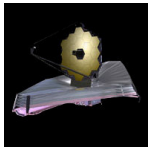

8414 - CAL-MIRI-434 LRS PSF Characterization

Cycle: 4, Proposal Category: CAL/MIRI

INVESTIGATORS

Name	*Institution*
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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Observation Folder				
	1	Bark offset	MIRI Low Resolution Spectroscopy	(2) Barklajdetolli-offset
	2	Bark nod 1	MIRI Low Resolution Spectroscopy	(1) Barklajdetolli
	3	Bark nod 2	MIRI Low Resolution Spectroscopy	(1) Barklajdetolli
	4	Lipperta offset	MIRI Low Resolution Spectroscopy	(4) Lipperta-offset
	5	Lipperta slitless	MIRI Low Resolution Spectroscopy	(3) Lipperta

ABSTRACT

This program aims to improve the empirical point-spread function (PSF) in the LRS by scanning a point source in sub-pixel steps in the spatial (cross-dispersion) direction in both the LRS slit and the SLITLESSPRISM subarray. In the slitless mode, the scan will be across the nominal pointing position. In the slit, the scans will cover both nod positions. These scans will improve the signal-to-noise ratio (S/N) of the empirical PSF, especially at the red end of the wavelength range, because the present targets will be asteroids instead of stars, which were used earlier in the JWST mission. Better PSFs will facilitate better algorithms for extracting spectra from two-dimensional spectral images.

This calibration program may change in response to system developments and the final Cycle 4 science program.

OBSERVING DESCRIPTION

This program observes asteroids in the slit and in slitless mode with a sub-pixel scan to sample the point-spread function.

Observations 1-3 are a non-interruptible sequence.
Observations 4-5 are also a non-interruptible sequence.

TIMING CONTRAINTS:

Observations 1-3 (ofo Barklajdetolli) are to be executed before 1 Mar 2026.
Observations 4-5 (of Lipperta) are to be executed after 30 Sep 2025.
The next period of visibility for Lipperta begins 26 May 2026.

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(1)	Barklajdetolli	TYPE=ASTEROID,A=2.320769491565503,E=0.132902021836323,I=7.286177009467332,O=177.202931201622,W=149.4480588313803,M=82.11249793546639,EQUINOX=J2000,EPOCH=15-AUG-2017:00:00:00,EpochTimeScale=TDB		
Comments: Extended=NO				
(2)	Barklajdetolli-offset	TYPE=ASTEROID,A=2.320769491565503,E=0.132902021836323,I=7.286177009467332,O=177.202931201622,W=149.4480588313803,M=82.11249793546639,EQUINOX=J2000,EPOCH=15-AUG-2017:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	
Comments: Extended=NO				
(3)	Lipperta	TYPE=ASTEROID,A=3.126086945594429,E=0.1823171838703358,I=0.2643136122725074,O=261.4370141950023,W=129.2130029681396,M=36.32087177066279,EQUINOX=J2000,EPOCH=18-SEP-2016:00:00:00,EpochTimeScale=TDB		
Comments: Orbital elements from Horizons Extended=NO				
(4)	Lipperta-offset	TYPE=ASTEROID,A=3.126086945594429,E=0.1823171838703358,I=0.2643136122725074,O=261.4370141950023,W=129.2130029681396,M=36.32087177066279,EQUINOX=J2000,EPOCH=18-SEP-2016:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	
Comments: Orbital elements from Horizons Extended=NO				

Observation

Proposal 8414, Observation 1: Bark offset Fri Aug 29 22:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observation For: [Bark nod 1 (Obs 2), Bark nod 2 (Obs 3)]

Diagnostics

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

(Bark offset (Obs 1)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

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

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(2)	Barklajdetolli-offset	TYPE=ASTEROID,A=2.320769491565503,E=0.132902021836323,I=7.286177009467332,O=177.202931201622,W=149.4480588313803,M=82.11249793546639,EQUINOX=J2000,EPOCH=15-AUG-2017:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	

Comments: Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Subarray	Obtain Verification Image?
	FULL	false

Dithers

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

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	5	90	90	1	1	1495.747	

Special Requirements	
	Before Date 01-MAR-2026 Sequence Observations 1, 2, 3, Non-interruptible DEFAULT WINDOW: ANGULAR RATE Barklajdetolli-offset FROM JWST LESS THAN 0.075

Observation

Proposal 8414, Observation 2: Bark nod 1

Fri Aug 29 22:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observations:[Bark offset (Obs 1), Bark nod 2 (Obs 3)]

Diagnostics

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

(Bark nod 1 (Obs 2)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(1)	Barklajdetolli	TYPE=ASTEROID,A=2.320769491565503,E=0.132902021836323,I=7.286177009467332,O=177.202931201622,W=149.4480588313803,M=82.11249793546639,EQUINOX=J2000,EPOCH=15-AUG-2017:00:00:00,EpochTimeScale=TDB		

Comments: Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	FND	FAST	4	1	1	11.1	241674.04

Template

Subarray	Obtain Verification Image?
FULL	true

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	INTRAPIXEL SLIT SCAN NOD1				

Pointing Verification

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	13.875		FND

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	5	15	165	1	11	2716.764	

Special Requirements

Sequence Observations 1, 2, 3, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE Barklajdetolli FROM JWST LESS THAN 0.075

Observation

Proposal 8414, Observation 3: Bark nod 2

Fri Aug 29 22:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observations:[Bark offset (Obs 1), Bark nod 1 (Obs 2)]

Diagnostics

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

(Bark nod 2 (Obs 3)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(1)	Barklajdetolli	TYPE=ASTEROID,A=2.320769491565503,E=0.132902021836323,I=7.286177009467332,O=177.202931201622,W=149.4480588313803,M=82.11249793546639,EQUINOX=J2000,EPOCH=15-AUG-2017:00:00:00,EpochTimeScale=TDB		

Comments: Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	FND	FAST	4	1	1	11.1	241674.04

Template

Subarray	Obtain Verification Image?
FULL	true

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	INTRAPIXEL SLIT SCAN NOD2				

Pointing Verification

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	5	1	1	1	1	13.875		FND

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	5	15	165	1	11	2716.764	

Special Requirements

Sequence Observations 1, 2, 3, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE Barklajdetolli FROM JWST LESS THAN 0.075

Observation

Proposal 8414, Observation 4: Lipperta offset Fri Aug 29 22:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observation For: [Lipperta slitless (Obs 5)]

Diagnostics

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

(Lipperta offset (Obs 4)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(4)	Lipperta-offset	TYPE=ASTEROID,A=3.126086945594429,E=0.1823171838703358,I=0.2643136122725074,O=261.4370141950023,W=129.2130029681396,M=36.32087177066279,EQUINOX=J2000,EPOCH=18-SEP-2016:00:00:00,EpochTimeScale=TDB	TYPE=POS_ANGLE,RAD=60,ANG=0,REF=NORTH	

Comments: Orbital elements from Horizons Extended=NO

Acquisition

#	Target
1	NONE

Template

AcqFilter	Subarray	Obtain Verification Image?
FND	SLITLESSPRISM	false

Dithers

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

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	12	110	110	1	1	227.268	233226.05

Special Requirements	
	Sequence Observations 4, 5, Non-interruptible DEFAULT WINDOW: ANGULAR RATE Lipperta-offset FROM JWST LESS THAN 0.075

Observation

Proposal 8414, Observation 5: Lipperta slitless Fri Aug 29 22:00:09 GMT 2025

Diagnostic Status: Warning

Observing Template: MIRI Low Resolution Spectroscopy

Background Observations:[Lipperta offset (Obs 4)]

Diagnostics

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

(Lipperta slitless (Obs 5)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

(Visit 5:1) Informational (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

Solar System Targets

#	Name	Level 1	Level 2	Level 3
(3)	Lipperta	TYPE=ASTEROID,A=3.126086945594429,E=0.1823171838703358,I=0.2643136122725074,O=261.4370141950023,W=129.2130029681396,M=36.32087177066279,EQUINOX=J2000,EPOCH=18-SEP-2016:00:00:00,EpochTimeScale=TDB		

Comments: Orbital elements from Horizons Extended=NO

Acquisition

#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	Optional ETC ID
1	SAME	FND	FAST	8	1	1	1.272	241674.02

Template

Subarray	Obtain Verification Image?
SLITLESSPRISM	true

Dithers

#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset
1	INTRAPIXEL SLITLESS SCAN				

Pointing Verification

#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	Optional ETC ID	Filter
1	FASTR1	8	1	1	1	1	1.272		FND

Proposal 8414 - Observation 5 - CAL-MIRI-434 LRS PSF Characterization

Spectral Elements

#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	Optional ETC ID
1	FASTR1	12	10	110	1	11	225.678	241674.01

Special Requirements

After Date 30-SEP-2025

Sequence Observations 4, 5, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE Lipperta FROM JWST LESS THAN 0.075