

1618 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission

Cycle: 1, Proposal Category: GO

INVESTIGATORS

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Dr. Pierre-Olivier Lagage (CoI) (ESA Member)	Commissariat a l'Energie Atomique (CEA)

OBSERVATIONS

Folder	Observation	Label	Observing Template	Science Target
Alpha Cen A				

Folder	Observation	Label	Observing Template	Science Target
	1	eps Mus Position A. us e offset star	MIRI Coronagraphic Imaging	(3) EPS-MUS-OFFSET4ARCSEC-BIN
	2	eps Mus Position A B ACKGROUND	MIRI Coronagraphic Imaging	(2) EPS-MUS-BACKGROUND
	3	Alpha Cen A F1550	MIRI Coronagraphic Imaging	(4) ALPHACENOFFSET-5ARCSECBIN
	4	Alpha Cen A F1550 - B ACKGROUND	MIRI Coronagraphic Imaging	(1) -ALF-CEN-BACKGROUND
	5	Alpha Cen A F1550	MIRI Coronagraphic Imaging	(4) ALPHACENOFFSET-5ARCSECBIN
	6	Alpha Cen A F1550 - BACKGROUND	MIRI Coronagraphic Imaging	(1) -ALF-CEN-BACKGROUND
	7	offset star for eps Mus. Position A. Obs 2	MIRI Coronagraphic Imaging	(3) EPS-MUS-OFFSET4ARCSEC-BIN
	8	offset star for eps Mus. BACKGROUND	MIRI Coronagraphic Imaging	(2) EPS-MUS-BACKGROUND
Test Ob	servation Alpha	Cen		
	10	eps mus TA	MIRI Imaging	(6) -eps-Mus-test
	50	eps mus TA	MIRI Imaging	(6) -eps-Mus-test
	11	alpha cen TA	MIRI Imaging	(5) -alf-Cen-test
March2	2024			
	52	eps Mus Position A. us e offset star	MIRI Coronagraphic Imaging	(9) NEW-EPS-MUS-OFFSET4ARCSEC-BIN
	53	eps Mus Position A B ACKGROUND	MIRI Coronagraphic Imaging	(8) NEW-EPS-MUS-BACKGROUND1
	54	Alpha Cen A F1550	MIRI Coronagraphic Imaging	(12) AlphaCen-Offset-StarG0
	55	Alpha Cen A F1550 - B ACKGROUND	MIRI Coronagraphic Imaging	(14) Final_Acen_Bkgnd1
	56	Alpha Cen A F1550	MIRI Coronagraphic Imaging	(12) AlphaCen-Offset-StarG0
	57	Alpha Cen A F1550 - BACKGROUND	MIRI Coronagraphic Imaging	(15) Final_Acen_Bkgnd2
	58	offset star for eps Mus. Position A. Obs 2	MIRI Coronagraphic Imaging	(9) NEW-EPS-MUS-OFFSET4ARCSEC-BIN
	59	offset star for eps Mus. BACKGROUND	MIRI Coronagraphic Imaging	(8) NEW-EPS-MUS-BACKGROUND1
	60	alpha cen Background Check	MIRI Imaging	(7) NEWALF-CEN-BACKGROUND

Folder Observation Label O		Label	Observing Template	Science Target
	65	Observe Eps Mus at po sition of AcenB for PS F reference	MIRI Coronagraphic Imaging	(9) NEW-EPS-MUS-OFFSET4ARCSEC-BIN
Test Ob	os			
61 eps MusTA		eps MusTA	MIRI Coronagraphic Imaging	(9) NEW-EPS-MUS-OFFSET4ARCSEC-BIN
	63	eps Mus Position A B ACKGROUND	MIRI Coronagraphic Imaging	(8) NEW-EPS-MUS-BACKGROUND1
62 ACen TA test		ACen TA test	MIRI Coronagraphic Imaging	(16) Acen-OfsetStar-G3
	64	Alpha Cen A F1550 - BACKGROUND	MIRI Coronagraphic Imaging	(14) Final_Acen_Bkgnd1

ABSTRACT

Alpha Centauri A is the closest solar-type star to the Sun and offers an unique opportunity to detect both a mature gas giant planet (consistent with existing radial velocity constraints) and a zodiacal dust cloud. A carefully planned observational sequence using the MIRI Coronagraph (F1550C) and innovative post-processing would be sensitive down to a radius limit of 0.5~0.7 R-Jupiter for planets within ~3 AU (~2.5") around alpha Cen A where models predict a region of stablity against disruption by alpha Cen B. These same observations would be sensitive to a level of zodiacal emission only a few times brighter than that of the Sun's, an unprecedented level not even achieved by ground based interferometers. The proposed observations would probe the limit of JWST high contrast imaging on a star that offers the best chance for the ultimate detection of Earth analogs by future ground and/or space based facilities. The experiment is admittedly high risk, but the prospect of directly imaging a planet around our closest stellar neighbor is an exciting one.

OBSERVING DESCRIPTION

The proposed scenario brackets the observations of alpha Cen with observations of a PSF reference star, eps Muscae, of comparable brightness to alpha Cen A. The date of the observation has been selected with a window of a few days to minimize the change in pitch angle (solar offset) between the target and reference star so as to minimize changes in telescope's thermal environment.

Eps Mus will be observed with a 9 point dither pattern at the position of alpha Cen A behind the coronagraphic mask to increase the image diversity for improved PSF reconstruction. Our simulations abve shown tht the diversity in the reference star PSF was of higher priority than eliminating the low level of residual speckles from alpha Cen B. The observation of alpha Cen is split to avoid the limit of 10,000 seconds for an individual observation.

Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen A is changing by 10 mas per day due to its combined proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial targets to be followed by an offset to the desired science or reference target. Offsets are given after rotation into the camera coordinate system using the SIAF tool. To make the rotation calculation fully deterministic we have specified a desired roll angle. However, we note that the angle itself and the exact timing of the observatiosn are somehwat arbitrary. We just need to know the values in enough time to be able to calculate the requisite offsets. The Gaia stars and eps Mus have highly precise Gaia positions and proper motions. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) along with the results of an approved ALMA DDT proposal to update the position of alpha Cen about 6 weeks before the scheduled observation. We will update the offsets once the exact date of the observation is known.

The offset star for alpha Cen A is a Gaia star located (13") away in (2023) away with an inferred K magnitude (from Gaia colors) of K=13.6. It is observed in TA for FQPM/F1550 mode with F560W and achieves SNR~140 in 15 sec. The offset star for eps Mus is a Gaia star located 25" away with an inferred K magnitude (from Gaia colors) of K=11.4. It is observed in TA for FQPM/F1550 mode with F560W and achieves SNR~32 in 8 sec.

A number of interloper stars will appraoch alpha Cen A during the next few years due to alpha Cen's large proper motion. One is quite faint (S2) and is a minor issue in 2022-23. A second (S5) is significantly brighter and becomes a more serious issue in 2026 and beyond. For this reason we want to schedule the observations as early as possible to ensure the maximum areal coverage for exoplanet discovery and the potential for future follow-up observations.

We have elected to use two roll angles as recommended for MIRI coronography.

**5/31/2023. uPDATED ROLL ANGLES AND v3 AS REQUETED. OBSERVATOIN DATE ASSUMED TO START AT 7/28/2023 00:00:00

6/29/2023:

- 1) Set roll angle at 8 degrees. Observatoins assumed to start at 7/26/2023 at 0800 UT
- 2) Selected guide stars based on F1000W test frames for both eps Mus
- 3) Incorporated ALMA positions for alpha cen using parallax correction appropriate for JWST whose position is taken frm Horizons database
- 4) Set PA for BACKGROUND observations to be the same as primary science observations.

5) removed offsets from eps ms bkgnd observatsoin (in error)

7/25/2024

Numerous updates due to rescheduling.

- 1) offset strategy validated during test observations #61 and #62
- 2) selected Gaia stars based on avoidance of dffraction spikes for gven roll angles
- 3) extended date of obervation by 27 hours to enable roll angle V3=112.7d which brings in 2 guide stars for obervation #56
- 4) dropped from 5pt to 9pt dither for second eps Mus observatoin to allow time to put eps Mus at position of AcenB for better PSF rejection.

Proposal 1618 - Targets - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	-ALF-CEN-BACKGROUND	RA: 14 39 49.5000 (219.9562500d)		
		Dec: -60 53 54.00 (-60.89833d)		
		Equinox: J2000		
Comments:	for a			
Category=Cat	alibration [Coronagraphic]			
(2)	EPS-MUS-BACKGROUND	RA: 12 16 56.5000 (184.2354167d)		
		Dec: -68 11 45.00 (-68.19583d)		
		Equinox: J2000		
Comments:		•		
Category=Ca				
(3)	[Coronagraphic] EPS-MUS-	RA: 12 17 34.6045 (184.3941854d)	Proper Motion RA: -7.114 mas/yr	
(3)	OFFSET4ARCSEC-BIN	Dec: -67 57 13.07 (-67.95363d)	Proper Motion Dec: 0.4336 mas/yr	
		Equinox: J2000	Parallax: 0.0001446"	
		Equinox. 32000	Epoch of Position: 2016	
Comments:			apoen of Foundin 2010	
Category=Category				
Description= Extended=No	[Target acquisition test]			
(4)	ALPHACENOFFSET-	RA: 14 39 30.6305 (219.8776271d)	Proper Motion RA: -3.7897 mas/yr	
()	5ARCSECBIN	Dec: -60 49 42.18 (-60.82838d)	Proper Motion Dec: -1.0139 mas/yr	
		Equinox: J2000	Parallax: 0.000320"	
		1	Epoch of Position: 2016	
Comments:			•	
Category=Co	alibration [Target acquisition test]			
Extended=No	Target acquisition tests			
(5)	-alf-Cen-test	RA: 14 39 26.1413 (219.8589221d)	Proper Motion RA: -3640.0 mas/yr	
		Dec: -60 49 53.88 (-60.83163d)	Proper Motion Dec: 700.4 mas/yr	
		Equinox: J2000	Parallax: 0.750"	
			Epoch of Position: 2019.5	
Comments: T	his object was generated by the t	targetselecto and updated by positions in Akeson et al 2020		
Category=Cat	ulibration [Target acquisition test]			
Extended=No	[Target acquisition test] O			
(6)	-eps-Mus-test	RA: 12 17 33.6409 (184.3901704d)	Proper Motion RA: -0.04104750101727305 sec of	
		Dec: -67 57 39.06 (-67.96085d)	time/yr	_
		Equinox: J2000	Proper Motion Dec: -0.02638999997088831 arcsec/yr	ī
Commercial	This shippings a second of the de-	tong ata alastan and natrianal for d CDADAD Jac. 1	Epoch of Position: 2015.5	
Category=Ca	alibration	targetselector and retrieved from the SIMBAD database.		
Description=	[Target acquisition test]			
Extended=No	NEWALF-CEN-	RA: 14 46 10.7000 (221.5445833d)		
(7)	BACKGROUND	,		
		Dec: -62 37 56.00 (-62.63222d)		
Comments		Equinox: J2000		
Comments: Category=Ca				
	[Coronagraphic]			

(8)	NEW-EPS-MUS- BACKGROUND1	RA: 12 16 54.1500 (184.2256250d) Dec: -68 12 6.10 (-68.20169d) Equinox: J2000		
Comments: Category= Description	: Calibration n=[Coronagraphic, External flat	t field]		
(9)	NEW-EPS-MUS- OFFSET4ARCSEC-BIN	RA: 12 17 26.1870 (184.3591125d) Dec: -67 58 6.07 (-67.96835d) Equinox: J2000	Proper Motion RA: -6.0517 mas/yr Proper Motion Dec: -0.49837 mas/yr Parallax: 0.000180" Epoch of Position: 2016	
	Calibration n=[Target acquisition test]			
(12)	AlphaCen-Offset-StarG0	RA: 14 39 30.6305 (219.8776271d) Dec: -60 49 42.18 (-60.82838d) Equinox: J2000	Proper Motion RA: -3.7898 mas/yr Proper Motion Dec: -1.0139 mas/yr Parallax: 0.0003202" Epoch of Position: 2016	
	Calibration n=[Target acquisition test]			
(13)	AlphaCen-Offset-StarG7	RA: 14 39 21.1066 (219.8379442d) Dec: -60 50 22.28 (-60.83952d) Equinox: J2000	Proper Motion RA: -5.2596 mas/yr Proper Motion Dec: -5.4394 mas/yr Parallax: 0.0005615" Epoch of Position: 2016	
	Calibration n=[Target acquisition test]		2010	
14)	Final_Acen_Bkgnd1	RA: 14 46 12.5300 (221.5522083d) Dec: -62 37 38.75 (-62.62743d) Equinox: J2000	Proper Motion RA: 0 mas/yr Proper Motion Dec: 0 mas/yr Parallax: 0.0" Epoch of Position: 2024.2	
	Calibration n=[Coronagraphic, External flat	t field]		
(15)	Final_Acen_Bkgnd2	RA: 14 46 11.5000 (221.5479167d) Dec: -62 37 22.00 (-62.62278d) Equinox: J2000	Proper Motion RA: 0 mas/yr Proper Motion Dec: 0 mas/yr Parallax: 0.0" Epoch of Position: 2024.2	
	Calibration n=[Coronagraphic, External flat	t field]		

Proposal 1618 - Targets - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission (16) Acen-Ofset--Star-G3 RA: 14 39 20.1323 (219.8338846d) Proper Motion RA: -4.4592 mas/yr Dec: -60 50 15.47 (-60.83763d) Proper Motion Dec: -2.9465 mas/yr Equinox: J2000 Parallax: 0.0003997" Epoch of Position: 2016 Comments:

Category=Calibration
Description=[Coronagraphic]
Extended=NO

Proposal 1618 - Observation 1 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission

Proposal 1618, Observation 1: eps Mus Position A. use offset star

Thu Aug 01 17:00:15 GMT 2024

Miscellaneous

Diagnostic Status: Error

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Observing Template: MIRI Coronagraphic Imaging

Background Observations: [eps Mus Position A BACKGROUND (Obs 2), offset star for eps Mus. Position A. Obs 2 (Obs 7), offset star for eps Mus. BACKGROUND (Obs 8)]

Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.

This TA positions eps mus behind the coronagrphic mask

(eps Mus Position A. use offset star (Obs 1)) Error (Form): Permission has not been granted for this program to use Special Requirement 'Guide Star in Guider 1'.

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

	#	Name
jets	(3)	EPS-MUS- OFFSET4ARCSEC-BIN

RA: 12 17 34.6045 (184.3941854d) Dec: -67 57 13.07 (-67.95363d)

Equinox: J2000

Target Coordinates

Proper Motion RA: -7.114 mas/yr Proper Motion Dec: 0.4336 mas/yr

Targ. Coord. Corrections

Parallax: 0.0001446" Epoch of Position: 2016

Comments:

Diagnostics

Category=Calibration

Description=[Target acquisition test]

Extended=NO

2		#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
13		1	SAME	F1000W	1	FASTGRPAVG8	8	1	1	15.34	59296.14
2	2										

Repeat observation

NO NO

ı	ers	#	Dither Type
ı	ihe	1	9-POINT-SMALL-GRID
ı	Öİ		

Elements Coron Subarray Mask Filter Readout Integrations/E Exposures/Dit Total Dithers Total Total **ETC** Groups/Int Mask/Filter **Integrations** Exposure Wkbk.Calc ID Pattern h хp Time 9 4QPM/F1550C MASK1550 40PM F1550C 30 400 3600 59296.4 FASTR1 1 26746.131 Spectral

	oposal 1618 - Observation 1 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	PSF Reference: true
Requirements	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
Special	

Pro	nosal 1618 - Observation 2	- Searching Our, Close	est Stellar Ne	eighbor for Planet	s and Zodiac	al Emission		
Observation	Proposal 1618 - Observation 2 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission Thu Aug 01 17:00:15 GMT 2024 Diagnostic Status: Error Observing Template: MIRI Coronagraphic Imaging Background Observation For: [eps Mus Position A. use offset star (Obs 1), offset star for eps Mus. Position A. Obs 2 (Obs 7)] Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.							
Diagnostics	This TA positions eps mus behind the coronage (eps Mus Position A BACKGROUND (Obs 2 (Visit 2:1) Warning (Form): Overheads are presented to the present	2)) Error (Form): Permission has not		program to use Special Requ	uirement 'Guide Star i	n Guider 1'.		
Fixed Targets	# Name (2) EPS-MUS-BACKGROUND Comments: Category=Calibration	Target Coordinates RA: 12 16 56.5000 (184.2354167d) Dec: -68 11 45.00 (-68.19583d) Equinox: J2000)	Targ, Coord, Correctio	ons	Miscellaneous		
	Description=[Coronagraphic] # 1			Target NONE				
Template	AcqFilter F560W	Repeat of YES	oservation		Backgr 1	ound Quadrant		
Dithers	# 1			Dither Type BACKGROUND				
Spectral Elements	# Coron Subarray Mask/Filter 1 4QPM/F1550C MASK1550	Mask Filter 4QPM F1550C	Readout Pattern Greatern 30	хр	E Exposures/Dit Toh	Integrations	Total Exposure Time 5943.585	ETC Wkbk.Calc ID 59296.4

<u>Pr</u>	pposal 1618 - Observation 2 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	Additional Justification: false
Requirements	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
Special	

Pro	Proposal 1618 - Observation 3 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission											
	Proposal 1618, Observation										Thu Aug 01	17:00:15 GMT 2024
ءِ ا	Diagnostic Status: Error											
월	Observing Template: MIRI	Coronagraphic Ima	aging									
] §	Background Observations:[Alpha Cen A F155	0 - BACKGROUNI	O (Obs 4), Alpha C	en A F1550 (Obs 5),	Alpha Cen	A F1550 - BAC	KGROUND (Ob	s 6)]			
Observation	Comments: Target acquisiti position of alpha Cen is che followed by an offset to the precise Gaia positions and observation. It may eventua	nging by up to 10 i desired science tar proper motion valu	mas per day due to i get. Offsets are give es. We will address	ts proper motion, p n in the sense (alp) the evolving positi	parallax and orbital m ha CenRA/DEC-Offse on of alpha Cen A usi	notion. We tStarRA/D ing the ALM	address the first EC) after rotatio MA astrometry ob	point for both sto n into the camer tained by Akeson	ars by using near a coordinate syst	by Gaia stars a em. The Gaia s	is the initial i tars and eps	target to be Mus have highly
(Alpha Cen A F1550 (Obs 3)) Error (Form): Permission has not been granted for this program to use Special Requirement 'Guide Star in Guider 1'.												
sti	(Alpha Cen A F1550 (Obs 3	3)) Warning (Form)): Science observation	ons should be linke	d to at least one other	compatibl	e science observa	tion by an Apert	ure PA Offset of	1-14 degrees		
Diagnostics	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
	# Name		Target Coordinat	es		Targ. Co	ord. Corrections	.	Mis	cellaneous		
ţ	(4) ALPHACEN		Proper Me	otion RA: -3.789	7 mas/yr							
Targets	5ARCSECBIN Dec: -60 49 42.18 (-60.82838d)					Proper Mo	otion Dec: -1.013	9 mas/yr				
<u>ā</u>			Equinox: J2000			Parallax: 0	0.000320"					
						Epoch of	Position: 2016					
Fixed	Comments: Category=Calibration Description=[Target acqui. Extended=NO	ition test]										
tion	# Targe	et Fil	ter (Quadrant	Readout Pattern	Groups	s/Int Int	egrations/Exp	Total Integrat	ions Total Ex Time	xposure	ETC Wkbk.Calc ID
Acquisition	1 SAM	E F10	000W 1		FASTGRPAVG8	8	1		1	15.34		59296.13
<u> </u>	Repeat observation											
olat	NO											
Template												
r _S	#					Dither '	Туре					
Dithers	1					NONE						
ents	# Coron Mask/Filte	Subarray	Mask		Readout Grou Pattern	ıps/Int	Integrations/E xp	Exposures/Dit h		Total Integrations	Total Exposure	ETC Wkbk.Calc ID

Ĺ	ב													
	nents	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	l Elem	1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	1250	1	1	1250	9287.36	59296.2
	Spectral													

<u>Pro</u>	oposal 1618 - Observation 3 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	eps Mus Position A. use offset star (Obs 1) (PSF Reference; Filters [F1550C]) offset star for eps Mus. Position A. Obs 2 (Obs 7) (PSF Reference; Filters [F1550C]) Additional Justification: false
Special Requirements	

Pro	oposal 16	18 - Observation 4	- Searching	Our Clos	est Stellar	Neighbor	for Planets	and Zodia	acal Emiss	sion			
	Proposal 1618	, Observation 4: Alpha Cen A	F1550 - BACK(GROUND							Thu Aug 01 17	2:00:15 GMT 2024	
Ις	Diagnostic Sta	itus: Error											
I₩	Observing Ten	nplate: MIRI Coronagraphic Im	aging										
%	Background O	bservation For: [Alpha Cen A I	F1550 (Obs 3), Alp	oha Cen A F1550	(Obs 5)]								
Observation	position of alp followed by an precise Gaia p	rget acquisition (TA) for both a ha Cen is changing by up to 10 offset to the desired science ta ositions and proper motion valu may eventually prove necessar	mas per day due to rget. Offsets are gi ues. We will addre	o its proper motic ven in the sense (ss the evolving po	on, parallax and c alpha CenRA/DI osition of alpha C	orbital motion. W EC-OffsetStarRA/I Cen A using the AI	e address the first DEC) after rotation MA astrometry of	t point for both st on into the came btained by Akeso	ars by using neo ra coordinate sy n et al (2020) an	arby Gaia stars o stem. The Gaia s	as the initial targ stars and eps Mu	get to be is have highly	
cs	(Alpha Cen A	(Alpha Cen A F1550 - BACKGROUND (Obs 4)) Error (Form): Permission has not been granted for this program to use Special Requirement 'Guide Star in Guider 1'.											
Diagnostics	(Visit 4:1) Wa	rning (Form): Overheads are pr	ovisional until the	Visit Planner has	been run.								
\vdash		Name	Target Coordin	ates		Targ. C	oord. Correction	ıs	М	iscellaneous			
Targets	(1)	-ALF-CEN-BACKGROUND	RA: 14 39 49.50		d)	g . v							
l ŝ			Dec: -60 53 54.0	00 (-60.89833d)	,								
ΙË			Equinox: J2000	,									
Fixed	Comments: Category=Cal	ibration Coronagraphic]											
ء	#	Coronagraphic				Targe	t						
읥	1	1 NONE											
Acquisition													
<u> </u>													
ate	AcqFilter				observation	Background Quadrant							
Template	F560W			YES				1					
_						P.1.1	m						
ers	#					-	r Type KGROUND						
Dithers						DACE	GROUND						
Elements	#	Coron Subarray Mask/Filter	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
Elen	1	4QPM/F1550C MASK1550	4QPM	F1550C	FASTR1	30	1250	1	2	2500	18574.721	59296.2	
Spectral													

<u>Pr</u>	pposal 1618 - Observation 4 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	Additional Justification: false
Requirements	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
Special	

	Proposal 1618, Obse	Observation 5 ervation 5: Alpha Cen							Thu Aug 0	1 17:00:15 GMT 2024		
servation	Diagnostic Status: E	E rror MIRI Coronagraphic I	magina									
vat	• .	tions:[Alpha Cen A F1		Cen A F1550 - BACK	GROUND (Obs 4). A	Alpha Cen A F1550 - l	BACKGROUND (Ob	s 6)]				
Obser	Comments: Target ac position of alpha Cen followed by an offset precise Gaia position	equisition (TA) for both is changing by up to 1 to the desired science to to and proper motion volume ventually prove necess.	h alpha Cen and the h O mas per day due to arget. Offsets are giv alues. We will addres	PSF reference star epoits proper motion, poven in the sense (alphas the evolving position)	os Mus will be challer arallax and orbital m a CenRA/DEC-Offset on of alpha Cen A usir	nging due to two factor otion. We address the StarRA/DEC) after ro ng the ALMA astrometo	rs: 1) both stars are ex first point for both sta tation into the camer ry obtained by Akeson	tremely bright and wo rs by using nearby G a coordinate system. T	aia stars as the initial he Gaia stars and ep	target to be s Mus have highly		
sti	(Alpha Cen A F1550	(Obs 5)) Warning (For	rm): Science observat	tions should be linked	l to at least one other	compatible science ob	servation by an Apertu	are PA Offset of 1-14	degrees			
(Alpha Cen A F1550 (Obs 5)) Error (Form): Permission has not been granted for this program to use Special Requirement 'Guide Star in Guider 1'. (Alpha Cen A F1550 (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.												
<u> </u>	# Name	:	Target Coordina	ates		Targ. Coord. Correc	tions	Miscella	neous			
Targets		ACENOFFSET-	RA: 14 39 30.630)5 (219.8776271d)		Proper Motion RA: -3	.7897 mas/yr					
	SARC	SECBIN	Dec: -60 49 42.18	8 (-60.82838d)		Proper Motion Dec: -1	.0139 mas/yr					
<u> </u>			Equinox: J2000			Parallax: 0.000320"						
Fixed	Comments: Category=Calibratio Description=[Target Extended=NO					Epoch of Position: 201	.0					
tion	#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
Acquisition	1	SAME	F1000W	1	FASTGRPAVG8	8	1	1	15.34	59296.13		
ate	Repeat observation											
∺	Repeat observation NO											
lemp												
Dithers Temp	#					Dither Type						

nents D	"	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elen		4QPM/F15500	C MASK1550	4QPM	F1550C	FASTR1	30	1250	1	1	1250	9287.36	59296.2

<u>P</u>	ro	posal 1618 - Observation 5 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	20	offset star for eps Mus. Position A. Obs 2 (Obs 7) (PSF Reference; Filters [F1550C])
13	Secu	Additional Justification: false
	<u> </u>	
19	<u> </u>	
۵	Reletel	
	ᄂ	
	۱ کا	
Ţ	Ž.	Aperture PA Range 99.58544897 to 99.58544897 Degrees (V3 94.75 to 94.75)
	= 1	Offset -20.27146122 arcsec, -45.8774117 arcsec
	E	No Parallel Attachments Guide Star in Guider 1
1.3	=	
1:	nb	Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
18	שו ע	
1:	פוש	
	בַּ	
Ó	<u>7</u>	

<u>Pro</u>	<u>posal 161</u>	8 - Observat	<u>tion 6 -</u>	<u>Searching</u>	Our Close	<u>est Stellar</u>	Neighbor	for Planets	and Zodia	acal Emiss	sion		
	Proposal 1618	, Observation 6: Al	pha Cen A	F1550 - BACKG	ROUND							Thu Aug 01 17	:00:15 GMT 2024
 	Diagnostic Sta	tus: Error											
servation	Observing Ten	plate: MIRI Corona	graphic Ima	ging									
<u>§</u>	Background O	oservation For: [Alph	na Cen A F1	550 (Obs 3), Alph	a Cen A F1550 ((Obs 5)]							
Obse	position of alph followed by an precise Gaia p	get acquisition (TA) a Cen is changing b offset to the desired ositions and proper n may eventually prove	y up to 10 n science targ notion value	as per day due to et. Offsets are give s. We will address	its proper motion en in the sense (a s the evolving pos	n, parallax and o alpha CenRA/DE sition of alpha C	orbital motion. W C-OffsetStarRA/L en A using the AL	e address the first DEC) after rotation MA astrometry of	t point for both sto on into the camer btained by Akesor	ars by using ned a coordinate sys	arby Gaia stars o stem. The Gaia s	is the initial targ tars and eps Mu	get to be s have highly
cs	(Alpha Cen A	F1550 - BACKGRO	UND (Obs	6)) Error (Form): 1	Permission has n	ot been granted f	or this program to	use Special Requ	uirement 'Guide S	Star in Guider 1'.			
Diagnostics													
n # Name Target Coordinates Targ. Coord. Corrections Miscellaneous													
Targets	(1)	-ALF-CEN-BACKG	ROUND	RA: 14 39 49.500	0 (219.9562500d	1)							
arc				Dec: -60 53 54.00	(-60.89833d)								
ΙĻ				Equinox: J2000									
Fixed	Comments: Category=Cali Description=[bration Coronagraphic]											
ř	#						Target	t					
l∺	1						NONE						
Acquisition													
ĕ													
te	AcqFilter				Repeat o	bservation			Back	ground Quadra	ant		
pla Bla	F560W				YES				1				
Template													
r _S	#						Dither	Туре					
Dithers	1						BACK	GROUND					
Elements	#	Coron Su Mask/Filter	ıbarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
al Elen	1	4QPM/F1550C M	ASK1550	4QPM	F1550C	FASTR1	30	1250	1	2	2500	18574.721	59296.2
Spectral													

<u> </u>	<u>ro</u>	posal 1618 - Observation 6 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF Reference	
	ements	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
ا	Keduire	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
[Special	

Proposal 1618 - Observation 7 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission

Proposal 1618, Observation 7: offset star for eps Mus. Position A. Obs 2

Thu Aug 01 17:00:15 GMT 2024

Miscellaneous

Diagnostic Status: Error

Observing Template: MIRI Coronagraphic Imaging

Background Observations: [eps Mus Position A. use offset star (Obs 1), eps Mus Position A BACKGROUND (Obs 2), offset star for eps Mus. BACKGROUND (Obs 8)]

Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.

This TA positions eps mus behind the coronagrphic mask

(offset star for eps Mus. Position A. Obs 2 (Obs 7)) Error (Form): Permission has not been granted for this program to use Special Requirement 'Guide Star in Guider 1'.

(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

	#	Name
jets	(3)	EPS-MUS- OFFSET4ARCSEC-BIN

RA: 12 17 34.6045 (184.3941854d)

Equinox: J2000

Target Coordinates

Proper Motion RA: -7.114 mas/yr Dec: -67 57 13.07 (-67.95363d) Proper Motion Dec: 0.4336 mas/yr

> Parallax: 0.0001446" Epoch of Position: 2016

Targ. Coord. Corrections

Comments:

Diagnostics

Category=Calibration

Description=[Target acquisition test]

Extended=NO

		#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
I:	sinh	1	SAME	F1000W	1	FASTGRPAVG8	8	1	1	15.34	59296.14
	ACC										

Template Repeat observation

NO

S	#	Dither Type
he	1	9-POINT-SMALL-GRID

nents		:	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Elen			4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	400	1	9	3600	26746.131	59296.4
Spectral	-													

<u>Prc</u>	posal 1618 - Observation 7 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	PSF Reference: true
Special Requirements	Aperture PA Range 127.99544897 to 127.99544897 Degrees (V3 123.16 to 123.16) Offset -25.10068935028 arcsec, 10.42010570854 arcsec No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible

<u>Pro</u>	pposal 1618 - Observation 8	- Searching Our Close	est Stellar Nei	ighbor for Planets	and Zodiacal Emis	sion_						
	Proposal 1618, Observation 8: offset star fo						Thu Aug 01 17	:00:15 GMT 2024				
	Diagnostic Status: Error											
on	Observing Template: MIRI Coronagraphic Imaging											
ati	Background Observation For: [eps Mus Position A. use offset star (Obs 1), offset star for eps Mus. Position A. Obs 2 (Obs 7)]											
Observation	Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.											
	This TA positions eps mus behind the corona;	grphic mask										
SS	(offset star for eps Mus. BACKGROUND (Obs 8)) Error (Form): Permission has	not been granted for th	is program to use Special Re	quirement 'Guide Star in Guider	1'.						
stic	(Visit 8:1) Warning (Form): Overheads are pr	rovisional until the Visit Planner has b	een run.									
Diagnostics												
ts	# Name	Target Coordinates		Targ. Coord. Corrections	S M	liscellaneous						
ge	(2) EPS-MUS-BACKGROUND	RA: 12 16 56.5000 (184.2354167d))									
a.		Dec: -68 11 45.00 (-68.19583d)										
Гр		Equinox: J2000										
Fixed Targets	Comments: Category=Calibration Description=[Coronagraphic]											
n	#			Target								
iti	1			NONE								
Acquisition												
te	AcqFilter	Repeat of	servation		Background Quadi	rant						
Template	F560W	YES			1							
Ter												
ers	#			Dither Type								
Dithers	1			BACKGROUND								
nents	# Coron Subarray Mask/Filter	Mask Filter	Readout Grou Pattern		Exposures/Dit Total Dithers h	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID				
Spectral Elements	1 4QPM/F1550C MASK1550	O 4QPM F1550C	FASTR1 30	400	1 2	800	5943.585	59296.4				
Spect												

<u> </u>	<u>ro</u>	posal 1618 - Observation 8 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF Reference	Additional Justification: false
	ements	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
ا	Reduire	No Parallel Attachments Guide Star in Guider 1 Sequence Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible
] 	Special	

Pro	posal 1618 - Observation	on 10 - Searchin	g Our Closest St	tellar Neighbo	for Pla	nets and Zod	iacal Emissio	n		
uc	Proposal 1618, Observation 10: eps	mus TA						Thu Aug 01	17:00:15 GMT 2024	
Observation	Diagnostic Status: Warning									
<u>ڇَ</u>	Observing Template: MIRI Imaging									
Se										
ŏ										
SS	(Visit 10:1) Warning (Form): Overhea	nds are provisional until the	Visit Planner has been run.							
Diagnostics										
2										
iag										
	# Name	Target Coordin	ates	Targ. Co	ord. Correct	ions	Miscella	neous		
Targets	(6) -eps-Mus-test RA: 12 17 33.6409 (184.3901704d) Dec: -67 57 39.06 (-67.96085d)				Proper Motion RA: -0.04104750101727305 sec of time/yr					
arc		Equinox: J2000				.02638999997088831	l arcsec/yr			
ΙĻ		Equilion. 92000				5.5				
Fixed	Comments: This object was generated	by the targetselector and	retrieved from the SIMBAD	database.						
证	Category=Calibration Description=[Target acquisition test]									
<u> </u>	Extended=NO									
Template	Subarray									
直	FULL									
l E										
_										
l S	# Dither Type	Starting Point	Number of Points Point	ts Startin	g Set	Number of Sets	Optimized For	Direction	Pattern Size	
Dithers	1 4-Point-Sets			5		1	POINT SOURCE	POSITIVE	DEFAULT	
Ö										
Spectral Elements	# Filter	Readout Pattern Gro	ups/Int Integrations	/Exp Exposures/Dith	Dither	Total Dithe	rs Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
۱	1 F1000W	FASTR1 60	1	1	Dither 1	4	4	666.01	153514	
<u>a</u> [
l $\frac{1}{5}$										
ğ										
S										

<u>Pro</u>	oposal 1618 - Observatio	on 50 - Searching Our	Closest Stella	ar Neighbor for Pl	anets and Zodi	acal Emissio	n		
ion	Proposal 1618, Observation 50: eps	mus TA					Thu Aug 0	17:00:15 GMT 2024	
at	Diagnostic Status: Warning								
e e	Observing Template: MIRI Imaging								
Observation	Comments: This observation is a dupli	cate of observation 10 which was s	kipped by the observator	y.					
Diagnostics	(Visit 50:1) Warning (Form): Overhead	ds are provisional until the Visit Pla	anner has been run.						
	# Name	Target Coordinates		Targ. Coord. Corr	ections	Miscella	neous		
Targets	(6) -eps-Mus-test	RA: 12 17 33.6409 (184.3		Proper Motion RA: time/yr	-0.04104750101727305	sec of			
ğ		Dec: -67 57 39.06 (-67.96) Equinox: J2000	085d)	•	Proper Motion Dec: -0.02638999997088831 arcsec/yr				
∟ੂ		-0.02038999997088831 2015.5	arcsec/yr						
Fixed	Comments: This object was generated Category=Calibration Description=[Target acquisition test] Extended=NO	by the targetselector and retrieved	from the SIMBAD datab	*					
ig e	Subarray								
Template	FULL								
ST.	# Dither Type	Starting Point Number	r of Points Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
Dithers	1 4-Point-Sets			5	1	POINT SOURCE	POSITIVE	DEFAULT	
Spectral Elements	# Filter	Readout Pattern Groups/Int	Integrations/Exp	Exposures/Dith Dither	Total Dithe	rs Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
١١	1 F1000W	FASTR1 60	1	1 Dither 1	4	4	666.01	153514	
ā									
뒪									
Ιğ									
ری									

Observation	Diagnostic Status	Observation 11: alphas: Warning ate: MIRI Imaging	ha cen TA							Thu Aug 01	17:00:15 GMT 2024
Diagnostics	(Visit 11:1) Warn	ing (Form): Overhea	ads are provisional u	ntil the Visit Plar	nner has been run.						
	# Na	ime	Target Co	ordinates		Targ. Co	ord. Correc	etions	Miscella	neous	
sts	(5) -alf-Cen-test RA: 14 39 26.1413 (219.8589221d)				_	Proper Motion RA: -3640.0 mas/yr					
Targets				9 53.88 (-60.831)	63d)	_		00.4 mas/yr			
Ta		Equinox: J2000				Parallax:	0.750" Position: 20				
e Fixed	Category=Calibre			ana upaatea by	positions in Akeson et	u 2020					
Template	FULL										
S	#	Dither Type	Starting Poin	t Number	of Points Points	Startin	g Set	Number of Sets	Optimized For	Direction	Pattern Size
Dithers	1	4-Point-Sets				5		1	POINT SOURCE	POSITIVE	DEFAULT
10	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Ditho	ers Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1	F1000W	FASTR1	60	1	1	Dither 1	4	4	666.01	153514

Proposal 1618 - Observation 52	- Sparching Our Closest Stollar	Neighbor for Planets and Zodiacal Emission
Proposal to to - Observation 52	- Searching Our Glosest Stellar	Neighbor for Planets and Zodiacai Emission

Proposal 1618, Observation 52: eps Mus Position A. use offset star

Thu Aug 01 17:00:15 GMT 2024

Miscellaneous

Diagnostic Status: Error

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[]

Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.

This TA positions eps mus behind the coronagrphic mask

(eps Mus Position A. use offset star (Obs 52)) Error (Form): This target requires similar background exposures that are linked in a non-interruptible group/sequence. Diagnostics

(Visit 52:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

	#	Name
Targets	(9)	NEW-EPS-MUS- OFFSET4ARCSEC-BIN
Fixed	Comments: Category=Ca	libration

RA: 12 17 26.1870 (184.3591125d)

Dec: -67 58 6.07 (-67.96835d)

Equinox: J2000

Target Coordinates

Proper Motion RA: -6.0517 mas/yr

Proper Motion Dec: -0.49837 mas/yr

Parallax: 0.000180" Epoch of Position: 2016

Targ. Coord. Corrections

Description=[Target acquisition test]

Extended=NO

5		#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
<u> </u>		l	SAME	FND	1	FASTGRPAVG8	44	1	1	84.367	198489
ACO	2										

Template Repeat observation

NO

2	#	Dither Type
ב ב	1	9-POINT-SMALL-GRID

nents	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Elem	1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	400	1	9	3600	26746.131	59296.4
Spectral													

<u>Pr</u>	oposal 1618 - Observation 52 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission	
PSF References		
nirements	Aperture PA Range 139.83544897 to 139.83544897 Degrees (V3 135.0 to 135.0)	
Red	Same Aperture PA 52, 65	
Special		

Pro	posai 161	8 - Observ	ation 53	- Searchi	ng Our Ci	osest Steil	iar ineignbo	or for Plane	is and Zoc	iiacai ⊑mi	SSION			
	Proposal 1618	, Observation 53	: eps Mus Pos	sition A BACK	GROUND							Thu Aug 01 1	7:00:15 GMT 2024	
	Diagnostic Sta	tus: Warning												
on	Observing Template: MIRI Coronagraphic Imaging													
ati	Background Observation For: []													
Observation	position of alph followed by an precise Gaia po	na Cen is changin offset to the desir ositions and prope	g by up to 10 i ed science tar er motion valu	nas per day due get. Offsets are s es. We will addr	to its proper mot given in the sense ess the evolving p	ion, parallax and (alpha CenRA/L position of alpha	l be challenging du d orbital motion. V DEC-OffsetStarRA Cen A using the A tigate its motion du	Ve address the firs DEC) after rotation LMA astrometry o	t point for both st on into the came btained by Akeso	ars by using ne ra coordinate sy	arby Gaia stars o stem. The Gaia s	ns the initial tar tars and eps M	rget to be us have highly	
	This TA positio	ns eps mus behind	d the coronagi	rphic mask										
Diagnostics	(Visit 53:1) Wa	arning (Form): Ov	verheads are pi	ovisional until t	he Visit Planner l	nas been run.								
S	#	Name		Target Coordi	nates		Targ. (Coord. Correction	ıs	M	liscellaneous			
Fixed Targets		NEW-EPS-MUS-		RA: 12 16 54.1	500 (184.225625	(0d)								
ār		BACKGROUND	1	Dec: -68 12 6.1	0 (-68.20169d)									
d T			Equinox: J2000											
xe	Comments:													
匞	Category=Cali Description=[0	bration Coronagraphic, E	xternal flat fie	ld]										
٦	#						Targe	et						
Acquisition	1						NON	Е						
uis														
cd														
Ă														
Template	AcqFilter				Repea	t observation			Bacl	kground Quadr	ant			
pla	F560W				NO				1					
m														
rs	#						Dithe	r Type						
he	1						NON	Е						
ΔĦ														
Spectral Elements Dithers	#	Coron	Subarray	Mask	Filter	Readout	Groups/Int	Integrations/E	Exposures/Dit	Total Dithers	Total	Total	ETC	
eni		Mask/Filter	·			Pattern	•	xp	h Î		Integrations	Exposure Time	Wkbk.Calc ID	
em	1	4QPM/F1550C	MASK 1550	4QPM	F1550C	FASTR1	30	400	1	1	400	2971.792	59296.4	
Ĕ	1	-Q1 W/1 1330C	141/ASIX1330	101 101	113300	IASIKI	30	400	1	1	400	2)11.1)2	37270.4	
a														
ctr														
be														
S														

<u>Pro</u>	pposal 1618 - Observation 53 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	Additional Justification: false
Special Requirements	Aperture PA Range 142.93618397 to 142.93618397 Degrees (V3 138.100735 to 138.100735) No Parallel Attachments

D.,	1 4 C 4	O. Ohaamistian	54 Caarabir	on Our Clay	aaat Otallas	. Nia:alala	an fan Dlana	45 5 5 d 7 5 d	lianal Emia						
Pro		8 - Observation		ng Our Clos	sest Stellar	iveigno	or for Plane	is and Zoo	ilacai Emis	sion	FFI 4 0.1	17.00.15 GMT 2024			
_ ا	Proposal 1618 Diagnostic Sta	, Observation 54: Alpha (Cen A F1550								Thu Aug 01	17:00:15 GMT 2024			
<u> </u> [5	U		a Imagina												
Diagnostic Status: Error Observing Template: MIRI Coronagraphic Imaging Background Observations:[] Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely be															
e l	, ,	oservations.[] rget acquisition (TA) for b	extramale bright as	nd would satur	ata durina th	a TA process: 2) the									
sqo	position of alph followed by an precise Gaia p	position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.													
Ś															
Diagnostics	(Alpha Cen A	(Alpha Cen A F1550 (Obs 54)) Error (Form): This target requires similar background exposures that are linked in a non-interruptible group/sequence. (Alpha Cen A F1550 (Obs 54)) Warning (Form): Coronagraphic Science and PSF Reference observations should be executed contiguously via a Group/Sequence Observations Link.													
۱ĕ	(Alpha Cen A	(Alpha Cen A F1550 (Obs 54)) Warning (Form): Coronagraphic Science and FSF Reference observations should be executed contiguously via a Group/Sequence Observations Link. (Alpha Cen A F1550 (Obs 54)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees													
ğ								, ,		C					
۱ä	(Visit 54:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.														
	#	Name	Target Coordi	nates		Targ.	Coord. Correction	ıs	Mis	cellaneous					
ध	(12)	AlphaCen-Offset-StarG0	RA: 14 39 30.63	305 (219.8776271d	1)	Prope	Motion RA: -3.78	398 mas/yr							
Targets			Dec: -60 49 42.	18 (-60.82838d)		Proper	Motion Dec: -1.0	139 mas/yr							
a.			Equinox: J2000			Paralla	ax: 0.0003202"								
15						Epoch	of Position: 2016								
Fixed	Comments: Category=Cala Description=[1 Extended=NO	ibration Target acquisition test]													
Acquisition	#	Target	Filter	Quadrant	Readout Pa	ttern Gro	ups/Int In	ntegrations/Exp	Total Integrati	ions Total E Time	xposure	ETC Wkbk.Calc ID			
isit	1	SAME	F1000W	1	FASTGRPA	VG8 22	1		1	42.184		180933.1			
<u>n</u>															
¥															
ţ	Repeat observ	ation	· ·	-											
Πe	NO														
Template															
-	#					Ditl	ner Type								
le:	1					NO									
Dithers						1101	VL.								
H	ш	G	37.3	F214	D. J.	G 7 :	T.4 4	E	T. A. I. D. C.	T . 4 . 1	m. 4 . 3	FIDO			
Spectral Elements	#	Coron Subarra Mask/Filter	ay Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	h h		Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID			
	1	4QPM/F1550C MASK1	550 4QPM	F1550C	FASTR1	30	1250	1	1	1250	9287.36	59296.2			
1=															
1;;															
) a															
S															

<u>Pr</u>	oposal 1618 - Observation 54 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
၂ ပ	eps Mus Position A. use offset star (Obs 52) (PSF Reference; Filters [F1550C]) offset star for eps Mus. Position A. Obs 2 (Obs 58) (PSF Reference; Filters [F1550C])
feren	Additional Justification: false
F Refe	
PSF	
ents	After Date 11-AUG-2024:22:00:00 Aperture PA Range 107.83544897 to 107.83544897 Degrees (V3 103.0 to 103.0) Offset 27.313742 arcsec, 46.5400439 arcsec
uirem	No Parallel Attachments
Regi	
Special	
Spe	

l 1€	618	- Ot	ser	vation	55	- Sear	ching	Our Clo	osest Ste	llar Nei	ghbo	r for Plane	ts and Zoo	diacal Emi	ssion				
al 16	618, C	bserva	tion 55	5: Alpha	Cen A	F1550 - I	BACKGI	ROUND								Thu Aug 01 1	7:00:15 GMT 2024		
Diagnostic Status: Warning																			
Observing Template: MIRI Coronagraphic Imaging																			
Background Observation For: []																			
Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.																			
								isit Planner h											
	Na	me			,	Farget Co	oordinate	es.		,	Targ, Co	ord. Correction	S	М	iscellaneous				
		al_Ace	n Bko	nd1				(221.552208	3d)			Iotion RA: 0 mas			ascerum cous				
		100	2.1.6					-62.62743d)	,		Proper Motion Dec: 0 mas/yr								
						Equinox: J	`	02.027430)			Parallax:								
						Equilion.	12000					Position: 2024.2							
	Calibr		ıphic, E	External j	lat field	d]					 ро си от								
											Target	-							
											NONE								
ter								Repeat	observation		Background Quadrant								
,								NO					1						
											Dither	Type							
											NONE								
		Coron Mask/F	ilter	Subari	ay	Mask		Filter	Readout Pattern	Group	os/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
	4	QPM/F	F1550C	MASK	1550	4QPM		F1550C	FASTR1	30		1250	1	1	1250	9287.36	59296.2		

<u>Pro</u>	pposal 1618 - Observation 55 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	Additional Justification: false
Special Requirements	Aperture PA Range 109.86273897 to 109.86273897 Degrees (V3 105.02729 to 105.02729) No Parallel Attachments

Pro	nnosal 1618	- Observation	56 - Searchir	na Our Clos	sast Stallar	. Neighbo	r for Plane	ats and Zoo	liacal Emiss	eion				
	Proposal 1618 - Observation 56 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission Proposal 1618, Observation 56: Alpha Cen A F1550 Thu A Diagnostic Status: Error													
<u> </u>														
servation	Observing Template: MIRI Coronagraphic Imaging Background Observations:[]													
<u>}</u>				DGE 6	16			1) 1 . 1				<i>m</i> 2) 1		
sqo	Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.													
Ś	(Alpha Cen A F1550 (Obs 56)) Error (Form): This target requires similar background exposures that are linked in a non-interruptible group/sequence.													
Ιij	(Alpha Cen A F1:	(Alpha Cen A F1550 (Obs 56)) Warning (Form): This target requires similar background exposures that are mixed in a non-interruptible group/sequence. (Alpha Cen A F1550 (Obs 56)) Warning (Form): Coronagraphic Science and PSF Reference observations should be executed contiguously via a Group/Sequence Observations Link.												
۱ő	_	=					_		-					
Diagnostics	(Alpha Cen A F1550 (Obs 56)) 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 56:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.													
广	# Na	ime	Target Coordin	nates		Targ. C	oord. Correction	ıs	Misc	ellaneous				
şt	(12) Al ₁	phaCen-Offset-StarG0	RA: 14 39 30.63	805 (219.8776271d	1)	Proper N	898 mas/yr							
Ιğ			Dec: -60 49 42.1	18 (-60.82838d)										
Targets	Equinox: J2000 Parallax: 0.0003202"													
٦	Epoch of Position: 2016													
Fixed	Comments: Category=Calibra Description=[Tan Extended=NO	ation get acquisition test]												
ion	#	Target	Filter	Quadrant	Readout Pa	ttern Group	os/Int I	ntegrations/Exp	Total Integration	ons Total Ex Time		ETC Wkbk.Calc ID		
Acquisition	1	SAME	F1000W	1	FASTGRPA	AVG8 22	1		1	42.184		180933.1		
ig g	Repeat observati	ion												
Template	NO													
ည	#					Dither	Туре							
Dithers	1					NONE								
nents	# (Coron Subarray Mask/Filter	y Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers I	Total ntegrations	Total Exposure Time	ETC Wkbk.Calc ID		
Elen	1 4	QPM/F1550C MASK15	550 4QPM	F1550C	FASTR1	30	1250	1	1 1	250	9287.36	59296.2		
Spectral Elements														

<u> 121</u>	oposal 1618 - Observation 56 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
Sec	eps Mus Position A. use offset star (Obs 52) (PSF Reference; Filters [F1550C]) offset star for eps Mus. Position A. Obs 2 (Obs 58) (PSF Reference; Filters [F1550C])
9	Additional Justification: false
Referen	
٦٣	
PS.F	
1	After Date 12-AUG-2024:04:50:00 Aperture PA Range 117.53544897 to 117.53544897 Degrees (V3 112.7 to 112.7)
l de	Officet 24.7625670 arrange 41.275094 arrange
I a	
Red	
7	
<u>.</u>	
Special	

oror	posal 16°	18 - Observ	ation 57	- Searchi	ng Our Cl	osest Stell	ar Neighbo	or for Plane	ts and Zoo	liacal Emi	ssion			
1	Proposal 1618	3, Observation 57	: Alpha Cen A	A F1550 - BAC	KGROUND							Thu Aug 01 1	7:00:15 GMT 2024	
آ ک	Diagnostic Sta	atus: Warning												
읡	Observing Ter	bserving Template: MIRI Coronagraphic Imaging												
. S	Background Observation For: []													
ő	Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.													
		arning (Form): Ov												
-	#	Name		Target Coordi	inates		Targ. (Coord. Correction	ıs	М	iscellaneous			
S		Final_Acen_Bkgn	nd2.		000 (221.547916	i7d)		Motion RA: 0 mas			ascerum cous			
Targets	Dec: -62.37				.00 (-62.62278d)	,, ,		Motion Dec: 0 mas	•					
ar C				Equinox: J2000	· · · · · · · · · · · · · · · · · · ·		Parallax		37 y I					
Ë	Equinox: J2000					Epoch of Position: 2024.2								
	Comments: Category=Cal Description=[Extended=YES	Coronagraphic, E.	xternal flat fie	ld]			i poen c	7 T OSKION. 202 1.2						
ב	#						Targe	et						
Acquisition	1						NON	E						
_	AcqFilter				Repeat	t observation		Background Quadrant						
≂⊢	F560W				NO				1					
_	#						Dithe	r Type						
Dithers	1						NON	E						
nents	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
Spectral Elements	1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	1250	1	1	1250	9287.36	59296.2	
Sp														

<u>Pro</u>	pposal 1618 - Observation 57 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	Additional Justification: false
Special Requirements	

Proposal 1618 - Observation 58	 Searching Our Closest Ste 	lar Neighbor for Planets and 2	Zodiacal Emission
		iai i icigiiboi ioi i iaiicio aiia i	

Proposal 1618, Observation 58: offset star for eps Mus. Position A. Obs 2

Thu Aug 01 17:00:15 GMT 2024

Miscellaneous

Diagnostic Status: Error

Observing Template: MIRI Coronagraphic Imaging

Background Observations:[]

Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC-OffsetStarRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.

This TA positions eps mus behind the coronagrphic mask

(offset star for eps Mus. Position A. Obs 2 (Obs 58)) Error (Form): This target requires similar background exposures that are linked in a non-interruptible group/sequence. Diagnostics

(Visit 58:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

	#	Name
Jets	(9)	NEW-EPS-MUS- OFFSET4ARCSEC-BIN

RA: 12 17 26.1870 (184.3591125d)

Dec: -67 58 6.07 (-67.96835d)

Equinox: J2000

Target Coordinates

Proper Motion RA: -6.0517 mas/yr

Targ. Coord. Corrections

Proper Motion Dec: -0.49837 mas/yr

Parallax: 0.000180" Epoch of Position: 2016

Comments:

Category=Calibration

Description=[Target acquisition test]

Extended=NO

2	5 #	#	Target	Filter	Quadrant	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
I :	2 1	1	SAME	FND	1	FASTGRPAVG8	44	1	1	84.367	198489
200	[

Template Repeat observation

NO

2	#	Dither Type
ıeı	1	5-POINT-SMALL-GRID

nents	#	·	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
tral Elem			4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	400	1	5	2000	14858.962	59296.4
Spectral														

<u> </u>	<u>ro'</u>	bosal 1618 - Observation 58 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF	PSF Reference: true
	Requirements	Offset -47.757993 arcsec, -5.27295 arcsec No Parallel Attachments Same Aperture PA 52, 58
	Special	

<u>Pro</u>	oposal 1618 - Observation 5	9 - Searching Our Clo	sest Stellar Neigh	nbor for Plane	ets and Zoc	diacal Emis	sion				
	Proposal 1618, Observation 59: offset star	for eps Mus. BACKGROUND						Thu Aug 01 17	2:00:15 GMT 2024		
	Diagnostic Status: Warning										
5	Observing Template: MIRI Coronagraphic I	maging									
aţi.	Background Observation For: []										
Observation	position of alpha Cen is changing by up to 1 followed by an offset to the desired science t precise Gaia positions and proper motion va	Comments: Target acquisition (TA) for both alpha Cen and the PSF reference star eps Mus will be challenging due to two factors: 1) both stars are extremely bright and would saturate during the TA process; 2) the position of alpha Cen is changing by up to 10 mas per day due to its proper motion, parallax and orbital motion. We address the first point for both stars by using nearby Gaia stars as the initial target to be followed by an offset to the desired science target. Offsets are given in the sense (alpha CenRA/DEC) after rotation into the camera coordinate system. The Gaia stars and eps Mus have highly precise Gaia positions and proper motion values. We will address the evolving position of alpha Cen A using the ALMA astrometry obtained by Akeson et al (2020) and update the offsets once the exact date of the observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.									
	This TA positions eps mus behind the coronagrphic mask										
Diagnostics	(Visit 59:1) Warning (Form): Overheads are	provisional until the Visit Planner ha	as been run.								
S	# Name	Target Coordinates	Tai	g. Coord. Correction	ns	Mi	scellaneous				
get	(8) NEW-EPS-MUS-	RA: 12 16 54.1500 (184.2256250	d)								
a.	BACKGROUND1	Dec: -68 12 6.10 (-68.20169d)									
١Ę		Equinox: J2000									
Fixed Targets	Comments: Category=Calibration Description=[Coronagraphic, External flat	field]									
ř	#	•	Т	arget							
I .≝	1 NONE										
Acquisition											
Ac											
te	AcqFilter	Repeat	observation	Background Quadrant							
目	F560W	NO			1						
Template											
_	#		n	ither Type							
Je l	1		-	ONE							
Dithers											
Spectral Elements	# Coron Subarray Mask/Filter	Mask Filter	Readout Groups/I Pattern	nt Integrations/E	E Exposures/Dit	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
le _T	1 4QPM/F1550C MASK155	50 4QPM F1550C	FASTR1 30	400	1	1	400	2971.792	59296.4		
lΨ											
tra											
S											
Гŝ											

<u> </u>	<u>'ror</u>	bosal 1618 - Observation 59 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF References	Additional Justification: false
	Special Requirements	Aperture PA Range 143.67301997 to 143.67301997 Degrees (V3 138.837571 to 138.837571) Offset 7.0 arcsec, 7.0 arcsec, 7.0 arcsec No Parallel Attachments

Pro	posal 16	18 - Observation	on 60 - Seard	hing Our	Closest Stella	ar Neighbor	for Pla	nets and Zod	iacal Emission	n	
		18, Observation 60: alph									17:00:15 GMT 2024
l≝	Diagnostic S	tatus: Warning									
Ĭ	Observing Te	emplate: MIRI Imaging									
Observation											
Diagnostics	(Visit 60:1) V	Varning (Form): Overhea	ds are provisional un	til the Visit Pla	nner has been run.						
Sti											
١ğ											
ja j											
-	#	Name	Target Co	ardinatas		Tora Co	ord. Correc	etions	Miscella	noone	
Fixed Targets	(7)	NEWALF-CEN-		10.7000 (221.54	145833d)	raig. Co	oru. Correc	tions	Miscena	neous	
arg	(,)	BACKGROUND		56.00 (-62.632							
ΙË			Equinox: J2		,						
ĕ	Comments:										
ĮŒ	Category=Cat	alibration [Coronagraphic]									
ŧ	Subarray										
o a	FULL										
Template											
ers	#	Dither Type	Starting Point	Number	of Points Points	Startin	g Set	Number of Sets	Optimized For	Direction	Pattern Size
Dithers	1	4-Point-Sets				5		1	POINT SOURCE	POSITIVE	DEFAULT
	#	Filter	Readout Pattern	Groups/Int	Integrations/Eyn	Exposures/Dith	Dither	Total Dithe	ers Total	Total Exposure	ETC Wkbk.Calc
Spectral Elements	"	Titel	Readout 1 attern		integrations, Exp	Exposures/Ditti	Dittici	Total Dillic	Integrations	Time	ID ID
Ĭ	1	F1500W	FASTR1	60	1	1	Dither 1	4	4	666.01	153514
Ĭ											
ᅙ											
뒳											
S											
	Between Date	es 01-FEB-2024 and 15-F	FEB-2024								
eu											
E E											
Ϊ́Ξ											
ed											
 											
cia											
Special Requirements											
S											

		sion	liacal Emissi	ts and Zod	r for Planets	eighbo	st Stellar Ne	Our Clos	Searching O	on 65 - S	- Observation	posal 1618 -	Pro
01 17:00:15 GMT 202	Thu Aug 01						eference	AcenB for PSF	us at position of Ac	serve Eps Mu	servation 65: Obser	Proposal 1618, Obs	on
												Diagnostic Status: I	Observation
									g	aphic Imaging		Observing Template	e.
											rations:[]	Background Observa	ps(
													0
	ence.	e group/sequen	a non-interruptible	that are linked in	round exposures th	nilar backş		sit Planner has l	sional until the Visit	ads are provis	at position of AcenB g (Form): Overheads		Diagnostics
		cellaneous	Misce		ord. Corrections				rget Coordinates	Tar		# Name	
				-	otion RA: -6.0517	_			A: 12 17 26.1870 (18	TNT	V-EPS-MUS- SET4ARCSEC-BIN		Targets
				337 mas/yr	otion Dec: -0.4983	•		7.96835d)	ec: -67 58 6.07 (-67.9	Dec	SET4ARCSEC-BIN	Orra	rg
					0.000180"				uinox: J2000	Equ			Та
					Position: 2016	Epoch of						_	pa
										1	ion et acquisition test]	Comments: Category=Calibration Description=[Target Extended=NO	Fixed
ETC Wkbk.Calc ID		ons Total Ex Time	Total Integration	tegrations/Exp	s/Int Inte	Group	Readout Pattern	ıadrant	Qua	Filter	Target	#	ion
198489		84.367	1		1	44	FASTGRPAVG8		1		9 NEW-EPS-MUS OFFSET4ARCSE -BIN	1	Acquisition
											1	Repeat observation	ø
												NO	lat
													Template
					Type	Dither						#	
						NONE						1	Dithers
ETC Wkbk.Calc II	Total Exposure Time	Fotal Integrations	Total Dithers To	Exposures/Dit h	Integrations/E xp l	ups/Int	eadout Gro attern		Mask File	parray I	ron Subar ask/Filter	# Cor Ma:	Spectral Elements
	9287.36	1250	1 12	1	1250	<u></u>	ASTR1 30	71550C	4QPM F15	SK1550 4	PM/F1550C MASK	1 4QI	len
													tra
													၁ဓ
													Sp
													0,

<u> </u>	ro	<u> posal 1618 - C</u>	<u> Jbservation 65 -</u>	Searching Our	Closest Stellar	Neighbor for I	Planets and ∠od	<u>iacal Emission</u>	
2	5	PSF Reference: true							
100	ents	Offset -39.37182 arcse No Parallel Attachmen	ec, -8.1042498685 arcsec ats						
	ılren	Same Aperture PA 52,	65						
	Red								
	Special								
8	o d								

Pro	posal 161	8 - Observ	ation 6	1 - Searchi	ng Our Clo	sest Stella	ar Neigh	bor for Plan	ets and Zoc	liacal Emis	ssion		
	Proposal 1618	Observation 61										Thu Aug 01	17:00:15 GMT 2024
ati	Diagnostic Sta												
] ≥		plate: MIRI Coro											
Observation	Background Ob	servations:[eps N	Ius Position	A BACKGROU	ND (Obs 63)]								
_													
Diagnostics	(Visit 61:1) Wa	rning (Form): Ov	erheads are		he Visit Planner ha	s been run.							
		Name		Target Coord				g. Coord. Correction		M	iscellaneous		
)ts	(9)	NEW-EPS-MUS- OFFSET4ARCSE			870 (184.3591125	d)	_	per Motion RA: -6.0	-				
Įğ	`	JITSE 14AKCSI	C-DIN	Dec: -67 58 6.0			_	per Motion Dec: -0.4	9837 mas/yr				
Ta∏				Equinox: J2000)			ıllax: 0.000180"					
ᄝ							Epo	ch of Position: 2016					
Fixed Targets	Comments: Category=Cali Description=[T Extended=NO	bration Target acquisition	test]										
tion	#	Target	I	Filter	Quadrant	Readout	Pattern G	roups/Int	Integrations/Exp	Total Integra	ntions Total E Time	xposure	ETC Wkbk.Calc ID
Acquisition	1	9 NEW-EF OFFSET44 -BIN	PS-MUS- F ARCSEC	FND	1	FASTGR	PAVG8 22	2	I	1	42.184		198489
e)	Repeat observ	ation											
<u>a</u> t	NO												
Template													
₽													
ร	#						Di	ither Type					
Dithers	1						N	ONE					
_													
Spectral Elements	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Ir	nt Integrations/ xp	E Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
len	1	4QPM/F1550C	MASK155	0 4QPM	F1550C	FASTR1	30	20	1	1	20	148.362	
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	oposal 1618 - Observation 61 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF	
Reguirements	Between Dates 08-JUL-2024:00:00:00 and 08-JUL-2024:00:30:00 Aperture PA Range 111.83544897 to 111.83544897 Degrees (V3 107.0 to 107.0) Offset -39.69796378 arcsec, -27.0953544 arcsec No Parallel Attachments Sequence Observations 61, 62, 63, 64, Non-interruptible
Special	

Pro	oposal 1618 -	Observation 63	- Searching	Q Our Clos	sest Stellar	Neighbo	r for Plane	ts and Zoc	liacal Emi	ssion		
	Proposal 1618, Obs	ervation 63: eps Mus Po	sition A BACKG	ROUND							Thu Aug 01 17	:00:15 GMT 2024
	Diagnostic Status: V	Varning										
ا ا	Observing Template:	MIRI Coronagraphic Ima	aging									
a ji	Background Observa	tion For: [eps MusTA (O	bs 61)]									
Observation	observation. It may eventually prove necessary to treat alpha Cen as a moving target so as to mitigate its motion during the 5 hours of its observation.											
	This TA positions eps	s mus behind the coronagi	rphic mask									
Diagnostics	(Visit 63:1) Warning	(Form): Overheads are pr	rovisional until the	Visit Planner has	s been run.							
Ś	# Name	,	Target Coordina	ites		Targ. Co	ord. Correction	s	M	iscellaneous		
get	(8) NEW-	-EPS-MUS-	RA: 12 16 54.150	0 (184.2256250	d)							
ar.	BACI	KGROUND1	Dec: -68 12 6.10	(-68.20169d)								
١Ę			Equinox: J2000									
Fixed Targets	Comments: Category=Calibration Description=[Coron	on agraphic, External flat fie	ld]									
Ž						Target						
I∺	1					NONE						
Acquisition												
_				D 4	1			р 1	10 1			
<u>a</u>	AcqFilter F560W			NO NO	bservation			Baci	kground Quadr	ant		
Template	F300W			NO				1				
_												
ers	#					Dither						
Dithers						NONE						
Spectral Elements	# Cor Mas	on Subarray sk/Filter	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
len_	1 4QF	PM/F1550C MASK1550	4QPM	F1550C	FASTR1	30	20	1	1	20	148.362	59296.4
IЩ												
tra												
l S												
Sp	1											

		oosal 1618 - Observation 63 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF References	Additional Justification: false
	nts	No Parallel Attachments
	эш Эш	Sequence Observations 61, 62, 63, 64, Non-interruptible
	Requirements	
	کو ا	
]	ia Cia	
3	Special	

Pro	posal 161	8 - Observ	ation 62 -	Searchir	ng Our Clos	sest Stellar	Neighb	or for Plane	ets and Zod	liacal Emis	sion		
on	_	, Observation 62	: ACen TA test									Thu Aug 01	17:00:15 GMT 2024
ati	Diagnostic Sta	_											
Observation	Observing Ten	nplate: MIRI Coro	onagraphic Imag	ing									
cs	(ACen TA test	(Obs 62)) Warnin	ng (Form): Scien	ce observations	s should be linked t	o at least one other	er compatible	science observation	on by an Aperture F	A Offset of 1-14	degrees		
Diagnostics					e Visit Planner has	been run.							
١		Name		Target Coordin				. Coord. Correctio		Mi	scellaneous		
Targets	(16)	Acen-OfsetStar-			323 (219.8338846d))	_	er Motion RA: -4.4	-				
ğ					47 (-60.83763d)			er Motion Dec: -2.9	9465 mas/yr				
∟°			ŀ	Equinox: J2000				ax: 0.0003997" n of Position: 2016					
Fixed	Comments:						Еросі	i oi Position: 2016					
ĮÊ	Category=Cal	ibration Coronagraphic]											
ion	#	Target	Filte	r	Quadrant	Readout Par	ttern Gro	oups/Int 1	Integrations/Exp	Total Integrat	tions Total Ex Time	xposure	ETC Wkbk.Calc ID
Acquisition	1	16 Acen-O Star-G3	ofset F100	00W	1	FASTGRPA	VG8 22	1		1	42.184		204513.1
_	Repeat observ	ation											
<u>a</u>	NO	ation											
Template													
ſS	#						Dit	her Type					
Dithers	1						NO	NE					
Spectral Elements	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/l	E Exposures/Dit	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
le.	1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	20	1	1	20	148.362	
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<u>Pro</u>	oposal 1618 - Observation 62 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
PSF References	eps MusTA (Obs 61) (PSF Reference; Filters [F1550C]) Additional Justification: false
Special Requirements	

<u>Prc</u>	posal 16	18 - Observ	ation 64	- Searchi	ng Our Cl	osest Stell	ar Neighbo	or for Plane	ts and Zoc	liacal Emi	ssion		
	Proposal 1618	3, Observation 64:	: Alpha Cen A	F1550 - BAC	CKGROUND							Thu Aug 01 1	7:00:15 GMT 2024
٦	Diagnostic St	atus: Warning											
I∺	Observing Ter	nplate: MIRI Coro	nagraphic Ima	ging									
Į ş	Background C	bservation For: []											
Observation	position of alp followed by ar precise Gaia p	rget acquisition (I ha Cen is changing offset to the desire ositions and prope may eventually pr	g by up to 10 n ed science targ er motion value	aas per day due et. Offsets are g es. We will addr	to its proper mot given in the sense ess the evolving p	ion, parallax and (alpha CenRA/D position of alpha	l orbital motion. V DEC-OffsetStarRA/ Cen A using the A.	Ve address the firs DEC) after rotation LMA astrometry o	t point for both st on into the came btained by Akeson	ars by using neo ra coordinate sy	arby Gaia stars o stem. The Gaia s	as the initial tar stars and eps M	get to be us have highly
Diagnostics	(Visit 64:1) W	arning (Form): Ov	erheads are pro	ovisional until t	he Visit Planner h	nas been run.							
	#	Name		Target Coordi	inates		Targ. C	Coord. Correction	s	M	iscellaneous		
ω	(14)	Final_Acen_Bkgn			300 (221.552208	(3d)		Motion RA: 0 mas					
Targets	(- 1)				.75 (-62.62743d)	,		Motion Dec: 0 mas	•				
a I				Equinox: J2000	` ′		Parallax		,, ,, ,				
ΙË				Equinox. \$2000	,			of Position: 2024.2					
Fixed	Comments: Category=Cat Description=[Extended=YE	Coronagraphic, E.	xternal flat fiel	d]									
Ž	#						Targe	et					
Acquisition	1						NON	E					
_	AcqFilter				Repeat	t observation			Back	ground Quadr	ant		
Template	F560W				NO				1				
_	#						Dithe	r Type					
Dithers	1						NON						
nents	#	Coron Mask/Filter	Subarray	Mask	Filter	Readout Pattern	Groups/Int	Integrations/E xp	Exposures/Dit h	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
Spectral Elements	1	4QPM/F1550C	MASK1550	4QPM	F1550C	FASTR1	30	20	1	1	20	148.362	59296.2
Sp													

<u> </u>	<u>'ro</u>	posal 1618 - Observation 64 - Searching Our Closest Stellar Neighbor for Planets and Zodiacal Emission
	PSF References	Additional Justification: false
		No Parallel Attachments Sequence Observations 61, 62, 63, 64, Non-interruptible