



## 6618 - CAL-MIRI-318: Imaging Filter Characterization

Cycle: 3, Proposal Category: CAL/MIRI

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>
<b>Dr. Greg Sloan (PI)</b>	<b>Space Telescope Science Institute</b>
Ms. Misty Cracraft (CoI)	Space Telescope Science Institute
Dr. Bryan Jason Holler (CoI)	Space Telescope Science Institute
Dr. Alberto Noriega-Crespo (CoI)	Space Telescope Science Institute

### OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	1		MIRI Medium Resolution Spectroscopy	(1) 1999XC173
	2		MIRI Imaging	(1) 1999XC173
	3		MIRI Medium Resolution Spectroscopy	(1) 1999XC173

### ABSTRACT

This activity will test the ground-based filter transmission functions by observing a red object through all nine MIRI imaging filters. The target will be a main-belt asteroid which will also be observed with the MRS to provide a spectrum covering the full 5-28 um wavelength range. Comparing synthetic photometry of the asteroid using the MRS spectrum of the asteroid with the actual photometry with the imager will test the filter functions and check for any possible filter leaks of red or blue light. Similar analysis on standard stars, comparing actual photometry and synthetic photometry with both model spectra and MRS spectra, will provide further tests.

This calibration program may change in response to system developments and the final Cycle 3 science program.

## **OBSERVING DESCRIPTION**

This CAL activity observes a moving target in the Solar System in both the MRS and the imager.

The target chosen, (75482) 1999 X173, has an extremely slow rotation period (estimated 1234 +/- 90 hours), which makes it useful as an absolute calibrator.

## **TIMING CONSTRAINTS**

Proposal 6618 - Targets - CAL-MIRI-318: Imaging Filter Characterization

Solar System Targets	#	Name	Level 1	Level 2	Level 3
	(1)	1999XC173	TYPE=ASTEROID,A=2.363962784015966,E=0.0760 5374753274954,I=6.120344158481379 .O=58.88292600324316,W=48.57907301403768,M=2 60.9046232282612,EQUINOX=J2000,EPOCH=06- MAR-2017:00:00:00,EpochTimeScale=TDB		
	<i>Comments: Extended=NO</i>				

Proposal 6618 - Observation 1 - CAL-MIRI-318: Imaging Filter Characterization

Wed Nov 27 00:00:16 GMT 2024

<b>Observation</b>	<b>Proposal 6618, Observation 1</b> <b>Diagnostic Status: Warning</b> Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Observation 1) Informational (Form): The Visit Planner and Spike may produce different schedulability results.												
<b>Solar System Targets</b>	<b>#</b>	<b>Name</b>	<b>Level 1</b>				<b>Level 2</b>				<b>Level 3</b>		
	(1)	1999XC173	TYPE=ASTEROID,A=2.363962784015966,E=0.0760 5374753274954,I=6.120344158481379 ,O=58.88292600324316,W=48.57907301403768,M=2 60.9046232282612,EQUINOX=J2000,EPOCH=06- MAR-2017:00:00:00,EpochTimeScale=TDB  Comments: Extended=NO										
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>				
	1	SAME	F560W	FAST	4	1	1	11.1	192838.34				
<b>Template</b>	<b>Primary Channel</b>		<b>Simultaneous Imaging</b>			<b>Imager Subarray</b>			<b>Grating Wheel Direction</b>				
	All MRS		NO			FULL			Allow Auto Reorder				
<b>Dithers</b>	<b>#</b>	<b>Dither Type</b>				<b>Optimized For</b>				<b>Direction</b>			
	1	4-Point				POINT SOURCE				NEGATIVE			
<b>Spectral Elements</b>	<b>#</b>	<b>Wavelength Range</b>	<b>Detector</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Exposures/Dith</b>	<b>Dither</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>
	1	SHORT(A)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	1	SHORT(A)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	
	2	MEDIUM(B)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	2	MEDIUM(B)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	
	3	LONG(C)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	3	LONG(C)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	

## Proposal 6618 - Observation 1 - CAL-MIRI-318: Imaging Filter Characterization

### Special Requirements

Sequence Observations 1, 2, 3, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE 1999XC173 FROM JWST LESS THAN 0.075

Proposal 6618 - Observation 2 - CAL-MIRI-318: Imaging Filter Characterization

Wed Nov 27 00:00:16 GMT 2024

<b>Observation</b>	<b>Proposal 6618, Observation 2</b> <b>Diagnostic Status: Warning</b> Observing Template: MIRI Imaging										
	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Observation 2) Informational (Form): The Visit Planner and Spike may produce different schedulability results.										
<b>Solar System Targets</b>	<b>#</b>	<b>Name</b>	<b>Level 1</b>	<b>Level 2</b>			<b>Level 3</b>				
	(1)	1999XC173	TYPE=ASTEROID,A=2.363962784015966,E=0.0760 5374753274954,I=6.120344158481379 .O=58.88292600324316,W=48.57907301403768,M=2 60.9046232282612,EQUINOX=J2000,EPOCH=06- MAR-2017:00:00:00,EpochTimeScale=TDB  <i>Comments: Extended=NO</i>								
<b>Template</b>	Subarray										
	BRIGHTSKY										
<b>Dithers</b>	<b>#</b>	<b>Dither Type</b>	<b>Starting Point</b>	<b>Number of Points</b>	<b>Points</b>	<b>Starting Set</b>	<b>Number of Sets</b>	<b>Optimized For</b>	<b>Direction</b>	<b>Pattern Size</b>	
	1	4-Point-Sets				1	1	POINT SOURCE	POSITIVE	DEFAULT	
<b>Spectral Elements</b>	<b>#</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Exposures/Dith</b>	<b>Dither</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>
	1	F560W	FASTR1	10	1	1	Dither 1	4	4	34.611	
	2	F770W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	3	F1000W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	4	F1130W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	5	F1280W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	6	F1500W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	7	F1800W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	8	F2100W	FASTR1	5	1	1	Dither 1	4	4	17.306	
	9	F2550W	FASTR1	5	1	1	Dither 1	4	4	17.306	

## Proposal 6618 - Observation 2 - CAL-MIRI-318: Imaging Filter Characterization

### Special Requirements

Sequence Observations 1, 2, 3, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE 1999XC173 FROM JWST LESS THAN 0.075

Proposal 6618 - Observation 3 - CAL-MIRI-318: Imaging Filter Characterization

Wed Nov 27 00:00:16 GMT 2024

<b>Observation</b>	<b>Proposal 6618, Observation 3</b> <b>Diagnostic Status: Warning</b> Observing Template: MIRI Medium Resolution Spectroscopy												
	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. (Observation 3) Informational (Form): The Visit Planner and Spike may produce different schedulability results.												
<b>Solar System Targets</b>	<b>#</b>	<b>Name</b>	<b>Level 1</b>				<b>Level 2</b>				<b>Level 3</b>		
	(1)	1999XC173	TYPE=ASTEROID,A=2.363962784015966,E=0.0760 5374753274954,I=6.120344158481379 .O=58.88292600324316,W=48.57907301403768,M=2 60.9046232282612,EQUINOX=J2000,EPOCH=06- MAR-2017:00:00:00,EpochTimeScale=TDB										
<i>Comments: Extended=NO</i>													
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>				
	1	SAME	F560W	FAST	4	1	1	11.1	192838.34				
<b>Template</b>	<b>Primary Channel</b>		<b>Simultaneous Imaging</b>			<b>Imager Subarray</b>			<b>Grating Wheel Direction</b>				
	All MRS		NO			FULL			Allow Auto Reorder				
<b>Dithers</b>	<b>#</b>	<b>Dither Type</b>				<b>Optimized For</b>				<b>Direction</b>			
	1	4-Point				POINT SOURCE				NEGATIVE			
<b>Spectral Elements</b>	<b>#</b>	<b>Wavelength Range</b>	<b>Detector</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Exposures/Dith</b>	<b>Dither</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>
	1	SHORT(A)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	1	SHORT(A)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	
	2	MEDIUM(B)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	2	MEDIUM(B)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	
	3	LONG(C)	MRSLONG		FASTR1	90	1	1	Dither 1	4	4	999.014	
	3	LONG(C)	MRSSHORT		FASTR1	90	1	1	Dither 1	4	4	999.014	

## Proposal 6618 - Observation 3 - CAL-MIRI-318: Imaging Filter Characterization

### Special Requirements

Sequence Observations 1, 2, 3, Non-interruptible

DEFAULT WINDOW: ANGULAR RATE 1999XC173 FROM JWST LESS THAN 0.075