dec: -53 19 19.88 (-53.32219d) Equinox: J2000	Proper Motion RA: -2768.511 mas/yr Proper Motion Dec: 358.472 mas/yr Parallax: 0.500993" Epoch of Position: 2000.0	
Comments: Background field offset from WISE 1049AB by -10" in RA and -10" in DEC. Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024 for WISE 1049AB. *Category=Star* *Description=[Brown dwarfs]* *Extended=NO*				
(4)	WISE1049AB_Bedin+2024_NIRSpec	RA: 10 49 18.7710 (162.3282125d) Dec: -53 19 9.88 (-53.31941d) Equinox: J2000	Proper Motion RA: -2768.511 mas/yr Proper Motion Dec: 358.472 mas/yr Parallax: 0.500993" Epoch of Position: 2000.0	
Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024. *Category=Star* *Description=[Brown dwarfs]* *Extended=NO*				

Observation

Proposal 2965, Observation 1

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Diagnostics

(Observation 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)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	F560W	FAST	4	1	1	0.636	133044

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

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	2193	2193	1	1	28250.593	133044

Special Requirements

Between Dates 01-JUN-2023:00:00:00 and 31-JUL-2023:00:00:00
Aperture PA Range 100 to 140 Degrees (V3 95.16455103 to 135.16455103)
Time Series Observation
No Parallel Attachments

Sequence Observations 1, 2, 3, Non-interruptible

Observation

Proposal 2965, Observation 2: MIRI background observations

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution 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
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	F560W	FAST	4	1	1	0.636	133044

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

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	10	10	1	1	128.663	133044

Special Requirements

Between Dates 01-JUN-2023:00:00:00 and 31-JUL-2023:00:00:00
Aperture PA Range 100 to 140 Degrees (V3 95.16455103 to 135.16455103)
Offset -10.0 arcsec, -10.0 arcsec
Time Series Observation
No Parallel Attachments

Sequence Observations 1, 2, 3, Non-interruptible

Observation

Proposal 2965, Observation 3

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: NIRSpec Bright Object Time Series

Diagnostics

(Observation 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
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	133044

Template

Subarray
SUB512S

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
1	PRISM/CLEAR	NRSRAPID	2	57100	1	1	57100	25822.904	133044

Special Requirements

Time Series Observation
No Parallel Attachments

Sequence Observations 1, 2, 3, Non-interruptible

Observation

Proposal 2965, Observation 12: Repeat of Observationi 1

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Diagnostics

(Repeat of Observationi 1 (Obs 12)) 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 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	F560W	FAST	4	1	1	0.636	133044

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

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	2193	2193	1	1	28250.593	133044

Special Requirements

Aperture PA Range 357 to 37 Degrees (V3 352.16455103 to 32.16455103)
Time Series Observation
No Parallel Attachments

Sequence Observations 11, 12, 13, Non-interruptible

Observation

Proposal 2965, Observation 11: MIRI background observations - repeat of observation 2

Wed Apr 01 16:00:22 GMT 2026

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
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	F560W	FAST	4	1	1	0.636	133044

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

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	10	10	1	1	128.663	133044

Special Requirements

Aperture PA Range 357 to 37 Degrees (V3 352.16455103 to 32.16455103)
Offset -10.0 arcsec, -10.0 arcsec
Time Series Observation
No Parallel Attachments

Sequence Observations 11, 12, 13, Non-interruptible

Observation

Proposal 2965, Observation 13: Repeat of Observation 3

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: NIRSpec Bright Object Time Series

Diagnostics

(Repeat of Observation 3 (Obs 13)) 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 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	WISE1049AB	RA: 10 49 18.7599 (162.3281663d) Dec: -53 19 9.82 (-53.31939d) Equinox: J2000	Proper Motion RA: -2762.2 mas/yr Proper Motion Dec: 354.5 mas/yr Parallax: 0.50118" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2017.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	133044

Template

Subarray
SUB512S

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
1	PRISM/CLEAR	NRSRAPID	2	57100	1	1	57100	25822.904	133044

Special Requirements

Aperture PA Range 54 to 160 Degrees (V3 275.14704895 to 21.14704895)
Time Series Observation
No Parallel Attachments

Sequence Observations 11, 12, 13, Non-interruptible

Observation

Proposal 2965, Observation 22: Repeat of Observationi 11

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observations:[MIRI background observations - repeat of observation 12 (Obs 21)]

Diagnostics

(Repeat of Observationi 11 (Obs 22)) 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 22:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	WISE1049AB_Bedin+2024_ MIRI	RA: 10 49 18.7710 (162.3282125d) Dec: -53 19 9.88 (-53.31941d) Equinox: J2000	Proper Motion RA: -2768.511 mas/yr Proper Motion Dec: 358.472 mas/yr Parallax: 0.500993" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	F560W	FAST	4	1	1	0.636	133044

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

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	2193	2193	1	1	28250.593	133044

Special Requirements

Between Dates 01-MAY-2026:00:00:00 and 01-JUN-2026:00:00:00
Aperture PA Range 49.83544897 to 105.83544897 Degrees (V3 45.0 to 101.0)
Time Series Observation
No Parallel Attachments

Sequence Observations 21, 22, 23, Non-interruptible

Observation

Proposal 2965, Observation 21: MIRI background observations - repeat of observation 12

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observation For: [Repeat of Observationi 11 (Obs 22)]

Diagnostics

(Visit 21:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	WISE1049AB_BKG	RA: 10 49 17.6557 (162.3235654d)	Proper Motion RA: -2768.511 mas/yr	
		Dec: -53 19 19.88 (-53.32219d)	Proper Motion Dec: 358.472 mas/yr	
		Equinox: J2000	Parallax: 0.500993"	
			Epoch of Position: 2000.0	

Comments: Background field offset from WISE 1049AB by -10" in RA and -10" in DEC. Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024 for WISE 1049AB.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Subarray	Obtain Verification Image?
F560W	SLITLESSPRISM	true

Dithers

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

Pointing Verification

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	0.795		F560W

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	80	10	10	1	1	128.663	133044

Special Requirements

Between Dates 01-MAY-2026:00:00:00 and 01-JUN-2026:00:00:00
Aperture PA Range 49.83544897 to 105.83544897 Degrees (V3 45.0 to 101.0)
Time Series Observation
No Parallel Attachments

Sequence Observations 21, 22, 23, Non-interruptible

Observation

Proposal 2965, Observation 23: Repeat of Observation 13

Wed Apr 01 16:00:22 GMT 2026

Diagnostic Status: Warning

Observing Template: NIRSpec Bright Object Time Series

Diagnostics

(Repeat of Observation 13 (Obs 23)) 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 23:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	WISE1049AB_Bedin+2024_NIRSpec	RA: 10 49 18.7710 (162.3282125d) Dec: -53 19 9.88 (-53.31941d) Equinox: J2000	Proper Motion RA: -2768.511 mas/yr Proper Motion Dec: 358.472 mas/yr Parallax: 0.500993" Epoch of Position: 2000.0	

Comments: Barycentre RA and DEC (epoch 2000) and proper motions taken from Bedin et al. 2024.
Category=Star
Description=[Brown dwarfs]
Extended=NO

Acquisition

#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	WATA	SUB32	F110W	NRSRAPID	3	1	1	0.08	133044

Template

Subarray
SUB512S

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
1	PRISM/CLEAR	NRSRAPID	2	57100	1	1	57100	25822.904	133044

Special Requirements

Between Dates 01-MAY-2026:00:00:00 and 01-JUN-2026:00:00:00
Aperture PA Range 183.85295105 to 239.85295105 Degrees (V3 45.0 to 101.0)
Time Series Observation
No Parallel Attachments

Sequence Observations 21, 22, 23, Non-interruptible