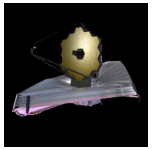

# 1591 - NIRSpec IFU: Deuterated PAHs, PAH-nitriles, and PAH Overtone and Combination Bands

Cycle: 1, Proposal Category: GO

**INVESTIGATORS**


| *Name* | *Institution* | *E-Mail* |
|---|---|---|
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**OBSERVATIONS**

| *Folder* | *Observation* | *Label* | *Observing Template* | *Science Target* |
|---|---|---|---|---|
| M17 | | | | |
| | 1 | NIRSpec IFU M17 PDR | NIRSpec IFU Spectroscopy | (1) M17-PDR |
| | 2 | NIRSpec IFU M17 H2 | NIRSpec IFU Spectroscopy | (2) M17-MC |
| NGC2023 | | | | |
| | 4 | NIRSpec IFU NGC2023 PDR | NIRSpec IFU Spectroscopy | (4) NGC2023-PDR |
| | 3 | REPEAT: NIRSpec IFU NGC2023 PDR | NIRSpec IFU Spectroscopy | (4) NGC2023-PDR |
| HD44179 | | | | |
| | 6 | NIRSpec IFU HD44179 SPIKE | NIRSpec IFU Spectroscopy | (6) HD44179-SPIKE |

| *Folder* | *Observation* | *Label* | *Observing Template* | *Science Target* |
|---|---|---|---|---|
| | 5 | REPEAT: NIRSpec IFU HD44179 SPIKE | NIRSpec IFU Spectroscopy | (6) HD44179-SPIKE |
| NGC7027 | | | | |
| | 10 | NIRSpec IFU NGC7027 Edge | NIRSpec IFU Spectroscopy | (8) NGC7027-EDGE |
| BD+303639 | | | | |
| | 11 | NIRSpec IFU BD+303639 Rim | NIRSpec IFU Spectroscopy | (10) BD+303639-RIM |
| IRAS21282+5050 | | | | |
| | 14 | NIRSpec IFU IRAS21282+5050 Rim | NIRSpec IFU Spectroscopy | (12) IRAS21282+5050-RIM |
| | 16 | NIRSpec IFU IRAS21282+5050 Background | NIRSpec IFU Spectroscopy | (13) IRAS21282+5050-BACKGROUND |
| NGC1333 | | | | |
| | 15 | NIRSpec IFU NGC1333 SVS3 | NIRSpec IFU Spectroscopy | (18) NGC1333-SVS3 |

**ABSTRACT**

This is a NIRSpec IFU proposal to measure the 1-5 μm spectrum of a few select objects known to have well-studied PAH features longward of 5 μm. Apart from the 3.3 μm PAH band and ~3.2-3.6 μm plateau, PAH spectroscopy across this region has been widely overlooked. The PAH model predicts many important, but weaker, features between 1-5 μm. JWST's unprecedented sensitivity, spectral resolution, and continuous 1-5 μm wavelength coverage make it possible, for the first time, to measure and fully characterize these features. Although, far weaker than the well-known bands, their frequencies and relative intensities contain fundamental information about the interstellar PAH population that is not accessible through the 5-15 μm PAH bands, such as the amount of cosmic nitrogen and deuterium sequestered in PAHs.

The goal is to make interstellar PAH spectroscopy a more precise and complete probe of their environments by expanding the spectral bandwidth to include the full 1-5 μm range. Since PAHs play important roles in the astrophysics of many different astronomical environments, from H2 formation to cloud collapse times and complex prebiotic molecule formation in planet forming regions, these observations will fundamentally impact our understanding of many astrophysical processes.

PAH features are going to be an important part of many, if not most, of the JWST NIRSpec and MIRI measured spectra and this will likely be the last opportunity to measure the weak PAH and PAH related emission features in the 1-5 μm region for a very long time. It is extremely important to get the most out of NIRSpec concerning PAHs as is possible at this time. The proposed observations will do just that.

**OBSERVING DESCRIPTION**

Seven extended nebula will be observed in the NIRSpec G140M/F100LP (0.97-1.89 μm), G235M/F170LP (1.66 -3.17 μm), and G395M/F290LP (2.87-5.27 μm) filters. One object is targeted twice and has an independent background observation. One other target also has an independent background, while four are without any.  The final target is organized in a Target Group.

If need-be, spatial- and spectral resolution can be exchanged for an increased signal-to-noise.

**Fixed Targets**

| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous |
|---|---|---|---|---|
| (1) | M17-PDR | RA: 18 20 23.2600 (275.0969167d)<br>Dec: -16 12 31.28 (-16.20869d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Emission nebulae, H II regions, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (2) | M17-MC | RA: 18 20 24.3500 (275.1014583d)<br>Dec: -16 11 52.96 (-16.19804d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Emission nebulae, H II regions, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (4) | NGC2023-PDR | RA: 05 41 41.0000 (85.4208333d)<br>Dec: -02 15 41.70 (-2.26158d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (6) | HD44179-SPIKE | RA: 06 19 57.9800 (94.9915833d)<br>Dec: -10 38 7.22 (-10.63534d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (8) | NGC7027-EDGE | RA: 21 07 1.5000 (316.7562500d)<br>Dec: +42 14 20.79 (42.23911d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (10) | BD+303639-RIM | RA: 19 34 45.2800 (293.6886667d)<br>Dec: +30 30 52.72 (30.51464d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |
| (12) | IRAS21282+5050-RIM | RA: 21 29 58.6900 (322.4945417d)<br>Dec: +51 04 1.89 (51.06719d)<br>Equinox: J2000 | | |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | | | |

| | | |
|---|---|---|
| (13) | IRAS21282+5050-BACKGROUND | RA: 21 29 57.9900 (322.4916250d)<br>Dec: +51 03 50.92 (51.06414d)<br>Equinox: J2000 |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | |
| (18) | NGC1333-SVS3 | RA: 03 29 10.4000 (52.2933333d)<br>Dec: +31 21 51.12 (31.36420d)<br>Equinox: J2000 |
| *Comments:*<br>*Category=ISM*<br>*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*<br>*Extended=YES* | | |

## Observation

**Proposal 1591, Observation 1: NIRSpec IFU M17 PDR** Mon Nov 21 19:02:12 GMT 2022

**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) | M17-PDR | RA: 18 20 23.2600 (275.0969167d)<br>Dec: -16 12 31.28 (-16.20869d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Emission nebulae, H II regions, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2 | 4 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 2 | G395M/F290LP | NRSIRS2 | 4 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 3 | G235M/F170LP | NRSIRS2 | 4 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 4 | G235M/F170LP | NRSIRS2 | 4 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 5 | G140M/F100LP | NRSIRS2 | 4 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 6 | G140M/F100LP | NRSIRS2 | 4 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |

## Observation

**Proposal 1591, Observation 2: NIRSpec IFU M17 H2** Mon Nov 21 19:02:12 GMT 2022

**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 |
|---|---|---|---|---|
| (2) | M17-MC | RA: 18 20 24.3500 (275.1014583d)<br>Dec: -16 11 52.96 (-16.19804d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Emission nebulae, H II regions, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2 | 8 | 1 | false | true | NONE | 4 | 4 | 2392.578 | 51710 |
| 2 | G395M/F290LP | NRSIRS2 | 8 | 1 | true | true | NONE | 4 | 4 | 2392.578 | 51710 |
| 3 | G235M/F170LP | NRSIRS2 | 8 | 1 | false | true | NONE | 4 | 4 | 2392.578 | 51710 |
| 4 | G235M/F170LP | NRSIRS2 | 8 | 1 | true | true | NONE | 4 | 4 | 2392.578 | 51710 |
| 5 | G140M/F100LP | NRSIRS2 | 8 | 1 | false | true | NONE | 4 | 4 | 2392.578 | 51710 |
| 6 | G140M/F100LP | NRSIRS2 | 8 | 1 | true | true | NONE | 4 | 4 | 2392.578 | 51710 |

## Observation

**Proposal 1591, Observation 4: NIRSpec IFU NGC2023 PDR** Mon Nov 21 19:02:12 GMT 2022

**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 |
|---|---|---|---|---|
| (4) | NGC2023-PDR | RA: 05 41 41.0000 (85.4208333d)<br>Dec: -02 15 41.70 (-2.26158d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 2 | G395M/F290LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 3 | G235M/F170LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 4 | G235M/F170LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 5 | G140M/F100LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 6 | G140M/F100LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |

## Observation

**Proposal 1591, Observation 3: REPEAT: NIRSpec IFU NGC2023 PDR** Mon Nov 21 19:02:12 GMT 2022

**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 |
|---|---|---|---|---|
| (4) | NGC2023-PDR | RA: 05 41 41.0000 (85.4208333d)<br>Dec: -02 15 41.70 (-2.26158d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 2 | G395M/F290LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 3 | G235M/F170LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 4 | G235M/F170LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 5 | G140M/F100LP | NRSIRS2RAPID | 20 | 1 | false | true | NONE | 4 | 4 | 1225.467 | 51710 |
| 6 | G140M/F100LP | NRSIRS2RAPID | 20 | 1 | true | true | NONE | 4 | 4 | 1225.467 | 51710 |

## Observation

**Proposal 1591, Observation 6: NIRSpec IFU HD44179 SPIKE** Mon Nov 21 19:02:12 GMT 2022

**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 |
|---|---|---|---|---|
| (6) | HD44179-SPIKE | RA: 06 19 57.9800 (94.9915833d)<br>Dec: -10 38 7.22 (-10.63534d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |

## Observation

**Proposal 1591, Observation 5: REPEAT: NIRSpec IFU HD44179 SPIKE** Mon Nov 21 19:02:12 GMT 2022

**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 |
|---|---|---|---|---|
| (6) | HD44179-SPIKE | RA: 06 19 57.9800 (94.9915833d)<br>Dec: -10 38 7.22 (-10.63534d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |

## Observation

**Proposal 1591, Observation 10: NIRSpec IFU NGC7027 Edge** Mon Nov 21 19:02:12 GMT 2022

**Diagnostic Status: Warning**

Observing Template: NIRSpec IFU Spectroscopy

## Diagnostics

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

(Visit 10:1) Warning (Form): Visit schedulable, but most scheduling windows are when JWST is pointed in direction of greatest micrometeoroid impact risk. This is likely due to scheduling special requirements.

## Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous |
|---|---|---|---|---|
| (8) | NGC7027-EDGE | RA: 21 07 1.5000 (316.7562500d)<br>Dec: +42 14 20.79 (42.23911d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |

## Special Requirements

Aperture PA Range 357.892975 to 103.892975 Degrees (V3 218.92044082 to 324.92044082)

## Observation

**Proposal 1591, Observation 11: NIRSpec IFU BD+303639 Rim** Mon Nov 21 19:02:12 GMT 2022

**Diagnostic Status: Warning**

Observing Template: NIRSpec IFU Spectroscopy

## Diagnostics

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

## Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous |
|---|---|---|---|---|
| (10) | BD+303639-RIM | RA: 19 34 45.2800 (293.6886667d)<br>Dec: +30 30 52.72 (30.51464d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |

## Observation

**Proposal 1591, Observation 14: NIRSpec IFU IRAS21282+5050 Rim** Mon Nov 21 19:02:12 GMT 2022

**Diagnostic Status: Warning**

Observing Template: NIRSpec IFU Spectroscopy

Background Observations:[NIRSpec IFU IRAS21282+5050 Background (Obs 16)]

## 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 |
|---|---|---|---|---|
| (12) | IRAS21282+5050-RIM | RA: 21 29 58.6900 (322.4945417d)<br>Dec: +51 04 1.89 (51.06719d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |

## Special Requirements

Aperture PA Range 188.892975 to 283.892975 Degrees (V3 49.92044082 to 144.92044082)

Sequence Observations 14, 16, Non-interruptible

## Observation

**Proposal 1591, Observation 16: NIRSpec IFU IRAS21282+5050 Background** Mon Nov 21 19:02:12 GMT 2022

**Diagnostic Status: Warning**

Observing Template: NIRSpec IFU Spectroscopy

Background Observation For: [NIRSpec IFU IRAS21282+5050 Rim (Obs 14)]

## 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 |
|---|---|---|---|---|
| (13) | IRAS21282+5050-BACKGROUND | RA: 21 29 57.9900 (322.4916250d)<br>Dec: +51 03 50.92 (51.06414d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 10 | 1 | false | true | NONE | 4 | 4 | 641.911 | 51710 |

## Special Requirements

Aperture PA Range 188.892975 to 283.892975 Degrees (V3 49.92044082 to 144.92044082)

Sequence Observations 14, 16, Non-interruptible

## Observation

**Proposal 1591, Observation 15: NIRSpec IFU NGC1333 SVS3** Mon Nov 21 19:02:12 GMT 2022

**Diagnostic Status: Warning**

Observing Template: NIRSpec IFU Spectroscopy

## 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 |
|---|---|---|---|---|
| (18) | NGC1333-SVS3 | RA: 03 29 10.4000 (52.2933333d)<br>Dec: +31 21 51.12 (31.36420d)<br>Equinox: J2000 | | |

*Comments:*
*Category=ISM*
*Description=[Dust nebulae, Interstellar dust, Interstellar molecules]*
*Extended=YES*

## Template

| TA Method |
|---|
| NONE |

## Dithers

| # | Dither Type | Size | Starting Point | Number of Points | Points |
|---|---|---|---|---|---|
| 1 | 4-POINT-DITHER | | | | |

## 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 | G395M/F290LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 2 | G235M/F170LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |
| 3 | G140M/F100LP | NRSIRS2RAPID | 9 | 1 | false | true | NONE | 4 | 4 | 583.556 | 51710 |