



12584 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Cycle: 5, Proposal Category: CAL/MIRI

INVESTIGATORS

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OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Set01 - J1757132/F1280W				
	1	Set01-FULL-1	MIRI Imaging	(1) J1757132
	2	Set01-SUB128_IP	MIRI Imaging	(1) J1757132
	3	Set01-SUB64_IP	MIRI Imaging	(1) J1757132
	4	Set01-FULL-2	MIRI Imaging	(1) J1757132
Set02 - J1802271/F1280W				
	5	Set02-FULL-1	MIRI Imaging	(2) J1802271
	6	Set02-SUB64_IP	MIRI Imaging	(2) J1802271
	7	Set02-SUB128_IP	MIRI Imaging	(2) J1802271
	8	Set02-FULL-2	MIRI Imaging	(2) J1802271

ABSTRACT

This science verification activity is to support the calibration of the new Imaging subarrays, SUB64_IP and SUB128_IP.

JWST Proposal 12584 (Created: Monday, June 29, 2026, 10:00:22AM Eastern Standard Time) - Overview

Goal: Establish flux calibration as a function of subarray. A similar calibration activity was performed for the existing subarrays (PIDs 1533, 4488), and now must be repeated for the new subarrays.

Activity: Standard stars 2MASS J17571324+6703409 (A3 V) and 2MASS J18022716+6043356 (A2 V) will be observe in the FULL array and two new subarrays with the F1280W filter to photometrically calibrate the new subarrays to the FULL and other subarrays.

This activity builds on the Cycle 1 activity with some update: 1) In PID 1533 the J1757 observations were paired with the F770W filter, and 2) In PID 1533 and 4488 the "sandwiches" included all subarrays. The targets and filter used to do this are chosen based on initial commissioning activity, which is detailed in Gordon, et al., 2025, ApJ, 169, 6. In that work, there was a discrepancy in the SUB128 subarray.

The shift to the longer-wavelength filter F1280W reduces detector systematics by bringing up the background. We will also not repeat the calibration activity for the other currently active subarrays (BRIGHTSKY, SUB256, etc.). Here we also switch the order of SUB128_IP and SUB64_IP in the two sets of observations to see if switching between subarrays impacts the extracted flux. Observing two different stars in the two sets of observations serves as an internal check that on the new subarray transfer values.

This calibration program is provisional and may change in response to system developments and the final science program.

OBSERVING DESCRIPTION

We are making "subarray sandwiches" with the new SUB64_IP and SUB128_IP Imaging subarrays. We will use both J1757132 and J1802271 in the F1280W.

An example of the subarray sandwich would use target J1757132 in the F1280W filter:

Example sandwich:

- Obs01 in FULL
- Obs02 in SUB128_IP
- Obs03 in SUB64_IP
- Obs04 in FULL

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Each sandwich is linked and non-interruptible. Obs04 is to check for consistency with Obs01 after subarray switching. We reverse the ordering of the subarrays in the second sandwich to investigate systematics from switching between subarrays.

Here are the sandwiches we are making:

- Sandwich 01 - J1757/F1280W - FULL-SUB128_IP-SUB64_IP-FULL
- Sandwich 02 - J1802/F1280W - FULL-SUB64_IP-SUB128_IP-FULL

Proposal 12584 - Targets - CAL-MIRI-580: Imager Subarray Transfer Calibration

Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
	(1)	J1757132	RA: 17 57 13.2322 (269.3051342d) Dec: +67 03 40.76 (67.06132d) Equinox: J2000	Proper Motion RA: 0.841 mas/yr Proper Motion Dec: -12.94500000312837 mas/yr Parallax: 9.482000000000001E-4" Epoch of Position: 2000	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=Star Description=[A dwarfs]				
	(2)	J1802271	RA: 18 02 27.1685 (270.6132021d) Dec: +60 43 35.59 (60.72655d) Equinox: J2000	Proper Motion RA: 2.82 mas/yr Proper Motion Dec: -2.238000070065027 mas/yr Parallax: 6.355E-4" Epoch of Position: 2000	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=Star Description=[A dwarfs]				

Proposal 12584 - Observation 1 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 1: Set01-FULL-1										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
Observing Template: MIRI Imaging											
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	
	(1)	J1757132	RA: 17 57 13.2322 (269.3051342d) Dec: +67 03 40.76 (67.06132d) Equinox: J2000				Proper Motion RA: 0.841 mas/yr Proper Motion Dec: -12.94500000312837 mas/yr Parallax: 9.482000000000001E-4" Epoch of Position: 2000				
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.										
	Category=Star Description=[A dwarfs]										
Template	Subarray										
	FULL										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	25	1	1	Dither 1	4	4	277.504	295892
Special Requirements	Before Date 01-SEP-2026:00:00:00										
	Sequence Observations 1, 2, 3, 4, Non-interruptible										

Proposal 12584 - Observation 2 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 2: Set01-SUB128_IP										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
Observing Template: MIRI Imaging											
Diagnostics	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(1)	J1757132	RA: 17 57 13.2322 (269.3051342d) Dec: +67 03 40.76 (67.06132d) Equinox: J2000			Proper Motion RA: 0.841 mas/yr Proper Motion Dec: -12.94500000312837 mas/yr Parallax: 9.482000000000001E-4" Epoch of Position: 2000					
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.											
Category=Star											
Description=[A dwarfs]											
Template	Subarray										
	SUB128_IP										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	500	1	1	Dither 1	4	4	240.64	
Special Requirements	Sequence Observations 1, 2, 3, 4, Non-interruptible										

Proposal 12584 - Observation 3 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 3: Set01-SUB64_IP										Mon Jun 29 15:00:22 GMT 2026	
	Diagnostic Status: Warning											
	Observing Template: MIRI Imaging											
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		
	(1)	J1757132	RA: 17 57 13.2322 (269.3051342d) Dec: +67 03 40.76 (67.06132d) Equinox: J2000				Proper Motion RA: 0.841 mas/yr Proper Motion Dec: -12.94500000312837 mas/yr Parallax: 9.482000000000001E-4" Epoch of Position: 2000					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.											
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.											
	Category=Star Description=[A dwarfs]											
Template	Subarray											
	SUB64_IP											
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size		
	1	CYCLING	1	4						DEFAULT		
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID	
	1	F1280W	FASTR1	800	1	1	Dither 1	4	4	278.528		
Special Requirements	Sequence Observations 1, 2, 3, 4, Non-interruptible											

Proposal 12584 - Observation 4 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 4: Set01-FULL-2										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
Diagnostics	(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(1)	J1757132	RA: 17 57 13.2322 (269.3051342d) Dec: +67 03 40.76 (67.06132d) Equinox: J2000			Proper Motion RA: 0.841 mas/yr Proper Motion Dec: -12.94500000312837 mas/yr Parallax: 9.482000000000001E-4" Epoch of Position: 2000			Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM. Category=Star Description=[A dwarfs]		
Template	Subarray FULL										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	25	1	1	Dither 1	4	4	277.504	
Special Requirements	Sequence Observations 1, 2, 3, 4, Non-interruptible										

Proposal 12584 - Observation 5 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 5: Set02-FULL-1										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
Diagnostics	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(2)	J1802271	RA: 18 02 27.1685 (270.6132021d) Dec: +60 43 35.59 (60.72655d) Equinox: J2000			Proper Motion RA: 2.82 mas/yr Proper Motion Dec: -2.238000070065027 mas/yr Parallax: 6.355E-4" Epoch of Position: 2000					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.										
	Category=Star										
	Description=[A dwarfs]										
Template	Subarray										
	FULL										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	16	1	1	Dither 1	4	4	177.603	
Special Requirements	Before Date 01-SEP-2026:00:00:00										
	Sequence Observations 5, 6, 7, 8, Non-interruptible										

Proposal 12584 - Observation 6 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 6: Set02-SUB64_IP										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
Diagnostics	(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(2)	J1802271	RA: 18 02 27.1685 (270.6132021d)			Proper Motion RA: 2.82 mas/yr					
			Dec: +60 43 35.59 (60.72655d)			Proper Motion Dec: -2.238000070065027 mas/yr					
			Equinox: J2000			Parallax: 6.355E-4"					
						Epoch of Position: 2000					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.										
	Category=Star										
	Description=[A dwarfs]										
Template	Subarray										
	SUB64_IP										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	400	1	1	Dither 1	4	4	139.264	
Special Requirements	Sequence Observations 5, 6, 7, 8, Non-interruptible										

Proposal 12584 - Observation 7 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 7: Set02-SUB128_IP Diagnostic Status: Warning Observing Template: MIRI Imaging										Mon Jun 29 15:00:22 GMT 2026
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)	J1802271	RA: 18 02 27.1685 (270.6132021d) Dec: +60 43 35.59 (60.72655d) Equinox: J2000			Proper Motion RA: 2.82 mas/yr Proper Motion Dec: -2.238000070065027 mas/yr Parallax: 6.355E-4" Epoch of Position: 2000					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.										
	Category=Star Description=[A dwarfs]										
Template	Subarray SUB128_IP										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	2	1	1	Dither 1	4	4	0.963	
Special Requirements	Sequence Observations 5, 6, 7, 8, Non-interruptible										

Proposal 12584 - Observation 8 - CAL-MIRI-580: Imager Subarray Transfer Calibration

Observation	Proposal 12584, Observation 8: Set02-FULL-2										Mon Jun 29 15:00:22 GMT 2026
	Diagnostic Status: Warning										
	Observing Template: MIRI Imaging										
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)	J1802271	RA: 18 02 27.1685 (270.6132021d) Dec: +60 43 35.59 (60.72655d) Equinox: J2000			Proper Motion RA: 2.82 mas/yr Proper Motion Dec: -2.238000070065027 mas/yr Parallax: 6.355E-4" Epoch of Position: 2000					
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.										
	SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.										
	Category=Star Description=[A dwarfs]										
Template	Subarray										
	FULL										
Dithers	#	Dither Type	Starting Point	Number of Points	Points	Starting Set	Number of Sets	Optimized For	Direction	Pattern Size	
	1	CYCLING	1	4						DEFAULT	
Spectral Elements	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Exposures/Dith	Dither	Total Dithers	Total Integrations	Total Exposure Time	Optional ETC ID
	1	F1280W	FASTR1	16	1	1	Dither 1	4	4	177.603	
Special Requirements	Sequence Observations 5, 6, 7, 8, Non-interruptible										