



15296 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Cycle: 25, Proposal Category: GO
(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

| <i>Visit</i> | <i>Targets used in Visit</i> | <i>Configurations used in Visit</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|--------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 01 | (1) 2MASSJ1017075+130839 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:15.0 | yes |
| 51 | (1) 2MASSJ1017075+130839 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:16.0 | yes |
| 02 | (2) GL417B | WFC3/UVIS | 1 | 16-Aug-2018 18:00:17.0 | yes |
| 03 | (3) 2MASSJ2132114+134158 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:18.0 | yes |
| 04 | (4) 2MASSWJ0920122+351742 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:19.0 | yes |
| 05 | (5) 2MASSWJ1728114+394859 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:19.0 | yes |
| 06 | (6) SDSSJ205235.31-160929.8 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:20.0 | yes |
| 07 | (7) DENIS-PJ225210.73-173013.4 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:21.0 | yes |
| 08 | (8) 2MASSWJ0149090+295613 | WFC3/UVIS | 1 | 16-Aug-2018 18:00:23.0 | yes |

9 Total Orbits Used

ABSTRACT

Substellar models underpin our theoretical understanding of brown dwarfs and gas-giant exoplanets, so assessing their accuracy is paramount. The past several years have seen progress in testing models thanks to a growing number of dynamical (total) masses for brown dwarf binaries determined via (relative) orbit monitoring from ground-based AO. However, the strongest tests of models require individual masses, particularly for calibrating the mass-luminosity relation. This is poorly constrained over the range of spectral types most influenced by clouds (mid-L to early-T). Given the observed prevalence of clouds in the atmospheres of directly imaged planets, testing models at such temperatures is crucial.

We propose a 3-year program to obtain individual masses for a sample of 11 substellar binaries. Our proposal builds on nearly a decade of orbital monitoring from the ground to measure dynamical total masses. Our goal is thus to measure precise mass ratios, utilizing HST's unique wide-field, high-angular resolution astrometric capabilities. We will obtain WFC3-UVIS images capturing our targets and numerous reference stars so that we can measure the relative amount of orbital motion in each component to determine mass ratios. Three of our targets have I-band photocenter orbits measured at USNO and VLT and thus only require one epoch of resolved I-band imaging to unlock individual masses. We will use this first large sample of substellar individual masses to map out the mass-luminosity relation over a wide range of temperatures (1000-2000 K) including the L/T transition. This will become a touchstone sample for tests of ultracool atmospheric models in the era of JWST.

OBSERVING DESCRIPTION

Our program consists of two distinct observing modes and accompanying goals. The primary one is to obtain absolute astrometry of the individual components of seven tight ($\lesssim 0.1$ arcsec) brown dwarf binaries that already have known relative orbits (and thereby total dynamical masses). Obtaining absolute astrometry at multiple epochs over 3 years will allow us to disentangle proper motion from the orbital motion of each component, and by measuring the ratio of component orbital motion will allow a precise measurement of the mass ratio and thus individual masses. The key observational goal is to obtain as high of precision absolute position measurements for as many reference stars as possible across all epochs. This motivates us to place our targets near the center of the full UVIS FOV, using the UVIS-CENTER aperture, so that data taken at different roll angles will share the maximum number of reference stars in common. We expect the dominant source of our astrometric errors will be set by how well we can deblend our tightest (~ 50 mas) binaries with flux ratios of $\sim 1-2$ mag. We expect positional errors on 4 mas in the most unfavorable cases.

The second observing mode/goal is to image three astrometric binaries at a single epoch each in order to measure their optical flux ratios.

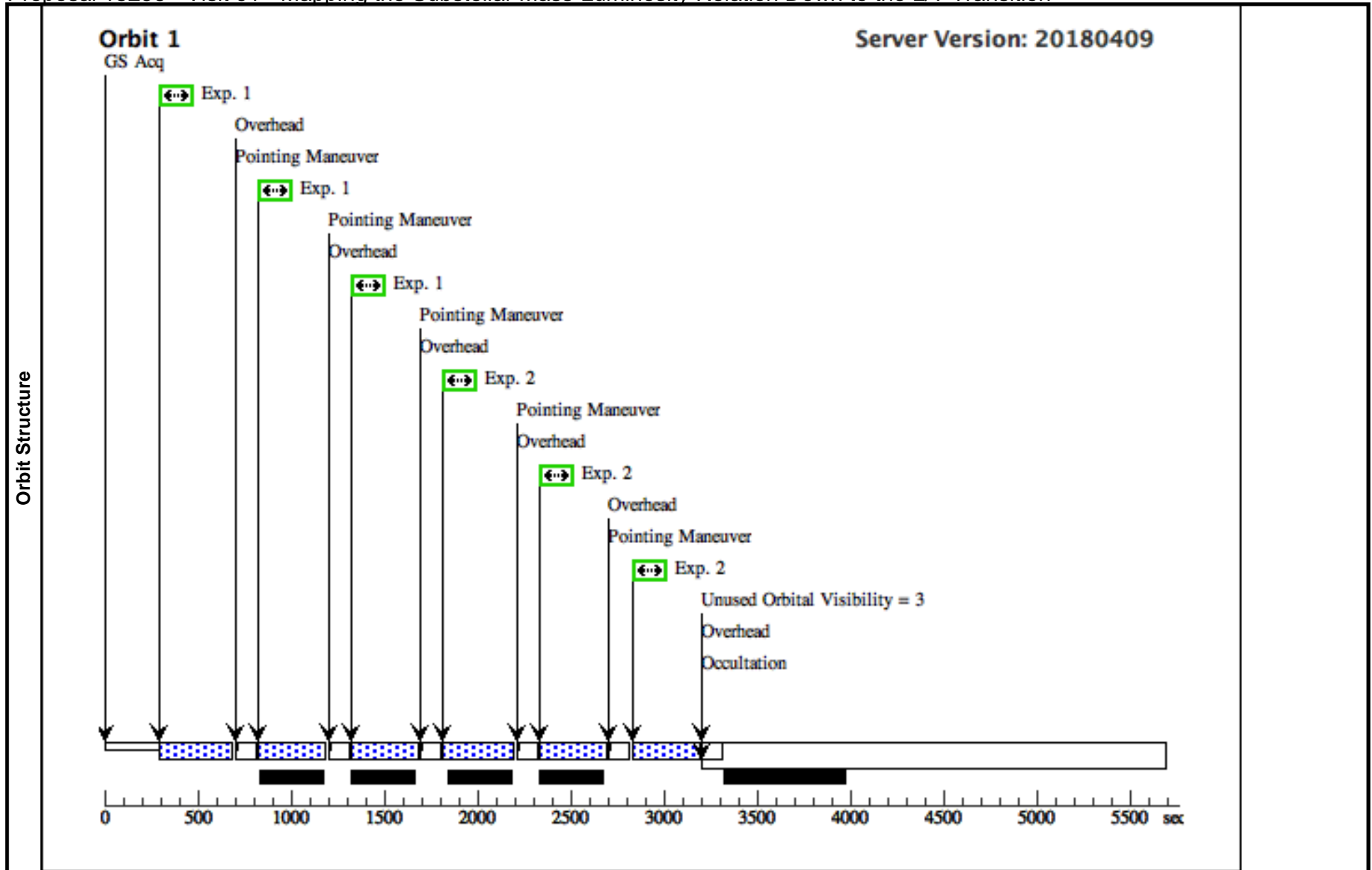
Proposal 15296 (STScI Edit Number: 0, Created: Thursday, August 16, 2018 5:00:24 PM EST) - Overview

Coincidentally, the optimal times to observe this sample result in one of these binaries being observed in each of Cycles 23, 24, and 25. Their photocenter orbits have previously been determined in seeing-limited optical imaging, so a single HST epoch will break the degeneracy between mass ratio and flux ratio, enabling individual mass measurements of both components. Thus our goal is high-precision relative photometry of these tight (50-100 mas) binaries, and we will use the UVIS2-C512C-CTE aperture to minimize image degradation caused by CTE losses.

Proposal 15296 - Visit 01 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

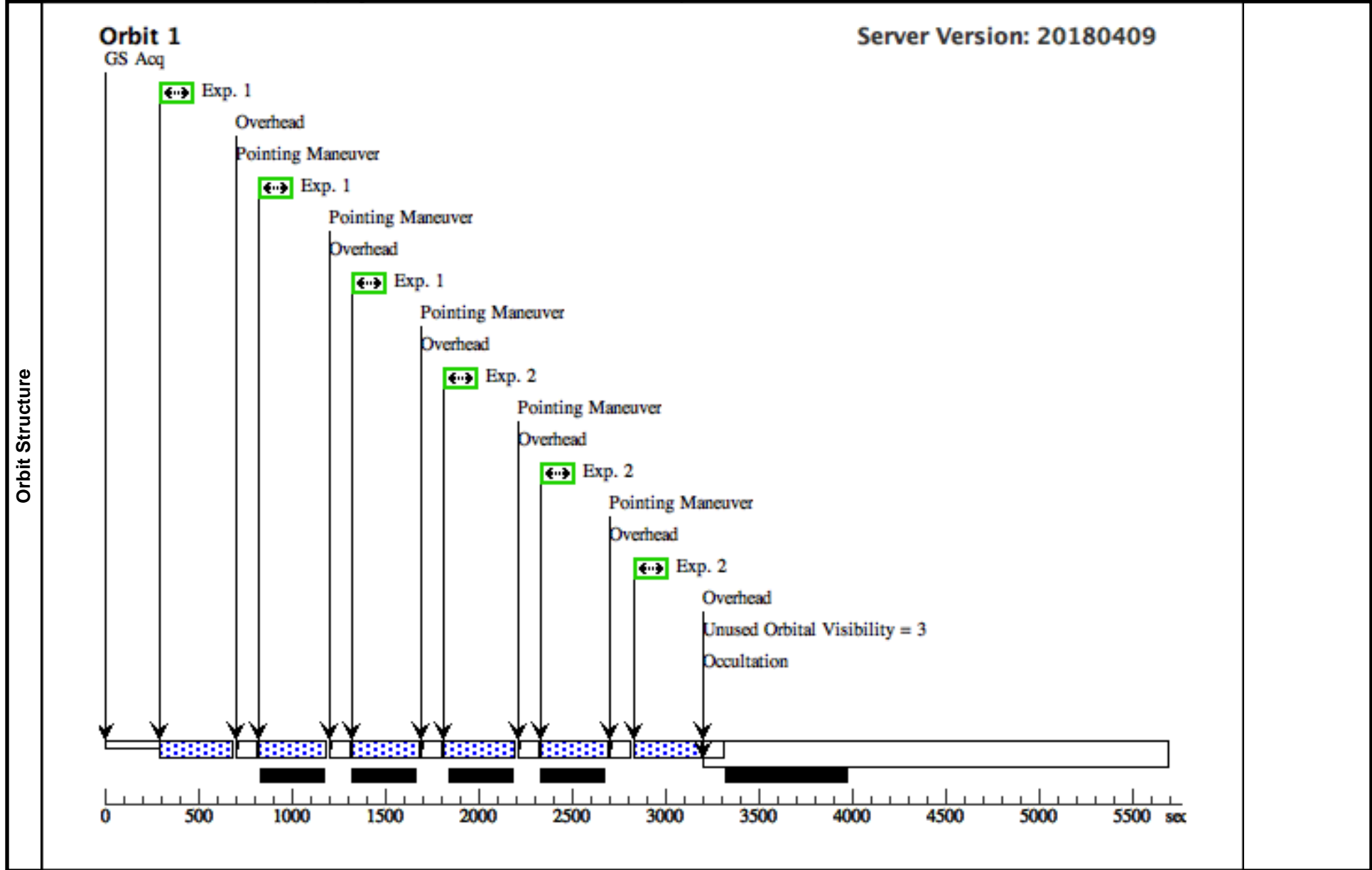
| Visit | Proposal 15296, Visit 01, failed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01-MAY-2018:00:00:00 | | | | | | | | | |
|---------------|--|--|--|---|-----------------|-----------------------|-------------------------------------|--|--|-------|
| | Patterns | # | Primary Pattern | Secondary Pattern | Exposures | | | | | |
| | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | (1), (2) | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (1) | 2MASSJ1017075+130839 | RA: 10 17 7.6381 (154.2818254d) Dec: +13 08 39.10 (13.14419d) Equinox: J2000 | Proper Motion RA: 45.3 mas/yr Proper Motion Dec: -114.5 mas/yr Epoch of Position: 2008.13 | V=(?) J=14.1 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) 2MASSJ1017075+130839 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 01 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] |
| 2 | | (1) 2MASSJ1017075+130839 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 01 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] | |



Proposal 15296 - Visit 51 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

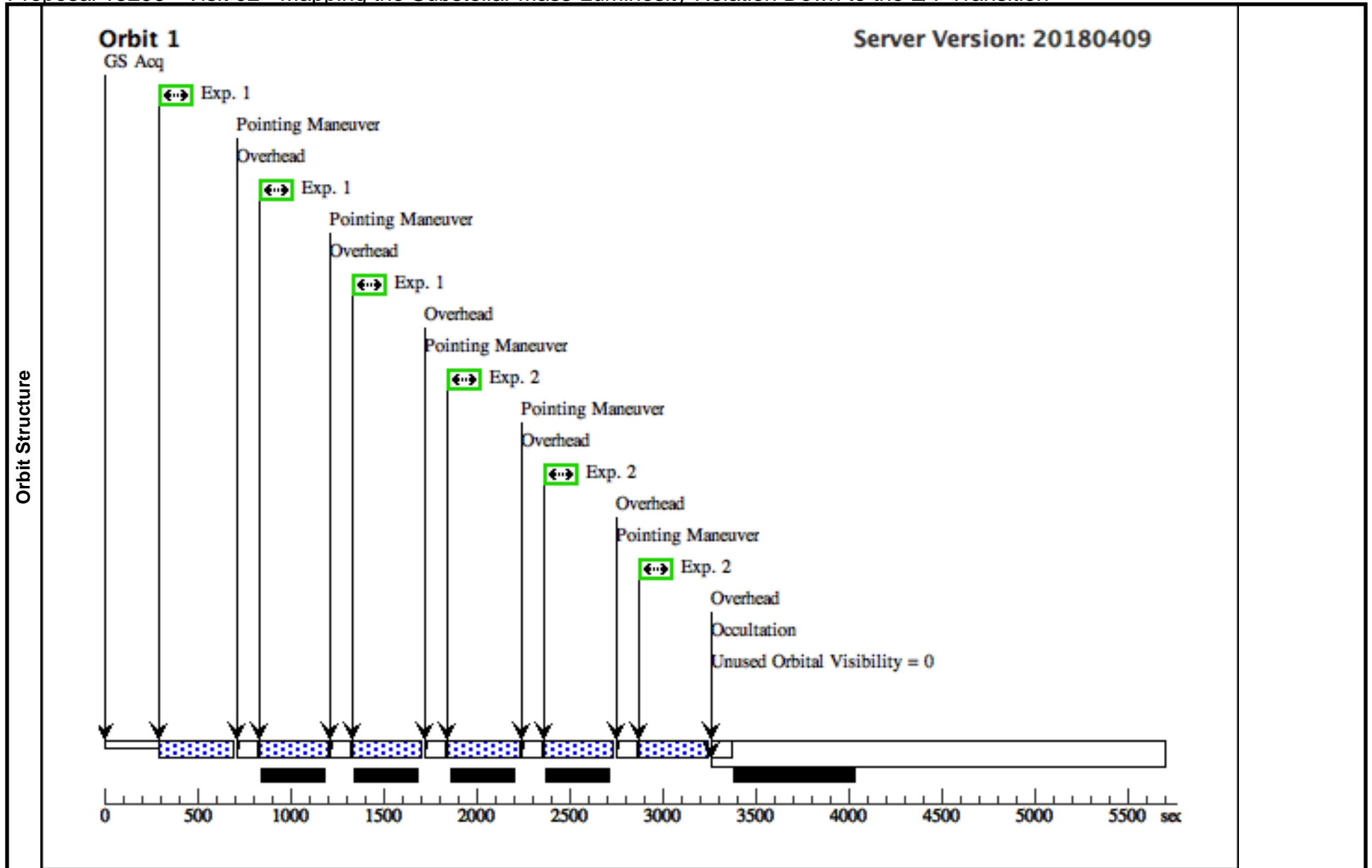
| Visit | Proposal 15296, Visit 51 Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 01-MAY-2018:00:00:00 Comments: Repeat of failed visit 01 | | | | | | | | | |
|---------------|---|--------------------------|--|--|-------------------------------|----------------------------------|-------------------------------------|--|--|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER-LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | (1), (2) | |
| Fixed Targets | # | Name | Target Coordinates | | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | |
| | (1) | 2MASSJ1017075+130839 | RA: 10 17 7.6381 (154.2818254d) | Dec: +13 08 39.10 (13.14419d) | Proper Motion RA: 45.3 mas/yr | Proper Motion Dec: -114.5 mas/yr | V=(?) J=14.1 | Reference Frame: ICRS | | |
| | Comments: Category=STAR Description=[L] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (1) 2MASSJ1017075+130839 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 51 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] |
| 2 | | (1) 2MASSJ1017075+130839 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 51 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] | |



Proposal 15296 - Visit 02 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

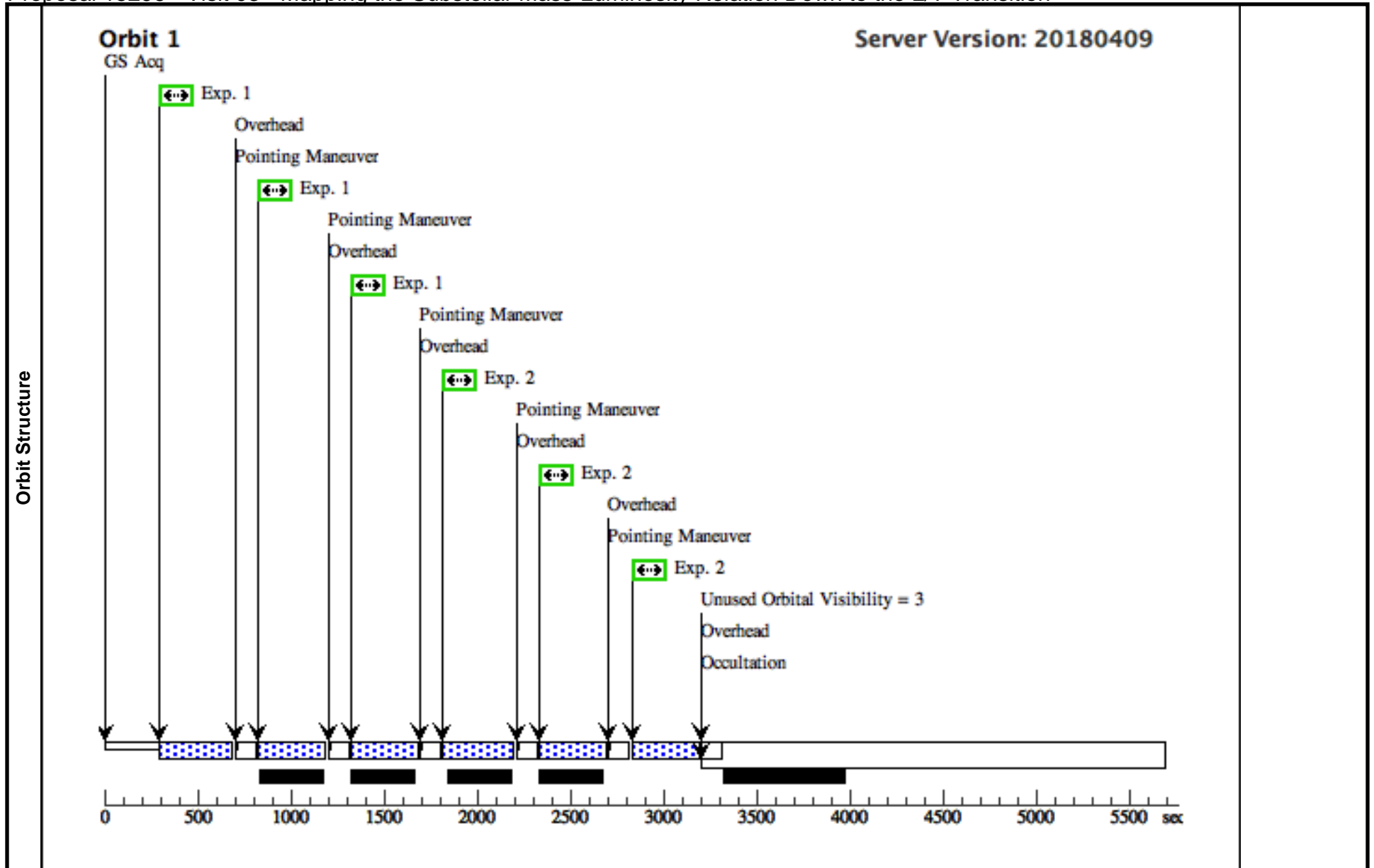
| Visit | Proposal 15296, Visit 02, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: ORIENT 266.6D TO 306.6 D; AFTER 27-OCT-2018:00:00:00 | | | | | | | | | | |
|---------------|--|------------|--|--|---|-------------------|---|---|---|-----|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | (1), (2) | | |
| Fixed Targets | # | Name | Target Coordinates | | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | |
| | (2) | GL417B | RA: 11 12 25.6745 (168.1069771d) Dec: +35 48 13.17 (35.80366d) Equinox: J2000 | RA: 11 12 25.6745 (168.1069771d) Dec: +35 48 13.17 (35.80366d) Equinox: J2000 | Proper Motion RA: -248.9 mas/yr Proper Motion Dec: -151.0 mas/yr Epoch of Position: 1998.35 | V=(?) J=14.6 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | | Orbit |
| | 1 | | (2) GL417B | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 i n Visit 02 (1) | 360 Secs (1119 Secs) [==>373.0 Secs (Pattern 1)] [==>373.0 Secs (Pattern 2)] [==>373.0 Secs (Pattern 3)] | [1] | |
| 2 | | (2) GL417B | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 i n Visit 02 (1) | 360 Secs (1119 Secs) [==>373.0 Secs (Pattern 1)] [==>373.0 Secs (Pattern 2)] [==>373.0 Secs (Pattern 3)] | [1] | | |



Proposal 15296 - Visit 03 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

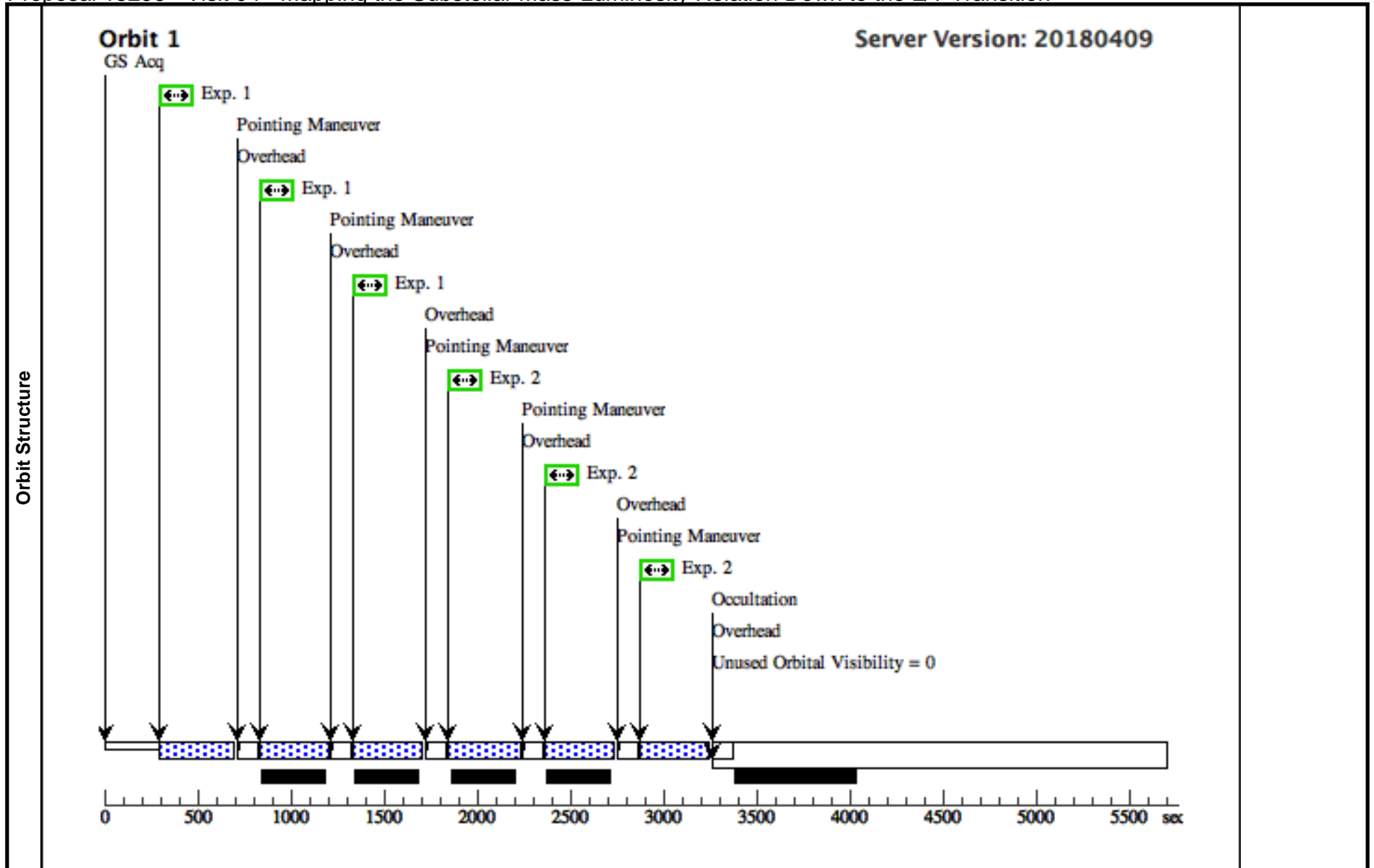
| Visit | Proposal 15296, Visit 03, implementation Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 10-SEP-2018:00:00:00 | | | | | | | | | | |
|---------------|--|--------------------------|--|--|--------------------------|-----------------------|-------------------------------------|--|--|-----------|-------|
| | Patterns | # | Primary Pattern | | | | Secondary Pattern | | | Exposures | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | | (1), (2) | |
| Fixed Targets | # | Name | Target Coordinates | | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | |
| | (3) | 2MASSJ2132114+134158 | RA: 21 32 11.5126 (323.0479692d) Dec: +13 41 58.22 (13.69951d) Equinox: J2000 | Proper Motion RA: 16.5 mas/yr Proper Motion Dec: -125.8 mas/yr Epoch of Position: 2007.58 | V=(?) J=15.8 | Reference Frame: ICRS | | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | | Orbit |
| | 1 | | (3) 2MASSJ2132114+134158 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 03 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] | |
| 2 | | (3) 2MASSJ2132114+134158 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 03 (1) | 360 Secs (1092 Secs) [=>364.0 Secs (Pattern 1)] [=>364.0 Secs (Pattern 2)] [=>364.0 Secs (Pattern 3)] | [1] | | |



Proposal 15296 - Visit 04 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

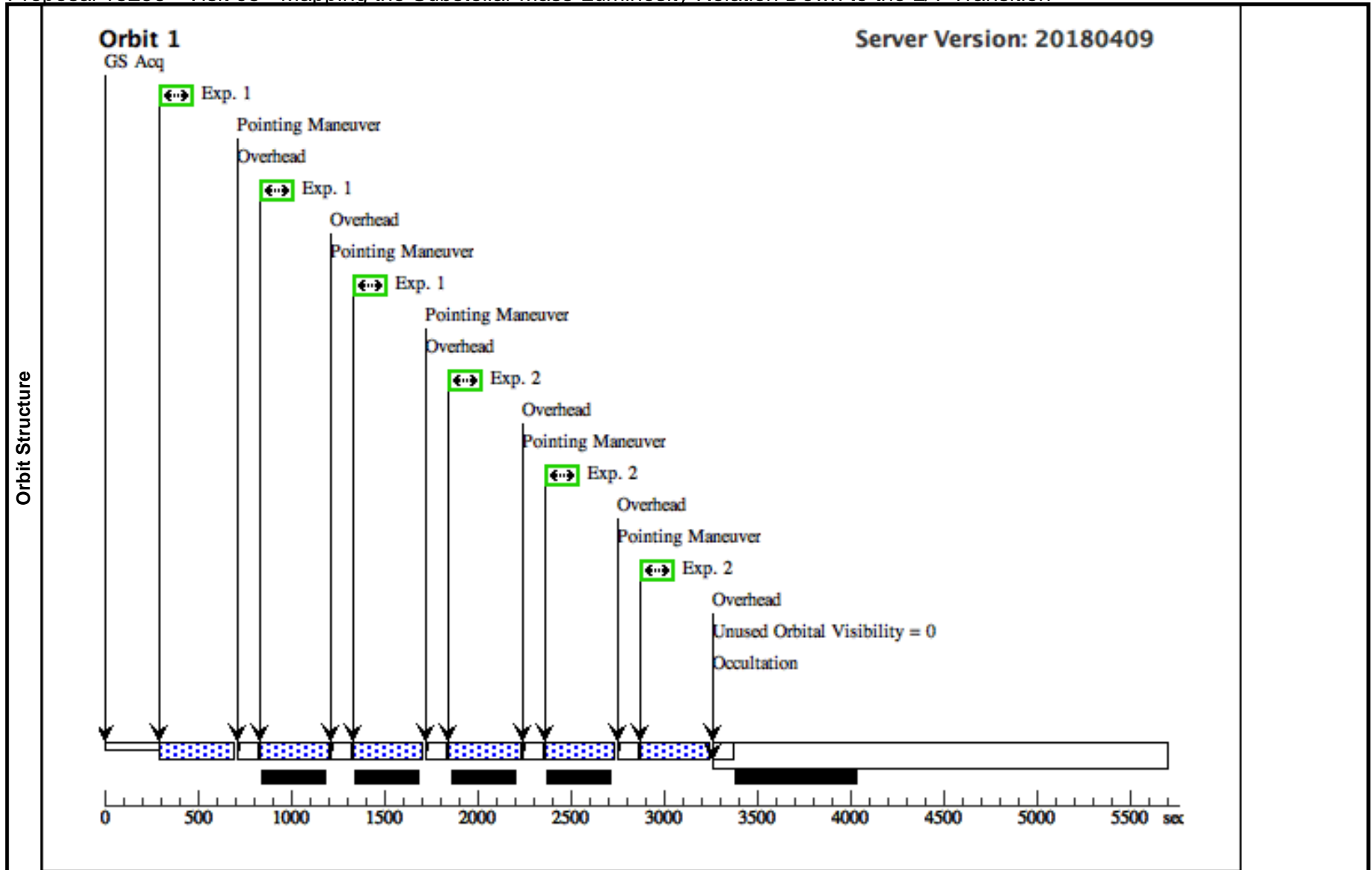
| Visit | Proposal 15296, Visit 04, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 15-MAR-2018:00:00:00 AND 16-JUN-2018:00:00:00 | | | | | | | | | |
|---------------|--|---------------------------|--|--|--------------------------|-----------------------|-------------------------------------|---|---|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | (1), (2) | |
| Fixed Targets | # | Name | Target Coordinates | | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | |
| | (4) | 2MASSWJ0920122+351742 | RA: 09 20 12.1687 (140.0507029d) Dec: +35 17 41.49 (35.29486d) Equinox: J2000 | Proper Motion RA: -187.1 mas/yr Proper Motion Dec: -199.0 mas/yr Epoch of Position: 2007.89 | V=(?) J=15.6 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (4) 2MASSWJ0920122+351742 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 04 (1) | 360 Secs (1119 Secs) [==>373.0 Secs (Pattern 1)] [==>373.0 Secs (Pattern 2)] [==>373.0 Secs (Pattern 3)] | [1] |
| 2 | | (4) 2MASSWJ0920122+351742 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 04 (1) | 360 Secs (1119 Secs) [==>373.0 Secs (Pattern 1)] [==>373.0 Secs (Pattern 2)] [==>373.0 Secs (Pattern 3)] | [1] | |



Proposal 15296 - Visit 05 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:24 GMT 2018

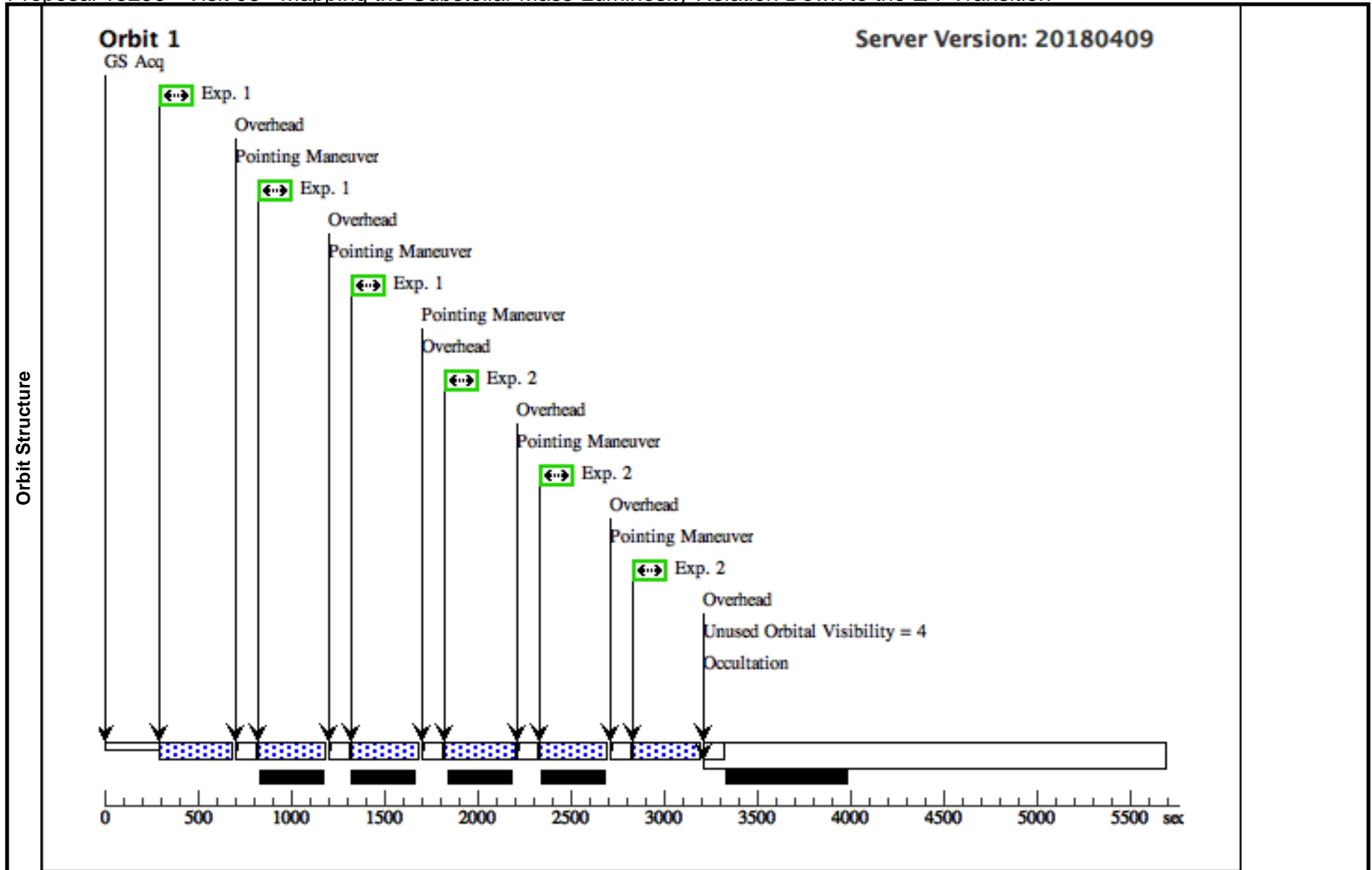
| Visit | Proposal 15296, Visit 05, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 25-JUL-2018:00:00:00 | | | | | | | | | | |
|---------------|---|---------------------------|--|--|--------------------------|-----------------------|-------------------------------------|--|--|-----|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | (1), (2) | | |
| Fixed Targets | # | Name | Target Coordinates | | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | |
| | (5) | 2MASSWJ1728114+394859 | RA: 17 28 11.5446 (262.0481025d) Dec: +39 48 59.14 (39.81643d) Equinox: J2000 | Proper Motion RA: 35.8 mas/yr Proper Motion Dec: -18.4 mas/yr Epoch of Position: 2008.30 | V=(?) J=16.0 | Reference Frame: ICRS | | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | | Orbit |
| | 1 | | (5) 2MASSWJ1728114+394859 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 05 (1) | 360 Secs (1119 Secs) | | |
| | | | | | | | | | [=>373.0 Secs (Pattern 1)] [=>373.0 Secs (Pattern 2)] [=>373.0 Secs (Pattern 3)] | [1] | |
| 2 | | (5) 2MASSWJ1728114+394859 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 05 (1) | 360 Secs (1119 Secs) | | | |
| | | | | | | | | [=>373.0 Secs (Pattern 1)] [=>373.0 Secs (Pattern 2)] [=>373.0 Secs (Pattern 3)] | [1] | | |



Proposal 15296 - Visit 06 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:25 GMT 2018

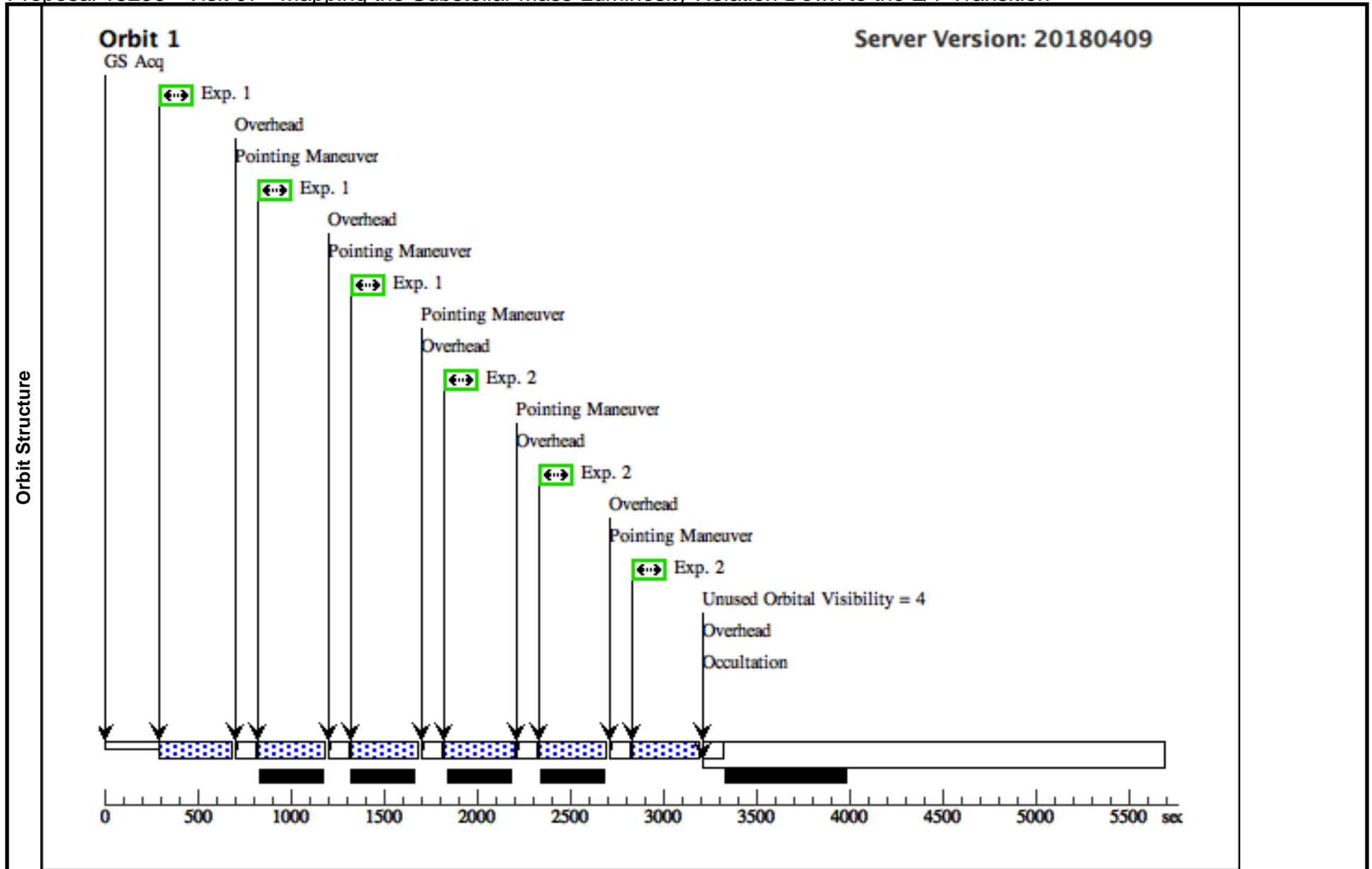
| Visit | Proposal 15296, Visit 06, scheduled Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: AFTER 24-AUG-2018:00:00:00 | | | | | | | | | |
|---------------|---|-----------------------------|--|--|-----------------|-----------------------|-------------------------------------|--|--|-------|
| | Patterns | # | Primary Pattern | Secondary Pattern | Exposures | | | | | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | (1), (2) | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (6) | SDSSJ205235.31-160929.8 | RA: 20 52 35.4408 (313.1476700d) Dec: -16 09 28.92 (-16.15803d) Equinox: J2000 | Proper Motion RA: 399.7 mas/yr Proper Motion Dec: 152.7 mas/yr Epoch of Position: 2007.58 | V=(?) J=16.3 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[T] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (6) SDSSJ205235.31-160929.8 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 06 (1) | 360 Secs (1095 Secs) [=>365.0 Secs (Pattern 1)] [=>365.0 Secs (Pattern 2)] [=>365.0 Secs (Pattern 3)] | [1] |
| 2 | | (6) SDSSJ205235.31-160929.8 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 06 (1) | 360 Secs (1095 Secs) [=>365.0 Secs (Pattern 1)] [=>365.0 Secs (Pattern 2)] [=>365.0 Secs (Pattern 3)] | [1] | |



Proposal 15296 - Visit 07 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:25 GMT 2018

| Visit | Proposal 15296, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 01-DEC-2017:00:00:00 AND 09-JAN-2018:00:00:00 | | | | | | | | | |
|---------------|--|--------------------------------|--|--|-----------------|-----------------------|-------------------------------------|--|--|-------|
| | Patterns | # | Primary Pattern | | | Secondary Pattern | | | Exposures | |
| | | (1) | Pattern Type=WFC3-UVIS-DITHER- LINE-3PT Purpose=DITHER Number Of Points=3 Point Spacing=0.135 Line Spacing= | Coordinate Frame=POS-TARG Pattern Orientation=46.84 Angle Between Sides= Center Pattern=false | | | | | (1), (2) | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | | Fluxes | Miscellaneous | | | |
| | (7) | DENIS-PJ225210.73-173013.4 | RA: 22 52 10.9885 (343.0457854d) Dec: -17 30 11.16 (-17.50310d) Equinox: J2000 | Proper Motion RA: 397.3 mas/yr Proper Motion Dec: 144.3 mas/yr Epoch of Position: 2007.59 | V=(?) J=14.3 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[L] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (7) DENIS-PJ225210.73-173013.4 | WFC3/UVIS, ACCUM, UVIS | F814W | FLASH=4 | | Pattern 1, Exps 1-1 in Visit 07 (1) | 360 Secs (1095 Secs) [=>365.0 Secs (Pattern 1)] [=>365.0 Secs (Pattern 2)] [=>365.0 Secs (Pattern 3)] | [1] |
| 2 | | (7) DENIS-PJ225210.73-173013.4 | WFC3/UVIS, ACCUM, UVIS | F850LP | FLASH=9 | | Pattern 1, Exps 2-2 in Visit 07 (1) | 360 Secs (1095 Secs) [=>365.0 Secs (Pattern 1)] [=>365.0 Secs (Pattern 2)] [=>365.0 Secs (Pattern 3)] | [1] | |



Proposal 15296 - Visit 08 - Mapping the Substellar Mass-Luminosity Relation Down to the L/T Transition

Thu Aug 16 22:00:25 GMT 2018

| Visit | Proposal 15296, Visit 08, completed Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/UVIS Special Requirements: BETWEEN 31-OCT-2017:00:00:00 AND 10-MAR-2018:00:00:00 | | | | | | | | | |
|---------------|--|--|---|--|--------------------------|-----------------------|---------------|-------------------------------------|--|-------|
| | Patterns | # | Primary Pattern | Secondary Pattern | Exposures | | | | | |
| | (2) | Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112 | Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false | | (1), (2) | | | | | |
| Fixed Targets | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | | | | |
| | (8) | 2MASSWJ0149090+295613 | RA: 01 49 9.1368 (27.2880700d) Dec: +29 56 7.76 (29.93549d) Equinox: J2000 | Proper Motion RA: 175.7 mas/yr Proper Motion Dec: -402.1 mas/yr Epoch of Position: 2010.5589 | V=21.25+/-0.05 I=16.8 | Reference Frame: ICRS | | | | |
| | <i>Comments:</i> Category=STAR Description=[M V-IV] | | | | | | | | | |
| Exposures | # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
| | 1 | | (8) 2MASSWJ0149090+295613 | WFC3/UVIS, ACCUM, UVIS2-C512C-SUB | F814W | FLASH=12 | | Pattern 2, Exps 1-1 in Visit 08 (2) | 73 Secs X 3 (876 Secs) [==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 1, Copy 3)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 2, Copy 3)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 3, Copy 3)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)] [==>(Pattern 4, Copy 3)] | [1] |
| | 2 | | (8) 2MASSWJ0149090+295613 | WFC3/UVIS, ACCUM, UVIS2-C512C-SUB | F850LP | FLASH=12 | | Pattern 2, Exps 2-2 in Visit 08 (2) | 104 Secs X 2 (832 Secs) [==>(Pattern 1, Copy 1)] [==>(Pattern 1, Copy 2)] [==>(Pattern 2, Copy 1)] [==>(Pattern 2, Copy 2)] [==>(Pattern 3, Copy 1)] [==>(Pattern 3, Copy 2)] [==>(Pattern 4, Copy 1)] [==>(Pattern 4, Copy 2)] | [1] |

