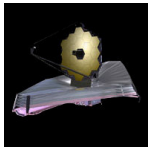

1241 - MIRI Coronagraphic Imaging of exoplanets

Cycle: 1, Proposal Category: GTO

INVESTIGATORS

Name	*Institution*
Dr. Michael E. Ressler (PI)	**Jet Propulsion Laboratory**
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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
51 Eri folder				
	1	51 Eri Bckgr - F1550C	MIRI Coronagraphic Imaging	(9) 51-ERI-BCKG
	2	51 Eri Bckgr - F1140C	MIRI Coronagraphic Imaging	(9) 51-ERI-BCKG
	3	51 Eri Bckgr- F1065C	MIRI Coronagraphic Imaging	(9) 51-ERI-BCKG
	4	51 Eri - F1550C	MIRI Coronagraphic Imaging	(1) 51-ERI
	5	51 Eri - F1140C	MIRI Coronagraphic Imaging	(1) 51-ERI
	6	51 Eri - F1065C	MIRI Coronagraphic Imaging	(1) 51-ERI
	7	Ref 51 Eri - F1065C	MIRI Coronagraphic Imaging	(2) REF-51-ERI--TYC-4739-392-1
	8	Ref 51 Eri - F1140C	MIRI Coronagraphic Imaging	(2) REF-51-ERI--TYC-4739-392-1
	9	Ref 51 Eri - F1550C	MIRI Coronagraphic Imaging	(2) REF-51-ERI--TYC-4739-392-1
	10	Ref 51 Eri Bckgr - F1065C	MIRI Coronagraphic Imaging	(10) REF-51-ERI--BCKGR
	11	Ref 51 Eri Bckgr - F1140C	MIRI Coronagraphic Imaging	(10) REF-51-ERI--BCKGR
	12	Ref 51 Eri Bckgr - F1550C	MIRI Coronagraphic Imaging	(10) REF-51-ERI--BCKGR
kappa And folder				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	13	kappa And Bckgr - F1550C	MIRI Coronagraphic Imaging	(11) KAPPA-AND-BCKG
	14	kappa And Bckgr- F1140C	MIRI Coronagraphic Imaging	(11) KAPPA-AND-BCKG
	15	kappa And Bckgr- F1065C	MIRI Coronagraphic Imaging	(11) KAPPA-AND-BCKG
	16	kappa And - F1550C	MIRI Coronagraphic Imaging	(3) KAPPA-AND
	17	kappa And - F1140C	MIRI Coronagraphic Imaging	(3) KAPPA-AND
	18	kappa And - F1065C	MIRI Coronagraphic Imaging	(3) KAPPA-AND
	19	Ref kappa And - F1065C	MIRI Coronagraphic Imaging	(4) REF-KAPPA-AND--HD-222389
	20	Ref kappa And - F1140C	MIRI Coronagraphic Imaging	(4) REF-KAPPA-AND--HD-222389
	21	Ref kappa And - F1550C	MIRI Coronagraphic Imaging	(4) REF-KAPPA-AND--HD-222389
	22	Ref kappa And Bckgr - F1065C	MIRI Coronagraphic Imaging	(12) REF-KAPPA-AND--BCKGR
	23	Ref kappa And Bckgr - F1140C	MIRI Coronagraphic Imaging	(12) REF-KAPPA-AND--BCKGR
	24	Ref kappa And Bckgr - F1550C	MIRI Coronagraphic Imaging	(12) REF-KAPPA-AND--BCKGR
beta Pic Folder				
	25	beta Pic Bckgr - F1140C	MIRI Coronagraphic Imaging	(13) BETA-PIC-BCKGR
	26	beta Pic Bckgr - F1065C	MIRI Coronagraphic Imaging	(13) BETA-PIC-BCKGR
	27	beta Pic - F1140C	MIRI Coronagraphic Imaging	(5) BETA-PIC
	28	beta Pic - F1065C	MIRI Coronagraphic Imaging	(5) BETA-PIC
	29	Ref beta Pic - F1065C	MIRI Coronagraphic Imaging	(17) REF2-BETA-PIC--CD-45-2093
	30	Ref beta Pic - F1140C	MIRI Coronagraphic Imaging	(17) REF2-BETA-PIC--CD-45-2093
	31	Ref beta Pic Bckgr - F1065C	MIRI Coronagraphic Imaging	(18) REF2-BETA-PIC--BCKGR
	32	Ref beta Pic Bckgr- F1140C	MIRI Coronagraphic Imaging	(18) REF2-BETA-PIC--BCKGR
HR 2562 Folder				

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
	33	HR 2562 Bckgr - F1550C	MIRI Coronagraphic Imaging	(15) HR-2562-BKGRD
	34	HR 2562 Bckgr - F1140C	MIRI Coronagraphic Imaging	(15) HR-2562-BKGRD
	35	HR 2562 Bckgr - F1065C	MIRI Coronagraphic Imaging	(15) HR-2562-BKGRD
	36	HR 2562 - F1550C	MIRI Coronagraphic Imaging	(7) HR-2562
	37	HR 2562 - F1140C	MIRI Coronagraphic Imaging	(7) HR-2562
	38	HR 2562 - F1065C	MIRI Coronagraphic Imaging	(7) HR-2562
	39	Ref HR 2562 - F1065C	MIRI Coronagraphic Imaging	(8) REF-HR-2562--HD-49518
	40	Ref HR 2562 - F1140C	MIRI Coronagraphic Imaging	(8) REF-HR-2562--HD-49518
	41	Ref HR 2562 - F1550C	MIRI Coronagraphic Imaging	(8) REF-HR-2562--HD-49518
	42	Ref HR 2562 Bckgr - F1065C	MIRI Coronagraphic Imaging	(16) REF-HR-2562--BCKGR
	43	Ref HR 2562 Bckgr - F1140C	MIRI Coronagraphic Imaging	(16) REF-HR-2562--BCKGR
	44	Ref HR 2562 Bckgr - F1550C	MIRI Coronagraphic Imaging	(16) REF-HR-2562--BCKGR

ABSTRACT

Characterization of 51 Eridani b, beta Pic b, kappa Anromeda b, and HR 2562 B with MIRI coronagraphy in the F1065C, F1140C, and/or F1550C filters.

The observations have constraints on the telescope orientation to ensure the observability of the planets between the coronagraph quadrant's attenuation zones.

The program also includes observations of reference stars, with 9-point grid dither, to enable PSF subtraction in the science data.

OBSERVING DESCRIPTION

We will perform MIRI coronagraphic observations of 4 science targets (51 Eri, beta Pic, kappa And, HR 2562) aiming at detecting and characterizing planetary-mass companions in the mid-IR.

We will perform acquisitions with two or three 4QPM: F1065C, F1140C, and/or F1550C, to quantify the presence of amonia in their atmospheres

(F1065C and F1140C, on and off the amonia feature), and to characterize their continuum and constrain their physical properties (F1140C and F1550C).
For each target, we also observe a reference star with the same filters, in order to subtract the star-light during post-processing.

4.6h HR2562
2.5h beta pic
3.5h kappa and
8.3h 51 Eri

OBSERVATION LINKAGE:
To minimize PSF variations between the science and the reference acquisition, we want to observe them as close as possible in time in the same configuration. However, given that we are observing the same targets in three different filters, and since the slew overheads are non-negligible, we set links such that we first observe the science target in all three filter, then slew to the reference star for observations in the same three filters, all six observations as part of an uninterruptible sequence. This is the best compromise in terms of PSF stability between the science and reference observations, and overheads.

ORIENTATION CONSTRAINTS:
As our targets are mostly short-separation planets, we cannot efficiently use the roll-differential imaging strategy (dominating over-subtraction effect). Furthermore, with a 10-20deg roll angle, a short separation planet would be significantly attenuated by the 4QPM quadrant's edge. We will thus only use a single telescope orientation per science target in our program. PSF subtraction will be performed using the reference star.

To ensure the observability of our planet companions between the 4QPM masks quadrant edges (which strongly attenuate the signal at their location), we will use Aperture PA range requirements to orient the companion at 45deg from the 4QPM edges. We used the JWST Cornagraph Visibility Tool to identify the appropriate quadrant given the target's visibility period, and to obtain the optimal Aperture PA constraints, +/-5D. This Aperture PA constraint is set to the first observation of the sequence on the science target (with mask F1065C), then set "Same Aperture PA" constraints on the two other science observations (F1140C and F1550C).

We did not set any orientation constraint on the reference star, but the goal (with the non-interruptible sequence) is to have minimal telescope variations between these and the science observations.

REFERENCE STAR OBSERVATION:
The main criterion for the reference star selection was its proximity with the science target (within 2D). In the mid-IR and within the short bandpasses of the MIRI filters, we expect chromatic artifact from color mismatch between the science and the reference stars in PSF subtraction to be negligible. To optimize our contrast limits at short separations, we use the 9-point grid dither patern strategy for the reference star. To minimize observing time, we selected reference stars brighter (x5 to x20) than their corresponding science target.

EXPOSURE TIMES:
Target Acq exposure times were computed using the JWST ETC, to give SNR of 40 on the science target. For the brighter reference stars, the minimum exposure time (Ngroup=3) gave SNR greater than 100.

The integration time for the coronagraphic observations were set not to saturate (through Ngroup). We computed these time from our own MIRI simulator version, at 65% from full-well capacity (developed by the MIRI team in France, contact A. Boccaletti), and crossed-check them with the JWST ETC (both are roughly consistant). For the science target, we then choose a number of integration to be 3 times above the 5-sigma photon noise level for the planet, using our MIRI simulator, including PSF subtraction. For the reference star, we use the same number of integration (per dither position) as the science target, to have comparable (or less) noise level in the images used for PSF subtraction.

NOTE ON THE CALIBRATION FILES:
To process our data and calibrate the contrast or photometry of the planets, we will need:
- sky background subtraction
- accurate and precise conversion factors from counts to physical units OR accurate conversion factors from the target-acq Neutral Density photometry and the coronagraphic filters.
We assume that these calibrations will be performed by the instrument team and provided along our observations, as the current templates does not allow us to perform these calibrations.

** JANUARY 2023 UPDATES **
- Background frames added to allow subtraction of the glowstick.
- Orient constraints updated to the latest estimation of planet astrometry given the scheduling window (minor updates).

- All exposures with NINT=1 are split in 3 (NINT=3, NGROUP/3) knowing that all the first integetions with MIRI are poor quality (feedback from ERS program).
- Replacing the reference star for beta Pic by another reference star: Gaia gave indications of a binary star, not good reference star.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	51-ERI	RA: 04 37 36.1782 (69.4007425d) Dec: -02 28 25.77 (-2.47382d) Equinox: J2000	Proper Motion RA: 0.0029595581757034524 sec of time/yr Proper Motion Dec: -0.06383299996741698 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *** Updated to the planet expected astrometry for September 2021 **** *Ref orbital elements: Maire et al. 2018.* *51 Eri b, Sept. 20th 2021: sep = 438mas PA = 138deg.* *Category=Star* *Description=[Exoplanets, F stars]* *Extended=NO*				
(2)	REF-51-ERI--TYC-4739-392-1	RA: 04 44 57.8054 (71.2408558d) Dec: -02 37 6.96 (-2.61860d) Equinox: J2000	Proper Motion RA: -1.478877591131566E-4 sec of time/yr Proper Motion Dec: -0.010700999996515748 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *TYC 4739-392-1 (M8 star) is the reference star for 51 Eri.* *TYC 4739-392-1 is 1.85deg away from 51 Eri.* *TYC 4739-392-1 is 17.08 times brighter than 51 Eri in WISE-W3 (12microns) (Cutri et al. 2013).* *Category=Star* *Description=[M stars]* *Extended=NO*				
(3)	KAPPA-AND	RA: 23 40 24.6243 (355.1026013d) Dec: +44 20 1.87 (44.33385d) Equinox: J2000	Proper Motion RA: 0.007524326490795721 sec of time/yr Proper Motion Dec: -0.01869999998689309 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Kappa And's companion b is at r = 1.029'' PA = 55.3deg (Bonnefoy et al. 2014).* *Observations with a single roll, using the reference star HD 222389 (5.74x brighter in W3).* *Category=Star* *Description=[A stars, Exoplanets]* *Extended=NO*				
(4)	REF-KAPPA-AND--HD-222389	RA: 23 39 51.0752 (354.9628133d) Dec: +45 26 36.79 (45.44355d) Equinox: J2000	Proper Motion RA: -8.574544365997929E-4 sec of time/yr Proper Motion Dec: -0.01901599998745951 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Reference star for kappa And.* *Angular distance: 1.12deg* *HD 222389 is 5.74 times brighter than kappa And in WISE-W3 (12microns) (Cutri et al. 2013).* *Category=Star* *Description=[K stars]* *Extended=NO*				

(5)	BETA-PIC	RA: 05 47 17.0953 (86.8212304d) Dec: -51 03 58.15 (-51.06615d) Equinox: J2000	Proper Motion RA: 4.932985550191305E-4 sec of time/yr Proper Motion Dec: 0.0831 arcsec/yr Epoch of Position: 2015.5

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: A6V
Teff=8052K, R=1.732Rs: Hoeijmakers et al. 2018, Kervella et al. 2003
Distance: 19.75pc (Gaia)
W3 = 2.597 (12microns), Cutri+2013.

*** Updated to the planet expected astrometry for March 2022 ***
Ref orbital elements: Lagrange et al. 2019, Wang et al. 2016.
beta Pic b, March 7th 2022: sep = 479mas PA = 31deg.

Observations with a single roll, using the reference star HD 39523
Category=Star
Description=[A stars, Debris disks, Exoplanets]
Extended=YES

(6)	REF-BETA-PIC--HD-39523	RA: 05 49 49.8124 (87.4575517d) Dec: -56 10 1.08 (-56.16697d) Equinox: J2000	Proper Motion RA: 0.00971428402418014 sec of time/yr Proper Motion Dec: -0.07112000005236041 arcsec/yr Epoch of Position: 2015.5

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: K1III.
Teff = 4667K, R=11.2Rs =1mas Gallenne et al. 2018
Distance: 54.2 pc (Gaia)
W3 = 2.046 (12microns), Cutri+2013.

Reference star for beta Pic:
Angular distance: 5.1deg.
Flux ratio: 1.661 (delta W3=0.551), brighter than beta Pic.
NOT USED! HINT OF BINARY FROM GAIA (ruwe=1.7)
Category=Star
Description=[K giants]
Extended=NO

(7)	HR-2562	RA: 06 50 1.0252 (102.5042717d) Dec: -60 14 55.24 (-60.24868d) Equinox: J2000	Proper Motion RA: 6.264485582242471E-4 sec of time/yr Proper Motion Dec: 0.108377 arcsec/yr Epoch of Position: 2015.5

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

(8)	REF-HR-2562--HD-49518	RA: 06 44 44.1923 (101.1841346d) Dec: -61 13 27.14 (-61.22421d) Equinox: J2000	Proper Motion RA: -0.001360384706570025 sec of time/yr Proper Motion Dec: 0.0063490000000000005 arcsec/yr Epoch of Position: 2015.5

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
1.6deg away
Category=Star
Description=[K giants]
Extended=NO

(9)	51-ERI-BCKG	RA: 04 36 40.6600 (69.1694167d) Dec: -02 28 19.70 (-2.47214d) Equinox: J2000

Comments: Backgrounf for 51 Eri
Distance: 13.7arcsec away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(10)	REF-51-ERI--BCKGR	RA: 04 45 16.6800 (71.3195000d) Dec: -02 35 49.30 (-2.59703d) Equinox: J2000

Comments: Background for TYC 4739-392-1
Distance of 7'
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(11)	KAPPA-AND-BCKG	RA: 23 39 33.4900 (354.8895417d) Dec: +44 21 13.90 (44.35386d) Equinox: J2000

Comments: Background for Kappa And
9' distance from Kappa And
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(12)	REF-KAPPA-AND--BCKGR	RA: 23 38 58.9500 (354.7456250d) Dec: +45 25 30.70 (45.42519d) Equinox: J2000

Comments: Background target for Ref Kappa And
Distance 9.2' from star
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(13)	BETA-PIC-BCKGR	RA: 05 46 24.5400 (86.6022500d) Dec: -51 07 8.00 (-51.11889d) Equinox: J2000

Comments: Background star for beta Pic.
Distance 10' from beta pic.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(14)	REF-BETA-PIC--BCKGR	RA: 05 48 57.0000 (87.2375000d) Dec: -56 12 51.00 (-56.21417d) Equinox: J2000

Comments: Backgrounf for beta pic ref.
Distance 7.9' away.
NOT USED! HINT OF BINARY FROM GAIA (ruwe=1.7)
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(15)	HR-2562-BKGRD	RA: 06 49 12.9300 (102.3038750d) Dec: -60 18 2.12 (-60.30059d) Equinox: J2000	

Comments: Background for HR 2562.
Distance 7.3' away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(16)	REF-HR-2562--BCKGR	RA: 06 43 46.0000 (100.9416667d) Dec: -61 13 55.00 (-61.23194d) Equinox: J2000	

Comments: Background for HR 2562 Ref
Distance 6.9' away
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

(17)	REF2-BETA-PIC--CD-45-2093	RA: 05 38 32.4164 (84.6350683d) Dec: -45 47 47.61 (-45.79656d) Equinox: J2000	Proper Motion RA: -1.724018862406519E-4 sec of time/yr Proper Motion Dec: 0.011257999999999999 arcsec/yr Epoch of Position: 2015.5

Comments: New reference star for beta pic, because the previous one has Gaia indications of being a binary.
This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: unknown, but red (pic SED at 2microns)
Distance: 820 pc (Gaia)
W3 = 1.621 (12microns), Cutri+2013.

New Reference star for beta Pic:
Angular distance: 5.7deg.
Flux ratio: 2.457 (delta W3=0.976), brighter than beta Pic.
Category=Calibration
Description=[Coronagraphic, Point spread function]
Extended=NO

(18)	REF2-BETA-PIC--BCKGR	RA: 05 37 34.7400 (84.3947500d) Dec: -45 51 23.90 (-45.85664d) Equinox: J2000	

Comments: Background for beta Pic Ref2
Distance: 10.3' away
Category=Calibration
Description=[Coronagraphic, Point spread function, Telescope/sky background]
Extended=NO

Observation

Proposal 1241, Observation 1: 51 Eri Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [51 Eri - F1550C (Obs 4), 51 Eri - F1140C (Obs 5), 51 Eri - F1065C (Obs 6)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

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

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	51-ERI-BCKG	RA: 04 36 40.6600 (69.1694167d) Dec: -02 28 19.70 (-2.47214d) Equinox: J2000		

Comments: Backgrounf for 51 Eri
Distance: 13.7arcsec away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	15	1	2	30	8994.711	89700.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 2: 51 Eri Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [51 Eri - F1550C (Obs 4), 51 Eri - F1140C (Obs 5), 51 Eri - F1065C (Obs 6)]

Comments: Background acquisition.
Duplicate of the Science exposures.

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
(9)	51-ERI-BCKG	RA: 04 36 40.6600 (69.1694167d) Dec: -02 28 19.70 (-2.47214d) Equinox: J2000		

Comments: Backgrounf for 51 Eri
Distance: 13.7arcsec away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	1099	10	1	2	20	5272.481	89700.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 3: 51 Eri Bckgr- F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [51 Eri - F1550C (Obs 4), 51 Eri - F1140C (Obs 5), 51 Eri - F1065C (Obs 6)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(9)	51-ERI-BCKG	RA: 04 36 40.6600 (69.1694167d) Dec: -02 28 19.70 (-2.47214d) Equinox: J2000		

Comments: Backgrounf for 51 Eri
Distance: 13.7arcsec away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	810	27	1	2	54	10496.067	89700.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 4: 51 Eri - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[51 Eri Bckgr - F1550C (Obs 1), 51 Eri Bckgr - F1140C (Obs 2), 51 Eri Bckgr- F1065C (Obs 3), 51 Eri - F1140C (Obs 5), 51 Eri - F1065C (Obs 6)]

Comments: TARGET ACQ:
JWST ETC fives SNR=140 for Ngroup=6 (5% FW capacity), using the neutral density, with a F0V spectrum normalize to 524.93mJy at 10.65µm (pySynphot estimation from phoenix model)

Coronagraphic observation:
Planet b: SNR = 9 with ETC (classical PSF subtraction) for Texp = 500s.
Planet b: SNR = 3 with mirimsim (9PGD+PCA).
Saturation for Ngroup = 6711. Chosing 70% FWC to avoid saturation.
--> Ngroup = 4698
--> Nint = 4 (floor around 5000s)

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 1 to keep the planet at the same position in all three filters.

Diagnostics

(51 Eri - F1550C (Obs 4)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

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

(51 Eri - F1550C (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	51-ERI	RA: 04 37 36.1782 (69.4007425d) Dec: -02 28 25.77 (-2.47382d) Equinox: J2000	Proper Motion RA: 0.0029595581757034524 sec of time/yr Proper Motion Dec: -0.06383299996741698 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

*** Updated to the planet expected astrometry for September 2021 ***
Ref orbital elements: Maire et al. 2018.
51 Eri b, Sept. 20th 2021: sep = 438mas PA = 138deg.
Category=Star
Description=[Exoplanets, F stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.3

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	15	1	1	15	4497.356	89700.9

PSF References

Ref 51 Eri - F1550C (Obs 9) (PSF Reference; Filters [F1550C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible
Same Aperture PA 4, 5, 6

Observation

Proposal 1241, Observation 5: 51 Eri - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[51 Eri Bckgr - F1550C (Obs 1), 51 Eri Bckgr - F1140C (Obs 2), 51 Eri Bckgr- F1065C (Obs 3), 51 Eri - F1550C (Obs 4), 51 Eri - F1065C (Obs 6)]

Comments: TARGET ACQ:
JWST ETC fives SNR=140 for Ngroup=6 (5% FW capacity), using the neutral density, with a F0V spectrum normalize to 524.93mJy at 10.65µm (pySynphot estimation from phoenix model)

Coronagraphic observation:
Planet b: SNR = 29 with ETC (classical PSF subtraction) for Texp = 2636s.
Planet b: SNR = 7 with mirimsim (9PGD+PCA).
Saturation for Ngroup = 1570. Chosing 70% FWC to avoid saturation.
--> Ngroup = 1099
--> Nint = 10

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 1 to keep the planet at the same position in all three filters.

Diagnostics

(51 Eri - F1140C (Obs 5)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

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

(51 Eri - F1140C (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	51-ERI	RA: 04 37 36.1782 (69.4007425d) Dec: -02 28 25.77 (-2.47382d) Equinox: J2000	Proper Motion RA: 0.0029595581757034524 sec of time/yr Proper Motion Dec: -0.06383299996741698 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

*** Updated to the planet expected astrometry for September 2021 ***
Ref orbital elements: Maire et al. 2018.
51 Eri b, Sept. 20th 2021: sep = 438mas PA = 138deg.
Category=Star
Description=[Exoplanets, F stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.2

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	1099	10	1	1	10	2636.24	89700.8

PSF References

Ref 51 Eri - F1140C (Obs 8) (PSF Reference; Filters [F1140C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible
Same Aperture PA 4, 5, 6

Observation

Proposal 1241, Observation 6: 51 Eri - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[51 Eri Bckgr - F1550C (Obs 1), 51 Eri Bckgr - F1140C (Obs 2), 51 Eri Bckgr- F1065C (Obs 3), 51 Eri - F1550C (Obs 4), 51 Eri - F1140C (Obs 5)]

Comments: TARGET ACQ:
JWST ETC fives SNR=140 for Ngroup=6 (5% FW capacity), using the neutral density, with a F0V spectrum normalize to 524.93mJy at 10.65µm (pySynphot estimation from phoenix model)

Coronagraphic observation:
Planet b: SNR = 19 with ETC (classical PSF subtraction) for Texp = 5054s
Planet b: SNR = 6 with mirimsim (9PGD+PCA).
Saturation for Ngroup = 1157. Chosing 70% FWC to avoid saturation.
--> Ngroup = 810
--> Nint = 26

ORIENT CONSTRAINTS:
Planet position angle predicted at 117º in Feb. 2023 (Whereistheplanet.org).
To position it at 45 from the 4QMP cross and maximize the throughput, we set an absolute Aperture PA constraint:
Aperture PA = 76.8º (quadrant 2) or 256.2 (quadrant 4) +/- 5D

Diagnostics

(51 Eri - F1065C (Obs 6)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

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

(51 Eri - F1065C (Obs 6)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	51-ERI	RA: 04 37 36.1782 (69.4007425d) Dec: -02 28 25.77 (-2.47382d) Equinox: J2000	Proper Motion RA: 0.0029595581757034524 sec of time/yr Proper Motion Dec: -0.06383299996741698 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

*** Updated to the planet expected astrometry for September 2021 ***
Ref orbital elements: Maire et al. 2018.
51 Eri b, Sept. 20th 2021: sep = 438mas PA = 138deg.
Category=Star
Description=[Exoplanets, F stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.1

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	810	27	1	1	27	5248.033	89700.7

PSF References

Ref 51 Eri - F1065C (Obs 7) (PSF Reference; Filters [F1065C])

Additional Justification: false

Special Requirements

Aperture PA Range 71.8 to 81.8 Degrees (V3 66.96455103 to 76.96455103)
Aperture PA Range 251.2 to 261.2 Degrees (V3 246.36455103 to 256.36455103)
No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible
Same Aperture PA 4, 5, 6

Observation

Proposal 1241, Observation 7: Ref 51 Eri - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref 51 Eri - F1140C (Obs 8), Ref 51 Eri - F1550C (Obs 9), Ref 51 Eri Bckgr - F1065C (Obs 10), Ref 51 Eri Bckgr - F1140C (Obs 11), Ref 51 Eri Bckgr - F1550C (Obs 12)]

Comments: Reference star is 17.1 times brighter than 51 Eri, using WISE W3 magnitudes.
Reference star is 9.4 times brighter than 51 Eri, using synphot spectra.
Here we chose 17.1 to ensure no saturation and limit the time spent on the reference star. Mirimsim simulations show that the pdetection of the planet is not degraded.

TARGET ACQ:
JWST ETC fives SNR=758 for Ngroup=6 (77% FW capacity), using the neutral density, with a M5V spectrum normalized to 8966mJy at 10.65µm (scaled from 51 Eri flux)

Coronagraphic observation:
Using at least 1/17 times the total exposure time on 51 Eri to obtain the same photon noise level: Texp = 297s/dither (1675s total)
Saturation for Ngroup = 69. Chosing 70% FWC to avoid saturation (1/16.8x SCI).
--> Ngroup = 48
--> Nint = 26

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the 51 Eri observations.

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)	REF-51-ERI--TYC-4739-392-1	RA: 04 44 57.8054 (71.2408558d) Dec: -02 37 6.96 (-2.61860d) Equinox: J2000	Proper Motion RA: -1.478877591131566E-4 sec of time/yr Proper Motion Dec: -0.010700999996515748 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

TYC 4739-392-1 (M8 star) is the reference star for 51 Eri.
TYC 4739-392-1 is 1.85deg away from 51 Eri.
TYC 4739-392-1 is 17.08 times brighter than 51 Eri in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[M stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.4

Template

Repeat observation
NO

Dithers

#	Dither Type
1	9-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	48	27	1	9	243	2851.713	89700.7

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 8: Ref 51 Eri - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref 51 Eri - F1065C (Obs 7), Ref 51 Eri - F1550C (Obs 9), Ref 51 Eri Bckgr - F1065C (Obs 10), Ref 51 Eri Bckgr - F1140C (Obs 11), Ref 51 Eri Bckgr - F1550C (Obs 12)]

Comments: Reference star is 17.1 times brighter than 51 Eri, using WISE W3 magnitudes.
Reference star is 9.4 times brighter than 51 Eri, using synphot spectra.
Here we chose 17.1 to ensure no saturation and limit the time spent on the reference star. Mirimsim simulations show that the pdetection of the planet is not degraded.

TARGET ACQ:
JWST ETC fives SNR=760 for Ngroup=6 (78% FW capacity), using the neutral density, with a M5V spectrum normalized to 8966mJy at 10.65µm (scaled from 51 Eri flux)

Coronagraphic observation:
Using at least 1/17 times the total exposure time on 51 Eri to obtain the same photon noise level: Texp = 155s/dither (1396s total)
Saturation for Ngroup = 95. Chosing 70% FWC to avoid saturation (1/16.5x SCI).
--> Ngroup = 67
--> Nint = 10

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the 51 Eri observations.

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)	REF-51-ERI--TYC-4739-392-1	RA: 04 44 57.8054 (71.2408558d) Dec: -02 37 6.96 (-2.61860d) Equinox: J2000	Proper Motion RA: -1.478877591131566E-4 sec of time/yr Proper Motion Dec: -0.010700999996515748 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

TYC 4739-392-1 (M8 star) is the reference star for 51 Eri.
TYC 4739-392-1 is 1.85deg away from 51 Eri.
TYC 4739-392-1 is 17.08 times brighter than 51 Eri in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[M stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.5

Template

Repeat observation
NO

Dithers

#	Dither Type
1	9-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	67	10	1	9	90	1464.684	89700.8

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 9: Ref 51 Eri - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref 51 Eri - F1065C (Obs 7), Ref 51 Eri - F1140C (Obs 8), Ref 51 Eri Bckgr - F1065C (Obs 10), Ref 51 Eri Bckgr - F1140C (Obs 11), Ref 51 Eri Bckgr - F1550C (Obs 12)]

Comments: Reference star is 17.1 times brighter than 51 Eri, using WISE W3 magnitudes.
Reference star is 9.4 times brighter than 51 Eri, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=763 for Ngroup=6 (79% FW capacity), using the neutral density, with a M5V spectrum normalized to 8966mJy at 10.65μm (scaled from 51 Eri flux)

Coronagraphic observation:
Using at least 1/9.4 times the total exposure time on 51 Eri to obtain the same photon noise level: Texp = 600s/dither (5391s total)
Saturation for Ngroup = 656. Chosing 70% FWC to avoid saturation and to minimize read noise (1/10.2x SCI).
--> Ngroup = 459
--> Nint = 4

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the 51 Eri observations.

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
(2)	REF-51-ERI--TYC-4739-392-1	RA: 04 44 57.8054 (71.2408558d) Dec: -02 37 6.96 (-2.61860d) Equinox: J2000	Proper Motion RA: -1.478877591131566E-4 sec of time/yr Proper Motion Dec: -0.010700999996515748 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

TYC 4739-392-1 (M8 star) is the reference star for 51 Eri.
TYC 4739-392-1 is 1.85deg away from 51 Eri.
TYC 4739-392-1 is 17.08 times brighter than 51 Eri in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[M stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143099.6

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	459	4	1	5	20	2203.858	89700.9

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 10: Ref 51 Eri Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref 51 Eri - F1065C (Obs 7), Ref 51 Eri - F1140C (Obs 8), Ref 51 Eri - F1550C (Obs 9)]

Comments: Background acquisition.
Duplicate of the Science exposures.

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
(10)	REF-51-ERI--BCKGR	RA: 04 45 16.6800 (71.3195000d) Dec: -02 35 49.30 (-2.59703d) Equinox: J2000		

Comments: Background for TYC 4739-392-1
Distance of 7'
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	48	27	1	2	54	633.714	89700.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 11: Ref 51 Eri Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref 51 Eri - F1065C (Obs 7), Ref 51 Eri - F1140C (Obs 8), Ref 51 Eri - F1550C (Obs 9)]

Comments: Background acquisition.
Duplicate of the Science exposures.

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
(10)	REF-51-ERI--BCKGR	RA: 04 45 16.6800 (71.3195000d) Dec: -02 35 49.30 (-2.59703d) Equinox: J2000		

Comments: Background for TYC 4739-392-1
Distance of 7'
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	67	10	1	2	20	325.485	89700.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 12: Ref 51 Eri Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref 51 Eri - F1065C (Obs 7), Ref 51 Eri - F1140C (Obs 8), Ref 51 Eri - F1550C (Obs 9)]

Comments: Background acquisition.
Duplicate of the Science exposures.

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
(10)	REF-51-ERI--BCKGR	RA: 04 45 16.6800 (71.3195000d) Dec: -02 35 49.30 (-2.59703d) Equinox: J2000		

Comments: Background for TYC 4739-392-1
Distance of 7'
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	459	4	1	2	8	881.543	89700.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, Non-interruptible

Observation

Proposal 1241, Observation 13: kappa And Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [kappa And - F1550C (Obs 16), kappa And - F1140C (Obs 17), kappa And - F1065C (Obs 18)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(11)	KAPPA-AND-BCKG	RA: 23 39 33.4900 (354.8895417d) Dec: +44 21 13.90 (44.35386d) Equinox: J2000		

Comments: Background for Kappa And
9' distance from Kappa And
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	3	1	2	6	1798.559	89874.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 14: kappa And Bckgr- F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [kappa And - F1550C (Obs 16), kappa And - F1140C (Obs 17), kappa And - F1065C (Obs 18)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(11)	KAPPA-AND-BCKG	RA: 23 39 33.4900 (354.8895417d) Dec: +44 21 13.90 (44.35386d) Equinox: J2000		

Comments: Background for Kappa And
9' distance from Kappa And
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	28	3	1	2	6	41.225	89874.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 15: kappa And Bckgr- F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [kappa And - F1550C (Obs 16), kappa And - F1140C (Obs 17), kappa And - F1065C (Obs 18)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 15:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(11)	KAPPA-AND-BCKG	RA: 23 39 33.4900 (354.8895417d) Dec: +44 21 13.90 (44.35386d) Equinox: J2000		

Comments: Background for Kappa And
9' distance from Kappa And
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	28	3	1	2	6	41.225	89874.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 16: kappa And - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[kappa And Bckgr - F1550C (Obs 13), kappa And Bckgr- F1140C (Obs 14), kappa And Bckgr- F1065C (Obs 15), kappa And - F1140C (Obs 17), kappa And - F1065C (Obs 18)]

Comments: TARGET ACQ:
JWST ETC fives SNR=165 for Ngroup=6 (6% FW capacity), using the neutral density,
Using a B8V spectrum normalize to 653.49mJy at 10.65µm (pySynphot estimation from phoenix model normalized to the H magnitud)

Coronagraphic observation:
Planet b: SNR = 17 with ETC (classical PSF subtraction) for Texp = 800s
Planet b: SNR= 15 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 5783
--> Ngroup = 3334 (58% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 11 to keep the planet at the same position in all three filters.

Diagnostics

(kappa And - F1550C (Obs 16)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(kappa And - F1550C (Obs 16)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	KAPPA-AND	RA: 23 40 24.6243 (355.1026013d) Dec: +44 20 1.87 (44.33385d) Equinox: J2000	Proper Motion RA: 0.007524326490795721 sec of time/yr Proper Motion Dec: -0.01869999998689309 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Kappa And's companion b is at r = 1.029'' PA = 55.3deg (Bonnefoy et al. 2014).
Observations with a single roll, using the reference star HD 222389 (5.74x brighter in W3).
Category=Star
Description=[A stars, Exoplanets]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.3

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	3	1	1	3	899.279	89874.9

PSF References

Ref kappa And - F1550C (Obs 21) (PSF Reference; Filters [F1550C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible
Same Aperture PA 16, 17, 18

Observation

Proposal 1241, Observation 17: kappa And - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[kappa And Bckgr - F1550C (Obs 13), kappa And Bckgr- F1140C (Obs 14), kappa And Bckgr- F1065C (Obs 15), kappa And - F1550C (Obs 16), kappa And - F1065C (Obs 18)]

Comments: TARGET ACQ:
JWST ETC fives SNR=164 for Ngroup=6 (6% FW capacity), using the neutral density,
Using a B8V spectrum normalize to 653.49mJy at 10.65µm (pySynphot estimation from phoenix model normalized to the H magnitud)

Coronagraphic observation:
Planet b: SNR = 9 with ETC (classical PSF subtraction) for Texp = 20s
Planet b: SNR= 24 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 1271
--> Ngroup = 84 (7% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 11 to keep the planet at the same position in all three filters.

Diagnostics

(kappa And - F1140C (Obs 17)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 17:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(kappa And - F1140C (Obs 17)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	KAPPA-AND	RA: 23 40 24.6243 (355.1026013d) Dec: +44 20 1.87 (44.33385d) Equinox: J2000	Proper Motion RA: 0.007524326490795721 sec of time/yr Proper Motion Dec: -0.01869999998689309 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Kappa And's companion b is at r = 1.029'' PA = 55.3deg (Bonnefoy et al. 2014).
Observations with a single roll, using the reference star HD 222389 (5.74x brighter in W3).
Category=Star
Description=[A stars, Exoplanets]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.2

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	28	3	1	1	3	20.612	89874.8

PSF References

Ref kappa And - F1140C (Obs 20) (PSF Reference; Filters [F1140C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible
Same Aperture PA 16, 17, 18

Observation

Proposal 1241, Observation 18: kappa And - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[kappa And Bckgr - F1550C (Obs 13), kappa And Bckgr- F1140C (Obs 14), kappa And Bckgr- F1065C (Obs 15), kappa And - F1550C (Obs 16), kappa And - F1140C (Obs 17)]

Comments: TARGET ACQ:
JWST ETC fives SNR=163 for Ngroup=6 (6% FW capacity), using the neutral density,
Using a B8V spectrum normalize to 653.49mJy at 10.65µm (pySynphot estimation from phoenix model normalized to the H magnitud)

Coronagraphic observation:
Planet b: SNR = 9 with ETC (classical PSF subtraction) for Texp = 20s
Planet b: SNR= 24 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 938
--> Ngroup = 84 (9% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Planet position angle predicted at 43º in Dec. 2022 (Whereistheplanet.org).
To position it at 45 from the 4QMP cross and maximize the throughput, we set an absolute Aperture PA constraint:
Aperture PA = 94 +/- 5D (quadrant 1) or 183 +/- 5D (quadrant 4).

Diagnostics

(kappa And - F1065C (Obs 18)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 18:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(kappa And - F1065C (Obs 18)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	KAPPA-AND	RA: 23 40 24.6243 (355.1026013d) Dec: +44 20 1.87 (44.33385d) Equinox: J2000	Proper Motion RA: 0.007524326490795721 sec of time/yr Proper Motion Dec: -0.01869999998689309 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Kappa And's companion b is at r = 1.029'' PA = 55.3deg (Bonnefoy et al. 2014).
Observations with a single roll, using the reference star HD 222389 (5.74x brighter in W3).
Category=Star
Description=[A stars, Exoplanets]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.1

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	28	3	1	1	3	20.612	89874.7

PSF References

Ref kappa And - F1065C (Obs 19) (PSF Reference; Filters [F1065C])

Additional Justification: false

Special Requirements

Aperture PA Range 86.1 to 96.1 Degrees (V3 81.26455103 to 91.26455103)
Aperture PA Range 176.1 to 186.1 Degrees (V3 171.26455103 to 181.26455103)
No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible
Same Aperture PA 16, 17, 18

Observation

Proposal 1241, Observation 19: Ref kappa And - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref kappa And - F1140C (Obs 20), Ref kappa And - F1550C (Obs 21), Ref kappa And Bckgr - F1065C (Obs 22), Ref kappa And Bckgr - F1140C (Obs 23), Ref kappa And Bckgr - F1550C (Obs 24)]

Comments: Reference star is 5.74 times brighter than kappa And, using WISE W3.
Reference star is 4.01 times brighter than kappa And, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=393 for Ngroup=6 (23% FW capacity), using the neutral density, with a K5V spectrum normalized to 2654.87mJy y at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/4.01 times the total exposure time on kappa And observations to obtain the same photon noise level: Texp = 5s/dither (25s total)
Saturation for Ngroup = 236.
--> Ngroup = 21 (9% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the kapp And observations.

Diagnostics

(Visit 19:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	REF-KAPPA-AND--HD-222389	RA: 23 39 51.0752 (354.9628133d) Dec: +45 26 36.79 (45.44355d) Equinox: J2000	Proper Motion RA: -8.574544365997929E-4 sec of time/yr Proper Motion Dec: -0.01901599998745951 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Reference star for kappa And.
Angular distance: 1.12deg
HD 222389 is 5.74 times brighter than kappa And in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[K stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.4

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	7	3	1	5	15	27.563	89874.7

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 20: Ref kappa And - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref kappa And - F1065C (Obs 19), Ref kappa And - F1550C (Obs 21), Ref kappa And Bckgr - F1065C (Obs 22), Ref kappa And Bckgr - F1140C (Obs 23), Ref kappa And Bckgr - F1550C (Obs 24)]

Comments: Reference star is 5.74 times brighter than kappa And, using WISE W3.
Reference star is 4.01 times brighter than kappa And, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=394 for Ngroup=6 (23% FW capacity), using the neutral density, with a K5V spectrum normalized to 2654.87mJy y at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/4.01 times the total exposure time on kappa And observations to obtain the same photon noise level: Texp = 5s/dither (25s total)
Saturation for Ngroup = 323.
--> Ngroup = 21 (6% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the kapp And observations.

Diagnostics

(Visit 20:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	REF-KAPPA-AND--HD-222389	RA: 23 39 51.0752 (354.9628133d) Dec: +45 26 36.79 (45.44355d) Equinox: J2000	Proper Motion RA: -8.574544365997929E-4 sec of time/yr Proper Motion Dec: -0.01901599998745951 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Reference star for kappa And.
Angular distance: 1.12deg
HD 222389 is 5.74 times brighter than kappa And in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[K stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.5

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	7	3	1	5	15	27.563	89874.8

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 21: Ref kappa And - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref kappa And - F1065C (Obs 19), Ref kappa And - F1140C (Obs 20), Ref kappa And Bckgr - F1065C (Obs 22), Ref kappa And Bckgr - F1140C (Obs 23), Ref kappa And Bckgr - F1550C (Obs 24)]

Comments: Reference star is 5.74 times brighter than kappa And, using WISE W3.
Reference star is 4.01 times brighter than kappa And, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=395 for Ngroup=6 (24% FW capacity), using the neutral density, with a K5V spectrum normalized to 2654.87mJy y at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/4.01 times the total exposure time on kappa And observations to obtain the same photon noise level: Texp = 200s/dither (1000s total)
Saturation for Ngroup = 2049.
--> Ngroup = 832 (41% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the kapp And observations.

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
(4)	REF-KAPPA-AND--HD-222389	RA: 23 39 51.0752 (354.9628133d) Dec: +45 26 36.79 (45.44355d) Equinox: J2000	Proper Motion RA: -8.574544365997929E-4 sec of time/yr Proper Motion Dec: -0.01901599998745951 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Reference star for kappa And.
Angular distance: 1.12deg
HD 222389 is 5.74 times brighter than kappa And in WISE-W3 (12microns) (Cutri et al. 2013).
Category=Star
Description=[K stars]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143116.6

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	277	3	1	5	15	998.267	89874.9

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 22: Ref kappa And Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref kappa And - F1065C (Obs 19), Ref kappa And - F1140C (Obs 20), Ref kappa And - F1550C (Obs 21)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 22:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	REF-KAPPA-AND--BCKGR	RA: 23 38 58.9500 (354.7456250d) Dec: +45 25 30.70 (45.42519d) Equinox: J2000		

Comments: Background target for Ref Kappa And
Distance 9.2' from star
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	7	3	1	2	6	11.025	89874.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 23: Ref kappa And Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref kappa And - F1065C (Obs 19), Ref kappa And - F1140C (Obs 20), Ref kappa And - F1550C (Obs 21)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 23:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	REF-KAPPA-AND--BCKGR	RA: 23 38 58.9500 (354.7456250d) Dec: +45 25 30.70 (45.42519d) Equinox: J2000		

Comments: Background target for Ref Kappa And
Distance 9.2' from star
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	7	3	1	2	6	11.025	89874.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 24: Ref kappa And Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref kappa And - F1065C (Obs 19), Ref kappa And - F1140C (Obs 20), Ref kappa And - F1550C (Obs 21)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 24:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(12)	REF-KAPPA-AND--BCKGR	RA: 23 38 58.9500 (354.7456250d) Dec: +45 25 30.70 (45.42519d) Equinox: J2000		

Comments: Background target for Ref Kappa And
Distance 9.2' from star
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	4

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	277	3	1	2	6	399.307	89874.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, Non-interruptible

Observation

Proposal 1241, Observation 25: beta Pic Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [beta Pic - F1140C (Obs 27), beta Pic - F1065C (Obs 28)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 25:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(13)	BETA-PIC-BCKGR	RA: 05 46 24.5400 (86.6022500d) Dec: -51 07 8.00 (-51.11889d) Equinox: J2000		

Comments: Background star for beta Pic.
Distance 10' from beta pic.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	NO	1

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	209	5	1	1	5	251.424	89686.6

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 26: beta Pic Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [beta Pic - F1140C (Obs 27), beta Pic - F1065C (Obs 28)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 26:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(13)	BETA-PIC-BCKGR	RA: 05 46 24.5400 (86.6022500d) Dec: -51 07 8.00 (-51.11889d) Equinox: J2000		

Comments: Background star for beta Pic.
Distance 10' from beta pic.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	NO	1

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	167	4	1	1	4	160.825	89686.5

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 27: beta Pic - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[beta Pic Bckgr - F1140C (Obs 25), beta Pic Bckgr - F1065C (Obs 26), beta Pic - F1065C (Obs 28)]

Comments: TARGET ACQ:
JWST ETC fives SNR=275 for Ngroup=6 (13% FW capacity), using the neutral density,
Using a A5V spectrum normalize to 1429.98mJy at 10.65µm (pySynphot estimation from phoenix model normalized to the J magnitude to avoid the strong IR excess of the system at larger wavelength)

Coronagraphic observation:
Planet b: SNR = 79 with ETC (classical PSF subtraction) for Texp = 50s.
Planet b: SNR= 10 with mirimsim (9PGD+PCA).
Saturation for Ngroup = 595
--> Ngroup = 209 (35% FW capacity)
--> Nint = 1
Increasing the Nint to fill up the program time to 19h, and aiming for detecting the disk.

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 31 to keep the planet at the same position in all three filters.

Diagnostics

(beta Pic - F1140C (Obs 27)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 27:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(beta Pic - F1140C (Obs 27)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	BETA-PIC	RA: 05 47 17.0953 (86.8212304d) Dec: -51 03 58.15 (-51.06615d) Equinox: J2000	Proper Motion RA: 4.932985550191305E-4 sec of time/yr Proper Motion Dec: 0.0831 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: A6V
Teff=8052K, R=1.732Rs: Hoeijmakers et al. 2018, Kervella et al. 2003
Distance: 19.75pc (Gaia)
W3 = 2.597 (12microns), Cutri+2013.

*** Updated to the planet expected astrometry for March 2022 ***
Ref orbital elements: Lagrange et al. 2019, Wang et al. 2016.
beta Pic b, March 7th 2022: sep = 479mas PA = 31deg.

Observations with a single roll, using the reference star HD 39523
Category=Star
Description=[A stars, Debris disks, Exoplanets]
Extended=YES

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143140.2

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	209	5	1	1	5	251.424	89686.6

PSF References

Ref beta Pic - F1140C (Obs 30) (PSF Reference; Filters [F1140C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible
Same Aperture PA 27, 28

Observation

Proposal 1241, Observation 28: beta Pic - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[beta Pic Bckgr - F1140C (Obs 25), beta Pic Bckgr - F1065C (Obs 26), beta Pic - F1140C (Obs 27)]

Comments: TARGET ACQ:
JWST ETC fives SNR=74 for Ngroup=6 (13% FW capacity), using the neutral density,
Using a A5V spectrum normalize to 1429.98mJy at 10.65µm (pySynphot estimation from phoenix model normalized to the J magnitude to avoid the strong IR excess of the system at larger wavelength)

Coronagraphic observation:
Planet b: SNR = 69 with ETC (classical PSF subtraction) for Texp = 40s
Planet b: SNR= 26 with mirimsim (9PGD+PCA).
Saturation for Ngroup = 433
--> Ngroup = 167 (39% FW capacity)
--> Nint = 1
Increasing the Nint to fill up the program time to 19h, and aiming for detecting the disk.

ORIENT CONSTRAINTS:
Planet position angle predicted at 31.6º in Dec. 2022 (Whereistheplanet.org).
To position it at 45 from the 4QMP cross and maximize the throughput, we set an absolute Aperture PA constraint:
Aperture PA = 351 +/- 5D (quadrant 2) or 81 +/- 5D (quadrant 1) or 263 +/- 5D (quadrant 3).

Diagnostics

(beta Pic - F1065C (Obs 28)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 28:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(beta Pic - F1065C (Obs 28)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(5)	BETA-PIC	RA: 05 47 17.0953 (86.8212304d) Dec: -51 03 58.15 (-51.06615d) Equinox: J2000	Proper Motion RA: 4.932985550191305E-4 sec of time/yr Proper Motion Dec: 0.0831 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: A6V
Teff=8052K, R=1.732Rs: Hoeijmakers et al. 2018, Kervella et al. 2003
Distance: 19.75pc (Gaia)
W3 = 2.597 (12microns), Cutri+2013.

*** Updated to the planet expected astrometry for March 2022 ****
Ref orbital elements: Lagrange et al. 2019, Wang et al. 2016.
beta Pic b, March 7th 2022: sep = 479mas PA = 31deg.

Observations with a single roll, using the reference star HD 39523
Category=Star
Description=[A stars, Debris disks, Exoplanets]
Extended=YES

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143140.1

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	167	4	1	1	4	160.825	89686.5

PSF References

Ref beta Pic - F1065C (Obs 29) (PSF Reference; Filters [F1065C])

Additional Justification: false

Special Requirements

Aperture PA Range 256.4 to 266.4 Degrees (V3 251.56455103 to 261.56455103)
Aperture PA Range 346.4 to 356.4 Degrees (V3 341.56455103 to 351.56455103)
No Parallel Attachments

Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible
Same Aperture PA 27, 28

Observation

Proposal 1241, Observation 29: Ref beta Pic - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref beta Pic - F1140C (Obs 30), Ref beta Pic Bckgr - F1065C (Obs 31), Ref beta Pic Bckgr- F1140C (Obs 32)]

Comments: Reference star is 1.66 times brighter than beta pic, using WISE W3 magnitudes, ratio affected by the strong IR Excess of the beta Pic system.
Reference star is 3.99 times brighter than beta pic, using synphot spectra normalized to their J band magnitude.

TARGET ACQ:
JWST ETC fives SNR=603 for Ngroup=6 (50% FW capacity), using the neutral density, with a K0III spectrum normalized to 5710.47mJy at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/3.99 times the total exposure time on beta Pic observations to obtain the same photon noise level: Texp = 10s/dither (50s total)
Saturation for Ngroup = 109.
--> Ngroup = 42 (38% FW capacity)
--> Nint = 1
Increasing the Nint to fill up the program time to 19h, and aiming for detecting the disk.

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the beta Pic observations.

Diagnostics

(Visit 29:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(17)	REF2-BETA-PIC--CD-45-2093	RA: 05 38 32.4164 (84.6350683d) Dec: -45 47 47.61 (-45.79656d) Equinox: J2000	Proper Motion RA: -1.724018862406519E-4 sec of time/yr Proper Motion Dec: 0.011257999999999999 arcsec/yr Epoch of Position: 2015.5	

Comments: New reference star for beta pic, because the previous one has Gaia indications of being a binary.
This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: unknown, but red (pic SED at 2microns)
Distance: 820 pc (Gaia)
W3 = 1.621 (12microns), Cutri+2013.

New Reference star for beta Pic:
Angular distance: 5.7deg.
Flux ratio: 2.457 (delta W3=0.976), brighter than beta Pic.
Category=Calibration
Description=[Coronagraphic, Point spread function]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143140.3

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	42	3	1	5	15	153.395	89686.5

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 30: Ref beta Pic - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref beta Pic - F1065C (Obs 29), Ref beta Pic Bckgr - F1065C (Obs 31), Ref beta Pic Bckgr- F1140C (Obs 32)]

Comments: Reference star is 1.66 times brighter than beta pic, using WISE W3 magnitudes, ratio affected by the strong IR Excess of the beta Pic system.
Reference star is 3.99 times brighter than beta pic, using synphot spectra normalized to their J band magnitude.

TARGET ACQ:
JWST ETC fives SNR=605 for Ngroup=6 (51% FW capacity), using the neutral density, with a K0III spectrum normalized to 5710.47mJy at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/3.99 times the total exposure time on beta Pic observations to obtain the same photon noise level: Texp = 13s/dither (65s total)
Saturation for Ngroup = 151.
--> Ngroup = 55 (36% FW capacity)
--> Nint = 1
Increasing the Nint to fill up the program time to 19h, and aiming for detecting the disk.

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the beta Pic observations.

Diagnostics

(Visit 30:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(17)	REF2-BETA-PIC--CD-45-2093	RA: 05 38 32.4164 (84.6350683d) Dec: -45 47 47.61 (-45.79656d) Equinox: J2000	Proper Motion RA: -1.724018862406519E-4 sec of time/yr Proper Motion Dec: 0.011257999999999999 arcsec/yr Epoch of Position: 2015.5	

Comments: New reference star for beta pic, because the previous one has Gaia indications of being a binary.
This object was generated by the targetselector and retrieved from the SIMBAD database.
Spectral type: unknown, but red (pic SED at 2microns)
Distance: 820 pc (Gaia)
W3 = 1.621 (12microns), Cutri+2013.

New Reference star for beta Pic:
Angular distance: 5.7deg.
Flux ratio: 2.457 (delta W3=0.976), brighter than beta Pic.
Category=Calibration
Description=[Coronagraphic, Point spread function]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143140.4

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	55	3	1	5	15	200.133	89686.6

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 31: Ref beta Pic Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref beta Pic - F1065C (Obs 29), Ref beta Pic - F1140C (Obs 30)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 31:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(18)	REF2-BETA-PIC--BCKGR	RA: 05 37 34.7400 (84.3947500d) Dec: -45 51 23.90 (-45.85664d) Equinox: J2000		

Comments: Background for beta Pic Ref2
Distance: 10.3' away
Category=Calibration
Description=[Coronagraphic, Point spread function, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	42	3	1	2	6	61.358	89686.5

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 32: Ref beta Pic Bckgr- F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref beta Pic - F1065C (Obs 29), Ref beta Pic - F1140C (Obs 30)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 32:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(18)	REF2-BETA-PIC--BCKGR	RA: 05 37 34.7400 (84.3947500d) Dec: -45 51 23.90 (-45.85664d) Equinox: J2000		

Comments: Background for beta Pic Ref2
Distance: 10.3' away
Category=Calibration
Description=[Coronagraphic, Point spread function, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	55	3	1	2	6	80.053	89686.6

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 25, 26, 27, 28, 29, 30, 31, 32, Non-interruptible

Observation

Proposal 1241, Observation 33: HR 2562 Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [HR 2562 - F1550C (Obs 36), HR 2562 - F1140C (Obs 37), HR 2562 - F1065C (Obs 38)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 33:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(15)	HR-2562-BKGRD	RA: 06 49 12.9300 (102.3038750d) Dec: -60 18 2.12 (-60.30059d) Equinox: J2000		

Comments: Background for HR 2562.
Distance 7.3' away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	4	1	2	8	2398.238	90102.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 34: HR 2562 Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [HR 2562 - F1550C (Obs 36), HR 2562 - F1140C (Obs 37), HR 2562 - F1065C (Obs 38)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 34:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(15)	HR-2562-BKGRD	RA: 06 49 12.9300 (102.3038750d) Dec: -60 18 2.12 (-60.30059d) Equinox: J2000		

Comments: Background for HR 2562.
Distance 7.3' away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	98	3	1	2	6	141.891	90102.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 35: HR 2562 Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [HR 2562 - F1550C (Obs 36), HR 2562 - F1140C (Obs 37), HR 2562 - F1065C (Obs 38)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 35:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(15)	HR-2562-BKGRD	RA: 06 49 12.9300 (102.3038750d) Dec: -60 18 2.12 (-60.30059d) Equinox: J2000		

Comments: Background for HR 2562.
Distance 7.3' away.
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	98	3	1	2	6	141.891	90102.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 36: HR 2562 - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[HR 2562 Bckgr - F1550C (Obs 33), HR 2562 Bckgr - F1140C (Obs 34), HR 2562 Bckgr - F1065C (Obs 35), HR 2562 - F1140C (Obs 37), HR 2562 - F1065C (Obs 38)]

Comments: TARGET ACQ:
JWST ETC fives SNR=159 for Ngroup=10 (5% FW capacity), using the neutral density,
Using a F5V spectrum normalize to 345.57 mJy at 10.65µm (pySynphot flux, scaled from the K band mag).

Coronagraphic observation:
Planet b: SNR = 18 with ETC (classical PSF subtraction) for Texp = 1200s
Planet b: SNR= 9 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 8201
--> Ngroup = 5000 (61% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Same Aperture PA as Obs 41 to keep the planet at the same position in all three filters.

Diagnostics

(HR 2562 - F1550C (Obs 36)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 36:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR 2562 - F1550C (Obs 36)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(7)	HR-2562	RA: 06 50 1.0252 (102.5042717d) Dec: -60 14 55.24 (-60.24868d) Equinox: J2000	Proper Motion RA: 6.264485582242471E-4 sec of time/yr Proper Motion Dec: 0.108377 arcsec/yr Epoch of Position: 2015.5	

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

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	10	1	1	2.397	143139.3

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	1250	4	1	1	4	1199.119	90102.9

PSF References

Ref HR 2562 - F1550C (Obs 41) (PSF Reference; Filters [F1550C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible
Same Aperture PA 36, 37, 38

Observation

Proposal 1241, Observation 37: HR 2562 - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[HR 2562 Bckgr - F1550C (Obs 33), HR 2562 Bckgr - F1140C (Obs 34), HR 2562 Bckgr - F1065C (Obs 35), HR 2562 - F1550C (Obs 36), HR 2562 - F1065C (Obs 38)]

Comments: TARGET ACQ:
JWST ETC fives SNR=159 for Ngroup=10 (5% FW capacity), using the neutral density,
Using a F5V spectrum normalize to 345.57 mJy at 10.65µm (pySynphot flux, scaled from the K band mag).

Coronagraphic observation:
Planet b: SNR = 17 with ETC (classical PSF subtraction) for Texp = 70s
Planet b: SNR= 19 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 2310
--> Ngroup = 292 (13% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Planet position angle predicted at 299º in Dec. 2022 (Whereistheplanet.org).
To position it at 45 from the 4QMP cross and maximize the throughput, we set an absolute Aperture PA constraint:
Aperture PA = 348 +/- 5D (quadrant 1) or 79 +/- 5D (quadrant 4) or 170 +/- 5D (quadrant 3).

Diagnostics

(HR 2562 - F1140C (Obs 37)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 37:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR 2562 - F1140C (Obs 37)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(7)	HR-2562	RA: 06 50 1.0252 (102.5042717d) Dec: -60 14 55.24 (-60.24868d) Equinox: J2000	Proper Motion RA: 6.264485582242471E-4 sec of time/yr Proper Motion Dec: 0.108377 arcsec/yr Epoch of Position: 2015.5	

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

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	10	1	1	2.397	143139.2

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	98	3	1	1	3	70.945	90102.8

PSF References

Ref HR 2562 - F1140C (Obs 40) (PSF Reference; Filters [F1140C])

Additional Justification: false

Special Requirements

No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible
Same Aperture PA 36, 37, 38

Observation

Proposal 1241, Observation 38: HR 2562 - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[HR 2562 Bckgr - F1550C (Obs 33), HR 2562 Bckgr - F1140C (Obs 34), HR 2562 Bckgr - F1065C (Obs 35), HR 2562 - F1550C (Obs 36), HR 2562 - F1140C (Obs 37)]

Comments: TARGET ACQ:
JWST ETC fives SNR=158 for Ngroup=10 (5% FW capacity), using the neutral density,
Using a F5V spectrum normalize to 345.57 mJy at 10.65µm (pySynphot flux, scaled from the K band mag).

Coronagraphic observation:
Planet b: SNR = 17 with ETC (classical PSF subtraction) for Texp = 70s
Planet b: SNR= 19 with mirimsim (5PGD+PCA).
Saturation for Ngroup = 1724
--> Ngroup = 292 (17% FW capacity)
--> Nint = 1

ORIENT CONSTRAINTS:
Planet position angle predicted at 299º in Dec. 2022 (Whereistheplanet.org).
To position it at 45 from the 4QMP cross and maximize the throughput, we set an absolute Aperture PA constraint:
Aperture PA = 348 +/- 5D (quadrant 1) or 79 +/- 5D (quadrant 4) or 170 +/- 5D (quadrant 3).

Diagnostics

(HR 2562 - F1065C (Obs 38)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees

(Visit 38:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(HR 2562 - F1065C (Obs 38)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(7)	HR-2562	RA: 06 50 1.0252 (102.5042717d) Dec: -60 14 55.24 (-60.24868d) Equinox: J2000	Proper Motion RA: 6.264485582242471E-4 sec of time/yr Proper Motion Dec: 0.108377 arcsec/yr Epoch of Position: 2015.5	

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

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	10	1	1	2.397	143139.1

Template

Repeat observation
NO

Dithers

#	Dither Type
1	NONE

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	98	3	1	1	3	70.945	90102.7

PSF References

Ref HR 2562 - F1065C (Obs 39) (PSF Reference; Filters [F1065C])

Additional Justification: false

Special Requirements

Aperture PA Range 73.7 to 83.7 Degrees (V3 68.86455103 to 78.86455103)
Aperture PA Range 163.7 to 173.7 Degrees (V3 158.86455103 to 168.86455103)
No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible
Same Aperture PA 36, 37, 38

Observation

Proposal 1241, Observation 39: Ref HR 2562 - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref HR 2562 - F1140C (Obs 40), Ref HR 2562 - F1550C (Obs 41), Ref HR 2562 Bckgr - F1065C (Obs 42), Ref HR 2562 Bckgr - F1140C (Obs 43), Ref HR 2562 Bckgr - F1550C (Obs 44)]

Comments: Reference star is 4.0 times brighter than HR 2562, using WISE W3 magnitudes.
Reference star is 3.4 times brighter than HR 2562, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=242 for Ngroup=6 (10% FW capacity), using the neutral density, with a K5III spectrum normalized to 1178.13mJy at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/3.4 times the total exposure time on HR 2562 observations to obtain the same photon noise level: Texp = 20.6s/dither (103s total)
Saturation for Ngroup = 525.
--> Ngroup = 86 (16% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the HR 2562 observations.

Diagnostics

(Visit 39:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	REF-HR-2562--HD-49518	RA: 06 44 44.1923 (101.1841346d) Dec: -61 13 27.14 (-61.22421d) Equinox: J2000	Proper Motion RA: -0.001360384706570025 sec of time/yr Proper Motion Dec: 0.0063490000000000005 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
1.6deg away
Category=Star
Description=[K giants]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143139.4

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	29	3	1	5	15	106.658	90102.7

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 40: Ref HR 2562 - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref HR 2562 - F1065C (Obs 39), Ref HR 2562 - F1550C (Obs 41), Ref HR 2562 Bckgr - F1065C (Obs 42), Ref HR 2562 Bckgr - F1140C (Obs 43), Ref HR 2562 Bckgr - F1550C (Obs 44)]

Comments: Reference star is 4.0 times brighter than HR 2562, using WISE W3 magnitudes.
Reference star is 3.4 times brighter than HR 2562, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=243 for Ngroup=6 (11% FW capacity), using the neutral density, with a K5III spectrum normalized to 1178.13mJy at 10.65µm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/3.4 times the total exposure time on HR 2562 observations to obtain the same photon noise level: Texp = 20.6s/dither (103s total)
Saturation for Ngroup = 718.
--> Ngroup = 86 (12% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the HR 2562 observations.

Diagnostics

(Visit 40:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	REF-HR-2562--HD-49518	RA: 06 44 44.1923 (101.1841346d) Dec: -61 13 27.14 (-61.22421d) Equinox: J2000	Proper Motion RA: -0.001360384706570025 sec of time/yr Proper Motion Dec: 0.0063490000000000005 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
1.6deg away
Category=Star
Description=[K giants]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143139.5

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	29	3	1	5	15	106.658	90102.8

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 41: Ref HR 2562 - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[Ref HR 2562 - F1065C (Obs 39), Ref HR 2562 - F1140C (Obs 40), Ref HR 2562 Bckgr - F1065C (Obs 42), Ref HR 2562 Bckgr - F1140C (Obs 43), Ref HR 2562 Bckgr - F1550C (Obs 44)]

Comments: Reference star is 4.0 times brighter than HR 2562, using WISE W3 magnitudes.
Reference star is 3.4 times brighter than HR 2562, using synphot spectra.

TARGET ACQ:
JWST ETC fives SNR=244 for Ngroup=6 (11% FW capacity), using the neutral density, with a K5III spectrum normalized to 1178.13mJy at 10.65μm (pySynphot phoenix model)

Coronagraphic observation:
Using at least 1/3.4 times the total exposure time on HR 2562 observations to obtain the same photon noise level: Texp = 353s/dither (1765s total)
Saturation for Ngroup = 3918.
--> Ngroup = 1467 (37% FW capacity)
--> Nint = 1

NO ORIENT CONSTRAINTS

TIMING CONSTRAINTS:
Must be observed immediately before or after the HR 2562 observations.

Diagnostics

(Visit 41:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	REF-HR-2562--HD-49518	RA: 06 44 44.1923 (101.1841346d) Dec: -61 13 27.14 (-61.22421d) Equinox: J2000	Proper Motion RA: -0.001360384706570025 sec of time/yr Proper Motion Dec: 0.0063490000000000005 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
1.6deg away
Category=Star
Description=[K giants]
Extended=NO

Acquisition

#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	FND	1	FAST	6	1	1	1.438	143139.6

Template

Repeat observation
NO

Dithers

#	Dither Type
1	5-POINT-SMALL-GRID

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	496	3	1	5	15	1785.616	90102.9

PSF References

PSF Reference: true

Special Requirements

No Parallel Attachments

Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 42: Ref HR 2562 Bckgr - F1065C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref HR 2562 - F1065C (Obs 39), Ref HR 2562 - F1140C (Obs 40), Ref HR 2562 - F1550C (Obs 41)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 42:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(16)	REF-HR-2562--BCKGR	RA: 06 43 46.0000 (100.9416667d) Dec: -61 13 55.00 (-61.23194d) Equinox: J2000		

Comments: Background for HR 2562 Ref
Distance 6.9' away
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1065C	MASK1065	4QPM	F1065C	FASTR1	29	3	1	2	6	42.663	90102.7

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 43: Ref HR 2562 Bckgr - F1140C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref HR 2562 - F1065C (Obs 39), Ref HR 2562 - F1140C (Obs 40), Ref HR 2562 - F1550C (Obs 41)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 43:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(16)	REF-HR-2562--BCKGR	RA: 06 43 46.0000 (100.9416667d) Dec: -61 13 55.00 (-61.23194d) Equinox: J2000		

Comments: Background for HR 2562 Ref
Distance 6.9' away
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1140C	MASK1140	4QPM	F1140C	FASTR1	29	3	1	2	6	42.663	90102.8

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible

Observation

Proposal 1241, Observation 44: Ref HR 2562 Bckgr - F1550C Wed Sep 13 21:00:15 GMT 2023

Diagnostic Status: Warning

Observing Template: MIRI Coronagraphic Imaging

Background Observation For: [Ref HR 2562 - F1065C (Obs 39), Ref HR 2562 - F1140C (Obs 40), Ref HR 2562 - F1550C (Obs 41)]

Comments: Background acquisition.
Duplicate of the Science exposures.

Diagnostics

(Visit 44:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(16)	REF-HR-2562--BCKGR	RA: 06 43 46.0000 (100.9416667d) Dec: -61 13 55.00 (-61.23194d) Equinox: J2000		

Comments: Background for HR 2562 Ref
Distance 6.9' away
Category=Calibration
Description=[Coronagraphic, Telescope/sky background]
Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Repeat observation	Background Quadrant
FND	YES	1

Dithers

#	Dither Type
1	BACKGROUND

Spectral Elements

#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	496	3	1	2	6	714.246	90102.9

PSF References	Additional Justification: false
Special Requirements	No Parallel Attachments Sequence Observations 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, Non-interruptible