



## 1516 - AMI and SOSS Charge Transfer Characterization

Cycle: 1, Proposal Category: CAL/NIRISS

### INVESTIGATORS

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### OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
Observation Folder				
	1		NIRISS Aperture Masking Interferometry	(1) -DEL-UMI
	2		NIRISS Aperture Masking Interferometry	(2) HD-163466
	3		NIRISS Aperture Masking Interferometry	(3) HD-40646
	4		NIRISS Single-Object Slitless Spectroscopy	(4) HD-59533
	5		NIRISS Single-Object Slitless Spectroscopy	(4) HD-59533
	6		NIRISS Single-Object Slitless Spectroscopy	(4) HD-59533
	7		NIRISS Single-Object Slitless Spectroscopy	(4) HD-59533

### ABSTRACT

Observations of stars in NIRISS AMI mode with differing peak ramp counts and the same total exposure time are to be taken to assess the effects of charge migration on the interference pattern. In this preliminary test, the F430M and F277W filters are used, and in the wide filter a smaller total number of photons is collected per ramp set-up. In addition an analogous SOSS mode observation of one of the stars is made to assess the effects of charge migration on the SOSS spectra.

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

### **OBSERVING DESCRIPTION**

In order to assess the effects of charge migration on NIRISS AMI observations, a series of exposures of different ramp length and hence different peak signal but with about the same total exposure time are taken for three stars. Analysis of the closure phases and other interferometric quantities in the different exposures will demonstrate whether there is a change with peak signal level due to the charge migration.

A similar observation is done in the NIRISS SOSS mode with a star observed to roughly the same S/N with ramps of lengths between 1 and 4 frames where the longest ramp is expected to reach pixel full well at some wavelengths. Comparison of the output spectra for these cases will show how the charge migration affects the SOSS reductions. The main concern is a blurring of spectral lines due to charge migration in the wavelength direction. Using one of the same stars as the AMI charge migration observation allows the program to save some time.

# Proposal 1516 - Targets - AMI and SOSS Charge Transfer Characterization

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	-DEL-UMI	RA: 17 32 13.1732 (263.0548883d) Dec: +86 35 12.09 (86.58669d) Equinox: J2000	Proper Motion RA: 0.0113876443232866 sec of time/yr Proper Motion Dec: 0.05397 arcsec/yr Parallax: 0.01895" Epoch of Position: 2015.5	
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>            Category=Star            Description=[A stars]            Extended=NO</p>				
(2)	HD-163466	RA: 17 52 25.3700 (268.1057083d) Dec: +60 23 47.60 (60.39656d) Equinox: J2000	Proper Motion RA: -3.684254305449276E-4 sec of time/yr Proper Motion Dec: 0.04267199999999995 arcsec/yr Parallax: 0.00508" Epoch of Position: 2015.5	
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>            Category=Star            Description=[A dwarfs]            Extended=NO</p>				
(3)	HD-40646	RA: 05 52 2.6331 (88.0109713d) Dec: -74 44 13.08 (-74.73697d) Equinox: J2000	Proper Motion RA: 0.0028165804790598065 sec of time/yr Proper Motion Dec: 0.01423799999999997 arcsec/yr Epoch of Position: 2015.5	
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>            Category=Star            Description=[A stars]</p>				
(4)	HD-59533	RA: 07 25 47.8732 (111.4494717d) Dec: -65 18 57.41 (-65.31595d) Equinox: J2000	Proper Motion RA: -0.0012565026310218147 sec of time/yr Proper Motion Dec: 0.028666 arcsec/yr Epoch of Position: 2015.5	
<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>            Category=Star            Description=[A dwarfs]            Extended=NO</p>				

Fixed Targets

# Proposal 1516 - Observation 1 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<b>Proposal 1516, Observation 1</b> <b>Diagnostic Status: Warning</b> Observing Template: NIRISS Aperture Masking Interferometry									
	(Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>			<b>Targ. Coord. Corrections</b>			<b>Miscellaneous</b>	
	(1)	-DEL-UMI	RA: 17 32 13.1732 (263.0548883d) Dec: +86 35 12.09 (86.58669d) Equinox: J2000			Proper Motion RA: 0.0113876443232866 sec of time/yr Proper Motion Dec: 0.05397 arcsec/yr Parallax: 0.01895" Epoch of Position: 2015.5				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=Star Description=[A stars] Extended=NO										
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Acquisition Mode</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	1 -DEL-UMI	AMIBRIGHT	F480M	NISRAPID	7	1	1	0.422	25023
<b>Template</b>	<b>Subarray</b>					<b>Direct Image</b>				
	SUB80					false				
<b>Dithers</b>	<b>#</b>	<b>Primary Dithers</b>				<b>Subpixel Positions</b>				
	1	NONE				NONE				
<b>Spectral Elements</b>	<b>#</b>	<b>Filter</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>	
	1	F430M	NISRAPID	2	2200	1	2200	542.96		
	2	F430M	NISRAPID	2	2200	1	2200	542.96		
	3	F430M	NISRAPID	3	3000	1	3000	966.72		
	4	F430M	NISRAPID	5	1650	1	1650	780.648		
	5	F430M	NISRAPID	6	1400	1	1400	767.984		

PSF References

PSF Reference: true

Proposal 1516 - Observation 2 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<p><b>Proposal 1516, Observation 2</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Observing Template: NIRISS Aperture Masking Interferometry</p>									
<b>Diagnostics</b>	(Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
<b>Fixed Targets</b>	#	Name	Target Coordinates		Targ. Coord. Corrections			Miscellaneous		
	(2)	HD-163466	RA: 17 52 25.3700 (268.1057083d) Dec: +60 23 47.60 (60.39656d) Equinox: J2000		Proper Motion RA: -3.684254305449276E-4 sec of time/yr Proper Motion Dec: 0.04267199999999995 arcsec/yr Parallax: 0.00508" Epoch of Position: 2015.5					
	<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>Category=Star</i></p> <p><i>Description=[A dwarfs]</i></p> <p><i>Extended=NO</i></p>									
<b>Acquisition</b>	#	Target	Acquisition Mode	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	2 HD-163466	AMIBRIGHT	F480M	NISRAPID	15	1	1	0.823	25023
<b>Template</b>	Subarray					Direct Image				
	SUB80					false				
<b>Dithers</b>	#	Primary Dithers				Subpixel Positions				
	1	NONE				NONE				
<b>Spectral Elements</b>	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	F430M	NISRAPID	7	4600	1	4600	2870.4		
	2	F430M	NISRAPID	5	6600	1	6600	3122.592		
	3	F430M	NISRAPID	4	8300	1	8300	3300.744		
	4	F430M	NISRAPID	3	9500	1	9500	3061.28		

Proposal 1516 - Observation 2 - AMI and SOSS Charge Transfer Characterization

PSF References	PSF Reference: true
Special Requirements	Between Dates 01-JUL-2022:00:00:00 and 01-AUG-2022:00:00:00

Proposal 1516 - Observation 3 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<p><b>Proposal 1516, Observation 3</b>  <b>Diagnostic Status: Warning</b>                  Observing Template: NIRISS Aperture Masking Interferometry</p>										
<b>Diagnostics</b>	(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
<b>Fixed Targets</b>	#	Name	Target Coordinates		Targ. Coord. Corrections			Miscellaneous			
	(3)	HD-40646	RA: 05 52 2.6331 (88.0109713d) Dec: -74 44 13.08 (-74.73697d) Equinox: J2000		Proper Motion RA: 0.0028165804790598065 sec of time/yr Proper Motion Dec: 0.01423799999999997 arcsec/yr Epoch of Position: 2015.5						
	<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>										
	<i>Category=Star</i>										
	<i>Description=[A stars]</i>										
<b>Acquisition</b>	#	Target	Acquisition Mode	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	3 HD-40646	AMIFAINTE	F480M	NISRAPID	15	1	1	0.823	25032	
<b>Template</b>	Subarray					Direct Image					
	SUB80					false					
<b>Dithers</b>	#	Primary Dithers				Subpixel Positions					
	1	NONE				NONE					
<b>Spectral Elements</b>	#	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID		
	1	F277W	NISRAPID	2	1875	1	1875	462.75			
	2	F277W	NISRAPID	3	1275	1	1275	410.856			
	3	F277W	NISRAPID	6	600	1	600	329.136			
	4	F277W	NISRAPID	9	405	1	405	313.826			
	5	F277W	NISRAPID	12	303	1	303	303.364			
<b>PSF References</b>	PSF Reference: true										

Proposal 1516 - Observation 3 - AMI and SOSS Charge Transfer Characterization

Special Requirements

Between Dates 01-JUL-2022:00:00:00 and 01-AUG-2022:00:00:00

Proposal 1516 - Observation 4 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<p><b>Proposal 1516, Observation 4</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Observing Template: NIRISS Single-Object Slitless Spectroscopy</p>									
<b>Diagnostics</b>	<p>(Observation 4) Warning (Form): NGROUPS=1 may suffer from low calibration accuracy.</p> <p>(Exposure) Warning (Form): NGROUPS=1 may suffer from low calibration accuracy.</p> <p>(Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>		<b>Targ. Coord. Corrections</b>			<b>Miscellaneous</b>		
	(4)	HD-59533	RA: 07 25 47.8732 (111.4494717d) Dec: -65 18 57.41 (-65.31595d) Equinox: J2000		Proper Motion RA: -0.0012565026310218147 sec of time/yr Proper Motion Dec: 0.028666 arcsec/yr Epoch of Position: 2015.5					
	<p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>Category=Star</i></p> <p><i>Description=[A dwarfs]</i></p> <p><i>Extended=NO</i></p>									
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Acquisition Mode</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	4 HD-59533	SOSSFAINT	F480M	NISRAPID	5	1	1	0.321	115356
<b>Template</b>	<b>Subarray</b>					<b>Include F277W Exposure?</b>				
	SUBSTRIP256					false				
<b>Spectral Elements</b>	<b>#</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>		
	1	NISRAPID	1	20	1	20	220.17	39940		

Proposal 1516 - Observation 5 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<b>Proposal 1516, Observation 5</b> <b>Diagnostic Status: Warning</b> Observing Template: NIRISS Single-Object Slitless Spectroscopy									
	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>			<b>Targ. Coord. Corrections</b>			<b>Miscellaneous</b>	
	(4)	HD-59533	RA: 07 25 47.8732 (111.4494717d) Dec: -65 18 57.41 (-65.31595d) Equinox: J2000			Proper Motion RA: -0.0012565026310218147 sec of time/yr Proper Motion Dec: 0.028666 arcsec/yr Epoch of Position: 2015.5				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=Star Description=[A dwarfs] Extended=NO										
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Acquisition Mode</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	4 HD-59533	SOSSFAINT	F480M	NISRAPID	5	1	1	0.321	115356
<b>Template</b>	<b>Subarray</b>					<b>Include F277W Exposure?</b>				
	SUBSTRIP256					false				
<b>Spectral Elements</b>	<b>#</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>		
	1	NISRAPID	2	10	1	10	165.025	39940		

Proposal 1516 - Observation 6 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<b>Proposal 1516, Observation 6</b> <b>Diagnostic Status: Warning</b> Observing Template: NIRISS Single-Object Slitless Spectroscopy									
	(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>			<b>Targ. Coord. Corrections</b>			<b>Miscellaneous</b>	
	(4)	HD-59533	RA: 07 25 47.8732 (111.4494717d) Dec: -65 18 57.41 (-65.31595d) Equinox: J2000			Proper Motion RA: -0.0012565026310218147 sec of time/yr Proper Motion Dec: 0.028666 arcsec/yr Epoch of Position: 2015.5				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=Star Description=[A dwarfs] Extended=NO										
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Acquisition Mode</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	4 HD-59533	SOSSFAINT	F480M	NISRAPID	5	1	1	0.321	115356
<b>Template</b>	<b>Subarray</b>					<b>Include F277W Exposure?</b>				
	SUBSTRIP256					false				
<b>Spectral Elements</b>	<b>#</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>		
	1	NISRAPID	3	7	1	7	153.975	39940		

Proposal 1516 - Observation 7 - AMI and SOSS Charge Transfer Characterization

Wed Jun 29 22:00:23 GMT 2022

<b>Observation</b>	<b>Proposal 1516, Observation 7</b> <b>Diagnostic Status: Warning</b> Observing Template: NIRISS Single-Object Slitless Spectroscopy									
	(Visit 7:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
<b>Fixed Targets</b>	<b>#</b>	<b>Name</b>	<b>Target Coordinates</b>			<b>Targ. Coord. Corrections</b>			<b>Miscellaneous</b>	
	(4)	HD-59533	RA: 07 25 47.8732 (111.4494717d) Dec: -65 18 57.41 (-65.31595d) Equinox: J2000			Proper Motion RA: -0.0012565026310218147 sec of time/yr Proper Motion Dec: 0.028666 arcsec/yr Epoch of Position: 2015.5				
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i> Category=Star Description=[A dwarfs] Extended=NO										
<b>Acquisition</b>	<b>#</b>	<b>Target</b>	<b>Acquisition Mode</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	4 HD-59533	SOSSFAINT	F480M	NISRAPID	5	1	1	0.321	115356
<b>Template</b>	<b>Subarray</b>					<b>Include F277W Exposure?</b>				
	SUBSTRIP256					false				
<b>Spectral Elements</b>	<b>#</b>	<b>Readout Pattern</b>	<b>Groups/Int</b>	<b>Integrations/Exp</b>	<b>Total Dithers</b>	<b>Total Integrations</b>	<b>Total Exposure Time</b>	<b>ETC Wkbk.Calc ID</b>		
	1	NISRAPID	4	5	1	5	137.452	39940		