



5232 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Cycle: 3, Proposal Category: GO

INVESTIGATORS

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JWST Proposal 5232 (Created: Wednesday, May 14, 2025, 5:00:10PM Eastern Standard Time) - Overview

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Dr. J. Craig Wheeler (CoI)	University of Texas at Austin
Ms. Maxime Deckers (CoI) (ESA Member)	Trinity College Dublin

OBSERVATIONS

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
MIRI LRS + NIRSPEC G395M WDSN-1				
	1	LRS-Slit	MIRI Low Resolution Spectroscopy	(1) SN2024PXL
	2	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(1) SN2024PXL
	3	LRS-Slit	MIRI Low Resolution Spectroscopy	(1) SN2024PXL
	4	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(1) SN2024PXL
	5	LRS-Slit	MIRI Low Resolution Spectroscopy	(1) SN2024PXL
	6	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(1) SN2024PXL
MIRI LRS + NIRSPEC G395M WDSN-2				
	7	LRS-Slit	MIRI Low Resolution Spectroscopy	(2) SN2025CY
	8	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(2) SN2025CY
	9	LRS-Slit	MIRI Low Resolution Spectroscopy	(2) SN2025CY
	10	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(2) SN2025CY
	11	LRS-Slit	MIRI Low Resolution Spectroscopy	(2) SN2025CY
	12	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(2) SN2025CY
MIRI LRS + NIRSPEC G395M WDSN-3				
	13	LRS-Slit	MIRI Low Resolution Spectroscopy	(3) SN2025IFQ
	14	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(3) SN2025IFQ
	15	LRS-Slit	MIRI Low Resolution Spectroscopy	(3) SN2025IFQ
	16	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(3) SN2025IFQ

<i>Folder</i>	<i>Observation</i>	<i>Label</i>	<i>Observing Template</i>	<i>Science Target</i>
	17	LRS-Slit	MIRI Low Resolution Spectroscopy	(3) SN2025IFQ
	18	NIR G395M	NIRSpec Fixed Slit Spectroscopy	(3) SN2025IFQ

ABSTRACT

Type Ia supernovae (SN Ia) have enormous importance to cosmology and astrophysics, but we still lack a detailed understanding of their progenitor systems and explosion mechanisms. As a supernova expands over time, it enters the nebular phase where the ejecta become optically thin, allowing us to see interior layers and directly probe its composition, density, temperature, and kinematic structure. JWST observations have shown that nebular phase observations in MIR provide powerful constraints on models, including the density-dependent nucleosynthesis of intermediate mass elements, radioactive iron-group elements, and stable iron-group elements. In the MIR, supernovae transition to the nebular phase far earlier than they do in the optical, and their evolution during this early, rapid transition is expected to reveal unique MIR signatures that will differentiate between models. Here we propose to build a legacy, reference sample of JWST MIR spectra of white dwarf supernovae at early times, as they transition to the nebular phase, with non-disruptive target-of-opportunity observations. In addition to normal SN Ia, we will also observe the diversity of thermonuclear supernovae, including extreme and peculiar objects. Our data will open a new, unexplored window on the early MIR evolution of thermonuclear explosions, uniquely probing wavelengths where the ejecta quickly become optically thin, and strongly testing progenitor and explosion models. All data obtained will be made public immediately, with no exclusive access period.

OBSERVING DESCRIPTION

We will observe 6 target-of-opportunity white dwarf supernovae (WDSN) with 3 objects per cycle for 2 cycles. Each supernova will be observed in three epochs to measure the spectral evolution and disentangle radioactive and stable elements. All epochs consist of mid-infrared (MIRI) and near-infrared (NIRSpec) observations. For all observations, we will use the NIRSpec G395M grating and MIRI LRS to obtain spectroscopic coverage from 2.9 to 5 microns at medium resolution ($R \sim 1000$) and 5 to 13 microns at low resolution ($R \sim 100$). These observations can target normal SN Ia out to 80 Mpc. The low-resolution MIR observations cover many important MIR emission lines of Ar, Co, and Ni; while the higher-resolution NIR data will cover an important [Ca IV] feature not accessible from the ground.

During the program we will trigger on WDSN from different classes, including normal SN Ia, extreme SN Ia (91bg/86G-like and 91T/99aa-like objects), and peculiar objects (SN Iax, Ia-CSM, super-Chandra SN Ia, etc.) ensuring that the breadth of the thermonuclear supernova zoo is adequately represented in our sample, while still maintaining a focus on SN Ia. We will trigger on objects that are discovered early (>10 days before maximum light), are well-positioned to be closely monitored by ground-based facilities in the optical and ground-based NIR, and nearby enough (with limiting distance depending on the specific type of object) to get adequate S/N to achieve our science goals.

Our early MIR observations spanning the transition to the nebular phase will be scheduled approximately +15, +30, and +50 days past maximum light for each supernova. With identification of supernova targets by 10 days before maximum, these will be non-disruptive TOOs that can be scheduled at least 3 weeks in advance. We will work with the WDSN community to identify the best targets, and all data collected in this program will be made publicly available immediately with no exclusive access period.

Proposal 5232 - Targets - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

	#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
Fixed Targets	(1)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000		
	<i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO				
	(2)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000		
<i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO					
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000	Epoch of Position: 2000	
<i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO					
Generic Targets	#	Name	Criteria	Description	
	(4)	C4-LONGTERM-TOO-WDSN-4	Nearby white dwarf supernova		
	<i>Comments: LONGTERM TOO for Cycle 4</i>				
(5)	C4-LONGTERM-TOO-WDSN-5	Nearby white dwarf supernova			
<i>Comments: LONGTERM TOO for Cycle 4</i>					
(6)	C4-LONGTERM-TOO-WDSN-6	Nearby white dwarf supernova			
<i>Comments: LONGTERM TOO for Cycle 4</i>					

Proposal 5232 - Observation 1 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 1: LRS-Slit</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Low Resolution Spectroscopy</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)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000							
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 1 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	100	2	4	1	2	1115.566
	Before Date 20-AUG-2024 Group Observations 1, 2, Non-interruptible								

Proposal 5232 - Observation 2 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	Proposal 5232, Observation 2: NIR G395M Diagnostic Status: Warning Observing Template: NIRSpec Fixed Slit Spectroscopy										
	(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)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000								
<i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i>											
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	1	NONE	3	3	700.267

Proposal 5232 - Observation 2 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 1, 2, Non-interruptible

Proposal 5232 - Observation 3 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 3: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy</p>									
Diagnostics	<p>(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections			Miscellaneous			
	(1)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000							
	<p>Comments: Category=Star Description=[Type Ia supernovae] Extended=NO</p>									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 3 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
		1	FASTR1	100	2	4	1	2	1115.566
Special Requirements	<p>Between Dates 23-AUG-2024 and 30-AUG-2024</p> <p>Group Observations 3, 4, Non-interruptible</p>								

Proposal 5232 - Observation 4 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	Proposal 5232, Observation 4: NIR G395M Diagnostic Status: Warning Observing Template: NIRSpec Fixed Slit Spectroscopy										
	(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)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000								
Comments: Category=Star Description=[Type Ia supernovae] Extended=NO											
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	1	NONE	3	3	700.267

Proposal 5232 - Observation 4 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 3, 4, Non-interruptible

Proposal 5232 - Observation 5 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	Proposal 5232, Observation 5: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy									
	(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous			
	(1)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000							
<i>Comments: Category=Star Description=[Type Ia supernovae] Extended=NO</i>										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 5 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	1	FASTR1	100	2	4	1	2	1115.566	210149
Special Requirements	<p>Between Dates 13-SEP-2024 and 20-SEP-2024</p> <p>Group Observations 5, 6, Non-interruptible</p>								

Proposal 5232 - Observation 6 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 6: NIR G395M</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>											
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			
	(1)	SN2024PXL	RA: 17 32 27.3397 (263.1139154d) Dec: +07 03 44.77 (7.06244d) Equinox: J2000									
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>											
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149	
Template	HFF Readout Mode				Slit			Subarray				
	false				S200A1			FULL				
Dithers	#	Primary Dither Positions						Sub-Pixel Pattern				
	1	3						NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	1	NONE	3	3	700.267	210149

Proposal 5232 - Observation 6 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 5, 6, Non-interruptible

Proposal 5232 - Observation 7 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 7: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy</p>									
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)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000							
	Comments: Category=Star Description=[Type Ia supernovae] Extended=NO									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 7 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	100	2	4	1	2	1115.566
		Before Date 31-JAN-2025 Group Observations 7, 8, Non-interruptible							

Proposal 5232 - Observation 8 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 8: NIR G395M</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>										
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)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>										
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	NONE	3	3	700.267	210149

Proposal 5232 - Observation 8 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 7, 8, Non-interruptible

Proposal 5232 - Observation 9 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	Proposal 5232, Observation 9: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy									
	(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections			Miscellaneous			
	(2)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000							
<i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 9 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	100	2	4	1	2	1115.566
	Between Dates 08-FEB-2025:00:00:00 and 21-FEB-2025:00:00:00 Group Observations 9, 10, Non-interruptible								

Proposal 5232 - Observation 10 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 10: NIR G395M Diagnostic Status: Warning Observing Template: NIRSpec Fixed Slit Spectroscopy</p>										
Diagnostics	(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(2)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000								
	<p><i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO</p>										
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	NONE	3	3	700.267	210149

Proposal 5232 - Observation 10 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 9, 10, Non-interruptible

Proposal 5232 - Observation 11 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	Proposal 5232, Observation 11: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy									
	(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections			Miscellaneous			
	(2)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000							
<i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO										
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	210149	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	80	1	1	1	1	222.003		F1000W

Proposal 5232 - Observation 11 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	100	2	4	1	2	1115.566
	Between Dates 05-MAR-2025:00:00:00 and 19-MAR-2025:00:00:00 Group Observations 11, 12, Non-interruptible								

Proposal 5232 - Observation 12 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 12: NIR G395M</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>										
Diagnostics	(Visit 12:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(2)	SN2025CY	RA: 13 21 13.4479 (200.3060329d) Dec: -43 41 1.16 (-43.68366d) Equinox: J2000								
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>										
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	210149
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	1	NONE	3	3	700.267	210149

Proposal 5232 - Observation 12 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 11, 12, Non-interruptible

Proposal 5232 - Observation 13 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 13: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy</p>									
Diagnostics	(Visit 13:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections			Miscellaneous			
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000	Epoch of Position: 2000						
	<p><i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO</p>									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPavg8	10	1	1	222.003	172271	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	40	1	1	1	1	111.002		F1000W

Proposal 5232 - Observation 13 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	130	3	6	1	2	2175.631
	Between Dates 01-MAY-2025:00:00:00 and 20-MAY-2025:00:00:00 Group Observations 13, 14, Non-interruptible								

Proposal 5232 - Observation 14 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 14: NIR G395M</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>										
Diagnostics	(Visit 14:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000			Epoch of Position: 2000					
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>										
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	172271
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	2 1	NONE	3	6	1400.533	172271

Proposal 5232 - Observation 14 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 13, 14, Non-interruptible

Proposal 5232 - Observation 15 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 15: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy</p>									
Diagnostics	(Visit 15:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.									
Fixed Targets	#	Name	Target Coordinates		Targ. Coord. Corrections		Miscellaneous			
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000		Epoch of Position: 2000					
	<p><i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO</p>									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPAVG8	10	1	1	222.003	172271	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type		No. Spectral Steps	Spectral Step Offset	No. Spatial Steps		Spatial Step Offset		
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	40	1	1	1	1	111.002		F1000W

Proposal 5232 - Observation 15 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	130	3	6	1	2	2175.631
	Between Dates 25-MAY-2025:00:00:00 and 05-JUN-2025:00:00:00 Group Observations 15, 16, Non-interruptible								

Proposal 5232 - Observation 16 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 16: NIR G395M</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: NIRSpec Fixed Slit Spectroscopy</p>											
Diagnostics	(Visit 16:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.											
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous			
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000			Epoch of Position: 2000						
	<p><i>Comments:</i> <i>Category=Star</i> <i>Description=[Type Ia supernovae]</i> <i>Extended=NO</i></p>											
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	172271	
Template	HFF Readout Mode				Slit			Subarray				
	false				S200A1			FULL				
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern					
	1	3					NONE					
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	2	1	NONE	3	6	1400.533	172271

Proposal 5232 - Observation 16 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 15, 16, Non-interruptible

Proposal 5232 - Observation 17 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 17: LRS-Slit Diagnostic Status: Warning Observing Template: MIRI Low Resolution Spectroscopy</p>									
Diagnostics	<p>(Visit 17:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p>									
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections			Miscellaneous			
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000	Epoch of Position: 2000						
	<p>Comments: Category=Star Description=[Type Ia supernovae] Extended=NO</p>									
Acquisition	#	Target	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID	
	1	SAME	F1000W	FASTGRPavg8	10	1	1	222.003	172271	
Template	Subarray				Obtain Verification Image?					
	FULL				true					
Dithers	#	Dither Type	No. Spectral Steps	Spectral Step Offset	No. Spatial Steps	Spatial Step Offset				
	1	ALONG SLIT NOD								
Pointing Verification	#	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Integrations	PV Exposures/Dith	PV Total Dithers	PV Total Exposure Time	PV ETC Wkbk.Calc ID	Filter
	1	FASTR1	40	1	1	1	1	111.002		F1000W

Proposal 5232 - Observation 17 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Spectral Elements	#	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Exposures/Dith	Total Dithers	Total Exposure Time	ETC Wkbk.Calc ID
	Special Requirements	1	FASTR1	130	3	6	1	2	2175.631
	Between Dates 13-JUN-2025:00:00:00 and 30-JUN-2025:00:00:00 Group Observations 17, 18, Non-interruptible								

Proposal 5232 - Observation 18 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Wed May 14 22:00:10 GMT 2025

Observation	<p>Proposal 5232, Observation 18: NIR G395M Diagnostic Status: Warning Observing Template: NIRSpec Fixed Slit Spectroscopy</p>										
Diagnostics	(Visit 18:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.										
Fixed Targets	#	Name	Target Coordinates			Targ. Coord. Corrections			Miscellaneous		
	(3)	SN2025IFQ	RA: 10 17 2.3110 (154.2596292d) Dec: -38 16 18.98 (-38.27194d) Equinox: J2000			Epoch of Position: 2000					
	<p><i>Comments:</i> Category=Star Description=[Type Ia supernovae] Extended=NO</p>										
Acquisition	#	Target	TA Method	Subarray	Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	SAME	WATA	SUB2048	F110W	NRSRAPID	3	1	1	3.628	172271
Template	HFF Readout Mode				Slit			Subarray			
	false				S200A1			FULL			
Dithers	#	Primary Dither Positions					Sub-Pixel Pattern				
	1	3					NONE				
Spectral Elements	#	Grating/Filter	Slit	Readout Pattern	Groups/Int	Integrations/Ex #	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
	1	G395M/F290LP	S200A1	NRSIRS2RAPID	15	2 1	NONE	3	6	1400.533	172271

Proposal 5232 - Observation 18 - Getting Late Early: Mid-Infrared Spectroscopy of White Dwarf Supernovae

Special Requirements

Group Observations 17, 18, Non-interruptible