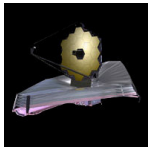

1563 - Icy Kuiper Belts in Exoplanetary Systems

Cycle: 1, Proposal Category: GO

INVESTIGATORS

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OBSERVATIONS

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
beta Pic - NIRSpec IFU				
	1	beta Pic Debris Disk - NIRSpec IFU	NIRSpec IFU Spectroscopy	(1) -BET-PIC
	2	alf Pic PSF Calibrator - NIRSpec IFU	NIRSpec IFU Spectroscopy	(5) -ALF-PIC-PSF-CALIBRATOR

Folder	*Observation*	*Label*	*Observing Template*	*Science Target*
HD 32297 - NIRSpec IFU				
	3	HD 32297 Debris Disk - NIRSPec IFU	NIRSpec IFU Spectroscopy	(2) HD-32297
	4	HD 31411 PSF Calibrator - NIRSpec IFU	NIRSpec IFU Spectroscopy	(6) HD-31411-PSF-CALIBRATOR
HD 181327 - NIRSpec IFU				
	5	HD 181327 Debris Disk - NIRSpec IFU	NIRSpec IFU Spectroscopy	(3) HD-181327
	6	iot Mic PSF Calibrator - NIRSpec IFU	NIRSpec IFU Spectroscopy	(7) -IOT-MIC-PSF-CALIBRATOR
49 Cet - NIRSpec IFU/NIRCam Coronagraphy				
	7	49 Cet Debris Disk - NIRSpec IFU	NIRSpec IFU Spectroscopy	(4) -49-CET
	8	49 Cet PSF - NIRSpec IFU	NIRSpec IFU Spectroscopy	(9) -48-Cet-PSF-CALIBRATOR
	9	49 Cet Debris Disk - NIRCam Coro, Roll 1	NIRCam Coronagraphic Imaging	(4) -49-CET
	10	49 Cet Debris Disk - NIRCam Coro, Roll 2	NIRCam Coronagraphic Imaging	(4) -49-CET
	11	49 Cet PSF - NIRCam Coro	NIRCam Coronagraphic Imaging	(8) -RHO-CET-PSF-CALIBRATOR

ABSTRACT

We propose a pilot study of near-infrared reflectance spectra from dust in the Kuiper Belt regions of 4 nearby debris disks, 49 Cet, HD 32297, beta Pic, and HD 181327, using the NIRSpec IFU. These disks are spatially extended, each subtending several arcsec in scattered light, with already measured near-infrared surface brightnesses from HST/NICMOS. They are therefore the easiest systems to study using high contrast spectroscopy. Our targets have ALMA CO emission indicative of the presence of volatile-rich planetesimals, similar to comets and KBOs in our Solar System. We propose to use high SNR (>200), near infrared spectra at 0.6 - 5.3 micron to (1) search for solid-state reflectance features at 1.5, 2.0, and 3.2 micron from volatile frosts such as H2O, (2) constrain the dust grain properties (e.g. composition, size) from the solid-state features and the color of the scattered light, and (3) map the particle composition and size as a function of position in the disk. In doing so, we hope to understand whether exoKuiper Belts in exoplanetary systems contain reservoirs of volatiles, that have been critical to the development of life on Earth, and are continuing to build exoplanets via giant collisions. At the present time, there are no plans by any of the Guaranteed Time Observers (GTOs) or Early Release Science (ERS) programs to obtain reflectance spectra for a debris disk. Therefore, these data would be unique. Finally, these observations would

provide a pathyway to develop Reference Differential Imaging (RDI) and Spectral Differential Imaging (SDI) PSF subtraction techniques for the NIRSpec IFU.

OBSERVING DESCRIPTION

We propose to obtain NIRSpec IFU observations of 49 Cet, HD 32297, beta Pic, and HD 181327, nearby debris disks that appear spatially extended in scattered light that have already measured near-infrared surface brightnesses from HST/NICMOS and ALMA CO indicative of the presence of volatile-rich planetesimals. High SNR, low resolution (R~100), NIRSpec IFU observations at 0.6 - 5.3 micron will enable (1) sensitive searches for solid-state reflectance features at 1.5, 2.0, and 3.2 micron from volatile frosts such as H2O, (2) detailed constraints on the dust grain properties (e.g. composition, size) from the solid-state features and the color of the scattered light, and (3) mapping of the particle composition and size as a function of position in the disk.

To mitigate the effect of the bright host star on the detection of the disk, we plan to point the IFU so that the host star is an average of 0.5" - 0.75" off the IFU FOV and to apply reference PSF subtraction techniques to the data. Ground-based testing of the NIRSpec instrument indicates that the IFU will not suffer from scattered light from objects just outside the FOV. We have selected reference stars that are located near our targets (within 20 deg on the sky) and have similar spectral types. To facilitate PSF subtraction, we request Target Acquisition "Verify Only" observations and a 9-point Small Cycling dither pattern. Dithering will enable reconstruction of the PSF from spatially subsampled data. Observations of a target and its corresponding PSF reference should be observed consecutively using a non-interrupt.

We plan to use NIRCam Coronagraphic Images at F444W to place the IFU observations into context with the larger disk. The NIRCam GTO team has already planned observations of HD 32297 and HD 181327 using the NIRCam Coronagraph with the round MASK335R mask and the F444W filter. The Telescope Scientist GTO team has already planned observations of beta Pic using the NIRCam Coronagraph with the round MASK335R mask and the F444W filter. We requestion observations of 49 Cet using the round MASK335R mask and the F444W filter.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(1)	-BET-PIC	RA: 05 47 17.0953 (86.8212304d) Dec: -51 03 58.15 (-51.06615d) Equinox: J2000	Proper Motion RA: 4.932985550191305E-4 sec of time/yr Proper Motion Dec: 0.0831 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]* *Extended=YES*			
(2)	HD-32297	RA: 05 02 27.4418 (75.6143408d) Dec: +07 27 39.31 (7.46092d) Equinox: J2000	Proper Motion RA: 3.874805427246334E-4 sec of time/yr Proper Motion Dec: -0.02377200009959779 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]* *Extended=YES*			
(3)	HD-181327	RA: 19 22 58.9872 (290.7457800d) Dec: -54 32 18.25 (-54.53840d) Equinox: J2000	Proper Motion RA: 0.0028222237658159723 sec of time/yr Proper Motion Dec: -0.08191400008854544 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]* *Extended=YES*			
(4)	-49-CET	RA: 01 34 37.8799 (23.6578329d) Dec: -15 40 34.95 (-15.67638d) Equinox: J2000	Proper Motion RA: 0.0065231049981519336 sec of time/yr Proper Motion Dec: -0.0031650000892113894 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *2MASS K = 5.458 mag* *Category=Star* *Description=[A dwarfs, Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]* *Extended=YES*			
(5)	-ALF-PIC-PSF-CALIBRATOR	RA: 06 48 11.2988 (102.0470783d) Dec: -61 56 24.54 (-61.94015d) Equinox: J2000	Proper Motion RA: -0.009363848394319287 sec of time/yr Proper Motion Dec: 0.24297 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[A dwarfs]*			
(6)	HD-31411-PSF-CALIBRATOR	RA: 04 55 58.3348 (73.9930617d) Dec: +05 23 56.26 (5.39896d) Equinox: J2000	Proper Motion RA: -0.001122178351408562 sec of time/yr Proper Motion Dec: -0.014817000055700191 arcsec/yr Epoch of Position: 2015.5	
	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[A dwarfs]* *Extended=NO*			

(7)	-IOT-MIC-PSF-CALIBRATOR	RA: 20 48 29.4047 (312.1225196d) Dec: -43 59 20.38 (-43.98899d) Equinox: J2000	Proper Motion RA: 0.016575182561165712 sec of time/yr Proper Motion Dec: -0.11240699998324999 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[F dwarfs]*				
(8)	-RHO-CET-PSF-CALIBRATOR	RA: 02 25 56.9936 (36.4874733d) Dec: -12 17 25.86 (-12.29052d) Equinox: J2000	Proper Motion RA: -8.041641139769439E-4 sec of time/yr Proper Motion Dec: -0.010440999949423713 arcsec/yr Epoch of Position: 2015.5	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *2MASS K = 4.811 mag* *Category=Star* *Description=[A dwarfs]* *Extended=NO*				
(9)	-48-Cet-PSF-CALIBRATOR	RA: 01 29 36.1357 (22.4005654d) Dec: -21 37 45.61 (-21.62934d) Equinox: J2000	Proper Motion RA: 56.468999999999994 mas/yr Proper Motion Dec: 4.134 mas/yr Epoch of Position: 2000	
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. *Category=Star* *Description=[A dwarfs]* *Extended=NO*				

Observation

Proposal 1563, Observation 1: beta Pic Debris Disk - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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)	-BET-PIC	RA: 05 47 17.0953 (86.8212304d) Dec: -51 03 58.15 (-51.06615d) Equinox: J2000	Proper Motion RA: 4.932985550191305E-4 sec of time/yr Proper Motion Dec: 0.0831 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	5	25.0	25.0	0.0	10.0	ROW_ORDER

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements

Aperture PA Range 127 to 143 Degrees (V3 348.02746582 to 4.02746582)

Sequence Observations 1, 2, Non-interruptible

Observation

Proposal 1563, Observation 2: alf Pic PSF Calibrator - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(5)	-ALF-PIC-PSF-CALIBRATOR	RA: 06 48 11.2988 (102.0470783d) Dec: -61 56 24.54 (-61.94015d) Equinox: J2000	Proper Motion RA: -0.009363848394319287 sec of time/yr Proper Motion Dec: 0.24297 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[A dwarfs]

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	5	25.0	25.0	0.0	10.0	ROW_ORDER

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements	Sequence Observations 1, 2, Non-interruptible

Observation

Proposal 1563, Observation 3: HD 32297 Debris Disk - NIRSPec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 3:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(2)	HD-32297	RA: 05 02 27.4418 (75.6143408d) Dec: +07 27 39.31 (7.46092d) Equinox: J2000	Proper Motion RA: 3.874805427246334E-4 sec of time/yr Proper Motion Dec: -0.02377200009959779 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	2	0.0	-16.7	0.0	0.0	DEFAULT

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements

Aperture PA Range 27.6 to 47.6 Degrees (V3 248.62746582 to 268.62746582)

Sequence Observations 3, 4, Non-interruptible

Observation

Proposal 1563, Observation 4: HD 31411 PSF Calibrator - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(6)	HD-31411-PSF-CALIBRATOR	RA: 04 55 58.3348 (73.9930617d) Dec: +05 23 56.26 (5.39896d) Equinox: J2000	Proper Motion RA: -0.001122178351408562 sec of time/yr Proper Motion Dec: -0.014817000055700191 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[A dwarfs]
Extended=NO

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	2	0.0	-16.7	0.0	0.0	DEFAULT

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements

Sequence Observations 3, 4, Non-interruptible

Observation

Proposal 1563, Observation 5: HD 181327 Debris Disk - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

Diagnostics

(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(3)	HD-181327	RA: 19 22 58.9872 (290.7457800d) Dec: -54 32 18.25 (-54.53840d) Equinox: J2000	Proper Motion RA: 0.0028222237658159723 sec of time/yr Proper Motion Dec: -0.08191400008854544 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
3	3	33.3	33.3	0.0	0.0	ROW_ORDER

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements

Sequence Observations 5, 6, Non-interruptible

Observation

Proposal 1563, Observation 6: iot Mic PSF Calibrator - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(7)	-IOT-MIC-PSF-CALIBRATOR	RA: 20 48 29.4047 (312.1225196d) Dec: -43 59 20.38 (-43.98899d) Equinox: J2000	Proper Motion RA: 0.016575182561165712 sec of time/yr Proper Motion Dec: -0.11240699998324999 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[F dwarfs]

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
3	3	33.3	33.3	0.0	0.0	ROW_ORDER

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	1	false	true	NONE	9	9	787.8	

Special Requirements	Sequence Observations 5, 6, Non-interruptible

Observation

Proposal 1563, Observation 7: 49 Cet Debris Disk - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(4)	-49-CET	RA: 01 34 37.8799 (23.6578329d) Dec: -15 40 34.95 (-15.67638d) Equinox: J2000	Proper Motion RA: 0.0065231049981519336 sec of time/yr Proper Motion Dec: -0.0031650000892113894 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

2MASS K = 5.458 mag
Category=Star
Description=[A dwarfs, Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	2	0.0	-16.7	0.0	10.0	DEFAULT

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	4	false	true	NONE	9	36	3151.2	

Special Requirements

Aperture PA Range 201.2 to 221.2 Degrees (V3 62.22746582 to 82.22746582)

Sequence Observations 7, 8, Non-interruptible

Observation

Proposal 1563, Observation 8: 49 Cet PSF - NIRSpec IFU Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRSpec IFU Spectroscopy

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
(9)	-48-Cet-PSF-CALIBRATOR	RA: 01 29 36.1357 (22.4005654d)	Proper Motion RA: 56.468999999999994 mas/yr	
		Dec: -21 37 45.61 (-21.62934d)	Proper Motion Dec: 4.134 mas/yr	
		Equinox: J2000	Epoch of Position: 2000	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=Star
Description=[A dwarfs]
Extended=NO

Template

TA Method
VERIFY_ONLY

Mosaic

Rows	Columns	Row Overlap %	Column Overlap %	Row shift (deg)	Column shift (deg)	Tile Order
1	2	0.0	-16.7	0.0	10.0	DEFAULT

Dithers

#	Dither Type	Size	Starting Point	Number of Points	Points
1	CYCLING	SMALL	1	9	

Pointing Verification

#	PV MSA Configuration	Filter	PV Readout Pattern	PV Groups/Int	PV Integrations/Exp	PV Total Dithers	PV Total Integrations	PV Total Exposure Time
1	ALLOPEN	F110W	NRSIRS2RAPID	3	1	1	1	58.356

Spectral Elements

#	Grating/Filter	Readout Pattern	Groups/Int	Integrations/Exp	Leakcal	Dither	Autocal	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	PRISM/CLEAR	NRSIRS2RAPID	5	4	false	true	NONE	9	36	3151.2	

Special Requirements	Sequence Observations 7, 8, Non-interruptible

Observation

Proposal 1563, Observation 9: 49 Cet Debris Disk - NIRCam Coro, Roll 1 Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Coronagraphic Imaging

Diagnostics

(49 Cet Debris Disk - NIRCam Coro, Roll 1 (Obs 9)) Warning (Form): The NO PARALLEL ATTACHMENTS requirement is expected for NIRCam Coronagraphic Imaging.

(Visit 9:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(49 Cet Debris Disk - NIRCam Coro, Roll 1 (Obs 9)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	-49-CET	RA: 01 34 37.8799 (23.6578329d) Dec: -15 40 34.95 (-15.67638d) Equinox: J2000	Proper Motion RA: 0.0065231049981519336 sec of time/yr Proper Motion Dec: -0.0031650000892113894 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

2MASS K = 5.458 mag
Category=Star
Description=[A dwarfs, Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Acquisition

#	Target	Filter	Target Brightness	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	F335M	BRIGHT (ND Square)	BRIGHT2	33	1	1	3.363	90849.20

Template

Module	Coronagraphic Mask	Obtain Astrometric Confirmation Images?	Subarray	Dither Pattern
A	MASK335R	true	SUB320A335R	NONE

Confirmation

#	Conf. Readout Pattern	Conf. Groups/Int	Conf. Integrations/Exp	Conf. Total Integrations	Conf. Total Exposure Time	Conf. Total Dithers
1	RAPID	3	3	3	118.104	1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F200W	F444W	MEDIUM8	10	17	1	17	1799.542	

PSF References	49 Cet PSF - NIRCam Coro (Obs 11) (PSF Reference; Filters [F200W/F444W]) Additional Justification: false
Special Requirements	Sequence Observations 9, 10, 11, Non-interruptible Aperture PA Offset 10 from 9 by 10 to 14 Degrees (Same offsets in V3)

Observation

Proposal 1563, Observation 10: 49 Cet Debris Disk - NIRCam Coro, Roll 2 Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Coronagraphic Imaging

Diagnostics

(49 Cet Debris Disk - NIRCam Coro, Roll 2 (Obs 10)) Warning (Form): The NO PARALLEL ATTACHMENTS requirement is expected for NIRCam Coronagraphic Imaging.

(Visit 10:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

(49 Cet Debris Disk - NIRCam Coro, Roll 2 (Obs 10)) Informational (Form): The Visit Planner and Spike may produce different schedulability results.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(4)	-49-CET	RA: 01 34 37.8799 (23.6578329d) Dec: -15 40 34.95 (-15.67638d) Equinox: J2000	Proper Motion RA: 0.0065231049981519336 sec of time/yr Proper Motion Dec: -0.0031650000892113894 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

2MASS K = 5.458 mag
Category=Star
Description=[A dwarfs, Circumstellar disks, Circumstellar dust, Circumstellar gas, Debris disks]
Extended=YES

Acquisition

#	Target	Filter	Target Brightness	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	F335M	BRIGHT (ND Square)	BRIGHT2	33	1	1	3.363	90849.20

Template

Module	Coronagraphic Mask	Obtain Astrometric Confirmation Images?	Subarray	Dither Pattern
A	MASK335R	true	SUB320A335R	NONE

Confirmation

#	Conf. Readout Pattern	Conf. Groups/Int	Conf. Integrations/Exp	Conf. Total Integrations	Conf. Total Exposure Time	Conf. Total Dithers
1	RAPID	3	3	3	118.104	1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F200W	F444W	MEDIUM8	10	17	1	17	1799.542	

PSF References	49 Cet PSF - NIRCam Coro (Obs 11) (PSF Reference; Filters [F200W/F444W]) Additional Justification: false
Special Requirements	Sequence Observations 9, 10, 11, Non-interruptible Aperture PA Offset 10 from 9 by 10 to 14 Degrees (Same offsets in V3)

Observation

Proposal 1563, Observation 11: 49 Cet PSF - NIRCam Coro Mon Nov 27 18:00:43 GMT 2023

Diagnostic Status: Warning

Observing Template: NIRCam Coronagraphic Imaging

Diagnostics

(49 Cet PSF - NIRCam Coro (Obs 11)) Warning (Form): The NO PARALLEL ATTACHMENTS requirement is expected for NIRCam Coronagraphic Imaging.

(Visit 11:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Miscellaneous
(8)	-RHO-CET-PSF-CALIBRATOR	RA: 02 25 56.9936 (36.4874733d) Dec: -12 17 25.86 (-12.29052d) Equinox: J2000	Proper Motion RA: -8.041641139769439E-4 sec of time/yr Proper Motion Dec: -0.010440999949423713 arcsec/yr Epoch of Position: 2015.5	

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

2MASS K = 4.811 mag
Category=Star
Description=[A dwarfs]
Extended=NO

Acquisition

#	Target	Filter	Target Brightness	Readout Pattern	Groups/Int	Integrations/Exp	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	SAME	F335M	BRIGHT (ND Square)	BRIGHT2	33	1	1	3.363	90849.21

Template

Module	Coronagraphic Mask	Obtain Astrometric Confirmation Images?	Subarray	Dither Pattern
A	MASK335R	true	SUB320A335R	9-POINT-CIRCLE

Confirmation

#	Conf. Readout Pattern	Conf. Groups/Int	Conf. Integrations/Exp	Conf. Total Integrations	Conf. Total Exposure Time	Conf. Total Dithers
1	RAPID	3	3	3	118.104	1

Spectral Elements

#	Short Filter	Long Filter	Readout Pattern	Groups/Int	Integrations/Exp	Total Dithers	Total Integrations	Total Exposure Time	ETC Wkbk.Calc ID
1	F200W	F444W	SHALLOW4	10	3	9	27	1443.757	

PSF References	PSF Reference: true
Special Requirements	Sequence Observations 9, 10, 11, Non-interruptible