



2751 - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

Cycle: 1, Proposal Category: CAL/OTE

INVESTIGATORS

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OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Epoch 1 NRC PIL Image - Primary Mirror Monitoring				
	1		NIRCam PIL Imaging	(1) 2MASS-05562621-6359103
Epoch 2 NRC PIL Image - Primary Mirror Monitoring				
	2		NIRCam PIL Imaging	(2) 2MASS-19590854+7313564
Epoch 3 NRC PIL Image - Primary Mirror Monitoring				
	3		NIRCam PIL Imaging	(4) 2MASS-12494253+5132129
Epoch 4 NRC PIL Image - Primary Mirror Monitoring				
	4		NIRCam PIL Imaging	(3) 2MASS-17505832+6914281

ABSTRACT

Quarterly NIRCam PIL images are requested to monitor the state of the primary mirror. PIL images will be inspected to identify and characterize features due to micro-meteoroid degradation, both those previously identified in WFE maps from phase retrieval and those for which the damage from individual micro-meteoroid are below the detection threshold in phase retrieval but are readily identifiable in PIL images. The features will be

analyzed with detailed physical optical models in an effort to gain further knowledge of the shape and magnitude of the damage, both in WFE and reflectivity, beyond what can be derived from phase retrieval. The goal is to use the results to accumulate statistical knowledge of the distribution of degradation, for the purpose of characterizing and monitoring observatory throughput and WFE and perhaps informing operations in strategies to minimize future degradation.

OBSERVING DESCRIPTION

Four Epochs of Primary Mirror monitoring observations using the NIRCcam PIL template with the F140M and F210M filters on a K=7th magnitude star (taken from the pool of targets for the Routine WFS&C program).

2 Extra targets have been included in this program (and are not used at first) as backups in case any of the selected targets turns out to be an unknown binary.

Proposal 2751 - Targets - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	2MASS-05562621-6359103	RA: 05 56 26.1833 (89.1090971d) Dec: -63 59 10.34 (-63.98621d) Equinox: J2000	Proper Motion RA: -1.579730909 mas/yr Proper Motion Dec: 4.980070582 mas/yr Epoch of Position: 2015.5	
<i>Comments: K-magnitude = 7.05, Jmag = 8.229</i> <i>Category=Calibration</i> <i>Description=[Focus test]</i>				
(2)	2MASS-19590854+7313564	RA: 19 59 8.5425 (299.7855937d) Dec: +73 13 56.50 (73.23236d) Equinox: J2000	Proper Motion RA: 0.53906769 mas/yr Proper Motion Dec: -5.622224296 mas/yr Epoch of Position: 2015.5	
<i>Comments: K-magnitude = 7.004, Jmag = 7.990</i> <i>Category=Calibration</i> <i>Description=[Focus test]</i>				
(3)	2MASS-17505832+6914281	RA: 17 50 58.3019 (267.7429246d) Dec: +69 14 28.14 (69.24115d) Equinox: J2000	Proper Motion RA: -12.11369631 mas/yr Proper Motion Dec: 0.454306278 mas/yr Epoch of Position: 2015.5	
<i>Comments: K-magnitude = 6.935, Jmag = 7.621</i> <i>Category=Calibration</i> <i>Description=[Focus test]</i>				
(4)	2MASS-12494253+5132129	RA: 12 49 42.4856 (192.4270233d) Dec: +51 32 13.19 (51.53700d) Equinox: J2000	Proper Motion RA: -26.47648216 mas/yr Proper Motion Dec: 16.71649291 mas/yr Epoch of Position: 2015.5	
<i>Comments: K-magnitude = 7.007, Jmag = 7.610</i> <i>Category=Calibration</i> <i>Description=[Focus test]</i>				

Fixed Targets

Proposal 2751 - Observation 1 - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

Mon Feb 27 17:01:47 GMT 2023

Observation	<p>Proposal 2751, Observation 1</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCcam PIL Imaging</p>						
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)	2MASS-05562621-6359103	RA: 05 56 26.1833 (89.1090971d) Dec: -63 59 10.34 (-63.98621d) Equinox: J2000	Proper Motion RA: -1.579730909 mas/yr Proper Motion Dec: 4.980070582 mas/yr Epoch of Position: 2015.5			
	<p><i>Comments: K-magnitude = 7.05, Jmag = 8.229</i></p> <p><i>Category=Calibration</i></p> <p><i>Description=/Focus test]</i></p>						
Template	Module						
	B						
Spectral Elements	#	Short Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time ETC Wkbk.Calc ID
	1	F140M	BRIGHT2	7	2	2	311.366
	2	F210M	BRIGHT2	7	2	2	311.366
Special Requirements	<p>Between Dates 30-JUL-2022:00:00:00 and 08-SEP-2022:00:00:00</p> <p>No Parallel Attachments</p>						

Proposal 2751 - Observation 2 - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

Mon Feb 27 17:01:47 GMT 2023

Observation	<p>Proposal 2751, Observation 2</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCcam PIL Imaging</p>						
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	
	(2)	2MASS-19590854+7313564	RA: 19 59 8.5425 (299.7855937d) Dec: +73 13 56.50 (73.23236d) Equinox: J2000	Proper Motion RA: 0.53906769 mas/yr Proper Motion Dec: -5.622224296 mas/yr Epoch of Position: 2015.5			
	<p><i>Comments: K-magnitude = 7.004, Jmag = 7.990</i></p> <p><i>Category=Calibration</i></p> <p><i>Description=/Focus test]</i></p>						
Template	Module						
	A						
Spectral Elements	#	Short Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time ETC Wkbk.Calc ID
	1	F140M	BRIGHT2	7	2	2	311.366
	2	F210M	BRIGHT2	7	2	2	311.366
Special Requirements	<p>Between Dates 31-OCT-2022:00:00:00 and 01-DEC-2022:00:00:00</p> <p>No Parallel Attachments</p>						

Proposal 2751 - Observation 3 - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

Mon Feb 27 17:01:47 GMT 2023

Observation	<p>Proposal 2751, Observation 3</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCcam PIL Imaging</p>																														
Diagnostics	<p>(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>																														
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th colspan="2">Targ. Coord. Corrections</th> <th colspan="2">Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(4)</td> <td>2MASS-12494253+5132129</td> <td>RA: 12 49 42.4856 (192.4270233d) Dec: +51 32 13.19 (51.53700d) Equinox: J2000</td> <td colspan="2">Proper Motion RA: -26.47648216 mas/yr Proper Motion Dec: 16.71649291 mas/yr Epoch of Position: 2015.5</td> <td colspan="2"></td> </tr> <tr> <td colspan="7"> <p><i>Comments: K-magnitude = 7.007, Jmag = 7.610</i></p> <p><i>Category=Calibration</i></p> <p><i>Description=/Focus test]</i></p> </td> </tr> </tbody> </table>							#	Name	Target Coordinates	Targ. Coord. Corrections		Miscellaneous		(4)	2MASS-12494253+5132129	RA: 12 49 42.4856 (192.4270233d) Dec: +51 32 13.19 (51.53700d) Equinox: J2000	Proper Motion RA: -26.47648216 mas/yr Proper Motion Dec: 16.71649291 mas/yr Epoch of Position: 2015.5				<p><i>Comments: K-magnitude = 7.007, Jmag = 7.610</i></p> <p><i>Category=Calibration</i></p> <p><i>Description=/Focus test]</i></p>									
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1	F140M	BRIGHT2	7	2	2	311.366																									
2	F210M	BRIGHT2	7	2	2	311.366																									
Special Requirements	<p>Between Dates 31-JAN-2023:00:00:00 and 01-MAR-2023:00:00:00</p> <p>No Parallel Attachments</p>																														

Proposal 2751 - Observation 4 - Cycle 1 Calibration: NRC PIL Images for Monitoring the Primary Mirror

Mon Feb 27 17:01:47 GMT 2023

Observation	<p>Proposal 2751, Observation 4</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRCcam PIL Imaging</p>						
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	
	(3)	2MASS-17505832+6914281	RA: 17 50 58.3019 (267.7429246d) Dec: +69 14 28.14 (69.24115d) Equinox: J2000	Proper Motion RA: -12.11369631 mas/yr Proper Motion Dec: 0.454306278 mas/yr Epoch of Position: 2015.5			
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Template	Module						
	A						
Spectral Elements	#	Short Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time ETC Wkbk.Calc ID
	1	F140M	BRIGHT2	7	2	2	311.366
	2	F210M	BRIGHT2	7	2	2	311.366
Special Requirements	<p>Between Dates 30-APR-2023:00:00:00 and 01-JUN-2023:00:00:00</p> <p>No Parallel Attachments</p>						