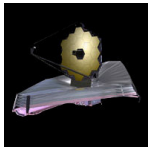

1501 - Astrometric Calibration

Cycle: 1, Proposal Category: CAL/NIRISS

INVESTIGATORS

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
Observation Folder				
	1	Filter Sequence	NIRISS External Calibration	(1) LMC-NIRISS-FGS-ALIGNMENT
	2	Filter Sequence	NIRISS External Calibration	(1) LMC-NIRISS-FGS-ALIGNMENT

ABSTRACT

The initial astrometric calibration for NIRISS will be done in commissioning. Subsequent astrometric observations may be required to revise and improve the initial astrometric calibration. This program carries out an astrometric cailbration assuming that the initial solution is known to the required accuracy (5 milli-arc-seconds RMS precision) and that we need to carry out additional observations to refine the existing solution. The three observations in the commissioning CAR are redone here, linked together. The first such set of three observations should be done within 3 months after the end of commissioning, and the second set of three observations should be done 4 or more months after the first set.

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

OBSERVING DESCRIPTION

The program carries out an astrometric calibration of NIRISS using the same method as what is to be done during commissioning. In addition a comparion of the full frame image of the astrometric field to an observation in the SUBAMPCAL sub-array may be taken for photometric calibration of the amplifier channels 2 to 4 with respect to channel 1 if this seems to be needed after commissioning. That particular observation is not presently part of the program.

There are two duplicate sets of observations with a minimum gap of about 150 days between the first set and the second set to produce two measurements well separated in cycle 1. The first set is scheduled sometime in the first three months of cycle 1 assuming a start date of 20 June 2022.

The program here is based on CAR 1087, the initial NIRISS astrometric calibration.

If we see a change in the astrometry in the first of these two observations compared to what was found in commissioning, it may be necessary to add additional observations to monitor the astrometry. This is not expected, but this is why the allocated time is approximately twice than the time required for these two observations.

Proposal 1501 - Targets - Astrometric Calibration

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	LMC-NIRISS-FGS-ALIGNMENT	RA: 05 21 57.3030 (80.4887625d) Dec: -69 29 57.90 (-69.49942d) Equinox: J2000		

Comments:
Category=Calibration
Description=[Astrometric]

Observation

Proposal 1501, Observation 1: Filter Sequence Tue Dec 06 19:00:29 GMT 2022

Diagnostic Status: Warning

Observing Template: NIRISS External Calibration

Coordinated Parallel Template(s): FGS External Calibration

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)	LMC-NIRISS-FGS-ALIGNMENT	RA: 05 21 57.3030 (80.4887625d) Dec: -69 29 57.90 (-69.49942d) Equinox: J2000		

Comments:
Category=Calibration
Description=[Astrometric]

Acquisition

NIRISS External Calibration	Target
1	NONE

Template

NIRISS External Calibration	FGS External Calibration
Pointing Type: PRIME	Target type: IMAGE
AcqTarget: NONE	Detector: GUIDER2
Acquisition Mode: null	
AcqFilter: F480M	

Dithers

#	Pattern Type	Image Dithers	Primary Dithers	Subpixel Positions	Pattern Size
1	IMAGING	4			

Spectral Elements

NIRISS External Calibration	Subarray	Aperture	Filter Wheel	Pupil Wheel	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	FULL	DEFAULT APERTURE	F277W	CLEARP	NISRAPID	10	1	4	4	472.418	
2	FULL	DEFAULT APERTURE	F444W	CLEARP	NISRAPID	10	1	4	4	472.418	
3	FULL	DEFAULT APERTURE	F356W	CLEARP	NISRAPID	10	1	4	4	472.418	
4	FULL	DEFAULT APERTURE	F430M	CLEARP	NISRAPID	15	1	4	4	687.153	
5	FULL	DEFAULT APERTURE	F380M	CLEARP	NISRAPID	15	1	4	4	687.153	
6	FULL	DEFAULT APERTURE	F480M	CLEARP	NISRAPID	10	1	4	4	472.418	
7	FULL	DEFAULT APERTURE	F480M	NRM	NISRAPID	25	1	4	4	1116.624	
8	FULL	DEFAULT APERTURE	CLEAR	F090W	NISRAPID	5	1	4	4	257.682	
9	FULL	DEFAULT APERTURE	CLEAR	F115W	NISRAPID	5	1	4	4	257.682	
10	FULL	DEFAULT APERTURE	CLEAR	F158M	NISRAPID	5	2	4	8	515.365	
11	FULL	DEFAULT APERTURE	CLEAR	F140M	NISRAPID	5	2	4	8	515.365	
12	FULL	DEFAULT APERTURE	CLEAR	F150W	NISRAPID	5	1	4	4	257.682	
13	FULL	DEFAULT APERTURE	CLEAR	F200W	NISRAPID	5	1	4	4	257.682	

Spectral Elements

FGS External Calibration	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	FGSRAPID	4	2	4	8	429.471	
2	FGSRAPID	4	2	4	8	429.471	
3	FGSRAPID	4	2	4	8	429.471	
4	FGSRAPID	6	2	4	8	601.259	
5	FGSRAPID	6	2	4	8	601.259	
6	FGSRAPID	4	2	4	8	429.471	
7	FGSRAPID	11	2	4	8	1030.73	
8	FGSRAPID	3	1	4	4	171.788	
9	FGSRAPID	3	1	4	4	171.788	
10	FGSRAPID	4	2	4	8	429.471	
11	FGSRAPID	4	2	4	8	429.471	
12	FGSRAPID	3	1	4	4	171.788	
13	FGSRAPID	3	1	4	4	171.788	

Special Requirements	
	Between Dates 20-JUN-2022 and 20-OCT-2022:00:00:00 No Parallel Attachments Guide Star in Guider 1

Observation

Proposal 1501, Observation 2: Filter Sequence Tue Dec 06 19:00:29 GMT 2022

Diagnostic Status: Warning

Observing Template: NIRISS External Calibration

Coordinated Parallel Template(s): FGS External Calibration

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)	LMC-NIRISS-FGS-ALIGNMENT	RA: 05 21 57.3030 (80.4887625d) Dec: -69 29 57.90 (-69.49942d) Equinox: J2000		

Comments:
Category=Calibration
Description=[Astrometric]

Acquisition

NIRISS External Calibration	Target
1	NONE

Template

NIRISS External Calibration	FGS External Calibration
Pointing Type: PRIME	Target type: IMAGE
AcqTarget: NONE	Detector: GUIDER1
Acquisition Mode: null	
AcqFilter: F480M	

Dithers

#	Pattern Type	Image Dithers	Primary Dithers	Subpixel Positions	Pattern Size
1	IMAGING	4			

Spectral Elements

NIRISS External Calibration	Subarray	Aperture	Filter Wheel	Pupil Wheel	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	FULL	DEFAULT APERTURE	F277W	CLEARP	NISRAPID	10	1	4	4	472.418	
2	FULL	DEFAULT APERTURE	F444W	CLEARP	NISRAPID	10	1	4	4	472.418	
3	FULL	DEFAULT APERTURE	F356W	CLEARP	NISRAPID	10	1	4	4	472.418	
4	FULL	DEFAULT APERTURE	F430M	CLEARP	NISRAPID	15	1	4	4	687.153	
5	FULL	DEFAULT APERTURE	F380M	CLEARP	NISRAPID	15	1	4	4	687.153	
6	FULL	DEFAULT APERTURE	F480M	CLEARP	NISRAPID	10	1	4	4	472.418	
7	FULL	DEFAULT APERTURE	F480M	NRM	NISRAPID	25	1	4	4	1116.624	
8	FULL	DEFAULT APERTURE	CLEAR	F090W	NISRAPID	5	1	4	4	257.682	
9	FULL	DEFAULT APERTURE	CLEAR	F115W	NISRAPID	5	1	4	4	257.682	
10	FULL	DEFAULT APERTURE	CLEAR	F158M	NISRAPID	5	2	4	8	515.365	
11	FULL	DEFAULT APERTURE	CLEAR	F140M	NISRAPID	5	2	4	8	515.365	
12	FULL	DEFAULT APERTURE	CLEAR	F150W	NISRAPID	5	1	4	4	257.682	
13	FULL	DEFAULT APERTURE	CLEAR	F200W	NISRAPID	5	1	4	4	257.682	

Spectral Elements

FGS External Calibration	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	FGSRAPID	4	2	4	8	429.471	
2	FGSRAPID	4	2	4	8	429.471	
3	FGSRAPID	4	2	4	8	429.471	
4	FGSRAPID	6	2	4	8	601.259	
5	FGSRAPID	6	2	4	8	601.259	
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10	FGSRAPID	4	2	4	8	429.471	
11	FGSRAPID	4	2	4	8	429.471	
12	FGSRAPID	3	1	4	4	171.788	
13	FGSRAPID	3	1	4	4	171.788	

Proposal 1501 - Observation 2 - Astrometric Calibration

Special Requirements	
	Between Dates 20-JAN-2023:00:00:00 and 20-APR-2023 No Parallel Attachments Guide Star in Guider 2