



9091 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Cycle: 4, Proposal Category: GO

INVESTIGATORS

| <i>Name</i> | <i>Institution</i> |
|---------------------------------|---|
| Mr. Marvin Morgan (PI) | University of California - Santa Barbara |
| Dr. Brendan Bowler (CoI) (CoPI) | University of California - Santa Barbara |
| Kyle Franson (CoI) | University of California - Santa Cruz |
| Dr. Adina Feinstein (CoI) | Michigan State University |
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| Darryl Seligman (CoI) | Michigan State University |
| Mr. Quang Tran (CoI) | University of Texas at Austin |
| Claire Finley (CoI) | University of Texas at Austin |

OBSERVATIONS

| <i>Folder</i> | <i>Observation</i> | <i>Label</i> | <i>Observing Template</i> | <i>Science Target</i> |
|--------------------|--------------------|------------------|----------------------------|-----------------------|
| Observation Folder | | | | |
| | 1 | HD148427_BG_1065 | MIRI Coronagraphic Imaging | (10) HD148427_BG |
| | 2 | HD148427_BG_1550 | MIRI Coronagraphic Imaging | (10) HD148427_BG |
| | 3 | HD148427_1065 | MIRI Coronagraphic Imaging | (9) HD148427 |
| | 4 | HD148427_1550 | MIRI Coronagraphic Imaging | (9) HD148427 |
| | 5 | HIP79431_1065 | MIRI Coronagraphic Imaging | (5) HIP79431_F1065 |
| | 6 | HIP79431_1550 | MIRI Coronagraphic Imaging | (6) HIP79431_F1550 |
| | 7 | HIP79431_BG_1550 | MIRI Coronagraphic Imaging | (8) HIP79431_BG_1550 |
| | 8 | HIP79431_BG_1065 | MIRI Coronagraphic Imaging | (7) HIP79431_BG_1065 |

ABSTRACT

JWST's MIRI is the only instrument capable of imaging mature Jovian-mass planets around nearby stars, as demonstrated by the recent discovery of a massive, temperate Jupiter orbiting Eps Ind. We aim to image a new cold benchmark super-Jupiter similar to a mature beta Pic b identified from the astrometric and radial acceleration of its host star, HIP79431. The M3V dwarf star hosts an inner warm Jupiter and an outer companion which we seek to recover. The long-term RV trend and astrometric acceleration (significant at the 18-sigma level) suggests that the stellar reflex motion must originate from an outer giant planet (~ 11 MJup) or low-mass brown dwarf at a separation of $\sim 5\text{--}12$ AU. This would be the second direct imaging planet discovery by JWST, and its dynamical mass will immediately enable tests of atmospheric and evolutionary models at low temperatures and old ages.

OBSERVING DESCRIPTION

We will collect MIRI coronagraphic observations of HIP 79431 to unveil a hidden massive companion detected in radial velocity and astrometric observations. Observations will be taken with the F1056C and F1550C filters and the 4QPM coronagraph. We will collect reference PSF observations for both of the MIRI observations. HD 148699 will be used as a suitable reference star and is ~ 0.5 mag brighter than HIP 79431. The reference star is within 10 degrees of the science target and appears to be single based on the literature (WDS) and on Gaia RUWE noise statistics.

We will collect these reference images with the 9pt dither pattern to ensure optimal PSF reconstruction. Background observations will also be collected near the science and reference targets for all MIRI observations to subtract out scattered light features. We include all observations in a non-interruptible block (SEQ NON INT). This helps to reduce the time gap between science, reference, and background star observations, ultimately enhancing the removal of the stellar PSF and scattered light. Our groups/integration and integrations/exposure are chosen based on the results of simulations with PanCAKE.

Proposal 9091 - Targets - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous |
|---|------------------|--|---|---------------|
| (5) | HIP79431_F1065 | RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000 | Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000 | |
| <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i> <i>Description=[M dwarfs]</i></p> | | | | |
| (6) | HIP79431_F1550 | RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000 | Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000 | |
| <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i> <i>Description=[M dwarfs]</i></p> | | | | |
| (7) | HIP79431_BG_1065 | RA: 16 12 45.6924 (243.1903850d) Dec: -18 51 7.78 (-18.85216d) Equinox: J2000 | Proper Motion RA: 0 Proper Motion Dec: 0 Parallax: 0" Epoch of Position: 2000 | |
| <p><i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i></p> <p><i>Category=Calibration</i> <i>Description=[Telescope/sky background]</i></p> | | | | |
| (8) | HIP79431_BG_1550 | RA: 16 12 45.6924 (243.1903850d) Dec: -18 51 7.78 (-18.85216d) Equinox: J2000 | Proper Motion RA: 0 Proper Motion Dec: 0 Parallax: 0" Epoch of Position: 2000 | |
| <p><i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i></p> <p><i>Category=Calibration</i> <i>Description=[Telescope/sky background]</i></p> | | | | |
| (9) | HD148427 | RA: 16 28 28.1512 (247.1172967d) Dec: -13 23 58.69 (-13.39964d) Equinox: J2000 | Proper Motion RA: -37.413 mas/yr Proper Motion Dec: 3.049 mas/yr Parallax: 0.0142059" Epoch of Position: 2000 | |
| <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i> <i>Description=[M stars]</i></p> | | | | |
| (10) | HD148427_BG | RA: 16 28 23.1881 (247.0966171d) Dec: -13 23 25.30 (-13.39036d) Equinox: J2000 | Epoch of Position: 2000 | |
| <p><i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i></p> <p><i>Category=Calibration</i> <i>Description=[Telescope/sky background]</i></p> | | | | |

Fixed Targets

Proposal 9091 - Observation 1 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|---|--|---------------------------|--|-------------|---------------|------------------------|---------------------------------|----------------------------|------------------------|----------------------|---------------------------|----------------------------|-------------------------|
| Observation | Proposal 9091, Observation 1: HD148427_BG_1065 Diagnostic Status: Warning Observing Template: MIRI Coronagraphic Imaging Background Observation For: [HD148427_1065 (Obs 3), HD148427_1550 (Obs 4)] | | | | | | | | | | | | |
| | (Visit 1:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. | | | | | | | | | | | | |
| Diagnosics | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Fixed Targets | # | Name | Target Coordinates | | | | Targ. Coord. Corrections | | | Miscellaneous | | | |
| | (10) | HD148427_BG | RA: 16 28 23.1881 (247.0966171d) Dec: -13 23 25.30 (-13.39036d) Equinox: J2000 | | | | Epoch of Position: 2000 | | | | | | |
| <i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i> <i>Category=Calibration</i> <i>Description=[Telescope/sky background]</i> | | | | | | | | | | | | | |
| Acquisition | # | | | | | | | | | | | Target | |
| | 1 | | | | | | | | | | | NONE | |
| Template | AcqFilter | Repeat observation | | | | | | Background Quadrant | | | | | |
| | | YES | | | | | | 1 | | | | | |
| Dithers | # | | | | | | | | | | | Dither Type | |
| | 1 | | | | | | | | | | | BACKGROUND | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1065C | MASK1065 | 4QPM | F1065C | FASTR1 | 295 | 12 | 1 | 2 | 24 | 1702.207 | |
| PSF References | Additional Justification: false | | | | | | | | | | | | |

Proposal 9091 - Observation 1 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Special Requirements

No Parallel Attachments

Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible

Proposal 9091 - Observation 2 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|---|--|---------------------------|--|-------------|---------------|------------------------|---------------------------------|----------------------------|------------------------|----------------------|---------------------------|----------------------------|-------------------------|
| Observation | Proposal 9091, Observation 2: HD148427_BG_1550 Diagnostic Status: Warning Observing Template: MIRI Coronagraphic Imaging Background Observation For: [HD148427_1065 (Obs 3), HD148427_1550 (Obs 4)] | | | | | | | | | | | | |
| | (Visit 2:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. | | | | | | | | | | | | |
| Diagnosics | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| Fixed Targets | # | Name | Target Coordinates | | | | Targ. Coord. Corrections | | | Miscellaneous | | | |
| | (10) | HD148427_BG | RA: 16 28 23.1881 (247.0966171d) Dec: -13 23 25.30 (-13.39036d) Equinox: J2000 | | | | Epoch of Position: 2000 | | | | | | |
| <i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i> <i>Category=Calibration</i> <i>Description=[Telescope/sky background]</i> | | | | | | | | | | | | | |
| Acquisition | # | | | | | | | | | | | Target | |
| | 1 | | | | | | | | | | | NONE | |
| Template | AcqFilter | Repeat observation | | | | | | Background Quadrant | | | | | |
| | | YES | | | | | | 1 | | | | | |
| Dithers | # | | | | | | | | | | | Dither Type | |
| | 1 | | | | | | | | | | | BACKGROUND | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1550C | MASK1550 | 4QPM | F1550C | FASTR1 | 303 | 12 | 1 | 2 | 24 | 1748.226 | |
| PSF References | Additional Justification: false | | | | | | | | | | | | |

Proposal 9091 - Observation 2 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Special Requirements

No Parallel Attachments

Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible

Proposal 9091 - Observation 3 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|--------------------------|---|--------------------|--|----------|-----------------|--|------------------|--------------------|---------------------|------------------|--------------------|---------------------|------------------|
| Observation | <p>Proposal 9091, Observation 3: HD148427_1065</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observations:[HD148427_BG_1065 (Obs 1), HD148427_BG_1550 (Obs 2), HD148427_1550 (Obs 4)]</p> | | | | | | | | | | | | |
| 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 | | | | |
| | (9) | HD148427 | RA: 16 28 28.1512 (247.1172967d) Dec: -13 23 58.69 (-13.39964d) Equinox: J2000 | | | Proper Motion RA: -37.413 mas/yr Proper Motion Dec: 3.049 mas/yr Parallax: 0.0142059" Epoch of Position: 2000 | | | | | | | |
| | <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i></p> <p><i>Description=[M stars]</i></p> | | | | | | | | | | | | |
| Acquisition | # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | |
| | 1 | SAME | FND | 1 | FAST | 4 | 1 | 1 | 0.959 | 227241 | | | |
| Template | <p>Repeat observation</p> <p>NO</p> | | | | | | | | | | | | |
| Dithers | # | Dither Type | | | | | | | | | | | |
| | 1 | 9-POINT-SMALL-GRID | | | | | | | | | | | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1065C | MASK1065 | 4QPM | F1065C | FASTR1 | 295 | 12 | 1 | 9 | 108 | 7659.933 | |

Proposal 9091 - Observation 3 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|-----------------------------|---|
| PSF References | PSF Reference: true |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |

Proposal 9091 - Observation 4 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| Observation | <p>Proposal 9091, Observation 4: HD148427_1550</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observations:[HD148427_BG_1065 (Obs 1), HD148427_BG_1550 (Obs 2), HD148427_1065 (Obs 3)]</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--|--|--|-----------------|-----------------|------------------|--------------------|---------------------|------------------|--------------------|---------------------|------------------|-------------------|--------------------|--------------------------|-----------------|-----------------|------------------|--|--|------------------|--------------------|---------------------|------------------|---|-------------|----------|------|--------|--------|--------|----|---|---|-----|----------|--|
| Diagnostics | (Visit 4:1) Warning (Form): Overheads are provisional until the Visit Planner has been run. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fixed Targets | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(9)</td> <td>HD148427</td> <td>RA: 16 28 28.1512 (247.1172967d) Dec: -13 23 58.69 (-13.39964d) Equinox: J2000</td> <td>Proper Motion RA: -37.413 mas/yr Proper Motion Dec: 3.049 mas/yr Parallax: 0.0142059" Epoch of Position: 2000</td> <td></td> </tr> </tbody> </table> <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i> <i>Description=[M stars]</i></p> | | | | | | | | | | | # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous | (9) | HD148427 | RA: 16 28 28.1512 (247.1172967d) Dec: -13 23 58.69 (-13.39964d) Equinox: J2000 | Proper Motion RA: -37.413 mas/yr Proper Motion Dec: 3.049 mas/yr Parallax: 0.0142059" Epoch of Position: 2000 | | | | | | | | | | | | | | | | | |
| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (9) | HD148427 | RA: 16 28 28.1512 (247.1172967d) Dec: -13 23 58.69 (-13.39964d) Equinox: J2000 | Proper Motion RA: -37.413 mas/yr Proper Motion Dec: 3.049 mas/yr Parallax: 0.0142059" Epoch of Position: 2000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition | <table border="1"> <thead> <tr> <th>#</th> <th>Target</th> <th>Filter</th> <th>Quadrant</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAME</td> <td>FND</td> <td>1</td> <td>FAST</td> <td>4</td> <td>1</td> <td>1</td> <td>0.959</td> <td>227241</td> </tr> </tbody> </table> | | | | | | | | | | | # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | 1 | SAME | FND | 1 | FAST | 4 | 1 | 1 | 0.959 | 227241 | | | | | | |
| # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | SAME | FND | 1 | FAST | 4 | 1 | 1 | 0.959 | 227241 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Template | <p>Repeat observation</p> <p>NO</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dithers | <table border="1"> <thead> <tr> <th>#</th> <th>Dither Type</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>9-POINT-SMALL-GRID</td> </tr> </tbody> </table> | | | | | | | | | | | # | Dither Type | 1 | 9-POINT-SMALL-GRID | | | | | | | | | | | | | | | | | | | | | | |
| # | Dither Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 9-POINT-SMALL-GRID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spectral Elements | <table border="1"> <thead> <tr> <th>#</th> <th>Coron Mask/Filter</th> <th>Subarray</th> <th>Mask</th> <th>Filter</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/E xp</th> <th>Exposures/Dit h</th> <th>Total Dithers</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4QPM/F1550C</td> <td>MASK1550</td> <td>4QPM</td> <td>F1550C</td> <td>FASTR1</td> <td>303</td> <td>12</td> <td>1</td> <td>9</td> <td>108</td> <td>7867.017</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | 1 | 4QPM/F1550C | MASK1550 | 4QPM | F1550C | FASTR1 | 303 | 12 | 1 | 9 | 108 | 7867.017 | |
| # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 4QPM/F1550C | MASK1550 | 4QPM | F1550C | FASTR1 | 303 | 12 | 1 | 9 | 108 | 7867.017 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Proposal 9091 - Observation 4 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|-----------------------------|---|
| PSF References | PSF Reference: true |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |

Proposal 9091 - Observation 5 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| Observation | <p>Proposal 9091, Observation 5: HIP79431_1065</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observations:[HIP79431_BG_1065 (Obs 8)]</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|---|--|---|-----------------|-----------------|------------------|--------------------|---------------------|------------------|--------------------|---------------------|------------------|---|-------------------|--------------------|--------------------------|-----------------|-----------------|------------------|--|---|------------------|--------------------|---------------------|------------------|---|-------------|----------|------|--------|--------|--------|----|---|---|----|----------|--|
| Diagnostics | <p>(HIP79431_1065 (Obs 5)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees</p> <p>(Visit 5:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fixed Targets | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(5)</td> <td>HIP79431_F1065</td> <td>RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000</td> <td>Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000</td> <td></td> </tr> </tbody> </table> <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i></p> <p><i>Description=[M dwarfs]</i></p> | | | | | | | | | | | | # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous | (5) | HIP79431_F1065 | RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000 | Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000 | | | | | | | | | | | | | | | | | |
| # | Name | Target Coordinates | Targ. Coord. Corrections | Miscellaneous | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (5) | HIP79431_F1065 | RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000 | Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Acquisition | <table border="1"> <thead> <tr> <th>#</th> <th>Target</th> <th>Filter</th> <th>Quadrant</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>SAME</td> <td>FND</td> <td>1</td> <td>FAST</td> <td>36</td> <td>1</td> <td>1</td> <td>8.628</td> <td>227241</td> </tr> </tbody> </table> | | | | | | | | | | | | # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | 1 | SAME | FND | 1 | FAST | 36 | 1 | 1 | 8.628 | 227241 | | | | | | |
| # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | SAME | FND | 1 | FAST | 36 | 1 | 1 | 8.628 | 227241 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Template | <p>Repeat observation</p> <p>NO</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dithers | <table border="1"> <thead> <tr> <th>#</th> <th>Dither Type</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>NONE</td> </tr> </tbody> </table> | | | | | | | | | | | | # | Dither Type | 1 | NONE | | | | | | | | | | | | | | | | | | | | | | |
| # | Dither Type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Spectral Elements | <table border="1"> <thead> <tr> <th>#</th> <th>Coron Mask/Filter</th> <th>Subarray</th> <th>Mask</th> <th>Filter</th> <th>Readout Pattern</th> <th>Groups/Int</th> <th>Integrations/Exp</th> <th>Exposures/Dit h</th> <th>Total Dithers</th> <th>Total Integrations</th> <th>Total Exposure Time</th> <th>ETC Wkbk.Calc ID</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4QPM/F1065C</td> <td>MASK1065</td> <td>4QPM</td> <td>F1065C</td> <td>FASTR1</td> <td>1251</td> <td>12</td> <td>1</td> <td>1</td> <td>12</td> <td>3600.713</td> <td></td> </tr> </tbody> </table> | | | | | | | | | | | | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/Exp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | 1 | 4QPM/F1065C | MASK1065 | 4QPM | F1065C | FASTR1 | 1251 | 12 | 1 | 1 | 12 | 3600.713 | |
| # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/Exp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 4QPM/F1065C | MASK1065 | 4QPM | F1065C | FASTR1 | 1251 | 12 | 1 | 1 | 12 | 3600.713 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Proposal 9091 - Observation 5 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|-----------------------------|--|
| PSF References | HD148427_1065 (Obs 3) (PSF Reference; Filters [F1065C]) Additional Justification: false |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |

Proposal 9091 - Observation 6 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|--------------------------|--|-------------------|--|----------|-----------------|---|------------------|--------------------|---------------------|------------------|--------------------|---------------------|------------------|
| Observation | <p>Proposal 9091, Observation 6: HIP79431_1550</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observations:[HIP79431_BG_1550 (Obs 7)]</p> | | | | | | | | | | | | |
| Diagnostics | <p>(HIP79431_1550 (Obs 6)) Warning (Form): Science observations should be linked to at least one other compatible science observation by an Aperture PA Offset of 1-14 degrees</p> <p>(Visit 6:1) Warning (Form): Overheads are provisional until the Visit Planner has been run.</p> | | | | | | | | | | | | |
| Fixed Targets | # | Name | Target Coordinates | | | Targ. Coord. Corrections | | | Miscellaneous | | | | |
| | (6) | HIP79431_F1550 | RA: 16 12 41.7794 (243.1740808d) Dec: -18 52 31.81 (-18.87550d) Equinox: J2000 | | | Proper Motion RA: 36.447 mas/yr Proper Motion Dec: -214.02500001386215 mas/yr Parallax: 0.06861" Epoch of Position: 2000 | | | | | | | |
| | <p><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i></p> <p><i>SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.</i></p> <p><i>Category=Star</i></p> <p><i>Description=[M dwarfs]</i></p> | | | | | | | | | | | | |
| Acquisition | # | Target | Filter | Quadrant | Readout Pattern | Groups/Int | Integrations/Exp | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID | | | |
| | 1 | SAME | FND | 1 | FAST | 36 | 1 | 1 | 8.628 | 227241 | | | |
| Template | <p>Repeat observation</p> <p>NO</p> | | | | | | | | | | | | |
| Dithers | # | Dither Type | | | | | | | | | | | |
| | 1 | NONE | | | | | | | | | | | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/Exp | Exposures/Dit | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1550C | MASK1550 | 4QPM | F1550C | FASTR1 | 1251 | 12 | 1 | 1 | 12 | 3600.713 | |

Proposal 9091 - Observation 6 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|-----------------------------|--|
| PSF References | HD148427_1550 (Obs 4) (PSF Reference; Filters [F1550C]) Additional Justification: false |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |

Proposal 9091 - Observation 7 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|--------------------------|--|--------------------|---|------|--------|--|------------|---------------------|-----------------|---------------|--------------------|---------------------|------------------|
| Observation | <p>Proposal 9091, Observation 7: HIP79431_BG_1550</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observation For: [HIP79431_1550 (Obs 6)]</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 | | | | |
| | (8) | HIP79431_BG_1550 | RA: 16 12 45.6924 (243.1903850d) Dec: -18 51 7.78 (-18.85216d) Equinox: J2000 | | | Proper Motion RA: 0 Proper Motion Dec: 0 Parallax: 0" Epoch of Position: 2000 | | | | | | | |
| | <p><i>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT.</i></p> <p><i>Category=Calibration</i></p> <p><i>Description=[Telescope/sky background]</i></p> | | | | | | | | | | | | |
| Acquisition | # | Target | | | | | | | | | | | |
| | 1 | NONE | | | | | | | | | | | |
| Template | AcqFilter | Repeat observation | | | | | | Background Quadrant | | | | | |
| | | YES | | | | | | 1 | | | | | |
| Dithers | # | Dither Type | | | | | | | | | | | |
| | 1 | BACKGROUND | | | | | | | | | | | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1550C | MASK1550 | 4QPM | F1550C | FASTR1 | 1251 | 12 | 1 | 2 | 24 | 7201.425 | |

Proposal 9091 - Observation 7 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|----------------------|---|
| PSF References | Additional Justification: false |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |

Proposal 9091 - Observation 8 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

Tue Aug 19 21:00:16 GMT 2025

| | | | | | | | | | | | | | |
|--------------------------|---|--------------------|---|------|--------|--|------------|---------------------|-----------------|---------------|--------------------|---------------------|------------------|
| Observation | <p>Proposal 9091, Observation 8: HIP79431_BG_1065</p> <p>Diagnostic Status: Warning</p> <p>Observing Template: MIRI Coronagraphic Imaging</p> <p>Background Observation For: [HIP79431_1065 (Obs 5)]</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 | | | | |
| | (7) | HIP79431_BG_1065 | RA: 16 12 45.6924 (243.1903850d) Dec: -18 51 7.78 (-18.85216d) Equinox: J2000 | | | Proper Motion RA: 0 Proper Motion Dec: 0 Parallax: 0" Epoch of Position: 2000 | | | | | | | |
| | <p>Comments: Coordinates were generated by looking into a empty region close to the SCIENCE star by using the tool Aladin v8.1 and catalog WISE on the APT. Category=Calibration Description=[Telescope/sky background]</p> | | | | | | | | | | | | |
| Acquisition | # | Target | | | | | | | | | | | |
| | 1 | NONE | | | | | | | | | | | |
| Template | AcqFilter | Repeat observation | | | | | | Background Quadrant | | | | | |
| | | YES | | | | | | 1 | | | | | |
| Dithers | # | Dither Type | | | | | | | | | | | |
| | 1 | BACKGROUND | | | | | | | | | | | |
| Spectral Elements | # | Coron Mask/Filter | Subarray | Mask | Filter | Readout Pattern | Groups/Int | Integrations/E xp | Exposures/Dit h | Total Dithers | Total Integrations | Total Exposure Time | ETC Wkbk.Calc ID |
| | 1 | 4QPM/F1065C | MASK1065 | 4QPM | F1065C | FASTR1 | 1251 | 12 | 1 | 2 | 24 | 7201.425 | |

Proposal 9091 - Observation 8 - Imaging a Hidden Super-Jupiter Accelerating its Metal-rich M-dwarf Host

| | |
|-----------------------------|---|
| PSF References | Additional Justification: false |
| Special Requirements | No Parallel Attachments Group Observations 1, 2, 3, 4, 5, 6, 7, 8, Non-interruptible |