



# 16319 - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

Cycle: 28, Proposal Category: GO

(Availability Mode: SUPPORTED)

## INVESTIGATORS

| <i>Name</i>                         | <i>Institution</i>                        | <i>E-Mail</i>              |
|-------------------------------------|-------------------------------------------|----------------------------|
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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           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 5                  | 18-Feb-2022 16:23:53.0        | yes                           |
| 02           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 4                  | 18-Feb-2022 16:23:55.0        | yes                           |
| 03           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 5                  | 18-Feb-2022 16:23:57.0        | yes                           |
| 04           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 4                  | 18-Feb-2022 16:23:58.0        | yes                           |
| 05           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 6                  | 18-Feb-2022 16:24:00.0        | yes                           |
| 06           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 3                  | 18-Feb-2022 16:24:02.0        | yes                           |

| <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> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 07           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 5                  | 18-Feb-2022 16:24:03.0        | yes                           |
| 08           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 4                  | 18-Feb-2022 16:24:04.0        | yes                           |
| 09           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 6                  | 18-Feb-2022 16:24:06.0        | yes                           |
| 10           | (2) HD-63433<br>WAVE         | STIS/CCD<br>STIS/FUV-MAMA           | 3                  | 18-Feb-2022 16:24:07.0        | yes                           |

45 Total Orbits Used

## ABSTRACT

Photoevaporative mass loss is key to sculpting the properties of short period transiting exoplanets, yet current models have large theoretical uncertainties and relatively few observational constraints. In particular, mass loss has never been conclusively observed around mini Neptunes (2-3  $R_E$ ), even though this regime is crucial for understanding the bimodal radius distribution observed by \textit{Kepler}. The recently discovered transiting mini Neptunes TOI 1726.01 and 1726.02 are far and away the most promising targets for probing present-day mass loss. This pair orbits a nearby (22 pc) and young (400 Myr) solar analogue which is 50 times brighter than the Sun in X-rays, driving a strong outflow which should be detectable in Lyman alpha absorption.

We request 36 HST orbits to observe two UV transits of each planet with STIS/G140M. These observations will allow us to measure the size, shape, and kinematic structure of the exosphere, constrain the mass loss rate, and evaluate the magnitude of any visit-to-visit variability in the outflow structure. In addition, we will be able to test hydrodynamical models by comparing their predictions for the relative mass loss rates and exosphere geometries for the two planets to observations: a comparative approach that has hitherto been impossible.

## OBSERVING DESCRIPTION

Our program will observe 2 transits of HD 63433b and 2 transits of HD 63433c. Each transit observation will consist of 9 orbits: 5 consecutive orbits containing the pre-transit baseline, the transit itself, and the post-transit baseline; and 4 consecutive orbits approximately 1 day after the transit, containing a pristine baseline free from any long exospheric tail. The idea is that HST would observe during 5 consecutive SAA-free orbits, followed

by 7-9 SAA orbits with no observations, followed by the 4 consecutive SAA-free orbits.

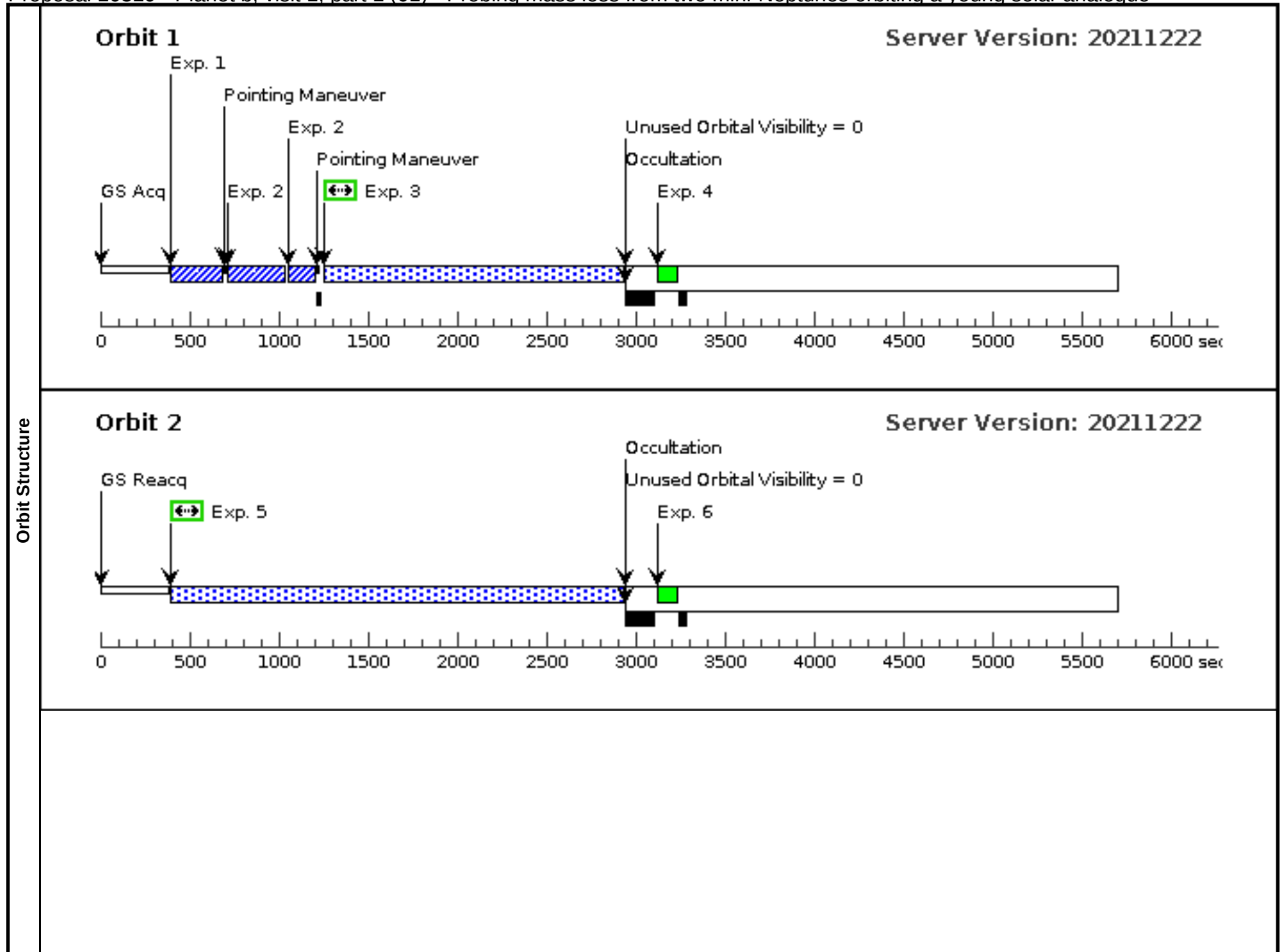
The transit durations of b and c are 3.2 hours and 4 hours, corresponding to 2 and 2.5 orbits respectively. Our 5-orbit sequence will therefore capture the entire transit. We require observations before the transit to establish a pre-transit baseline, and observations after the transit in case the exosphere has an extended egress (as is the case for many other exoplanets). Because we can accommodate  $\sim 1$  h of timing uncertainty, we set the phase requirements to  $\pm 0.5$  hours. The ephemeris uncertainty will add (in quadrature) another  $\pm 0.5$  hours by the end of 2020, although we are hoping to have an ephemeris update by the end of 2020.

We planned our observations so that the first orbit of each visit has an ACQ and ACQ-PEAKUP exposure, followed by a science exposure and wavelength calibration. Subsequent orbits only have a science exposure and a wavelength calibration exposure, with no ACQ or ACQ-PEAKUP. Because the few minutes' difference in orbital visibility due to precession has minimal impact on our science, we change the schedulability parameter from 30 to 90 to make scheduling easier. If possible, we kindly ask the Program Coordinator to expand our science observations to fill up the entire orbital visibility for the orbits that are actually scheduled.

Reduced gyro mode impacts our program by limiting the number of scheduling opportunities, which is already severely limited by planet c's long period (20.5 days). Otherwise, we do not foresee major impacts from RGM.

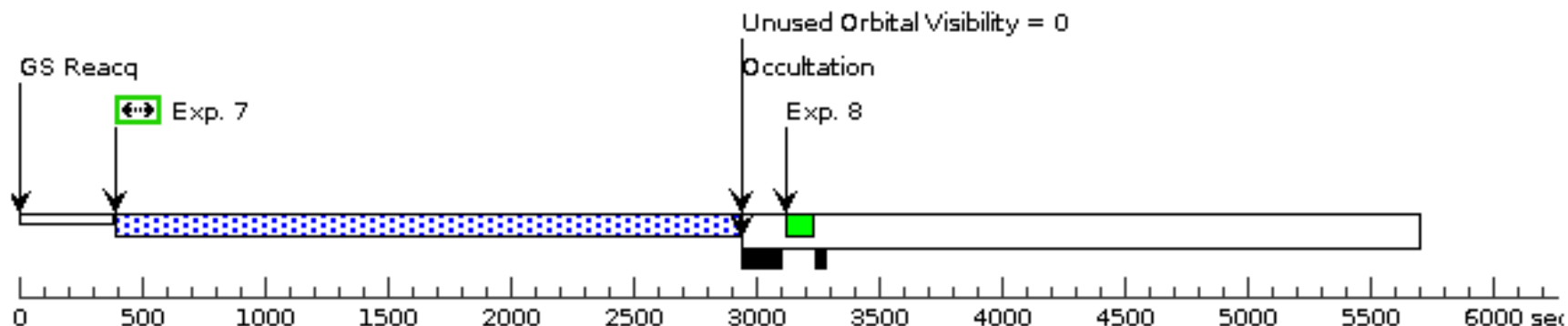
# Proposal 16319 - Planet b, visit 1, part 1 (01) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|               |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|---------------------------------|------------------------|----------------------------------------------------------|---------------------------------|------------------------------|
| Visit         | Proposal 16319, Planet b, visit 1, part 1 (01), completed                                                                                                                                |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 | Fri Feb 18 21:24:08 GMT 2022 |
|               | Diagnostic Status: No Diagnostics                                                                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Special Requirements: SCHED 90%; Period 7.107789 D AND ZERO-PHASE HJD2458916.45142                                                                                                       |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Fixed Targets | #                                                                                                                                                                                        | Name                        | Target Coordinates                                                                  | Targ. Coord. Corrections                                                                          | Fluxes        | Miscellaneous                   |                        |                                                          |                                 |                              |
|               | (2)                                                                                                                                                                                      | HD-63433                    | RA: 07 49 55.0488 (117.4793700d)<br>Dec: +27 21 47.28 (27.36313d)<br>Equinox: J2000 | Proper Motion RA: -10.027 mas/yr<br>Proper Motion Dec: -11.31 mas/yr<br>Epoch of Position: 2015.5 | V=6.91        | Reference Frame: ICRS           |                        |                                                          |                                 |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO                                                                                   |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Exposures     | #                                                                                                                                                                                        | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture                                                                              | Spectral Els. | Opt. Params.                    | Special Reqs.          | Groups                                                   | Exp. Time (Total)/[Actual Dur.] | Orbit                        |
|               | 1                                                                                                                                                                                        | ACQ (STIS.ta.144 5864)      | (2) HD-63433                                                                        | STIS/CCD, ACQ, F28X50OIII                                                                         | MIRROR        |                                 | PHASE 0.9688 TO 0.9748 | Sequence 1-4 Non-Int in Planet b, visit 1, part 1 (01)   | 5 Secs (5 Secs)<br>[==>]        | [1]                          |
|               | 2                                                                                                                                                                                        | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                                                                        | STIS/CCD, ACQ/PEAK, 0.2X0.05ND                                                                    | MIRROR        |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 1, part 1 (01)   | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]                          |
|               | 3                                                                                                                                                                                        | Science (STIS.sp.14 47661)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1000;<br>WAVECAL=NO |                        | Sequence 1-4 Non-Int in Planet b, visit 1, part 1 (01)   | 1515 Secs (1515 Secs)<br>[==>]  | [1]                          |
|               | 4                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 1, part 1 (01)   | [==>]                           | [1]                          |
|               | 5                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 5-6 Non-Int in Planet b, visit 1, part 1 (01)   | 2523 Secs (2523 Secs)<br>[==>]  | [2]                          |
|               | 6                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 5-6 Non-Int in Planet b, visit 1, part 1 (01)   | [==>]                           | [2]                          |
|               | 7                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 7-8 Non-Int in Planet b, visit 1, part 1 (01)   | 2523 Secs (2523 Secs)<br>[==>]  | [3]                          |
|               | 8                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 7-8 Non-Int in Planet b, visit 1, part 1 (01)   | [==>]                           | [3]                          |
|               | 9                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 9-10 Non-Int in Planet b, visit 1, part 1 (01)  | 2523 Secs (2523 Secs)<br>[==>]  | [4]                          |
|               | 10                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 9-10 Non-Int in Planet b, visit 1, part 1 (01)  | [==>]                           | [4]                          |
|               | 11                                                                                                                                                                                       | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 11-12 Non-Int in Planet b, visit 1, part 1 (01) | 2523 Secs (2523 Secs)<br>[==>]  | [5]                          |
|               | 12                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 11-12 Non-Int in Planet b, visit 1, part 1 (01) | [==>]                           | [5]                          |



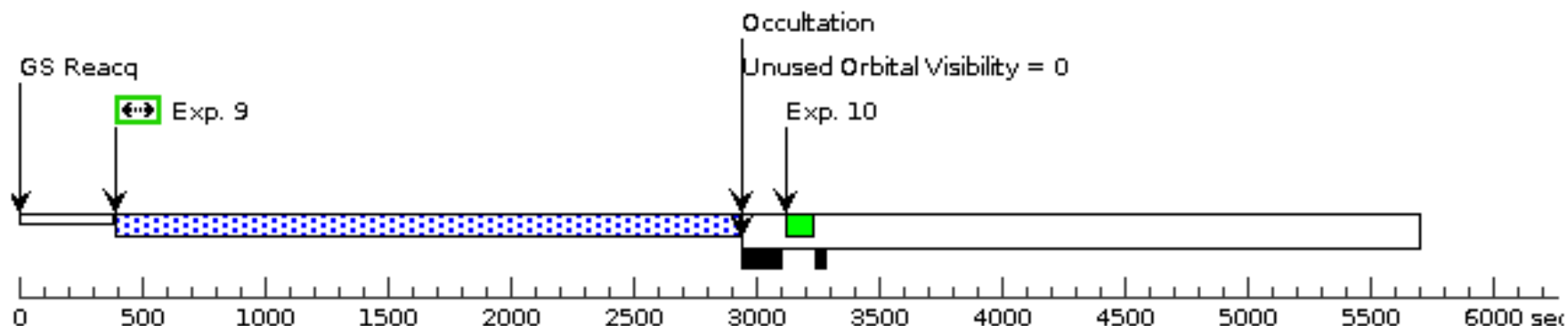
### Orbit 3

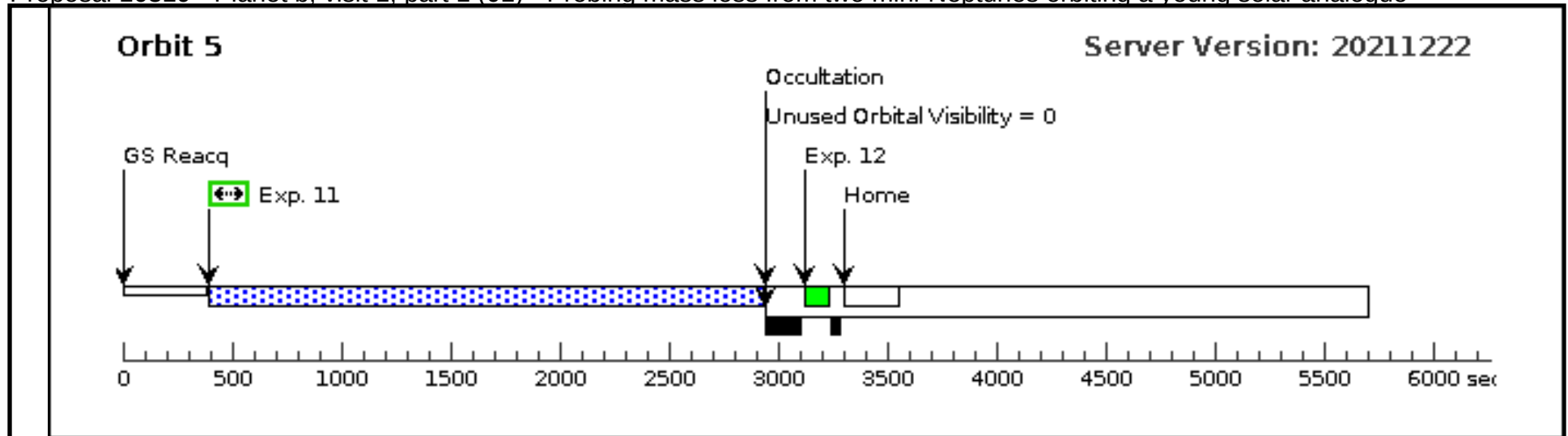
Server Version: 20211222



### Orbit 4

Server Version: 20211222



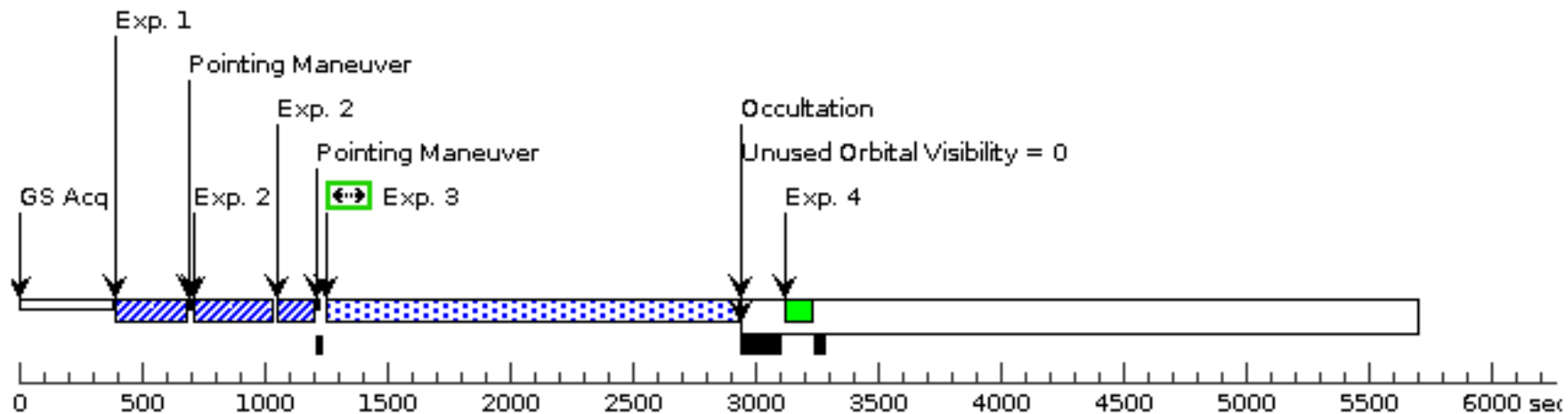


# Proposal 16319 - Planet b, visit 1, part 2 (02) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|----------------------------------|---------------------------------|----------------------------------|--------------------|---------------------------------------------------------|--------------------------------------------------------|---------------------------------|-----|------------------------------|
| Visit                                                                                                                                                                                                          | Proposal 16319, Planet b, visit 1, part 2 (02), completed           |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     | Fri Feb 18 21:24:09 GMT 2022 |
|                                                                                                                                                                                                                | Diagnostic Status: No Diagnostics                                   |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                | Special Requirements: SCHED 90%; AFTER 01 BY 11 Orbits TO 18 Orbits |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Comments: The "After Visit" requirements are not strict, and can be relaxed if scheduling is otherwise very difficult. The minimum of 11 orbits was chosen to avoid the SAA, but can be shortened arbitrarily. |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Fixed Targets                                                                                                                                                                                                  | #                                                                   | Name                        | Target Coordinates               |                                 | Targ. Coord. Corrections         |                    | Fluxes                                                  |                                                        | Miscellaneous                   |     |                              |
|                                                                                                                                                                                                                | (2)                                                                 | HD-63433                    | RA: 07 49 55.0488 (117.4793700d) |                                 | Proper Motion RA: -10.027 mas/yr |                    | V=6.91                                                  |                                                        | Reference Frame: ICRS           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             | Dec: +27 21 47.28 (27.36313d)    |                                 | Proper Motion Dec: -11.31 mas/yr |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             | Equinox: J2000                   |                                 | Epoch of Position: 2015.5        |                    |                                                         |                                                        |                                 |     |                              |
| Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.                       |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Category=STAR                                                                                                                                                                                                  |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]                                                                                                                                         |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Extended=NO                                                                                                                                                                                                    |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Exposures                                                                                                                                                                                                      | #                                                                   | Label (ETC Run)             | Target                           | Config,Mode,Aperture            | Spectral Els.                    | Opt. Params.       | Special Reqs.                                           | Groups                                                 | Exp. Time (Total)/[Actual Dur.] |     | Orbit                        |
|                                                                                                                                                                                                                | 1                                                                   | ACQ (STIS.ta.144 5864)      | (2) HD-63433                     | STIS/CCD, ACQ, F28X50OIII       | MIRROR                           |                    |                                                         | Sequence 1-4 Non-Int in Planet b, visit 1, part 2 (02) | 5 Secs (5 Secs)                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 2                                                                   | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                     | STIS/CCD, ACQ/PEAK, 0.2X0.05ND  | MIRROR                           |                    |                                                         | Sequence 1-4 Non-Int in Planet b, visit 1, part 2 (02) | 1.5 Secs (1.5 Secs)             |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 3                                                                   | Science (STIS.sp.14 47661)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=10 00; |                                                         | Sequence 1-4 Non-Int in Planet b, visit 1, part 2 (02) | 1515 Secs (1515 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  | WAVECAL=NO         |                                                         |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 4                                                                   | WAVECAL WAVE                |                                  | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M 1222 A                     |                    |                                                         | Sequence 1-4 Non-Int in Planet b, visit 1, part 2 (02) | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 5                                                                   | Science (STIS.sp.14 47662)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=15 00; |                                                         | Sequence 5-6 Non-Int in Planet b, visit 1, part 2 (02) | 2523 Secs (2523 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  | WAVECAL=NO         |                                                         |                                                        | [==>]                           |     | [2]                          |
|                                                                                                                                                                                                                | 6                                                                   | WAVECAL WAVE                |                                  | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M 1222 A                     |                    |                                                         | Sequence 5-6 Non-Int in Planet b, visit 1, part 2 (02) | [==>]                           |     | [2]                          |
|                                                                                                                                                                                                                | 7                                                                   | Science (STIS.sp.14 47662)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=15 00; |                                                         | Sequence 7-8 Non-Int in Planet b, visit 1, part 2 (02) | 2523 Secs (2523 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 | WAVECAL=NO                       |                    |                                                         | [==>]                                                  |                                 | [3] |                              |
| 8                                                                                                                                                                                                              | WAVECAL WAVE                                                        |                             | STIS/FUV-MAMA, ACCUM, 52X0.1     | G140M 1222 A                    |                                  |                    | Sequence 7-8 Non-Int in Planet b, visit 1, part 2 (02)  | [==>]                                                  |                                 | [3] |                              |
| 9                                                                                                                                                                                                              | Science (STIS.sp.14 47662)                                          | (2) HD-63433                | STIS/FUV-MAMA, TIME-TAG, 52X0.1  | G140M 1222 A                    | BUFFER-TIME=15 00;               |                    | Sequence 9-10 Non-Int in Planet b, visit 1, part 2 (02) | 2523 Secs (2523 Secs)                                  |                                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 | WAVECAL=NO                       |                    |                                                         | [==>]                                                  |                                 | [4] |                              |
| 10                                                                                                                                                                                                             | WAVECAL WAVE                                                        |                             | STIS/FUV-MAMA, ACCUM, 52X0.1     | G140M 1222 A                    |                                  |                    | Sequence 9-10 Non-Int in Planet b, visit 1, part 2 (02) | [==>]                                                  |                                 | [4] |                              |

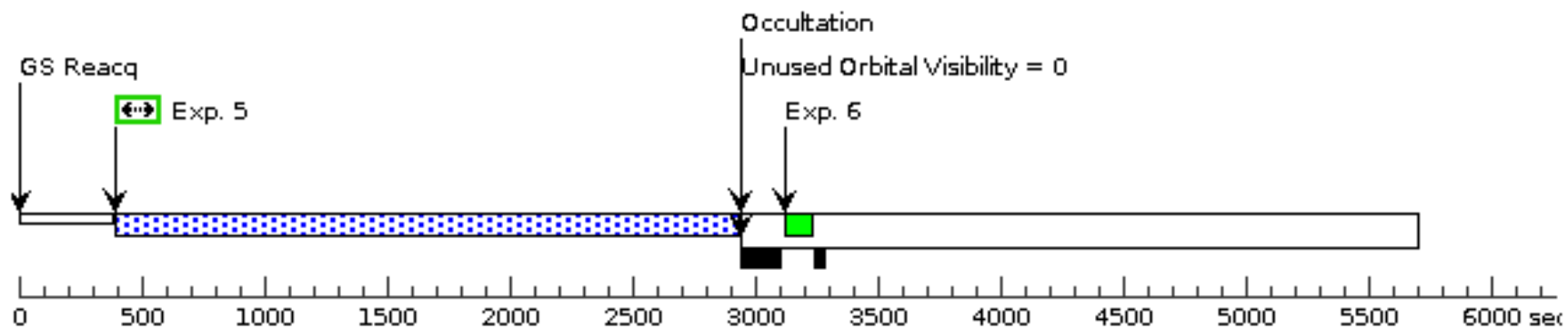
### Orbit 1

Server Version: 20211222



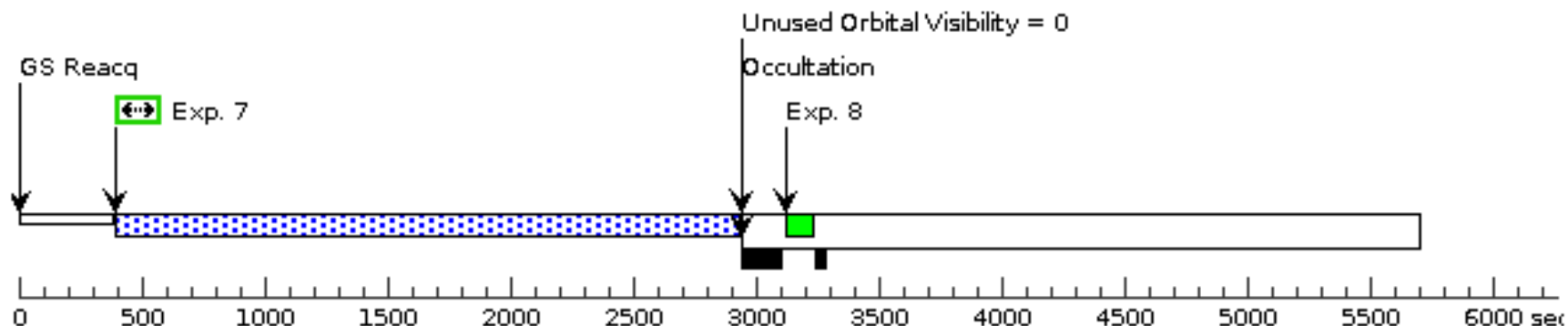
### Orbit 2

Server Version: 20211222



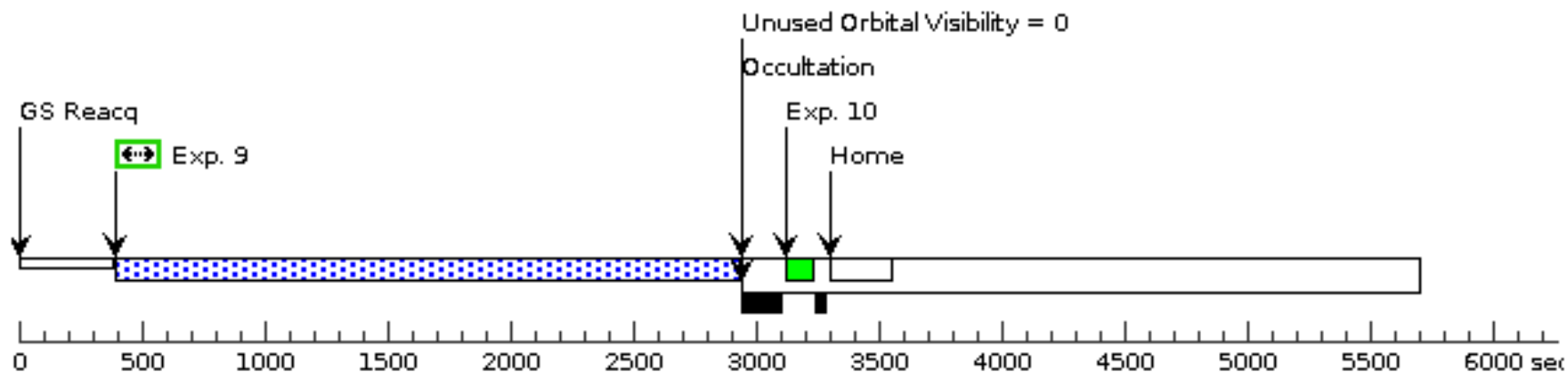
### Orbit 3

Server Version: 20211222



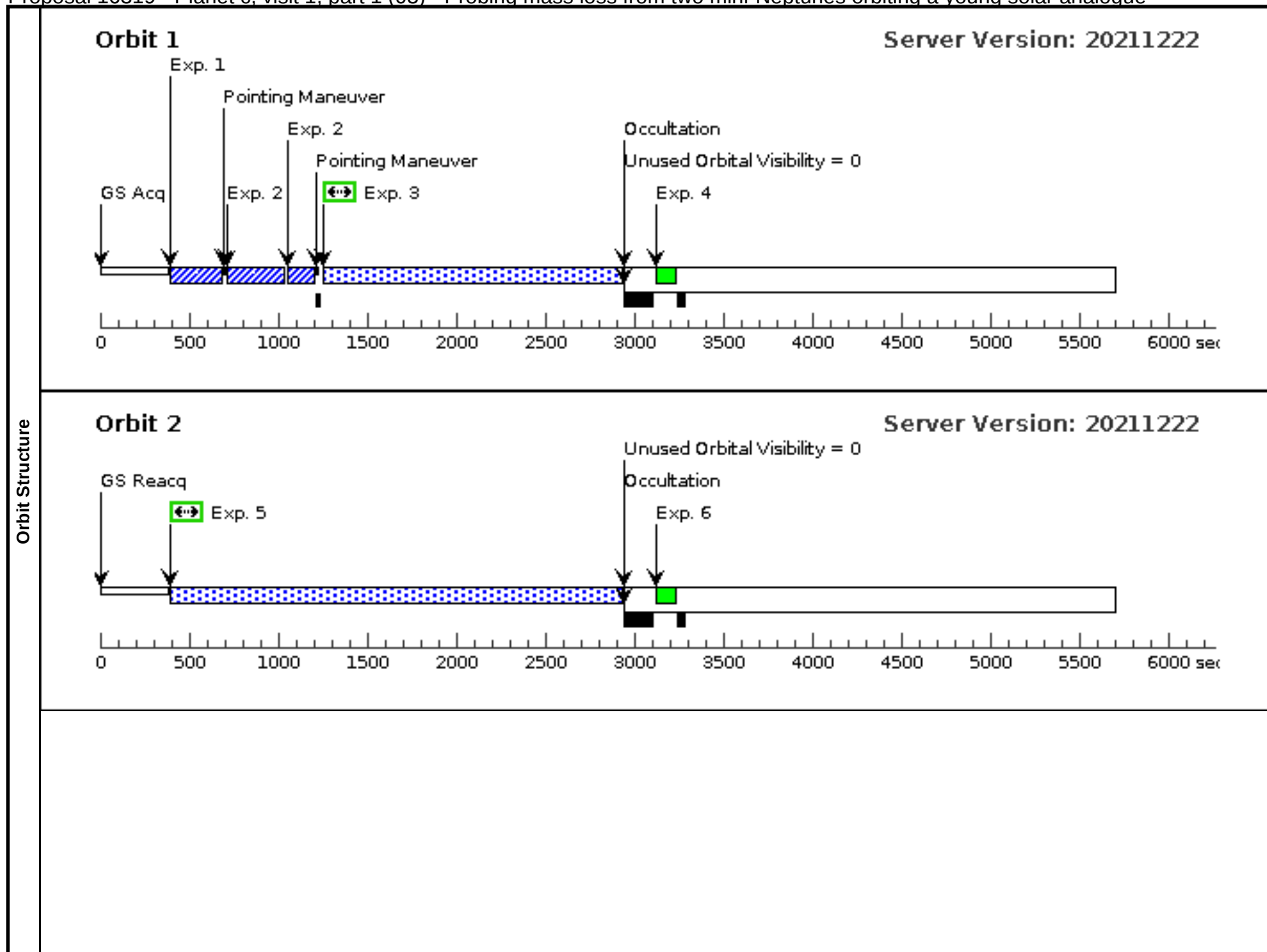
### Orbit 4

Server Version: 20211222



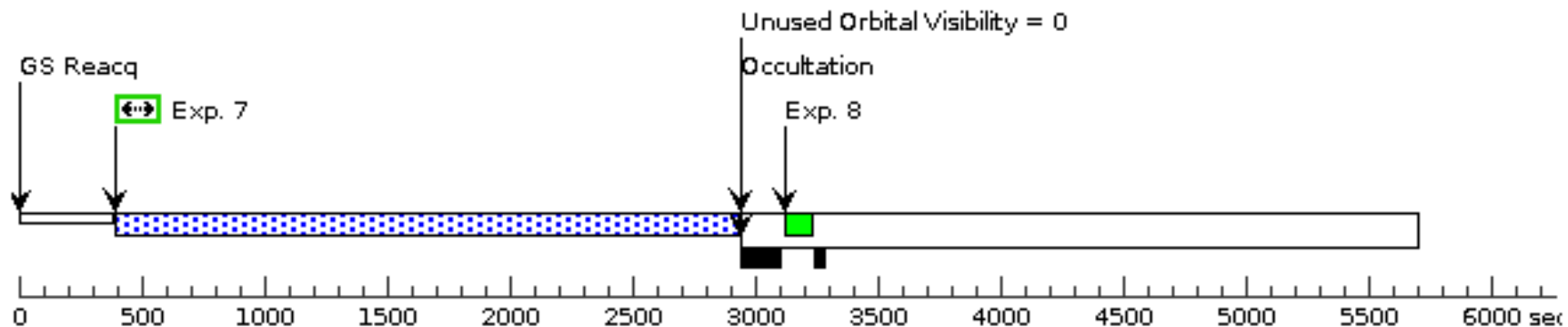
# Proposal 16319 - Planet c, visit 1, part 1 (03) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|               |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|---------------------------------|------------------------|----------------------------------------------------------|---------------------------------|------------------------------|
| Visit         | Proposal 16319, Planet c, visit 1, part 1 (03), completed                                                                                                                                |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 | Fri Feb 18 21:24:09 GMT 2022 |
|               | Diagnostic Status: No Diagnostics                                                                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Special Requirements: SCHED 90%; Period 20.5453 D AND ZERO-PHASE HJD2458844.05799                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Fixed Targets | #                                                                                                                                                                                        | Name                        | Target Coordinates                                                                  | Targ. Coord. Corrections                                                                          | Fluxes        | Miscellaneous                   |                        |                                                          |                                 |                              |
|               | (2)                                                                                                                                                                                      | HD-63433                    | RA: 07 49 55.0488 (117.4793700d)<br>Dec: +27 21 47.28 (27.36313d)<br>Equinox: J2000 | Proper Motion RA: -10.027 mas/yr<br>Proper Motion Dec: -11.31 mas/yr<br>Epoch of Position: 2015.5 | V=6.91        | Reference Frame: ICRS           |                        |                                                          |                                 |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO                                                                                   |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Exposures     | #                                                                                                                                                                                        | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture                                                                              | Spectral Els. | Opt. Params.                    | Special Reqs.          | Groups                                                   | Exp. Time (Total)/[Actual Dur.] | Orbit                        |
|               | 1                                                                                                                                                                                        | ACQ (STIS.ta.144 5864)      | (2) HD-63433                                                                        | STIS/CCD, ACQ, F28X50OIII                                                                         | MIRROR        |                                 | PHASE 0.9899 TO 0.9919 | Sequence 1-4 Non-Int in Planet c, visit 1, part 1 (03)   | 5 Secs (5 Secs)<br>[==>]        | [1]                          |
|               | 2                                                                                                                                                                                        | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                                                                        | STIS/CCD, ACQ/PEAK, 0.2X0.05ND                                                                    | MIRROR        |                                 |                        | Sequence 1-4 Non-Int in Planet c, visit 1, part 1 (03)   | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]                          |
|               | 3                                                                                                                                                                                        | Science (STIS.sp.14 47661)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1000;<br>WAVECAL=NO |                        | Sequence 1-4 Non-Int in Planet c, visit 1, part 1 (03)   | 1515 Secs (1515 Secs)<br>[==>]  | [1]                          |
|               | 4                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 1-4 Non-Int in Planet c, visit 1, part 1 (03)   | [==>]                           | [1]                          |
|               | 5                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 5-6 Non-Int in Planet c, visit 1, part 1 (03)   | 2523 Secs (2523 Secs)<br>[==>]  | [2]                          |
|               | 6                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 5-6 Non-Int in Planet c, visit 1, part 1 (03)   | [==>]                           | [2]                          |
|               | 7                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 7-8 Non-Int in Planet c, visit 1, part 1 (03)   | 2523 Secs (2523 Secs)<br>[==>]  | [3]                          |
|               | 8                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 7-8 Non-Int in Planet c, visit 1, part 1 (03)   | [==>]                           | [3]                          |
|               | 9                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 9-10 Non-Int in Planet c, visit 1, part 1 (03)  | 2523 Secs (2523 Secs)<br>[==>]  | [4]                          |
|               | 10                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 9-10 Non-Int in Planet c, visit 1, part 1 (03)  | [==>]                           | [4]                          |
|               | 11                                                                                                                                                                                       | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 11-12 Non-Int in Planet c, visit 1, part 1 (03) | 2523 Secs (2523 Secs)<br>[==>]  | [5]                          |
|               | 12                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 11-12 Non-Int in Planet c, visit 1, part 1 (03) | [==>]                           | [5]                          |



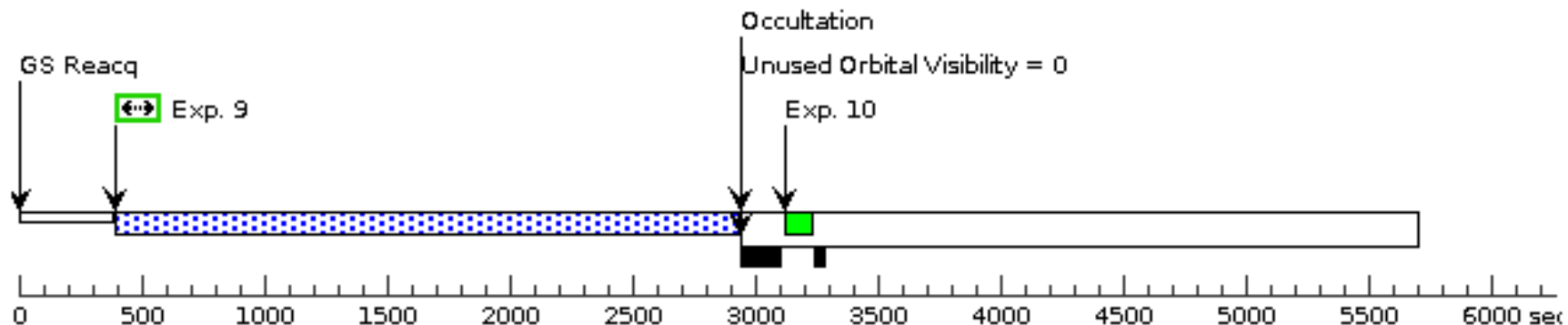
### Orbit 3

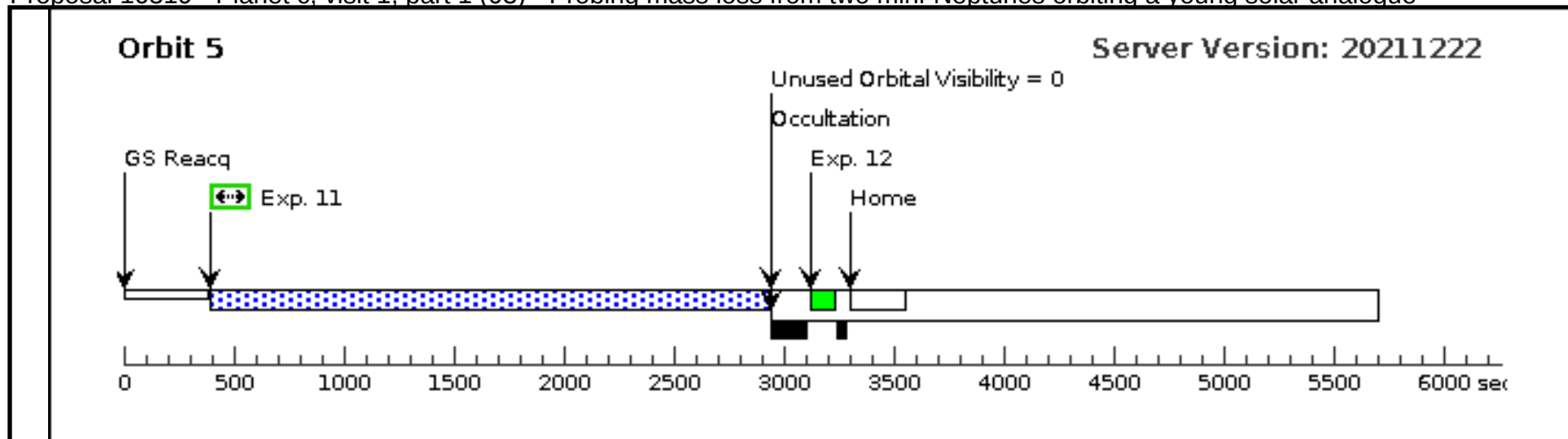
Server Version: 20211222



### Orbit 4

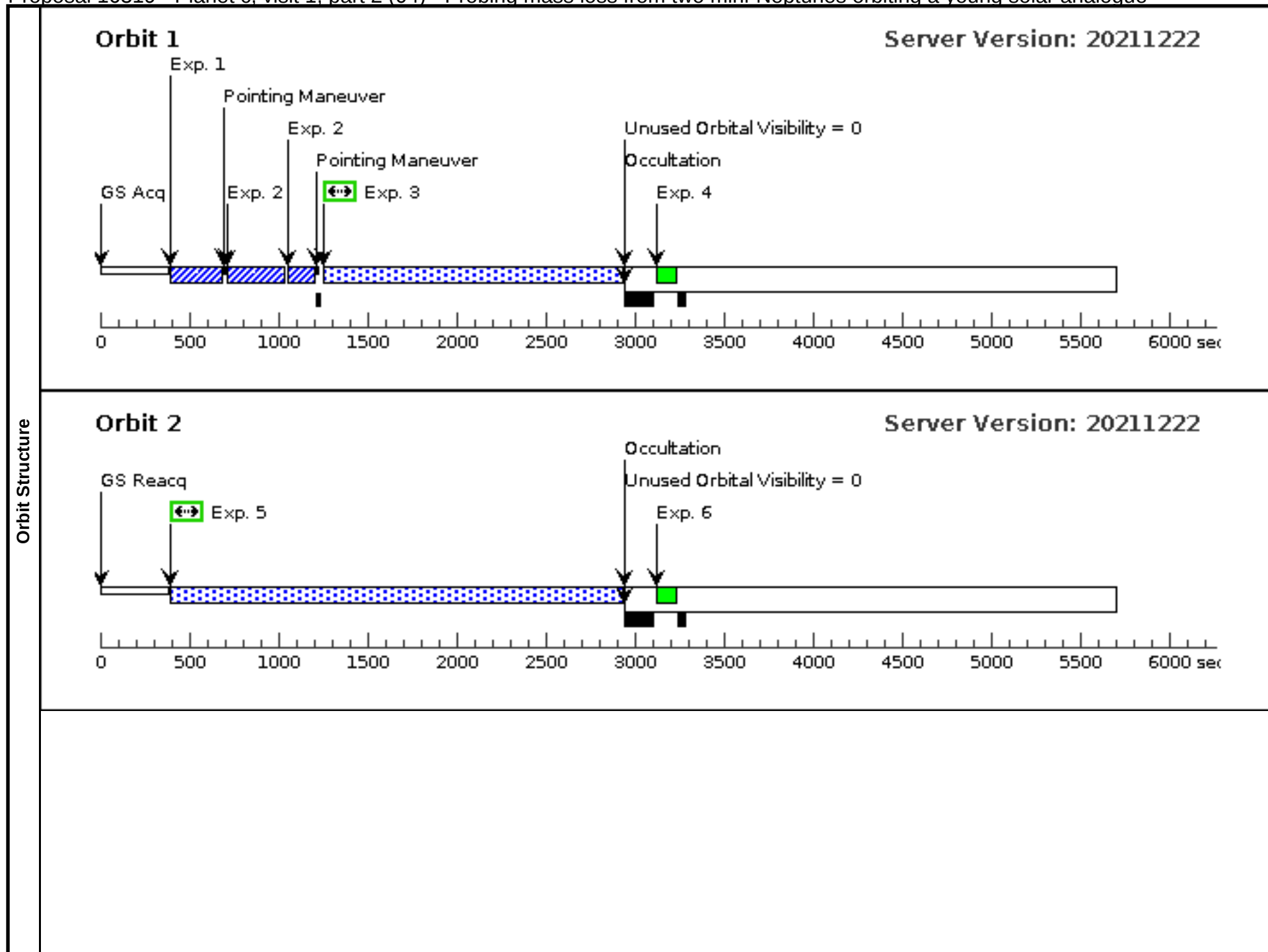
Server Version: 20211222





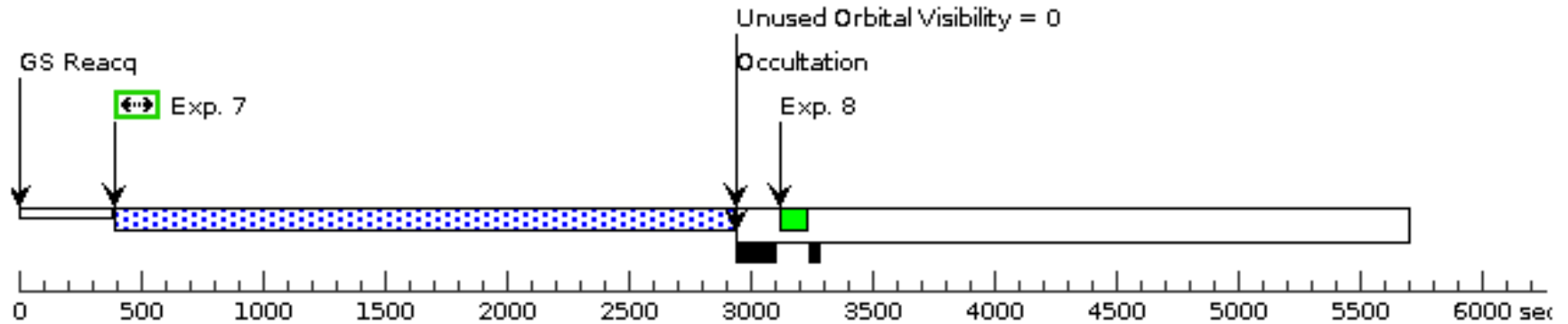
# Proposal 16319 - Planet c, visit 1, part 2 (04) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------|----------------------------------|---------------------------------|----------------------------------|--------------------|---------------------------------------------------------|--------------------------------------------------------|---------------------------------|-----|------------------------------|
| Visit                                                                                                                                                                                                          | Proposal 16319, Planet c, visit 1, part 2 (04), completed           |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     | Fri Feb 18 21:24:09 GMT 2022 |
|                                                                                                                                                                                                                | Diagnostic Status: No Diagnostics                                   |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                | Special Requirements: SCHED 90%; AFTER 03 BY 11 Orbits TO 18 Orbits |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Comments: The "After Visit" requirements are not strict, and can be relaxed if scheduling is otherwise very difficult. The minimum of 11 orbits was chosen to avoid the SAA, but can be shortened arbitrarily. |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Fixed Targets                                                                                                                                                                                                  | #                                                                   | Name                        | Target Coordinates               |                                 | Targ. Coord. Corrections         |                    | Fluxes                                                  |                                                        | Miscellaneous                   |     |                              |
|                                                                                                                                                                                                                | (2)                                                                 | HD-63433                    | RA: 07 49 55.0488 (117.4793700d) |                                 | Proper Motion RA: -10.027 mas/yr |                    | V=6.91                                                  |                                                        | Reference Frame: ICRS           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             | Dec: +27 21 47.28 (27.36313d)    |                                 | Proper Motion Dec: -11.31 mas/yr |                    |                                                         |                                                        |                                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             | Equinox: J2000                   |                                 | Epoch of Position: 2015.5        |                    |                                                         |                                                        |                                 |     |                              |
| Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.                       |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Category=STAR                                                                                                                                                                                                  |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]                                                                                                                                         |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Extended=NO                                                                                                                                                                                                    |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        |                                 |     |                              |
| Exposures                                                                                                                                                                                                      | #                                                                   | Label (ETC Run)             | Target                           | Config,Mode,Aperture            | Spectral Els.                    | Opt. Params.       | Special Reqs.                                           | Groups                                                 | Exp. Time (Total)/[Actual Dur.] |     | Orbit                        |
|                                                                                                                                                                                                                | 1                                                                   | ACQ (STIS.ta.144 5864)      | (2) HD-63433                     | STIS/CCD, ACQ, F28X50OIII       | MIRROR                           |                    |                                                         | Sequence 1-4 Non-Int in Planet c, visit 1, part 2 (04) | 5 Secs (5 Secs)                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 2                                                                   | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                     | STIS/CCD, ACQ/PEAK, 0.2X0.05ND  | MIRROR                           |                    |                                                         | Sequence 1-4 Non-Int in Planet c, visit 1, part 2 (04) | 1.5 Secs (1.5 Secs)             |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    |                                                         |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 3                                                                   | Science (STIS.sp.14 47661)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=10 00; |                                                         | Sequence 1-4 Non-Int in Planet c, visit 1, part 2 (04) | 1515 Secs (1515 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    | WAVECAL=NO                                              |                                                        | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 4                                                                   | WAVECAL WAVE                |                                  | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M 1222 A                     |                    |                                                         | Sequence 1-4 Non-Int in Planet c, visit 1, part 2 (04) | [==>]                           |     | [1]                          |
|                                                                                                                                                                                                                | 5                                                                   | Science (STIS.sp.14 47662)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=15 00; |                                                         | Sequence 5-6 Non-Int in Planet c, visit 1, part 2 (04) | 2523 Secs (2523 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    | WAVECAL=NO                                              |                                                        | [==>]                           |     | [2]                          |
|                                                                                                                                                                                                                | 6                                                                   | WAVECAL WAVE                |                                  | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M 1222 A                     |                    |                                                         | Sequence 5-6 Non-Int in Planet c, visit 1, part 2 (04) | [==>]                           |     | [2]                          |
|                                                                                                                                                                                                                | 7                                                                   | Science (STIS.sp.14 47662)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M 1222 A                     | BUFFER-TIME=15 00; |                                                         | Sequence 7-8 Non-Int in Planet c, visit 1, part 2 (04) | 2523 Secs (2523 Secs)           |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  |                    | WAVECAL=NO                                              |                                                        | [==>]                           |     | [3]                          |
| 8                                                                                                                                                                                                              | WAVECAL WAVE                                                        |                             | STIS/FUV-MAMA, ACCUM, 52X0.1     | G140M 1222 A                    |                                  |                    | Sequence 7-8 Non-Int in Planet c, visit 1, part 2 (04)  | [==>]                                                  |                                 | [3] |                              |
| 9                                                                                                                                                                                                              | Science (STIS.sp.14 47662)                                          | (2) HD-63433                | STIS/FUV-MAMA, TIME-TAG, 52X0.1  | G140M 1222 A                    | BUFFER-TIME=15 00;               |                    | Sequence 9-10 Non-Int in Planet c, visit 1, part 2 (04) | 2523 Secs (2523 Secs)                                  |                                 |     |                              |
|                                                                                                                                                                                                                |                                                                     |                             |                                  |                                 |                                  | WAVECAL=NO         |                                                         | [==>]                                                  |                                 | [4] |                              |
| 10                                                                                                                                                                                                             | WAVECAL WAVE                                                        |                             | STIS/FUV-MAMA, ACCUM, 52X0.1     | G140M 1222 A                    |                                  |                    | Sequence 9-10 Non-Int in Planet c, visit 1, part 2 (04) | [==>]                                                  |                                 | [4] |                              |



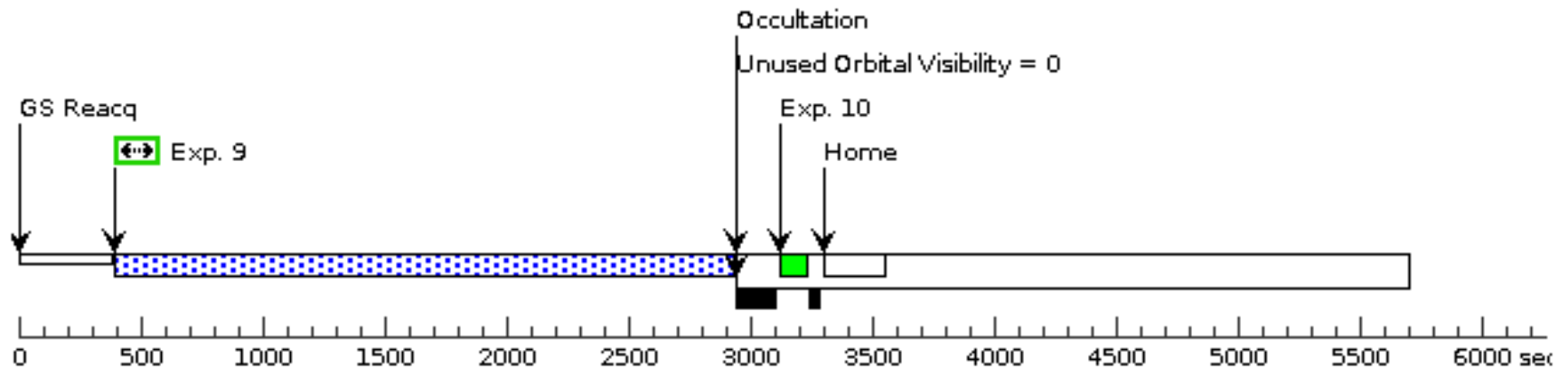
### Orbit 3

Server Version: 20211222



### Orbit 4

Server Version: 20211222

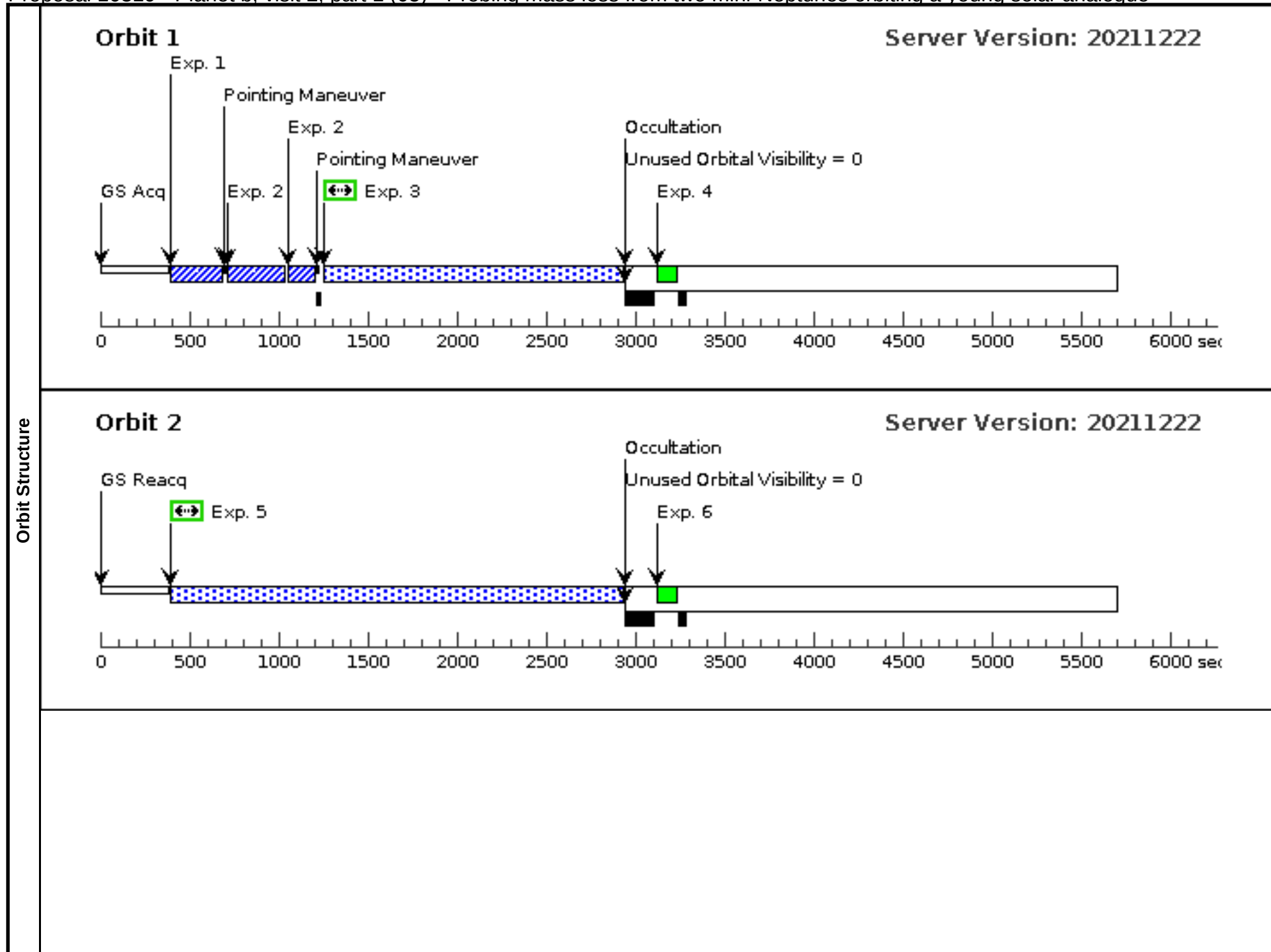


# Proposal 16319 - Planet b, visit 2, part 1 (05) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|               |                                                                                                                                                                                                                                                                                                    |          |                                  |                                  |        |                              |
|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------|----------------------------------|--------|------------------------------|
| Visit         | Proposal 16319, Planet b, visit 2, part 1 (05), failed                                                                                                                                                                                                                                             |          |                                  |                                  |        | Fri Feb 18 21:24:09 GMT 2022 |
|               | Diagnostic Status: Warning                                                                                                                                                                                                                                                                         |          |                                  |                                  |        |                              |
|               | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                                                                                                                                    |          |                                  |                                  |        |                              |
|               | Special Requirements: SCHED 90%; Period 7.107789 D AND ZERO-PHASE HJD2458916.45142                                                                                                                                                                                                                 |          |                                  |                                  |        |                              |
| Diagnosics    | (Planet b, visit 2, part 1 (05)) Warning (Orbit Planner): LONG STIS MAMA SU LIKELY TO INTERSECT THE SAA                                                                                                                                                                                            |          |                                  |                                  |        |                              |
| Fixed Targets | #                                                                                                                                                                                                                                                                                                  | Name     | Target Coordinates               | Targ. Coord. Corrections         | Fluxes | Miscellaneous                |
|               | (2)                                                                                                                                                                                                                                                                                                | HD-63433 | RA: 07 49 55.0488 (117.4793700d) | Proper Motion RA: -10.027 mas/yr | V=6.91 | Reference Frame: ICRS        |
|               |                                                                                                                                                                                                                                                                                                    |          | Dec: +27 21 47.28 (27.36313d)    | Proper Motion Dec: -11.31 mas/yr |        |                              |
|               |                                                                                                                                                                                                                                                                                                    |          | Equinox: J2000                   | Epoch of Position: 2015.5        |        |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.<br>Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO |          |                                  |                                  |        |                              |

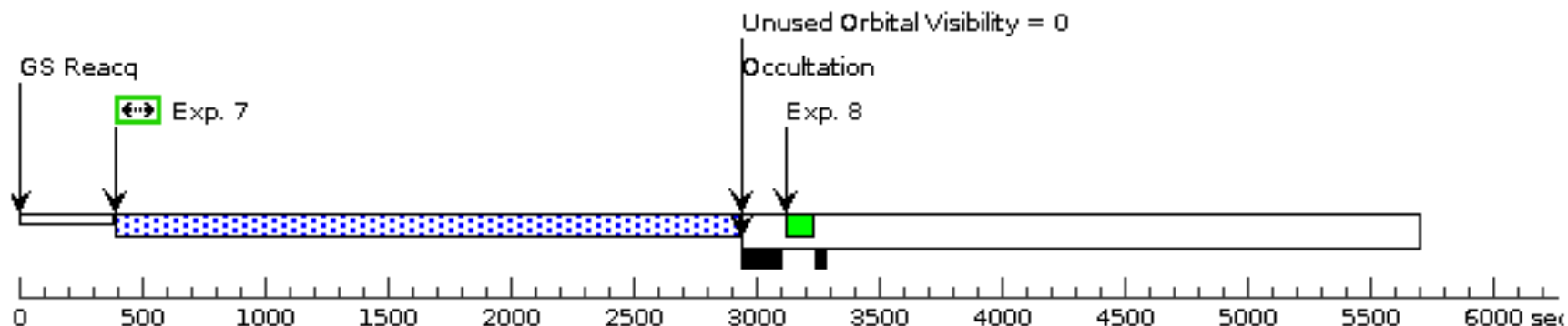
Proposal 16319 - Planet b, visit 2, part 1 (05) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

| Exposures | #  | Label<br>(ETC Run)                | Target       | Config,Mode,Aperture            | Spectral Els.   | Opt. Params.                    | Special Reqs.          | Groups                                                   | Exp. Time (Total)/[Actual Dur.] | Orbit |
|-----------|----|-----------------------------------|--------------|---------------------------------|-----------------|---------------------------------|------------------------|----------------------------------------------------------|---------------------------------|-------|
|           | 1  | ACQ<br>(STIS.ta.144<br>5864)      | (2) HD-63433 | STIS/CCD, ACQ, F28X50OIII       | MIRROR          |                                 | PHASE 0.9688 TO 0.9748 | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (05)   | 5 Secs (5 Secs)<br>[==>]        | [1]   |
|           | 2  | ACQ/PEAK<br>(STIS.ta.144<br>5870) | (2) HD-63433 | STIS/CCD, ACQ/PEAK, 0.2X0.05ND  | MIRROR          |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (05)   | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]   |
|           | 3  | Science<br>(STIS.sp.14<br>47661)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1000;<br>WAVECAL=NO |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (05)   | 1515 Secs (1515 Secs)<br>[==>]  | [1]   |
|           | 4  | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (05)   | [==>]                           | [1]   |
|           | 5  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 5-6 Non-Int in Planet b, visit 2, part 1 (05)   | 2523 Secs (2523 Secs)<br>[==>]  | [2]   |
|           | 6  | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 5-6 Non-Int in Planet b, visit 2, part 1 (05)   | [==>]                           | [2]   |
|           | 7  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 7-8 Non-Int in Planet b, visit 2, part 1 (05)   | 2523 Secs (2523 Secs)<br>[==>]  | [3]   |
|           | 8  | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 7-8 Non-Int in Planet b, visit 2, part 1 (05)   | [==>]                           | [3]   |
|           | 9  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 9-10 Non-Int in Planet b, visit 2, part 1 (05)  | 2523 Secs (2523 Secs)<br>[==>]  | [4]   |
|           | 10 | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 9-10 Non-Int in Planet b, visit 2, part 1 (05)  | [==>]                           | [4]   |
|           | 11 | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 11-12 Non-Int in Planet b, visit 2, part 1 (05) | 2523 Secs (2523 Secs)<br>[==>]  | [5]   |
|           | 12 | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 11-12 Non-Int in Planet b, visit 2, part 1 (05) | [==>]                           | [5]   |
|           | 13 | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 13-14 Non-Int in Planet b, visit 2, part 1 (05) | 2523 Secs (2523 Secs)<br>[==>]  | [6]   |
|           | 14 | WAVECAL                           | WAVE         | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 13-14 Non-Int in Planet b, visit 2, part 1 (05) | [==>]                           | [6]   |



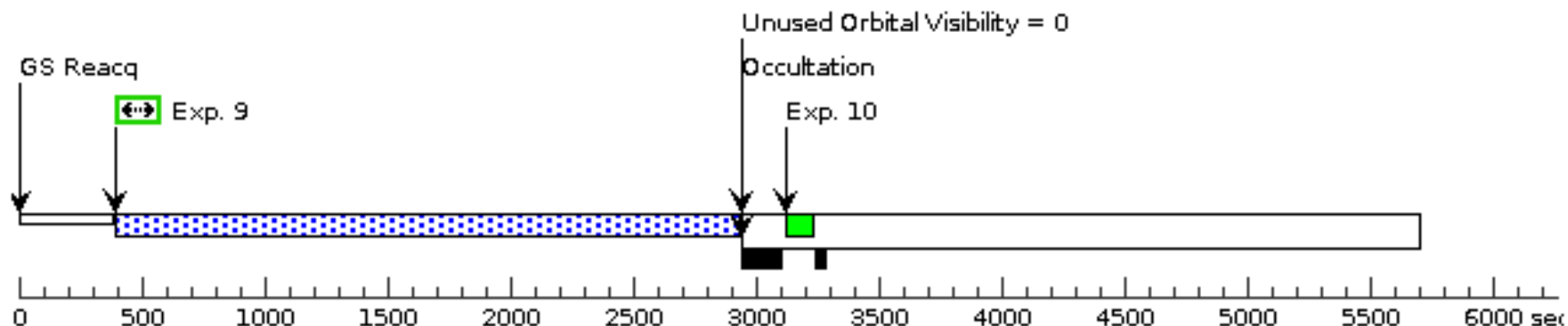
### Orbit 3

Server Version: 20211222



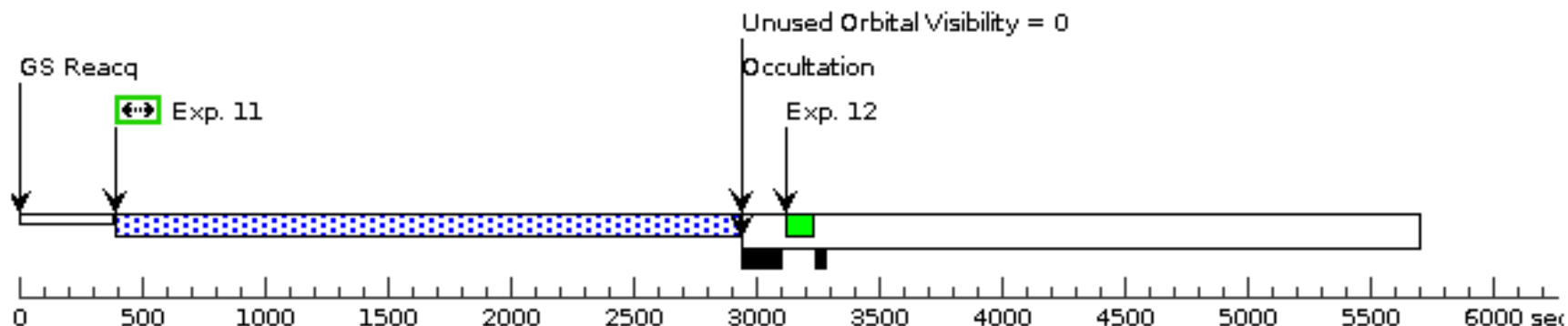
### Orbit 4

Server Version: 20211222



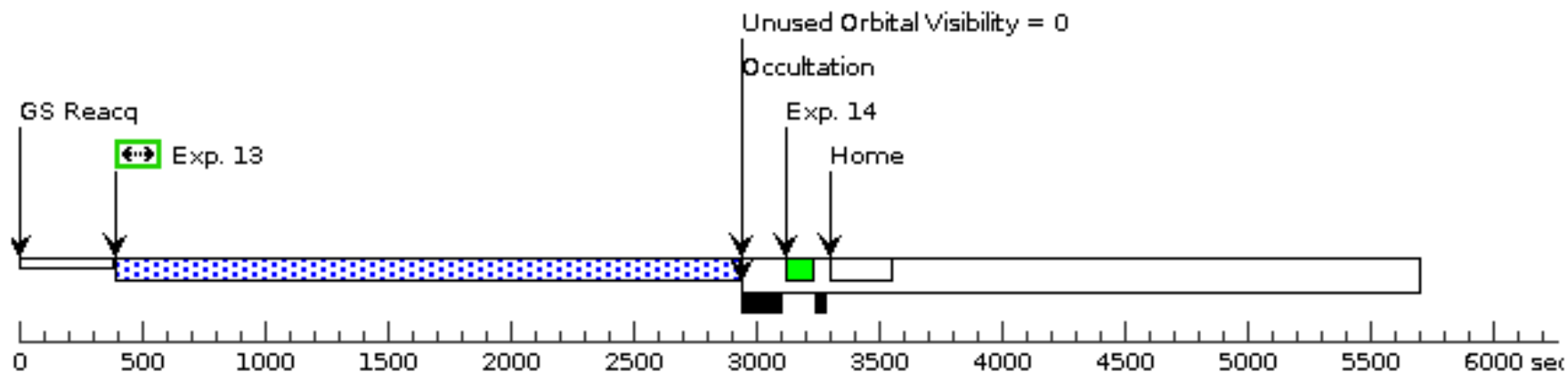
### Orbit 5

Server Version: 20211222



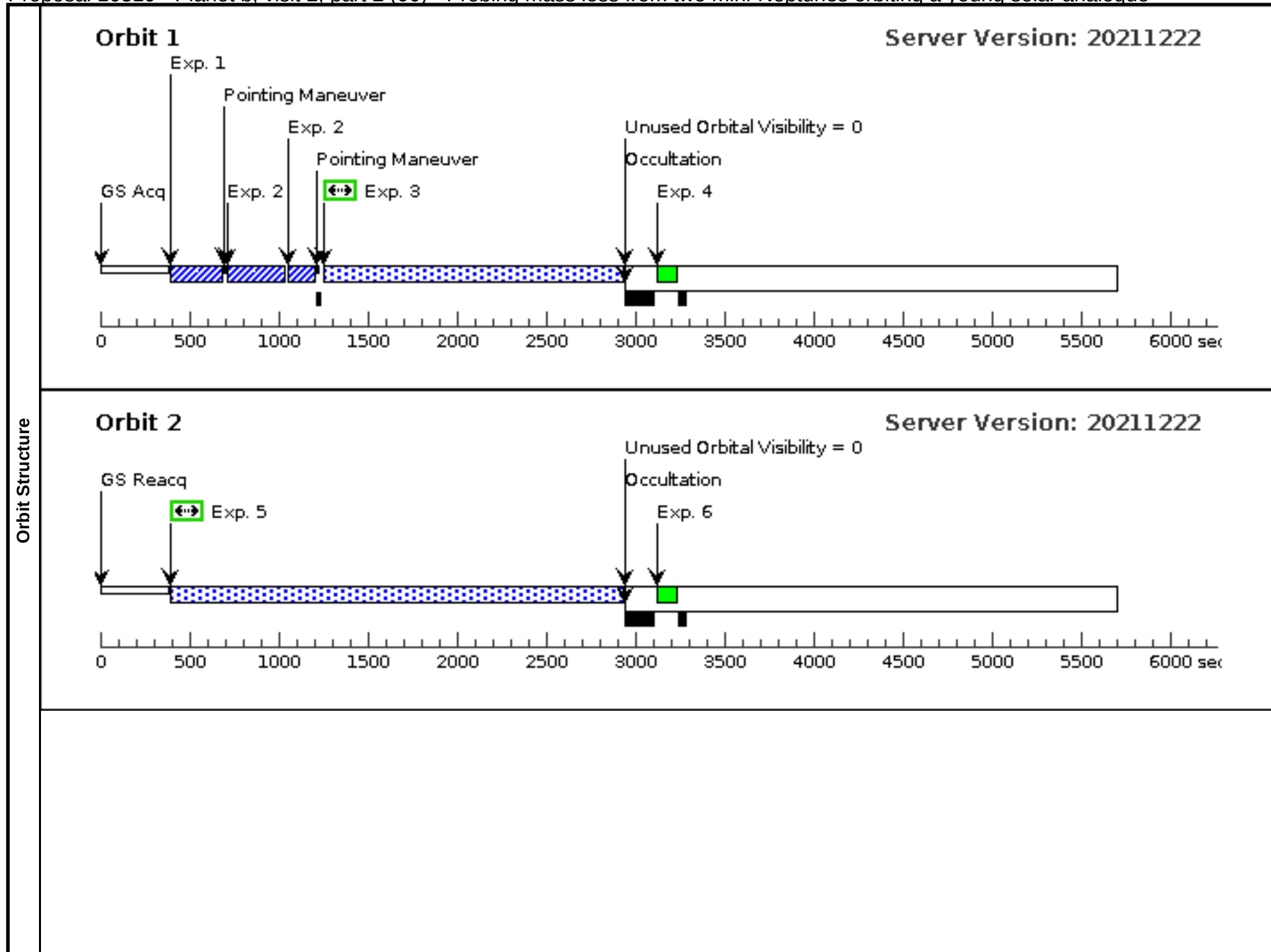
### Orbit 6

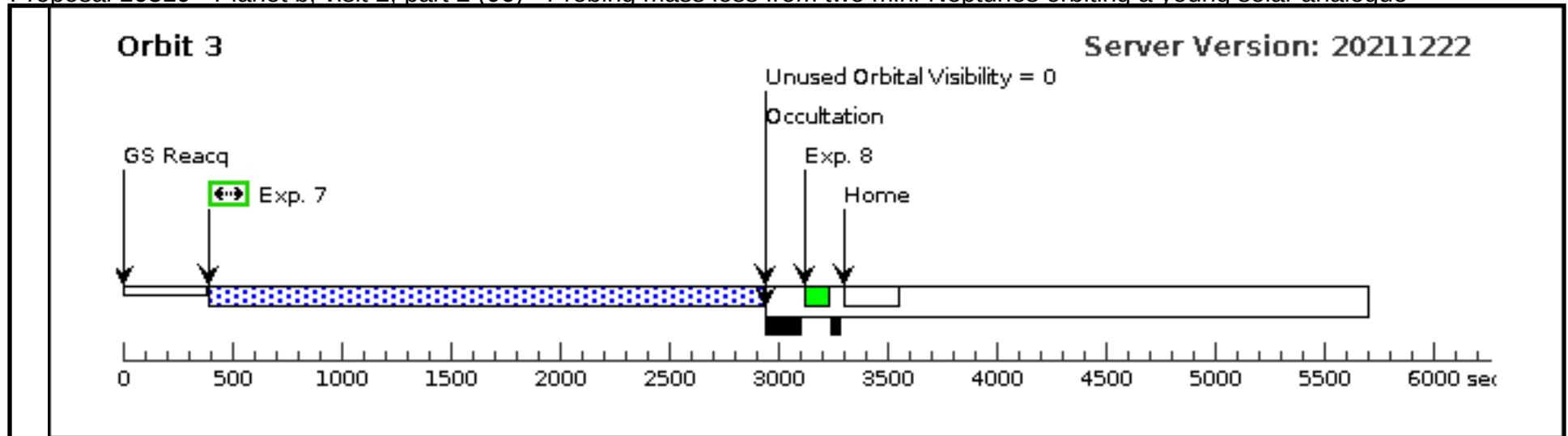
Server Version: 20211222



# Proposal 16319 - Planet b, visit 2, part 2 (06) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

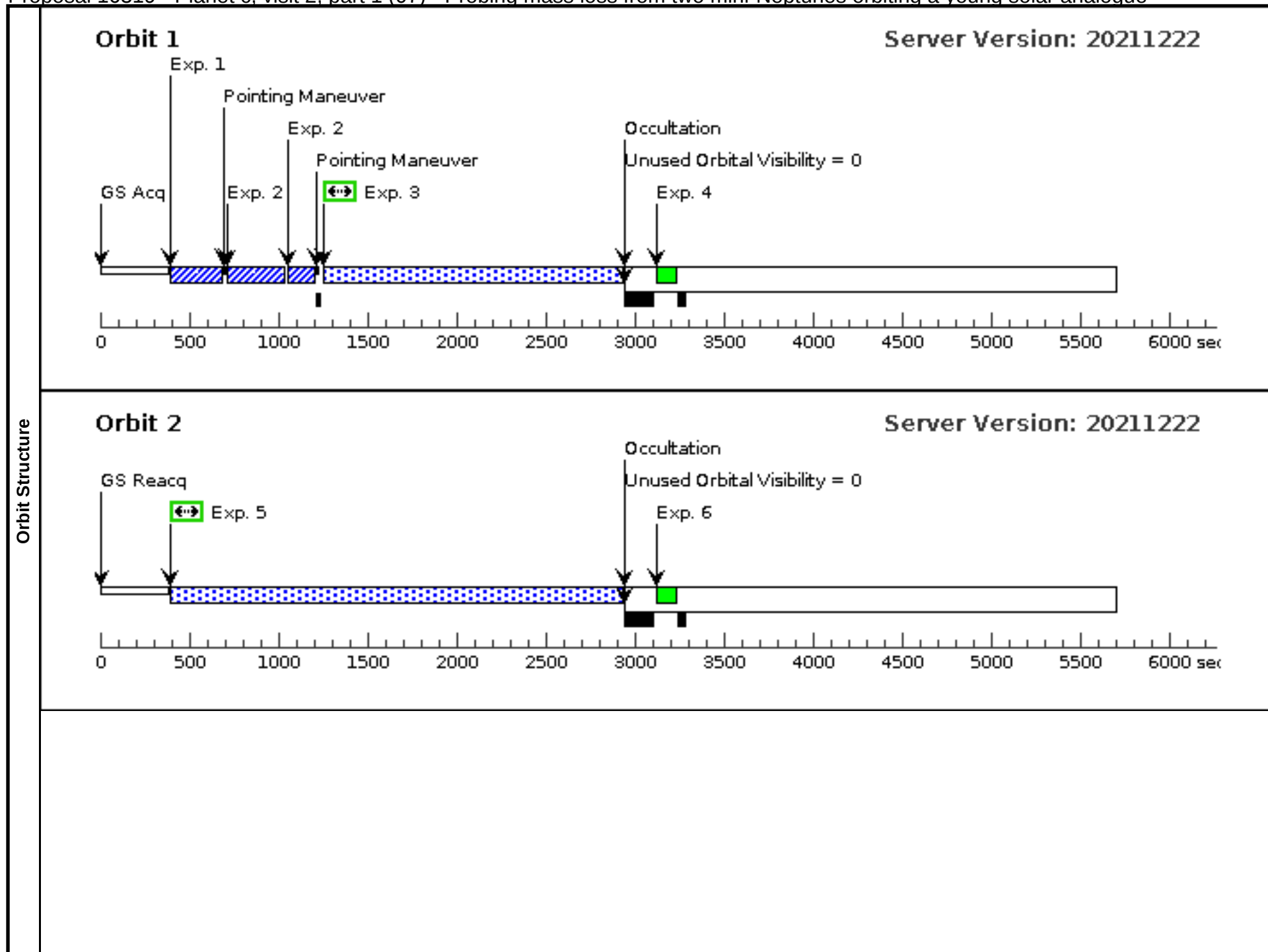
|                                                                                                                                                                                                                |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|----------------------------------|---------------|--------------------------------------------------------|---------------------------------|-------|
| Visit                                                                                                                                                                                                          | Proposal 16319, Planet b, visit 2, part 2 (06), completed                                                                                                                                |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        | Fri Feb 18 21:24:09 GMT 2022    |       |
|                                                                                                                                                                                                                | Diagnostic Status: No Diagnostics                                                                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
|                                                                                                                                                                                                                | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
|                                                                                                                                                                                                                | Special Requirements: SCHED 90%; AFTER 05 BY 11 Orbits TO 18 Orbits                                                                                                                      |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
| Comments: The "After Visit" requirements are not strict, and can be relaxed if scheduling is otherwise very difficult. The minimum of 11 orbits was chosen to avoid the SAA, but can be shortened arbitrarily. |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
| Fixed Targets                                                                                                                                                                                                  | #                                                                                                                                                                                        | Name                        | Target Coordinates                                                                  | Targ. Coord. Corrections                                                                          | Fluxes        | Miscellaneous                    |               |                                                        |                                 |       |
|                                                                                                                                                                                                                | (2)                                                                                                                                                                                      | HD-63433                    | RA: 07 49 55.0488 (117.4793700d)<br>Dec: +27 21 47.28 (27.36313d)<br>Equinox: J2000 | Proper Motion RA: -10.027 mas/yr<br>Proper Motion Dec: -11.31 mas/yr<br>Epoch of Position: 2015.5 | V=6.91        | Reference Frame: ICRS            |               |                                                        |                                 |       |
|                                                                                                                                                                                                                | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
|                                                                                                                                                                                                                | Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO                                                                                   |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                        |                                 |       |
| Exposures                                                                                                                                                                                                      | #                                                                                                                                                                                        | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture                                                                              | Spectral Els. | Opt. Params.                     | Special Reqs. | Groups                                                 | Exp. Time (Total)/[Actual Dur.] | Orbit |
|                                                                                                                                                                                                                | 1                                                                                                                                                                                        | ACQ (STIS.ta.144 5864)      | (2) HD-63433                                                                        | STIS/CCD, ACQ, F28X50OIII                                                                         | MIRROR        |                                  |               | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (06) | 5 Secs (5 Secs)<br>[==>]        | [1]   |
|                                                                                                                                                                                                                | 2                                                                                                                                                                                        | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                                                                        | STIS/CCD, ACQ/PEAK, 0.2X0.05ND                                                                    | MIRROR        |                                  |               | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (06) | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]   |
|                                                                                                                                                                                                                | 3                                                                                                                                                                                        | Science (STIS.sp.14 47661)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=10 00;<br>WAVECAL=NO |               | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (06) | 1515 Secs (1515 Secs)<br>[==>]  | [1]   |
|                                                                                                                                                                                                                | 4                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (06) | [==>]                           | [1]   |
|                                                                                                                                                                                                                | 5                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=15 00;<br>WAVECAL=NO |               | Sequence 5-6 Non-Int in Planet b, visit 2, part 2 (06) | 2523 Secs (2523 Secs)<br>[==>]  | [2]   |
|                                                                                                                                                                                                                | 6                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 5-6 Non-Int in Planet b, visit 2, part 2 (06) | [==>]                           | [2]   |
|                                                                                                                                                                                                                | 7                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=15 00;<br>WAVECAL=NO |               | Sequence 7-8 Non-Int in Planet b, visit 2, part 2 (06) | 2523 Secs (2523 Secs)<br>[==>]  | [3]   |
|                                                                                                                                                                                                                | 8                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 7-8 Non-Int in Planet b, visit 2, part 2 (06) | [==>]                           | [3]   |





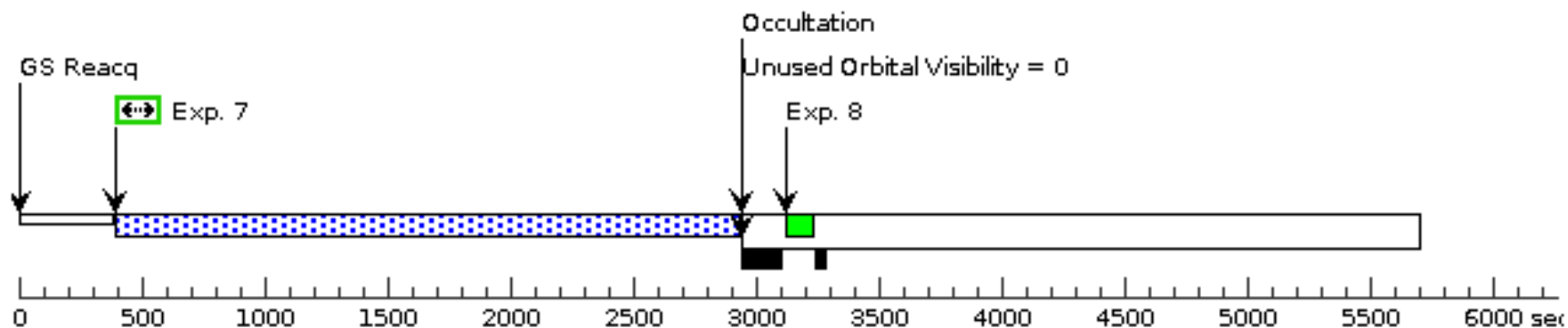
# Proposal 16319 - Planet c, visit 2, part 1 (07) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|               |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|---------------------------------|------------------------|----------------------------------------------------------|---------------------------------|------------------------------|
| Visit         | Proposal 16319, Planet c, visit 2, part 1 (07), implementation                                                                                                                           |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 | Fri Feb 18 21:24:09 GMT 2022 |
|               | Diagnostic Status: No Diagnostics                                                                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Special Requirements: SCHED 90%; Period 20.543888 D AND ZERO-PHASE HJD2458844.05824                                                                                                      |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Fixed Targets | #                                                                                                                                                                                        | Name                        | Target Coordinates                                                                  | Targ. Coord. Corrections                                                                          | Fluxes        | Miscellaneous                   |                        |                                                          |                                 |                              |
|               | (2)                                                                                                                                                                                      | HD-63433                    | RA: 07 49 55.0488 (117.4793700d)<br>Dec: +27 21 47.28 (27.36313d)<br>Equinox: J2000 | Proper Motion RA: -10.027 mas/yr<br>Proper Motion Dec: -11.31 mas/yr<br>Epoch of Position: 2015.5 | V=6.91        | Reference Frame: ICRS           |                        |                                                          |                                 |                              |
|               | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
|               | Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO                                                                                   |                             |                                                                                     |                                                                                                   |               |                                 |                        |                                                          |                                 |                              |
| Exposures     | #                                                                                                                                                                                        | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture                                                                              | Spectral Els. | Opt. Params.                    | Special Reqs.          | Groups                                                   | Exp. Time (Total)/[Actual Dur.] | Orbit                        |
|               | 1                                                                                                                                                                                        | ACQ (STIS.ta.144 5864)      | (2) HD-63433                                                                        | STIS/CCD, ACQ, F28X50OIII                                                                         | MIRROR        |                                 | PHASE 0.9899 TO 0.9919 | Sequence 1-4 Non-Int in Planet c, visit 2, part 1 (07)   | 5 Secs (5 Secs)<br>[==>]        | [1]                          |
|               | 2                                                                                                                                                                                        | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                                                                        | STIS/CCD, ACQ/PEAK, 0.2X0.05ND                                                                    | MIRROR        |                                 |                        | Sequence 1-4 Non-Int in Planet c, visit 2, part 1 (07)   | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]                          |
|               | 3                                                                                                                                                                                        | Science (STIS.sp.14 47661)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1000;<br>WAVECAL=NO |                        | Sequence 1-4 Non-Int in Planet c, visit 2, part 1 (07)   | 1515 Secs (1515 Secs)<br>[==>]  | [1]                          |
|               | 4                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 1-4 Non-Int in Planet c, visit 2, part 1 (07)   | [==>]                           | [1]                          |
|               | 5                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 5-6 Non-Int in Planet c, visit 2, part 1 (07)   | 2523 Secs (2523 Secs)<br>[==>]  | [2]                          |
|               | 6                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 5-6 Non-Int in Planet c, visit 2, part 1 (07)   | [==>]                           | [2]                          |
|               | 7                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 7-8 Non-Int in Planet c, visit 2, part 1 (07)   | 2523 Secs (2523 Secs)<br>[==>]  | [3]                          |
|               | 8                                                                                                                                                                                        | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 7-8 Non-Int in Planet c, visit 2, part 1 (07)   | [==>]                           | [3]                          |
|               | 9                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 9-10 Non-Int in Planet c, visit 2, part 1 (07)  | 2523 Secs (2523 Secs)<br>[==>]  | [4]                          |
|               | 10                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 9-10 Non-Int in Planet c, visit 2, part 1 (07)  | [==>]                           | [4]                          |
|               | 11                                                                                                                                                                                       | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 11-12 Non-Int in Planet c, visit 2, part 1 (07) | 2523 Secs (2523 Secs)<br>[==>]  | [5]                          |
|               | 12                                                                                                                                                                                       | WAVECAL                     | WAVE                                                                                | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                 |                        | Sequence 11-12 Non-Int in Planet c, visit 2, part 1 (07) | [==>]                           | [5]                          |



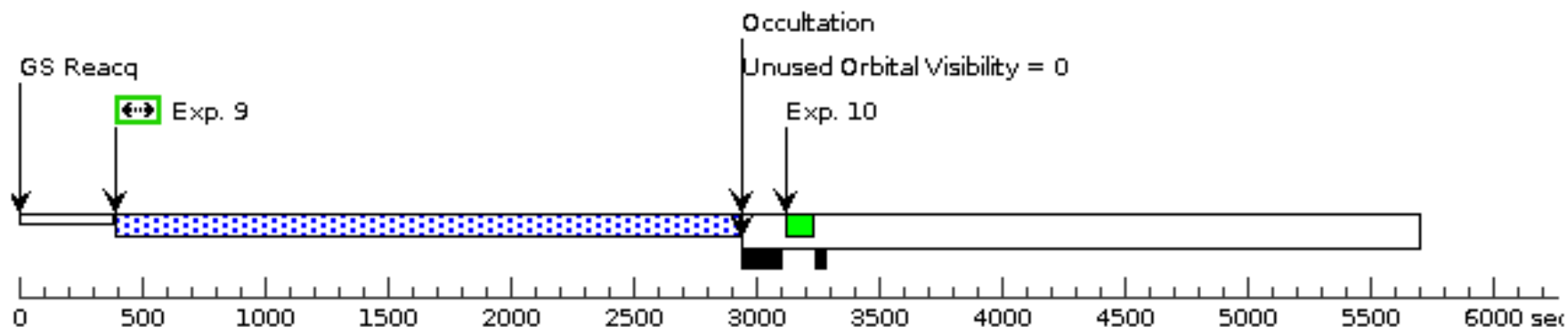
### Orbit 3

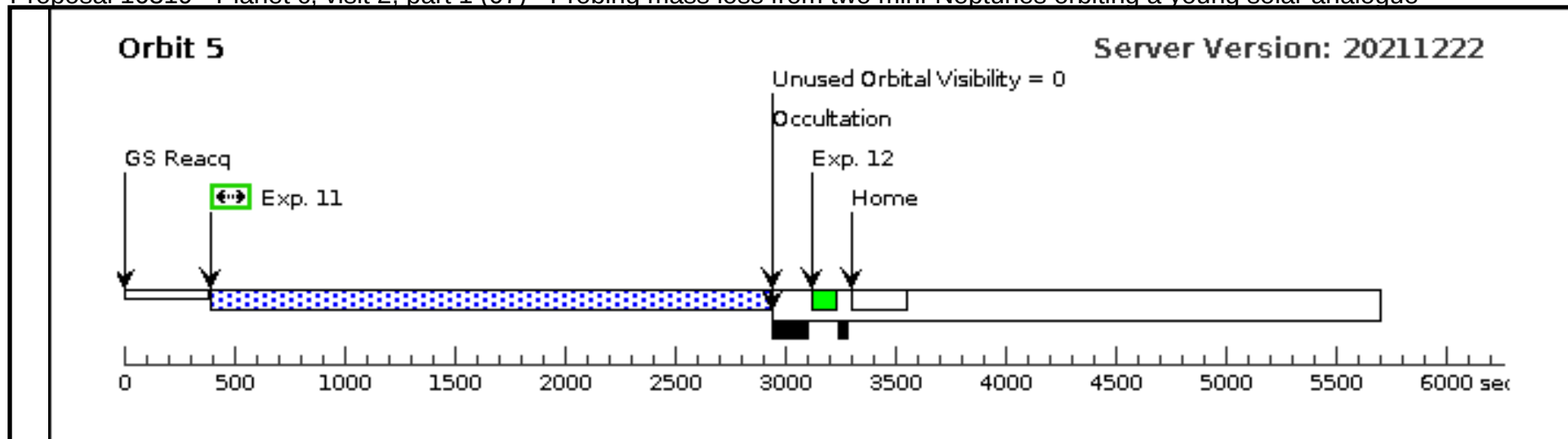
Server Version: 20211222



### Orbit 4

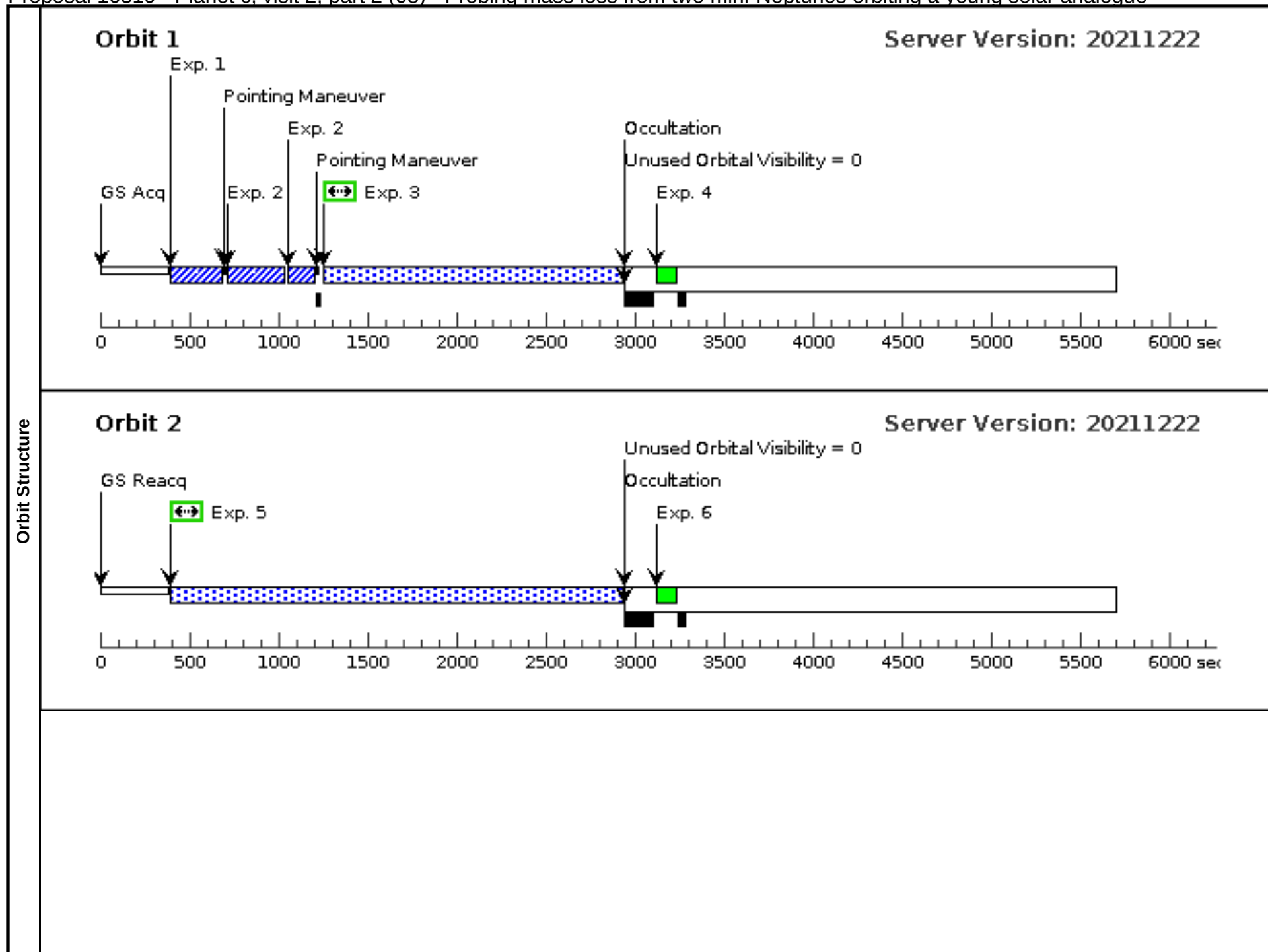
Server Version: 20211222





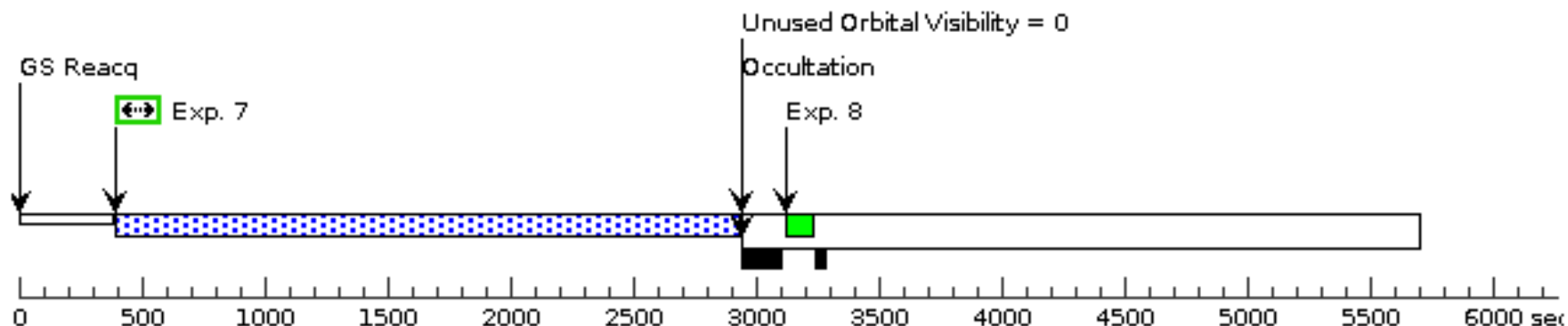
# Proposal 16319 - Planet c, visit 2, part 2 (08) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|                                                                                                                                                                                                                |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|---------------|----------------------------------|---------------|---------------------------------------------------------|---------------------------------|------------------------------|
| Visit                                                                                                                                                                                                          | Proposal 16319, Planet c, visit 2, part 2 (08), implementation                                                                                                                           |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 | Fri Feb 18 21:24:09 GMT 2022 |
|                                                                                                                                                                                                                | Diagnostic Status: No Diagnostics                                                                                                                                                        |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
|                                                                                                                                                                                                                | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
|                                                                                                                                                                                                                | Special Requirements: SCHED 90%; AFTER 07 BY 11 Orbits TO 18 Orbits                                                                                                                      |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
| Comments: The "After Visit" requirements are not strict, and can be relaxed if scheduling is otherwise very difficult. The minimum of 11 orbits was chosen to avoid the SAA, but can be shortened arbitrarily. |                                                                                                                                                                                          |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
| Fixed Targets                                                                                                                                                                                                  | #                                                                                                                                                                                        | Name                        | Target Coordinates                                                                  | Targ. Coord. Corrections                                                                          | Fluxes        | Miscellaneous                    |               |                                                         |                                 |                              |
|                                                                                                                                                                                                                | (2)                                                                                                                                                                                      | HD-63433                    | RA: 07 49 55.0488 (117.4793700d)<br>Dec: +27 21 47.28 (27.36313d)<br>Equinox: J2000 | Proper Motion RA: -10.027 mas/yr<br>Proper Motion Dec: -11.31 mas/yr<br>Epoch of Position: 2015.5 | V=6.91        | Reference Frame: ICRS            |               |                                                         |                                 |                              |
|                                                                                                                                                                                                                | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
|                                                                                                                                                                                                                | Category=STAR<br>Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV]<br>Extended=NO                                                                                   |                             |                                                                                     |                                                                                                   |               |                                  |               |                                                         |                                 |                              |
| Exposures                                                                                                                                                                                                      | #                                                                                                                                                                                        | Label (ETC Run)             | Target                                                                              | Config,Mode,Aperture                                                                              | Spectral Els. | Opt. Params.                     | Special Reqs. | Groups                                                  | Exp. Time (Total)/[Actual Dur.] | Orbit                        |
|                                                                                                                                                                                                                | 1                                                                                                                                                                                        | ACQ (STIS.ta.144 5864)      | (2) HD-63433                                                                        | STIS/CCD, ACQ, F28X50OIII                                                                         | MIRROR        |                                  |               | Sequence 1-4 Non-Int in Planet c, visit 2, part 2 (08)  | 5 Secs (5 Secs)<br>[==>]        | [1]                          |
|                                                                                                                                                                                                                | 2                                                                                                                                                                                        | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                                                                        | STIS/CCD, ACQ/PEAK, 0.2X0.05ND                                                                    | MIRROR        |                                  |               | Sequence 1-4 Non-Int in Planet c, visit 2, part 2 (08)  | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]                          |
|                                                                                                                                                                                                                | 3                                                                                                                                                                                        | Science (STIS.sp.14 47661)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=10 00;<br>WAVECAL=NO |               | Sequence 1-4 Non-Int in Planet c, visit 2, part 2 (08)  | 1515 Secs (1515 Secs)<br>[==>]  | [1]                          |
|                                                                                                                                                                                                                | 4                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 1-4 Non-Int in Planet c, visit 2, part 2 (08)  | [==>]                           | [1]                          |
|                                                                                                                                                                                                                | 5                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=15 00;<br>WAVECAL=NO |               | Sequence 5-6 Non-Int in Planet c, visit 2, part 2 (08)  | 2523 Secs (2523 Secs)<br>[==>]  | [2]                          |
|                                                                                                                                                                                                                | 6                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 5-6 Non-Int in Planet c, visit 2, part 2 (08)  | [==>]                           | [2]                          |
|                                                                                                                                                                                                                | 7                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=15 00;<br>WAVECAL=NO |               | Sequence 7-8 Non-Int in Planet c, visit 2, part 2 (08)  | 2523 Secs (2523 Secs)<br>[==>]  | [3]                          |
|                                                                                                                                                                                                                | 8                                                                                                                                                                                        | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 7-8 Non-Int in Planet c, visit 2, part 2 (08)  | [==>]                           | [3]                          |
|                                                                                                                                                                                                                | 9                                                                                                                                                                                        | Science (STIS.sp.14 47662)  | (2) HD-63433                                                                        | STIS/FUV-MAMA, TIME-TAG, 52X0.1                                                                   | G140M 1222 A  | BUFFER-TIME=15 00;<br>WAVECAL=NO |               | Sequence 9-10 Non-Int in Planet c, visit 2, part 2 (08) | 2523 Secs (2523 Secs)<br>[==>]  | [4]                          |
|                                                                                                                                                                                                                | 10                                                                                                                                                                                       | WAVECAL WAVE                |                                                                                     | STIS/FUV-MAMA, ACCUM, 52X0.1                                                                      | G140M 1222 A  |                                  |               | Sequence 9-10 Non-Int in Planet c, visit 2, part 2 (08) | [==>]                           | [4]                          |



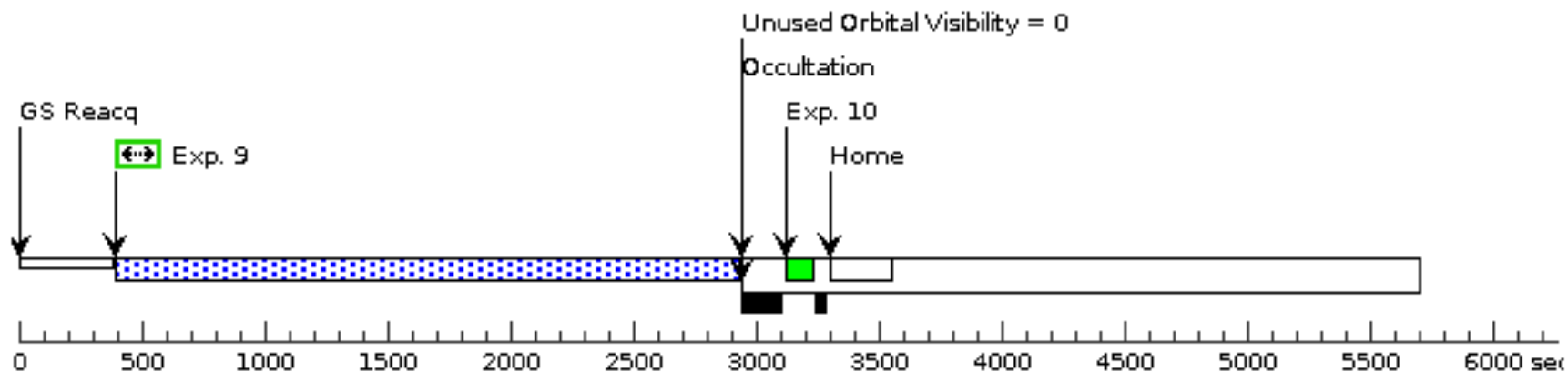
### Orbit 3

Server Version: 20211222



### Orbit 4

Server Version: 20211222

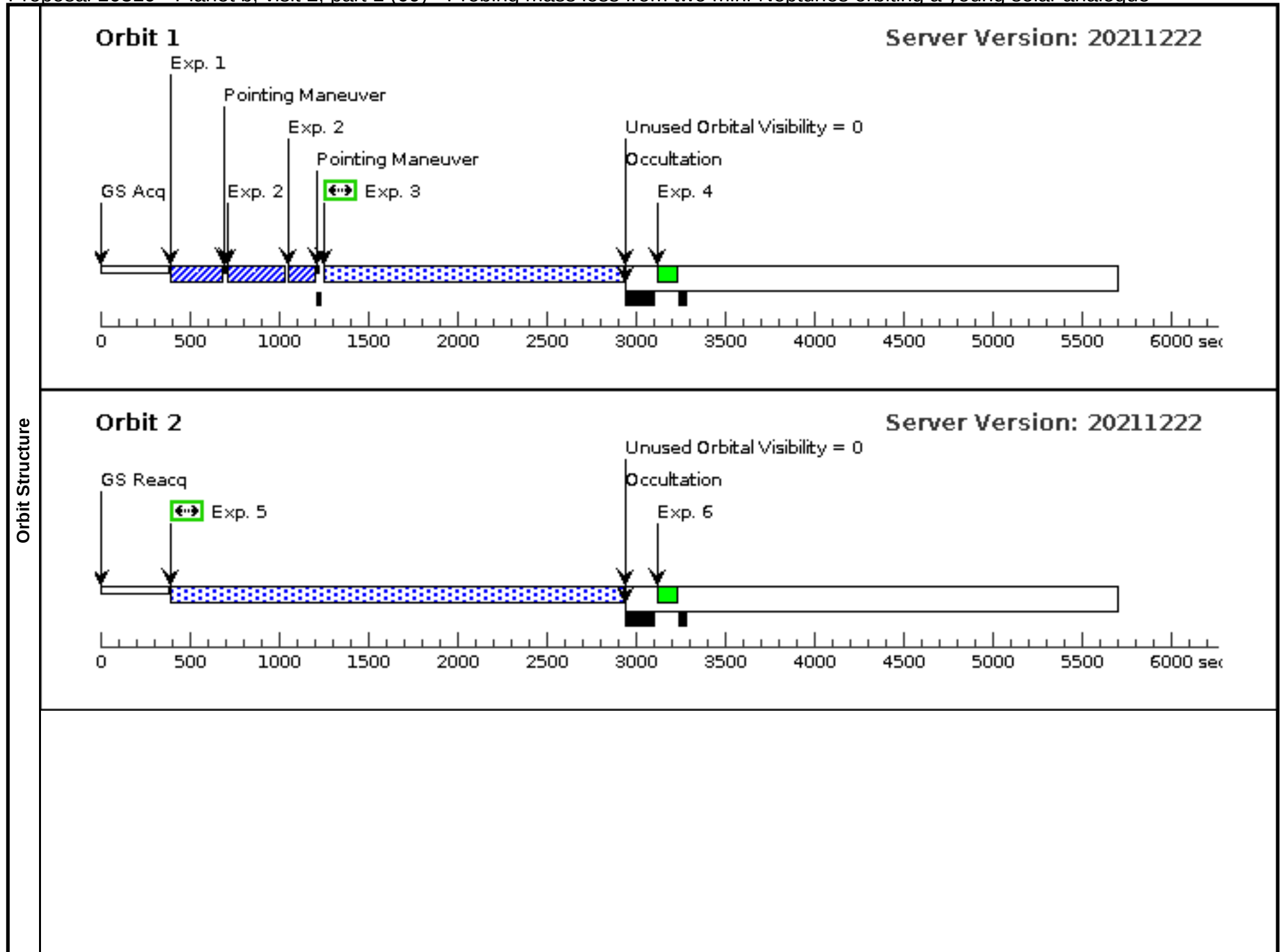


# Proposal 16319 - Planet b, visit 2, part 1 (09) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|                                                                        |                                                                                                                                                                                          |          |                                  |                                  |        |                              |
|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------|----------------------------------|--------|------------------------------|
| Visit                                                                  | Proposal 16319, Planet b, visit 2, part 1 (09), implementation                                                                                                                           |          |                                  |                                  |        | Fri Feb 18 21:24:09 GMT 2022 |
|                                                                        | Diagnostic Status: Warning                                                                                                                                                               |          |                                  |                                  |        |                              |
|                                                                        | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                          |          |                                  |                                  |        |                              |
|                                                                        | Special Requirements: SCHED 90%; Period 7.107789 D AND ZERO-PHASE HJD2458916.45142                                                                                                       |          |                                  |                                  |        |                              |
| Comments: HOPR repeat of visit 05                                      |                                                                                                                                                                                          |          |                                  |                                  |        |                              |
| Diagnosics                                                             | (Planet b, visit 2, part 1 (09)) Warning (Orbit Planner): LONG STIS MAMA SU LIKELY TO INTERSECT THE SAA                                                                                  |          |                                  |                                  |        |                              |
| Fixed Targets                                                          | #                                                                                                                                                                                        | Name     | Target Coordinates               | Targ. Coord. Corrections         | Fluxes | Miscellaneous                |
|                                                                        | (2)                                                                                                                                                                                      | HD-63433 | RA: 07 49 55.0488 (117.4793700d) | Proper Motion RA: -10.027 mas/yr | V=6.91 | Reference Frame: ICRS        |
|                                                                        |                                                                                                                                                                                          |          | Dec: +27 21 47.28 (27.36313d)    | Proper Motion Dec: -11.31 mas/yr |        |                              |
|                                                                        |                                                                                                                                                                                          |          | Equinox: J2000                   | Epoch of Position: 2015.5        |        |                              |
|                                                                        | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database. |          |                                  |                                  |        |                              |
| Category=STAR                                                          |                                                                                                                                                                                          |          |                                  |                                  |        |                              |
| Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV] |                                                                                                                                                                                          |          |                                  |                                  |        |                              |
| Extended=NO                                                            |                                                                                                                                                                                          |          |                                  |                                  |        |                              |

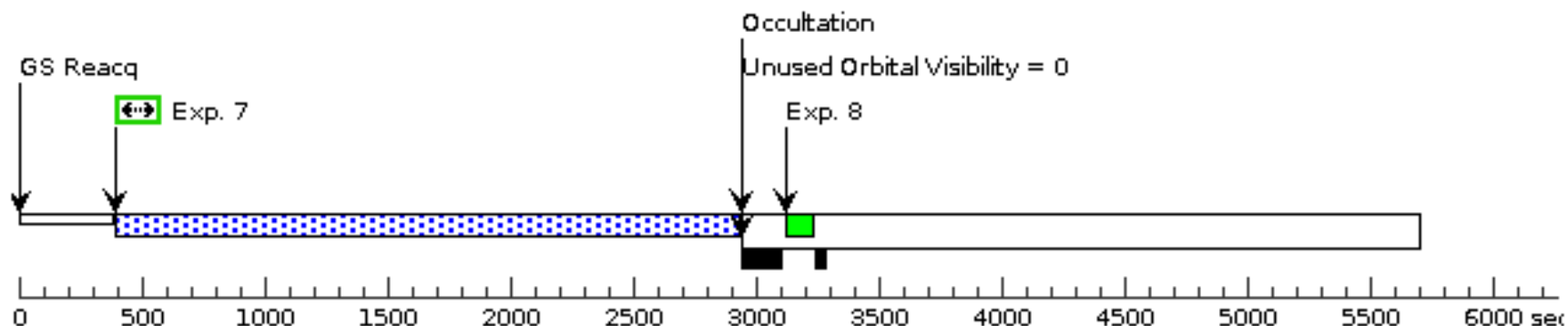
Proposal 16319 - Planet b, visit 2, part 1 (09) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

| Exposures | #  | Label<br>(ETC Run)                | Target       | Config,Mode,Aperture            | Spectral Els.   | Opt. Params.                    | Special Reqs.          | Groups                                                   | Exp. Time (Total)/[Actual Dur.] | Orbit |
|-----------|----|-----------------------------------|--------------|---------------------------------|-----------------|---------------------------------|------------------------|----------------------------------------------------------|---------------------------------|-------|
|           | 1  | ACQ<br>(STIS.ta.144<br>5864)      | (2) HD-63433 | STIS/CCD, ACQ, F28X50OIII       | MIRROR          |                                 | PHASE 0.9688 TO 0.9748 | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (09)   | 5 Secs (5 Secs)<br>[==>]        | [1]   |
|           | 2  | ACQ/PEAK<br>(STIS.ta.144<br>5870) | (2) HD-63433 | STIS/CCD, ACQ/PEAK, 0.2X0.05ND  | MIRROR          |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (09)   | 1.5 Secs (1.5 Secs)<br>[==>]    | [1]   |
|           | 3  | Science<br>(STIS.sp.14<br>47661)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1000;<br>WAVECAL=NO |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (09)   | 1515 Secs (1515 Secs)<br>[==>]  | [1]   |
|           | 4  | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 1 (09)   | [==>]                           | [1]   |
|           | 5  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 5-6 Non-Int in Planet b, visit 2, part 1 (09)   | 2523 Secs (2523 Secs)<br>[==>]  | [2]   |
|           | 6  | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 5-6 Non-Int in Planet b, visit 2, part 1 (09)   | [==>]                           | [2]   |
|           | 7  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 7-8 Non-Int in Planet b, visit 2, part 1 (09)   | 2523 Secs (2523 Secs)<br>[==>]  | [3]   |
|           | 8  | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 7-8 Non-Int in Planet b, visit 2, part 1 (09)   | [==>]                           | [3]   |
|           | 9  | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 9-10 Non-Int in Planet b, visit 2, part 1 (09)  | 2523 Secs (2523 Secs)<br>[==>]  | [4]   |
|           | 10 | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 9-10 Non-Int in Planet b, visit 2, part 1 (09)  | [==>]                           | [4]   |
|           | 11 | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 11-12 Non-Int in Planet b, visit 2, part 1 (09) | 2523 Secs (2523 Secs)<br>[==>]  | [5]   |
|           | 12 | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 11-12 Non-Int in Planet b, visit 2, part 1 (09) | [==>]                           | [5]   |
|           | 13 | Science<br>(STIS.sp.14<br>47662)  | (2) HD-63433 | STIS/FUV-MAMA, TIME-TAG, 52X0.1 | G140M<br>1222 A | BUFFER-TIME=1500;<br>WAVECAL=NO |                        | Sequence 13-14 Non-Int in Planet b, visit 2, part 1 (09) | 2523 Secs (2523 Secs)<br>[==>]  | [6]   |
|           | 14 | WAVECAL WAVE                      |              | STIS/FUV-MAMA, ACCUM, 52X0.1    | G140M<br>1222 A |                                 |                        | Sequence 13-14 Non-Int in Planet b, visit 2, part 1 (09) | [==>]                           | [6]   |



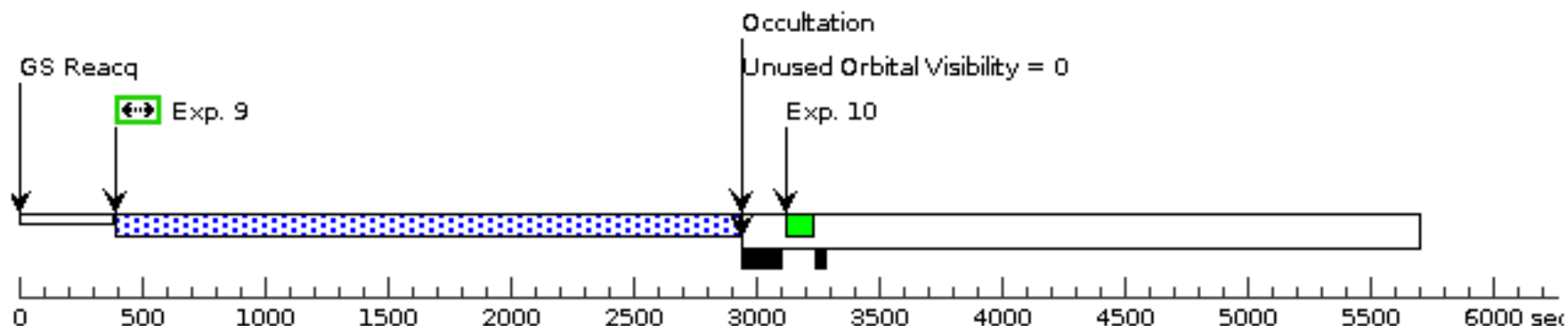
### Orbit 3

Server Version: 20211222



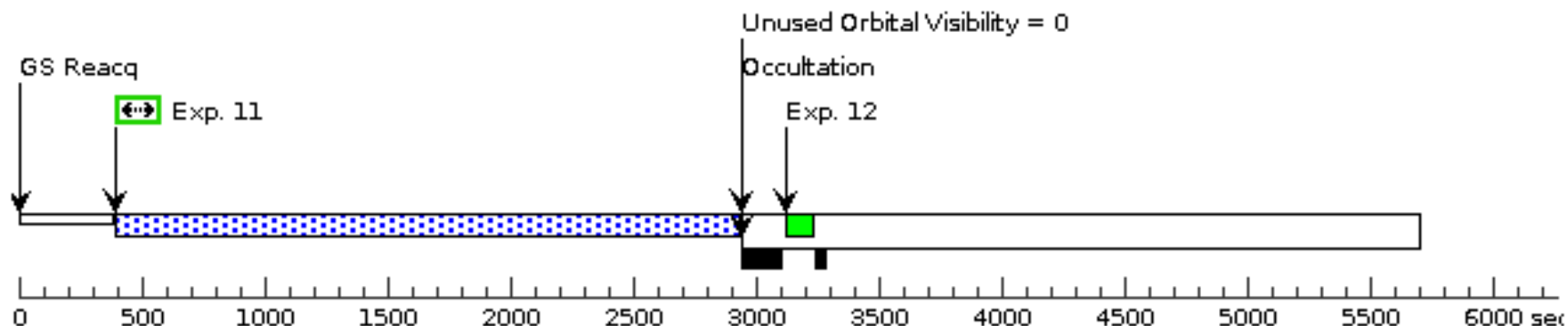
### Orbit 4

Server Version: 20211222



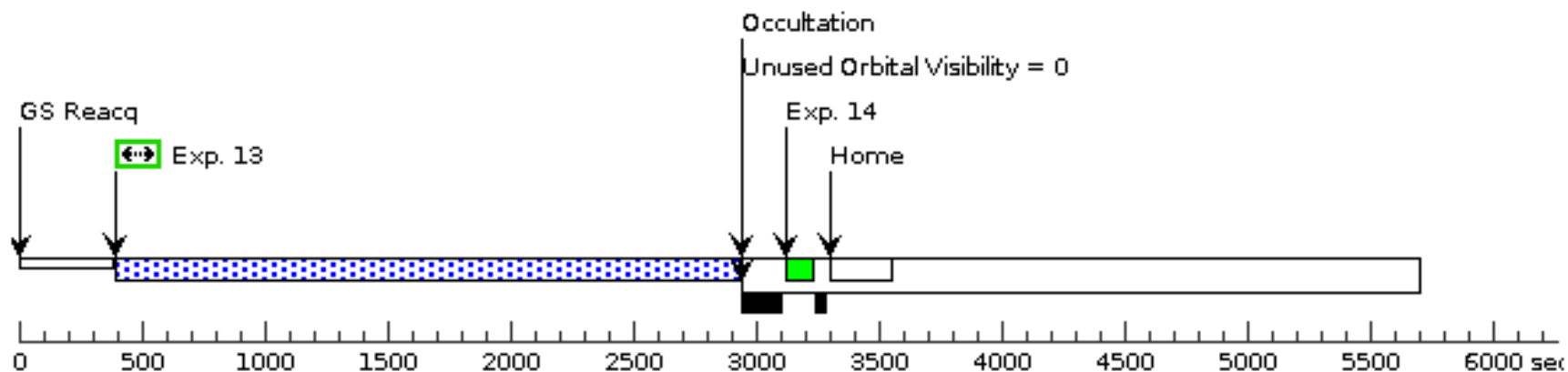
### Orbit 5

Server Version: 20211222



### Orbit 6

Server Version: 20211222

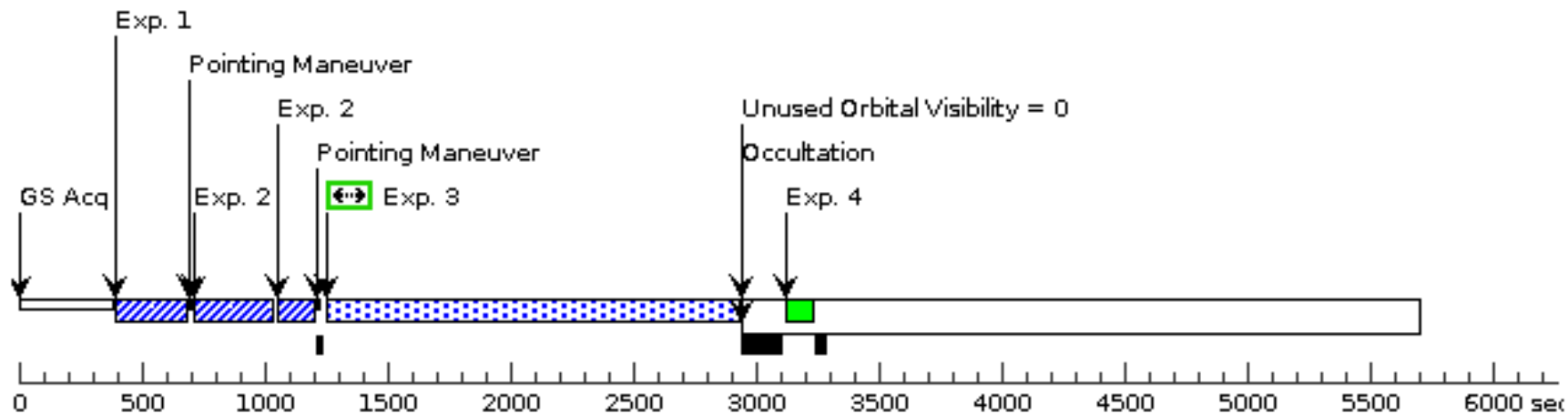


# Proposal 16319 - Planet b, visit 2, part 2 (10) - Probing mass loss from two mini-Neptunes orbiting a young solar analogue

|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
|------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|----------------------------------|---------------------------------|--------------|----------------------------------|--------------------|--------------------------------------------------------|--------------------------------------------------------|---------------------------------|------------------------------|-------|
| Visit                                                                  | Proposal 16319, Planet b, visit 2, part 2 (10)                                                                                                                                                                 |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 | Fri Feb 18 21:24:09 GMT 2022 |       |
|                                                                        | Diagnostic Status: No Diagnostics                                                                                                                                                                              |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
|                                                                        | Scientific Instruments: STIS/CCD, STIS/FUV-MAMA                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
|                                                                        | Special Requirements: SCHED 90%; AFTER 09 BY 11 Orbits TO 18 Orbits                                                                                                                                            |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
|                                                                        | Comments: The "After Visit" requirements are not strict, and can be relaxed if scheduling is otherwise very difficult. The minimum of 11 orbits was chosen to avoid the SAA, but can be shortened arbitrarily. |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| HOPR copy of visit 06                                                  |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| Fixed Targets                                                          | #                                                                                                                                                                                                              | Name                        | Target Coordinates               |                                 |              | Targ. Coord. Corrections         |                    | Fluxes                                                 |                                                        | Miscellaneous                   |                              |       |
|                                                                        | (2)                                                                                                                                                                                                            | HD-63433                    | RA: 07 49 55.0488 (117.4793700d) |                                 |              | Proper Motion RA: -10.027 mas/yr |                    | V=6.91                                                 |                                                        | Reference Frame: ICRS           |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             | Dec: +27 21 47.28 (27.36313d)    |                                 |              | Proper Motion Dec: -11.31 mas/yr |                    |                                                        |                                                        |                                 |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             | Equinox: J2000                   |                                 |              | Epoch of Position: 2015.5        |                    |                                                        |                                                        |                                 |                              |       |
|                                                                        | Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.                       |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| Category=STAR                                                          |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| Description=[EXTRA-SOLAR PLANET, EXTRA-SOLAR PLANETARY SYSTEM, G V-IV] |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| Extended=NO                                                            |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 |                              |       |
| Exposures                                                              | #                                                                                                                                                                                                              | Label (ETC Run)             | Target                           | Config,Mode,Aperture            |              | Spectral Els.                    | Opt. Params.       | Special Reqs.                                          | Groups                                                 | Exp. Time (Total)/[Actual Dur.] |                              | Orbit |
|                                                                        | 1                                                                                                                                                                                                              | ACQ (STIS.ta.144 5864)      | (2) HD-63433                     | STIS/CCD, ACQ, F28X500III       |              | MIRROR                           |                    |                                                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (10) | 5 Secs (5 Secs)                 |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        | [==>]                                                  |                                 | [1]                          |       |
|                                                                        | 2                                                                                                                                                                                                              | ACQ/PEAK (STIS.ta.144 5870) | (2) HD-63433                     | STIS/CCD, ACQ/PEAK, 0.2X0.05ND  |              | MIRROR                           |                    |                                                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (10) | 1.5 Secs (1.5 Secs)             |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        | [==>]                                                  |                                 | [1]                          |       |
|                                                                        | 3                                                                                                                                                                                                              | Science (STIS.sp.14 47661)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 |              | G140M 1222 A                     | BUFFER-TIME=10 00; |                                                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (10) | 1515 Secs (1515 Secs)           |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  | WAVECAL=NO         |                                                        | [==>]                                                  |                                 | [1]                          |       |
|                                                                        | 4                                                                                                                                                                                                              | WAVECAL                     | WAVE                             | STIS/FUV-MAMA, ACCUM, 52X0.1    |              | G140M 1222 A                     |                    |                                                        | Sequence 1-4 Non-Int in Planet b, visit 2, part 2 (10) | [==>]                           |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        |                                 | [1]                          |       |
|                                                                        | 5                                                                                                                                                                                                              | Science (STIS.sp.14 47662)  | (2) HD-63433                     | STIS/FUV-MAMA, TIME-TAG, 52X0.1 |              | G140M 1222 A                     | BUFFER-TIME=15 00; |                                                        | Sequence 5-6 Non-Int in Planet b, visit 2, part 2 (10) | 2523 Secs (2523 Secs)           |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              | WAVECAL=NO                       |                    | [==>]                                                  |                                                        | [2]                             |                              |       |
| 6                                                                      | WAVECAL                                                                                                                                                                                                        | WAVE                        | STIS/FUV-MAMA, ACCUM, 52X0.1     |                                 | G140M 1222 A |                                  |                    | Sequence 5-6 Non-Int in Planet b, visit 2, part 2 (10) | [==>]                                                  |                                 |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        | [2]                             |                              |       |
| 7                                                                      | Science (STIS.sp.14 47662)                                                                                                                                                                                     | (2) HD-63433                | STIS/FUV-MAMA, TIME-TAG, 52X0.1  |                                 | G140M 1222 A | BUFFER-TIME=15 00;               |                    | Sequence 7-8 Non-Int in Planet b, visit 2, part 2 (10) | 2523 Secs (2523 Secs)                                  |                                 |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              | WAVECAL=NO                       |                    | [==>]                                                  |                                                        | [3]                             |                              |       |
| 8                                                                      | WAVECAL                                                                                                                                                                                                        | WAVE                        | STIS/FUV-MAMA, ACCUM, 52X0.1     |                                 | G140M 1222 A |                                  |                    | Sequence 7-8 Non-Int in Planet b, visit 2, part 2 (10) | [==>]                                                  |                                 |                              |       |
|                                                                        |                                                                                                                                                                                                                |                             |                                  |                                 |              |                                  |                    |                                                        |                                                        | [3]                             |                              |       |

### Orbit 1

Server Version: 20211222



### Orbit 2

Server Version: 20211222

