



## 16301 - The Circumgalactic Medium at the Lowest Mass End

Cycle: 28, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

### INVESTIGATORS

| <i>Name</i>                                | <i>Institution</i>                                 | <i>E-Mail</i>                     |
|--|--|-----------------------------------|
| <b>Prof. Mary E. Putman (PI) (Contact)</b> | <b>Columbia University in the City of New York</b> | <b>mputman@astro.columbia.edu</b> |
| Dr. Yong Zheng (CoI)                       | University of California - Berkeley                | yongzheng1231@gmail.com           |
| Dr. Andrew Emerick (CoI)                   | Carnegie Institution of Washington                 | aemerick@carnegiescience.edu      |
| Dr. Jessica Kay Werk (CoI)                 | University of Washington                           | jess.werk@gmail.com               |
| Dr. Benjamin Darwin Oppenheimer (CoI)      | University of Colorado at Boulder                  | benjamin.oppenheimer@colorado.edu |
| Dr. Evan Kirby (CoI)                       | California Institute of Technology                 | enk@astro.caltech.edu             |
| Dr. Joseph Neil Burchett (CoI)             | New Mexico State University                        | jnb@nmsu.edu                      |
| Dr. Kristen B W McQuinn (CoI)              | Rutgers the State University of New Jersey         | kristen.mcquinn@rutgers.edu       |

### VISITS

| <i>Visit</i> | <i>Targets used in Visit</i> | <i>Configurations used in Visit</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 01           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 3                  | 29-Jul-2021 11:00:17.0        | yes                           |
| 21           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 1                  | 29-Jul-2021 11:00:18.0        | yes                           |
| 05           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 3                  | 29-Jul-2021 11:00:18.0        | yes                           |

Proposal 16301 (STScI Edit Number: 2, Created: Thursday, July 29, 2021 at 10:00:30 AM Eastern Standard Time) - Overview

| <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> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 02           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 5                  | 29-Jul-2021 11:00:19.0        | yes                           |
| 12           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 4                  | 29-Jul-2021 11:00:20.0        | yes                           |
| 22           | (1) UVQSJ000009.65-163441.4  | COS/FUV<br>COS/NUV                  | 1                  | 29-Jul-2021 11:00:21.0        | yes                           |
| 03           | (2) VV2006-J001641.9-312657  | COS/FUV<br>COS/NUV                  | 3                  | 29-Jul-2021 11:00:22.0        | yes                           |
| 04           | (2) VV2006-J001641.9-312657  | COS/FUV<br>COS/NUV                  | 5                  | 29-Jul-2021 11:00:23.0        | yes                           |
| 08           | (4) RXJ00537+2232            | COS/FUV<br>COS/NUV                  | 2                  | 29-Jul-2021 11:00:25.0        | yes                           |
| 09           | (5) 2MASXJ14292507+4518318   | COS/FUV<br>COS/NUV                  | 4                  | 29-Jul-2021 11:00:26.0        | yes                           |
| 10           | (5) 2MASXJ14292507+4518318   | COS/FUV<br>COS/NUV                  | 5                  | 29-Jul-2021 11:00:27.0        | yes                           |
| 11           | (5) 2MASXJ14292507+4518318   | COS/FUV<br>COS/NUV                  | 4                  | 29-Jul-2021 11:00:28.0        | yes                           |
| 13           | (6) PG1415+451               | COS/FUV<br>COS/NUV                  | 5                  | 29-Jul-2021 11:00:29.0        | yes                           |

45 Total Orbits Used

**ABSTRACT**

COS has created a legacy with the detection of large quantities of baryons in dark matter halos; however, there remains a crucial unprobed mass scale. Dwarf galaxies, or dark matter halo masses  $< 10^{10.5}$  Msun, appear to have lost the vast majority of their baryons, but beyond the central few kpc the baryon distribution is unknown. The circumgalactic medium (CGM) may now harbor the baryons. CGM observations of dwarf galaxies provide crucial insight into the missing baryon problem and feedback efficiency at the low mass end.

We propose to study the distribution, kinematics, metal content, and ionization properties of the CGM of some of the smallest galaxies in the universe through UV-bright background QSOs within the virial radius of dwarf galaxies in the Local Volume. This sample is unique as the low mass range of the dwarf galaxies is unexplored and their proximity means comparisons can be made to their resolved stellar populations and gas distributions. The dwarf galaxy observations will allow for: (1) the ionization, mass and distribution of their CGM to be compared to larger galaxies, (2) constraints on the feedback prescriptions of state-of-the-art dwarf galaxy simulations, (3) a comparison of the metals in the CGM to what remains in the stars and gas in the main body of the dwarf galaxies.

### **OBSERVING DESCRIPTION**

This survey of the circumgalactic medium of dwarf galaxies in the Local Volume uses the Cosmic Origins Spectrograph in medium resolution mode with the G130M and G160M gratings. We will observe 5 QSOs distributed within the virial radii of the dwarf galaxies. With the G130M and G160M gratings, we will cover 1150 - 1775 AA, and this will allow us to achieve our goal of observing a variety of metal absorption lines to constrain the ionization properties and mass of metals in the halos. For our science goals, carbon and silicon are key elements as their various ionization states are covered by both G130M and G160M gratings and these lines are frequently detected in the CGM. The observations are designed to yield S/N  $\sim$  15, high resolution ( $\sim$ 20 km/s) spectra at Si II (1260) and C IV (1550).

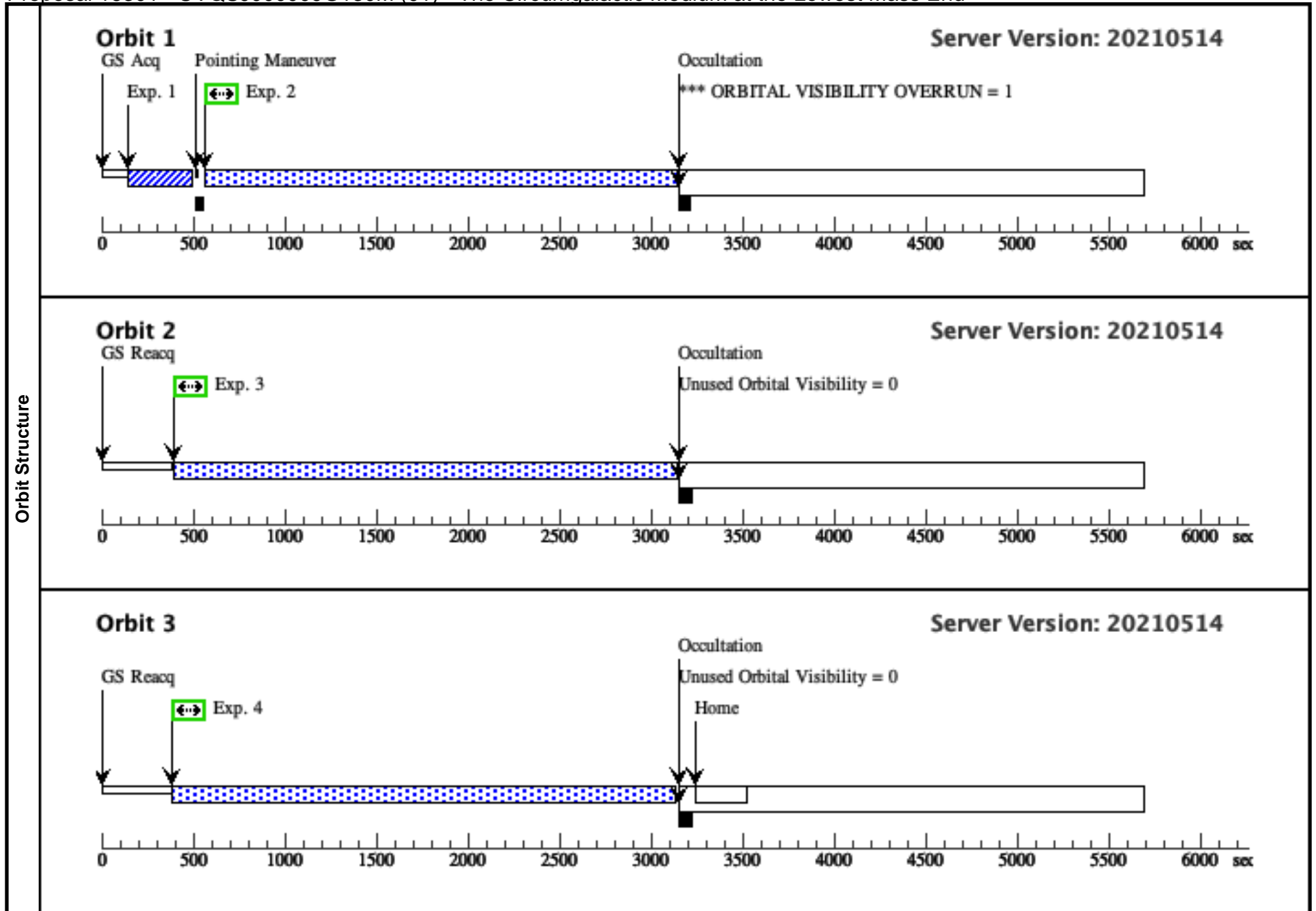
The GALEX data were examined for all sources to estimate the UV flux level and check if the sources are extended in the UV. The FUV fluxes are noted for each target and one of our original sources (MCG-03-01-002) was found to be extended on close inspection of the GALEX imaging. We have replaced this source with PG 1415+451 which provides an additional sightline for the dwarf galaxy DDO190 to map its CGM. The SDSS and NED images were checked to ensure there are no obvious stars or galaxies interfering with the GALEX flux. All our targets are selected to be brighter than 18.5 AB mag in FUV.

All exposure times were calculated with the COS ETC. We will acquire our sources with the NUV imaging mode and use Mirror B for all of our sources given their brightness. For the G130M grating, we have decided to stick with a central wavelength of 1291 and alternate between FP-POS 3 and 4 given Segment A is not available with the other central wavelengths. For G160M, we alternate between a central wavelength of 1589 and 1611 and use the majority of the FP-POS positions for each source to optimize the S/N across the spectrum.

Proposal 16301 - UVQSJ000009G130M (01) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:31 GMT 2021

|                      |  |  |                              |                         |                                   |                                   |  |                       |                       |     |
|----------------------|--|--|------------------------------|-------------------------|-----------------------------------|-----------------------------------|--|-----------------------|-----------------------|-----|
| <b>Visit</b>         | <b>Proposal 16301, UVQSJ000009G130M (01), failed</b><br><b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 6 orbits G130M</i> |  |                              |                         |                                   |                                   |  |                       |                       |     |
|                      | <b>Diagnosics</b><br>(UVQSJ000009G130M (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN   |  |                              |                         |                                   |                                   |  |                       |                       |     |
| <b>Fixed Targets</b> | # <b>Name</b> <b>Target Coordinates</b> <b>Targ. Coord. Corrections</b> <b>Fluxes</b> <b>Miscellaneous</b>   | (1)      UVQSJ000009.65-163441.4      RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000<br>V=17.1<br>FUV=18.48<br>Reference Frame: ICRS |                              |                         |                                   |                                   |  |                       |                       |     |
|                      | <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<br>Extended=NO  |  |                              |                         |                                   |                                   |  |                       |                       |     |
| <b>Exposures</b>     | # <b>Label (ETC Run)</b> <b>Target</b> <b>Config,Mode,Aperture</b> <b>Spectral Els.</b> <b>Opt. Params.</b> <b>Special Reqs.</b> <b>Groups</b> <b>Exp. Time (Total)/[Actual Dur.]</b> <b>Orbit</b>       |  |                              |                         |                                   |                                   |  |                       |                       |     |
|                      | 1  | UVQSJ000009-ACQ (COS.ta.144 7925)  | (1) UVQSJ000009.6 5-163441.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                           |                                   |  |                       | 21.7 Secs (21.7 Secs) |     |
|                      |  |  |                              |                         |                                   |                                   |  |                       | [==>]                 | [1] |
|                      | 2  | UVQSJ000009 (COS.sp.144 7954)  | (1) UVQSJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A                   | BUFFER-TIME=46<br>36;<br>FP-POS=3 |  |                       | 2300 Secs (2407 Secs) |     |
|                      |  |  |                              |                         |                                   |                                   |  |                       | [==>2407.0 Secs ]     | [1] |
| 3                    | UVQSJ000009 (COS.sp.144 7954)  | (1) UVQSJ000009.6 5-163441.4   | COS/FUV, TIME-TAG, PSA       | G130M<br>1291 A         | BUFFER-TIME=46<br>36;<br>FP-POS=3 |                                   |  | 2600 Secs (2700 Secs) |                       |     |
|                      |  |  |                              |                         |                                   |                                   |  | [==>2700.0 Secs ]     | [2]                   |     |
| 4                    | UVQSJ000009 (COS.sp.144 7954)  | (1) UVQSJ000009.6 5-163441.4   | COS/FUV, TIME-TAG, PSA       | G130M<br>1291 A         | BUFFER-TIME=46<br>36;<br>FP-POS=4 |                                   |  | 2600 Secs (2700 Secs) |                       |     |
|                      |  |  |                              |                         |                                   |                                   |  | [==>2700.0 Secs ]     | [3]                   |     |



Proposal 16301 - UVQJ000009G130M (21) - The Circumgalactic Medium at the Lowest Mass End

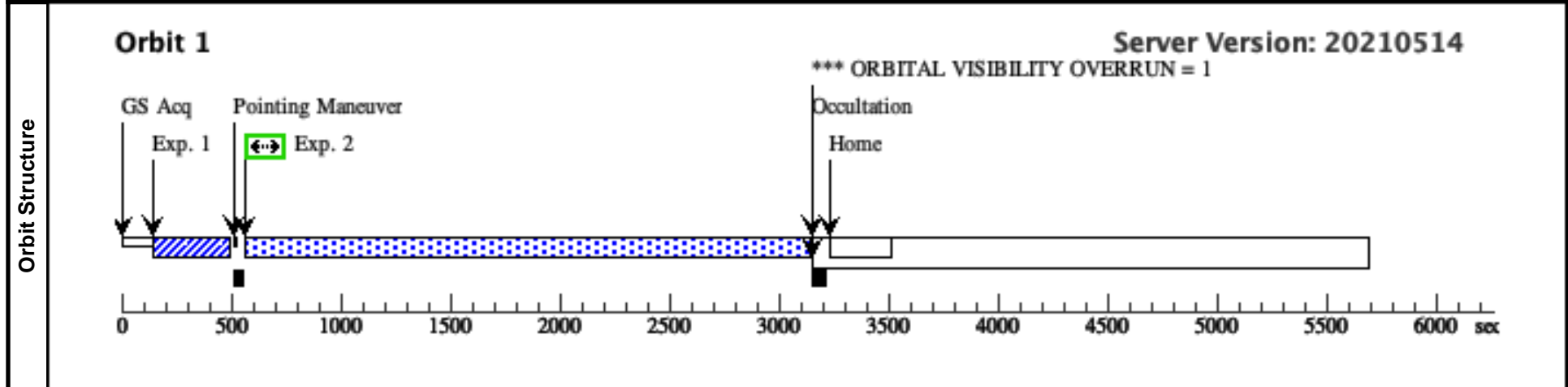
Thu Jul 29 15:00:31 GMT 2021

|              |   |
|--------------|---|
| <b>Visit</b> | <b>Proposal 16301, UVQJ000009G130M (21), implementation</b><br><b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 6 orbits G130M</i> |
|              | (UVQJ000009G130M (21)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN  |

|                    |  |
|--------------------|--|
| <b>Diagnostics</b> | (UVQJ000009G130M (21)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN |
|--------------------|--|

| <b>Fixed Targets</b>  | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>UVQJ000009.65-163441.4</td> <td>RA: 00 00 9.6480 (.0402000d)<br/>Dec: -16 34 41.52 (-16.57820d)<br/>Equinox: J2000</td> <td>Redshift: 0.64765</td> <td>V=17.1<br/>FUV=18.48</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> | #  | Name               | Target Coordinates       | Targ. Coord. Corrections | Fluxes        | Miscellaneous | (1) | UVQJ000009.65-163441.4 | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765 | V=17.1<br>FUV=18.48 | Reference Frame: ICRS |
|---|--|--|--------------------|--------------------------|--------------------------|---------------|---------------|-----|------------------------|--|-------------------|---------------------|-----------------------|
|   | #  | Name   | Target Coordinates | Targ. Coord. Corrections | Fluxes                   | Miscellaneous |               |     |                        |  |                   |                     |                       |
| (1)   | UVQJ000009.65-163441.4   | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765  | V=17.1<br>FUV=18.48      | Reference Frame: ICRS    |               |               |     |                        |  |                   |                     |                       |
| <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<br>Extended=NO |  |  |                    |                          |                          |               |               |     |                        |  |                   |                     |                       |

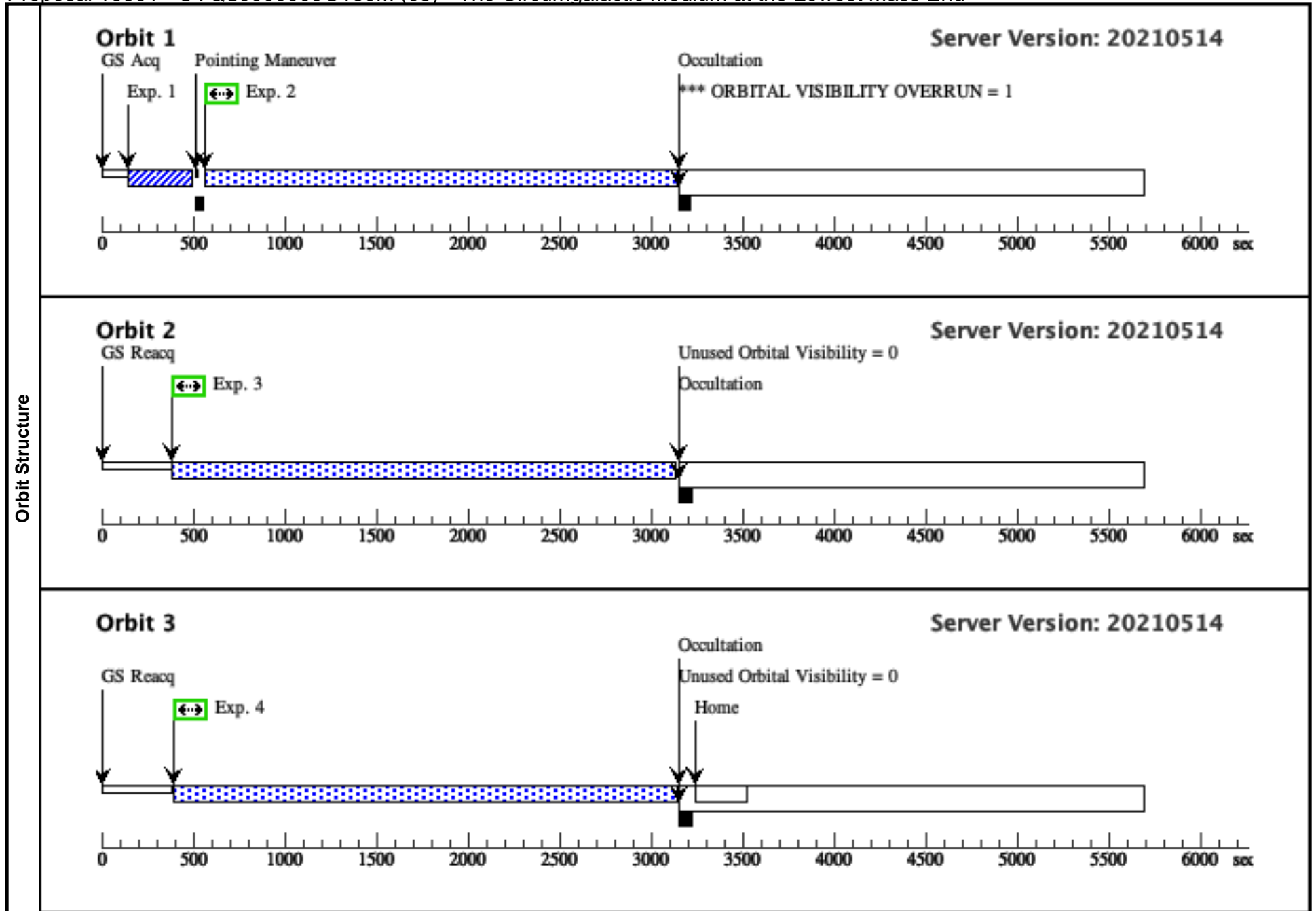
| <b>Exposures</b> | # | Label (ETC Run)                  | Target                      | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                      | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.]            | Orbit |
|------------------|---|----------------------------------|-----------------------------|-------------------------|-----------------|-----------------------------------|---------------|--------|--|-------|
|                  | 1 | UVQJ000009-ACQ (COS.ta.144 7925) | (1) UVQJ000009.6 5-163441.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                   |               |        | 21.7 Secs (21.7 Secs)<br>[==>]             | [1]   |
|                  | 2 | UVQJ000009 (COS.sp.144 7954)     | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | BUFFER-TIME=46<br>36;<br>FP-POS=4 |               |        | 2300 Secs (2407 Secs)<br>[==>2407.0 Secs ] | [1]   |



Proposal 16301 - UVQJ000009G130M (05) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:31 GMT 2021

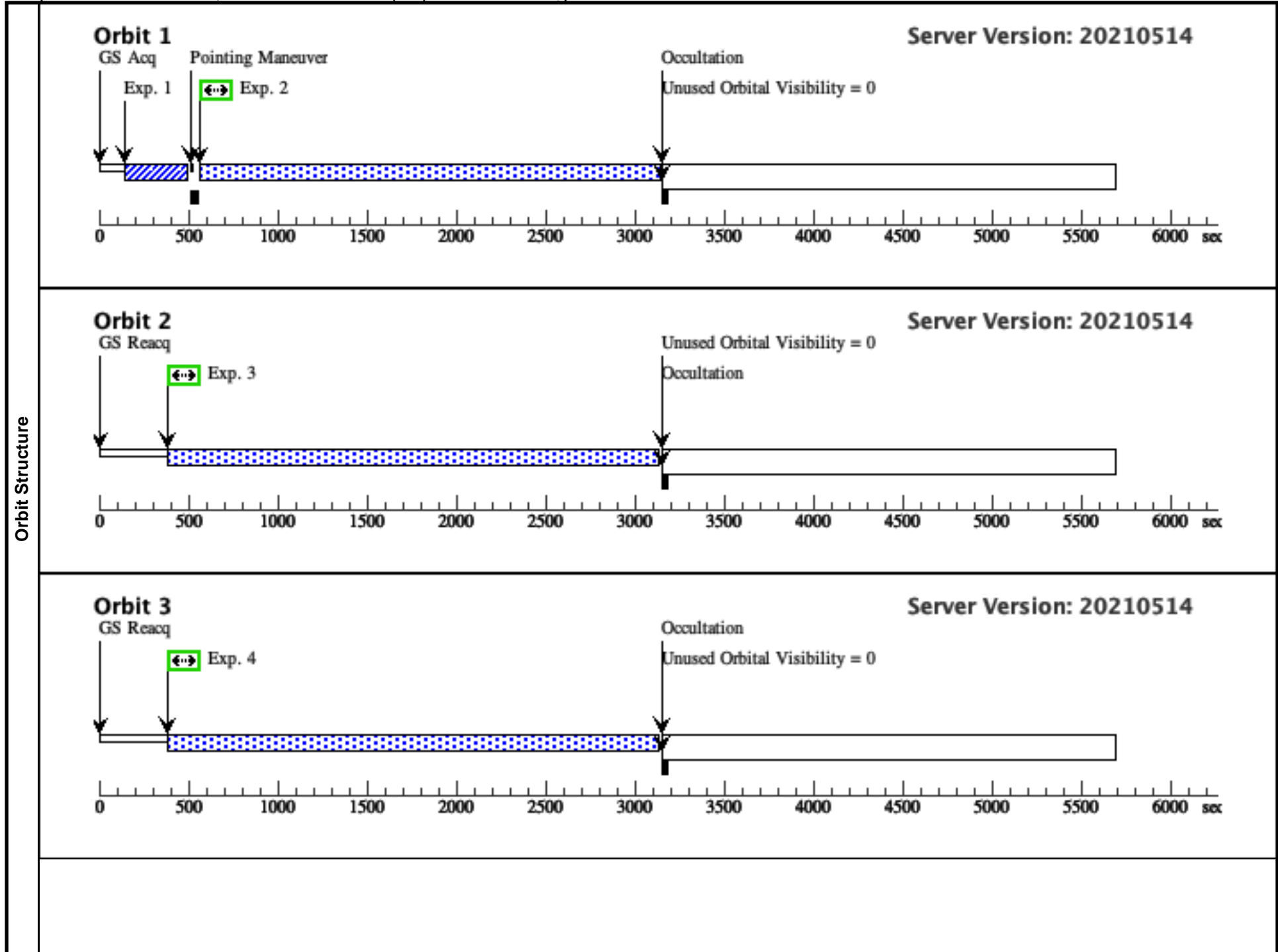
| <b>Visit</b>  | <b>Proposal 16301, UVQJ000009G130M (05), completed</b><br><b>Diagnostic Status: Warning</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 6 orbits G130M, 2 - 3 orbit visits</i>   |  |                         |                          |                                   |               |                 |  |                        |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
|---|--|--|-------------------------|--------------------------|-----------------------------------|---------------|-----------------|--|------------------------|--|-------------------|---------------------|-----------------------|---|-------|---|----------------------------------|-----------------------------|-------------------------|---------|--|--|--|--------------------------------|-----|---|------------------------------|-----------------------------|------------------------|-----------------|-----------------------------------|--|--|--|-----|---|------------------------------|-----------------------------|------------------------|-----------------|-----------------------------------|--|--|--|-----|---|------------------------------|-----------------------------|------------------------|-----------------|-----------------------------------|--|--|--|-----|
|   | <b>Diagnosics</b><br>(UVQJ000009G130M (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN  |  |                         |                          |                                   |               |                 |  |                        |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
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|   | #  | Name   | Target Coordinates      | Targ. Coord. Corrections | Fluxes                            | Miscellaneous |                 |  |                        |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
| (1)   | UVQJ000009.65-163441.4   | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765       | V=17.1<br>FUV=18.48      | Reference Frame: ICRS             |               |                 |  |                        |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
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| #   | Label (ETC Run)  | Target   | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                      | Special Reqs. | Groups          | Exp. Time (Total)/[Actual Dur.]            | Orbit                  |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
| 1   | UVQJ000009-ACQ (COS.ta.144 7925)   | (1) UVQJ000009.6 5-163441.4  | COS/NUV, ACQ/IMAGE, PSA | MIRRORB                  |                                   |               |                 | 21.7 Secs (21.7 Secs)<br>[==>]             | [1]                    |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
| 2   | UVQJ000009 (COS.sp.144 7954)   | (1) UVQJ000009.6 5-163441.4  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | BUFFER-TIME=46<br>36;<br>FP-POS=3 |               |                 | 2300 Secs (2407 Secs)<br>[==>2407.0 Secs ] | [1]                    |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
| 3   | UVQJ000009 (COS.sp.144 7954)   | (1) UVQJ000009.6 5-163441.4  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | BUFFER-TIME=46<br>36;<br>FP-POS=4 |               |                 | 2600 Secs (2700 Secs)<br>[==>2700.0 Secs ] | [2]                    |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |
| 4   | UVQJ000009 (COS.sp.144 7954)   | (1) UVQJ000009.6 5-163441.4  | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A          | BUFFER-TIME=46<br>36;<br>FP-POS=4 |               |                 | 2600 Secs (2700 Secs)<br>[==>2700.0 Secs ] | [3]                    |  |                   |                     |                       |   |       |   |                                  |                             |                         |         |  |  |  |                                |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |   |                              |                             |                        |                 |                                   |  |  |  |     |

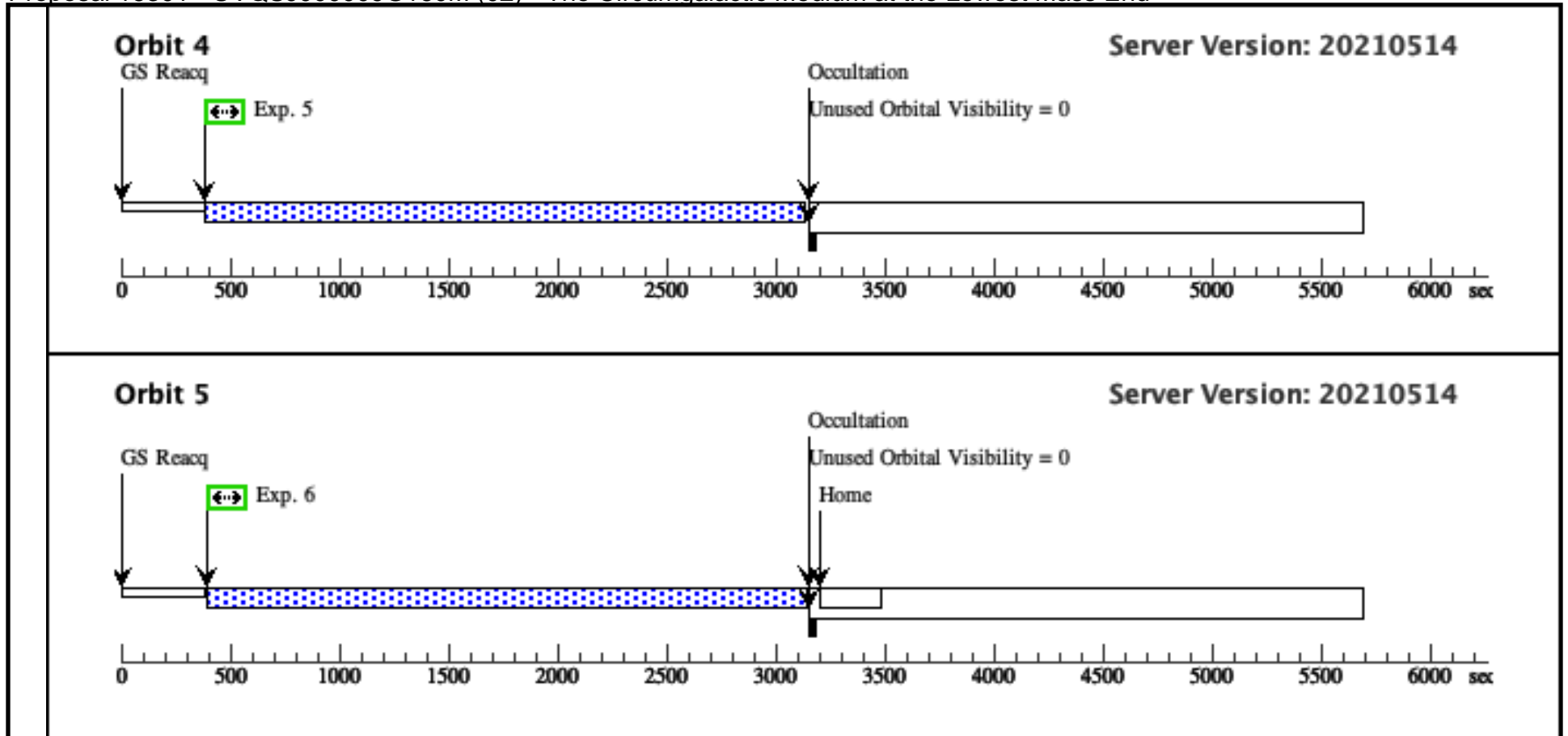


Proposal 16301 - UVQJ000009G160M (02) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:31 GMT 2021

| Visit                    | <b>Proposal 16301, UVQJ000009G160M (02), completed</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 9 orbits G160M</i> |  |                             |                         |                       |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|--------------------------|---|--|-----------------------------|-------------------------|-----------------------|------------------------------------|---------------|---------------|---------------------------------|--|--|-------------------|---------------------|-----------------------|------------------|--|--|--|--|--|------------------------|--|--|--|--|--|--------------------------|--|--|--|--|--|--------------------|--|--|--|--|
|                          | Fixed Targets   | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>UVQJ000009.65-163441.4</td> <td>RA: 00 00 9.6480 (.0402000d)<br/>Dec: -16 34 41.52 (-16.57820d)<br/>Equinox: J2000</td> <td>Redshift: 0.64765</td> <td>V=17.1<br/>FUV=18.48</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"><i>Comments:</i></td> </tr> <tr> <td colspan="6"><i>Category=GALAXY</i></td> </tr> <tr> <td colspan="6"><i>Description=[QSO]</i></td> </tr> <tr> <td colspan="6"><i>Extended=NO</i></td> </tr> </tbody> </table> | #                           | Name                    | Target Coordinates    | Targ. Coord. Corrections           | Fluxes        | Miscellaneous | (1)                             | UVQJ000009.65-163441.4                     | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765 | V=17.1<br>FUV=18.48 | Reference Frame: ICRS | <i>Comments:</i> |  |  |  |  |  | <i>Category=GALAXY</i> |  |  |  |  |  | <i>Description=[QSO]</i> |  |  |  |  |  | <i>Extended=NO</i> |  |  |  |  |
| #                        | Name  | Target Coordinates   | Targ. Coord. Corrections    | Fluxes                  | Miscellaneous         |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| (1)                      | UVQJ000009.65-163441.4  | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000   | Redshift: 0.64765           | V=17.1<br>FUV=18.48     | Reference Frame: ICRS |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Comments:</i>         |   |  |                             |                         |                       |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Category=GALAXY</i>   |   |  |                             |                         |                       |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Description=[QSO]</i> |   |  |                             |                         |                       |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Extended=NO</i>       |   |  |                             |                         |                       |                                    |               |               |                                 |  |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| Exposures                | #   | Label (ETC Run)  | Target                      | Config,Mode,Aperture    | Spectral Els.         | Opt. Params.                       | Special Reqs. | Groups        | Exp. Time (Total)/[Actual Dur.] | Orbit                                      |  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 1   | UVQJ000009-ACQ (COS.ta.144 7925)   | (1) UVQJ000009.6 5-163441.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB               |                                    |               |               |                                 | 21.7 Secs (21.7 Secs)<br>[==>]             | [1]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 2   | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=15<br>300;<br>FP-POS=1 |               |               |                                 | 2300 Secs (2364 Secs)<br>[==>2364.0 Secs ] | [1]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 3   | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=15<br>300;<br>FP-POS=2 |               |               |                                 | 2700 Secs (2700 Secs)<br>[==>]             | [2]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 4   | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=15<br>300;<br>FP-POS=3 |               |               |                                 | 2700 Secs (2700 Secs)<br>[==>]             | [3]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 5   | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=15<br>300;<br>FP-POS=4 |               |               |                                 | 2700 Secs (2700 Secs)<br>[==>]             | [4]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|                          | 6   | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=15<br>300;<br>FP-POS=4 |               |               |                                 | 2700 Secs (2700 Secs)<br>[==>]             | [5]  |                   |                     |                       |                  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |

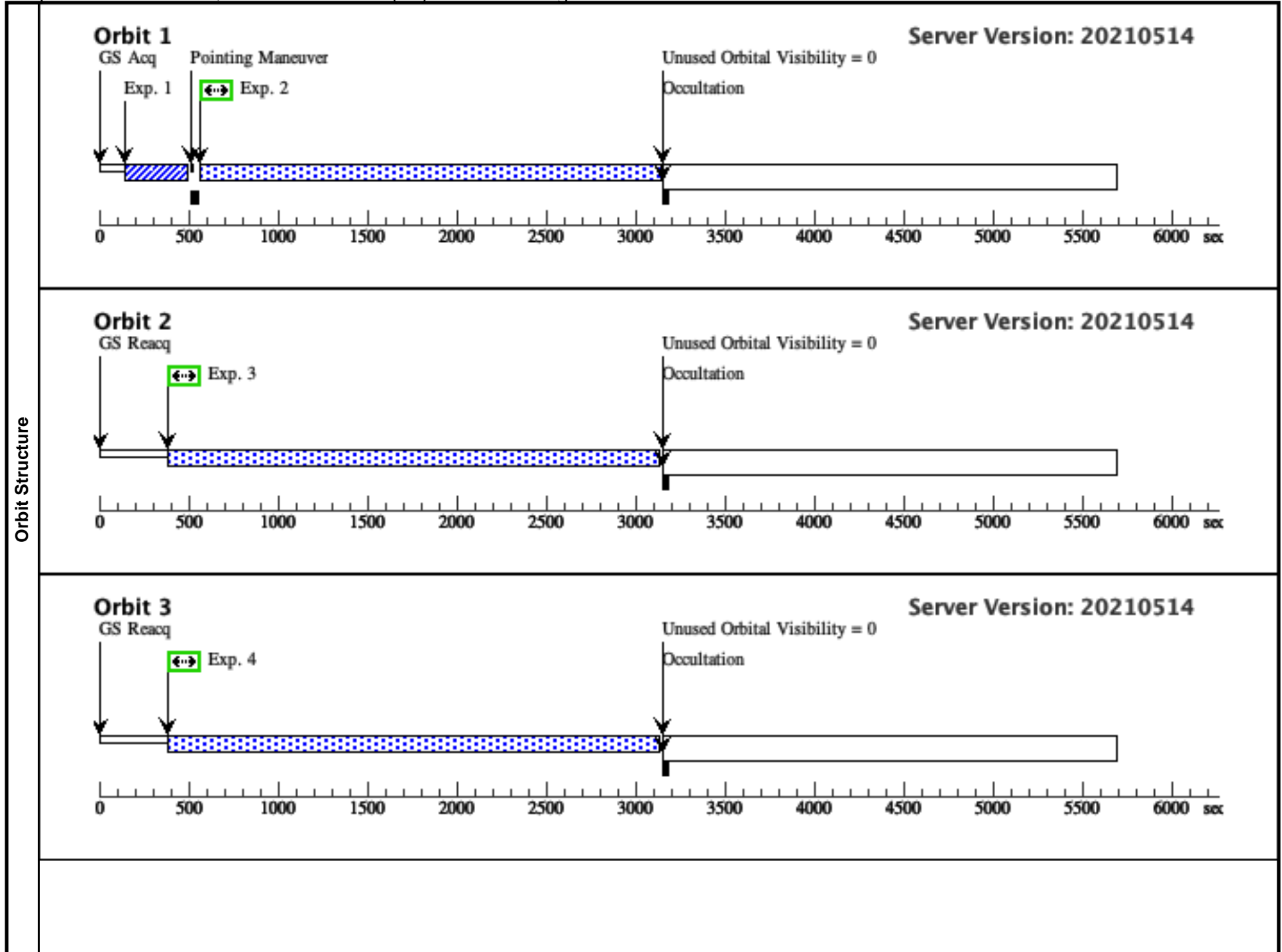


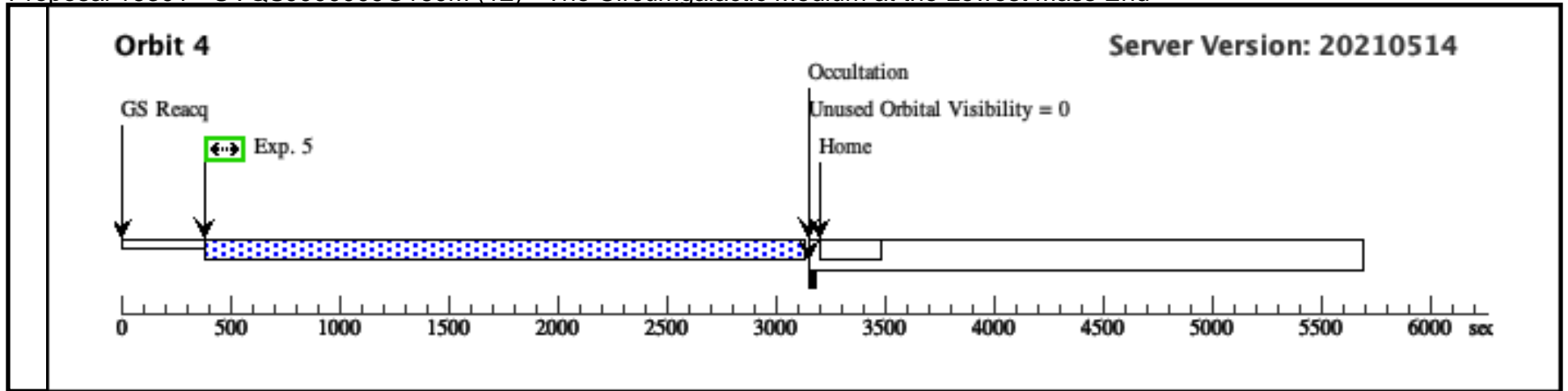


Proposal 16301 - UVQJ000009G160M (12) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:31 GMT 2021

| Visit   | <b>Proposal 16301, UVQJ000009G160M (12), failed</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 9 orbits G160M</i> |  |                             |                         |                       |                                    |               |        |  |       |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
|---|--|--|-----------------------------|-------------------------|-----------------------|------------------------------------|---------------|--------|--|-------|--|---|------|--------------------|--------------------------|--------|---------------|-----|------------------------|--|-------------------|---------------------|-----------------------|---|--|--|--|--|
|   | Fixed Targets  | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>UVQJ000009.65-163441.4</td> <td>RA: 00 00 9.6480 (.0402000d)<br/>Dec: -16 34 41.52 (-16.57820d)<br/>Equinox: J2000</td> <td>Redshift: 0.64765</td> <td>V=17.1<br/>FUV=18.48</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"> <i>Comments:</i><br/>                     Category=GALAXY<br/>                     Description=[QSO]<br/>                     Extended=NO                 </td> </tr> </tbody> </table> |                             |                         |                       |                                    |               |        |  |       |  | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | (1) | UVQJ000009.65-163441.4 | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765 | V=17.1<br>FUV=18.48 | Reference Frame: ICRS | <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<br>Extended=NO |  |  |  |  |
| #   | Name   | Target Coordinates   | Targ. Coord. Corrections    | Fluxes                  | Miscellaneous         |                                    |               |        |  |       |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
| (1)   | UVQJ000009.65-163441.4   | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000   | Redshift: 0.64765           | V=17.1<br>FUV=18.48     | Reference Frame: ICRS |                                    |               |        |  |       |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
| <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<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  | UVQJ000009-ACQ (COS.ta.144 7925)   | (1) UVQJ000009.6 5-163441.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB               |                                    |               |        | 21.7 Secs (21.7 Secs)<br>[==>]             | [1]   |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
|   | 2  | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=15<br>300;<br>FP-POS=1 |               |        | 2300 Secs (2357 Secs)<br>[==>2357.0 Secs ] | [1]   |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
|   | 3  | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=15<br>300;<br>FP-POS=2 |               |        | 2700 Secs (2700 Secs)<br>[==>]             | [2]   |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
|   | 4  | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=15<br>300;<br>FP-POS=3 |               |        | 2700 Secs (2700 Secs)<br>[==>]             | [3]   |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |
|   | 5  | UVQJ000009 (COS.sp.144 8312)   | (1) UVQJ000009.6 5-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=15<br>300;<br>FP-POS=4 |               |        | 2700 Secs (2700 Secs)<br>[==>]             | [4]   |  |   |      |                    |                          |        |               |     |                        |  |                   |                     |                       |   |  |  |  |  |





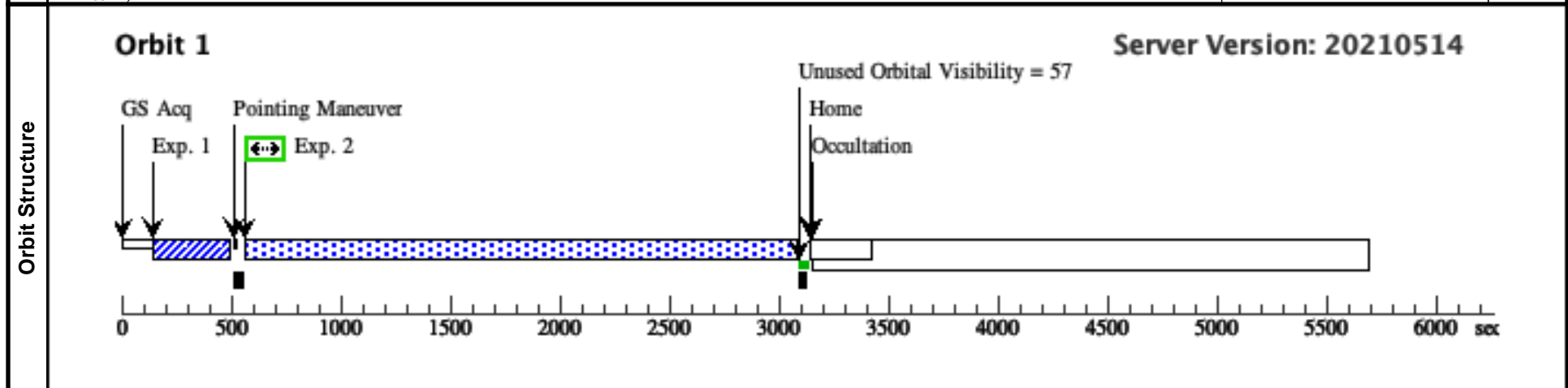
Proposal 16301 - UVQJ000009G160M (22) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:31 GMT 2021

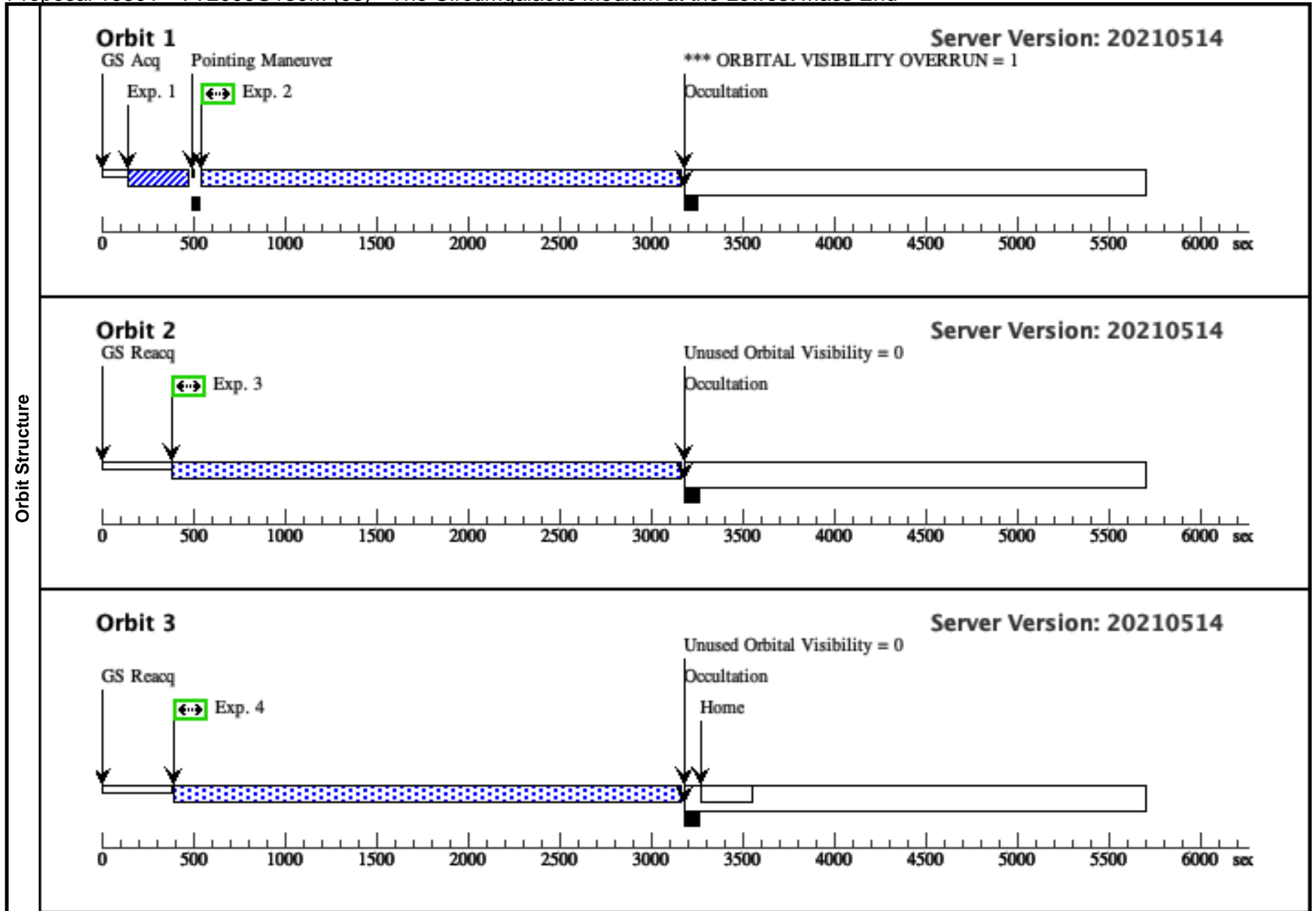
|                                 |   |  |  |  |  |
|---------------------------------|---|--|--|--|--|
| <b>Visit</b>                    | <b>Proposal 16301, UVQJ000009G160M (22), implementation</b> |  |  |  |  |
|                                 | <b>Diagnostic Status: No Diagnostics</b>                    |  |  |  |  |
|                                 | Scientific Instruments: COS/FUV, COS/NUV                    |  |  |  |  |
|                                 | Special Requirements: (none)                                |  |  |  |  |
| <i>Comments: 9 orbits G160M</i> |   |  |  |  |  |

| <b>Fixed Targets</b> | #                        | Name                   | Target Coordinates   | Targ. Coord. Corrections | Fluxes              | Miscellaneous         |
|----------------------|--------------------------|------------------------|--|--------------------------|---------------------|-----------------------|
|                      | (1)                      | UVQJ000009.65-163441.4 | RA: 00 00 9.6480 (.0402000d)<br>Dec: -16 34 41.52 (-16.57820d)<br>Equinox: J2000 | Redshift: 0.64765        | V=17.1<br>FUV=18.48 | Reference Frame: ICRS |
|                      | <i>Comments:</i>         |                        |  |                          |                     |                       |
|                      | <i>Category=GALAXY</i>   |                        |  |                          |                     |                       |
|                      | <i>Description=[QSO]</i> |                        |  |                          |                     |                       |
|                      | <i>Extended=NO</i>       |                        |  |                          |                     |                       |

| <b>Exposures</b> | # | Label (ETC Run)                  | Target                     | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                       | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|------------------|---|----------------------------------|----------------------------|-------------------------|-----------------|------------------------------------|---------------|--------|---------------------------------|-------|
|                  | 1 | UVQJ000009-ACQ (COS.ta.144 7925) | (1) UVQJ000009.65-163441.4 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                    |               |        | 21.7 Secs (21.7 Secs)<br>[==>]  | [1]   |
|                  | 2 | UVQJ000009 (COS.sp.144 8312)     | (1) UVQJ000009.65-163441.4 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A | BUFFER-TIME=15<br>300;<br>FP-POS=4 |               |        | 2300 Secs (2300 Secs)<br>[==>]  | [1]   |



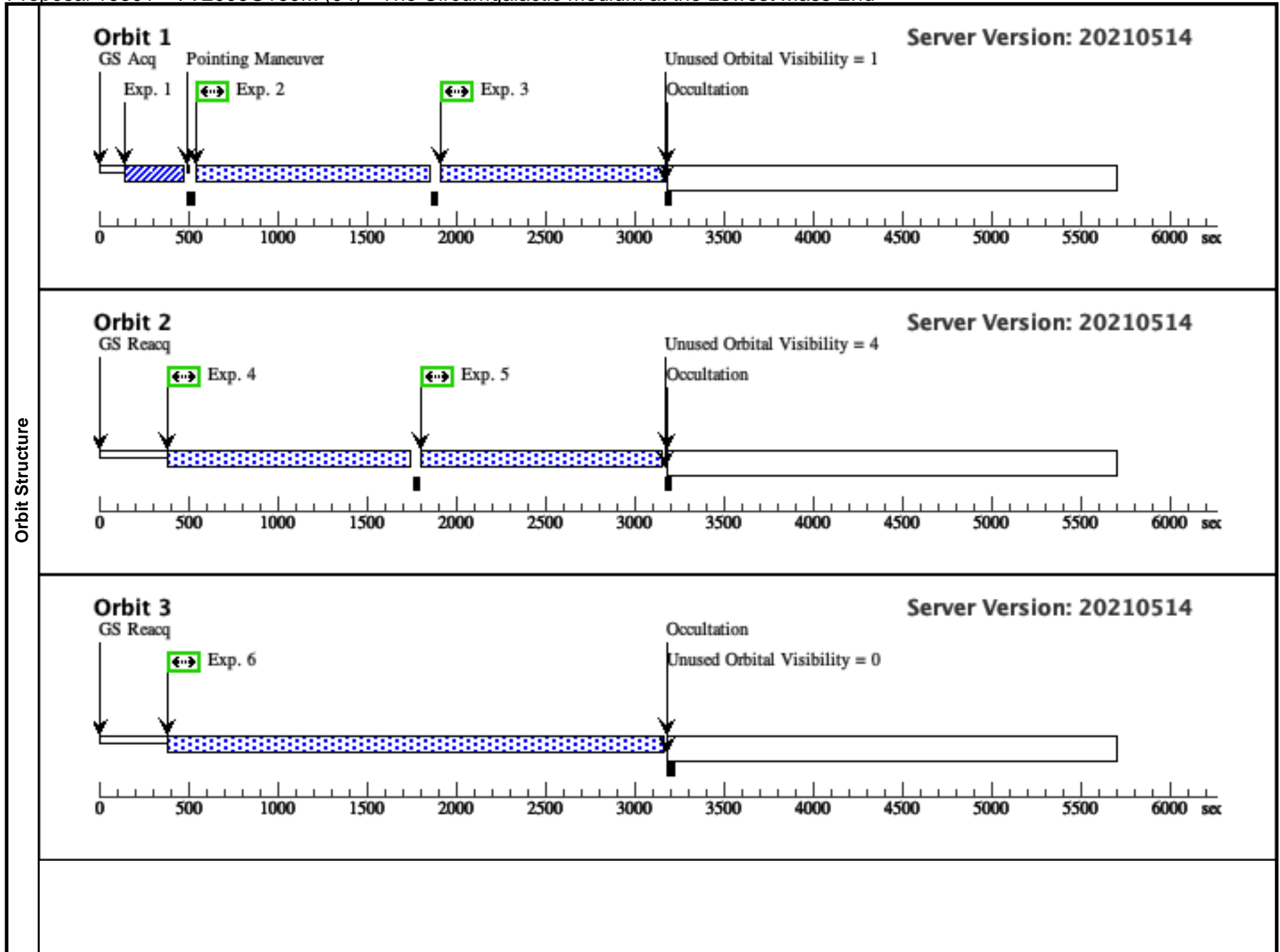


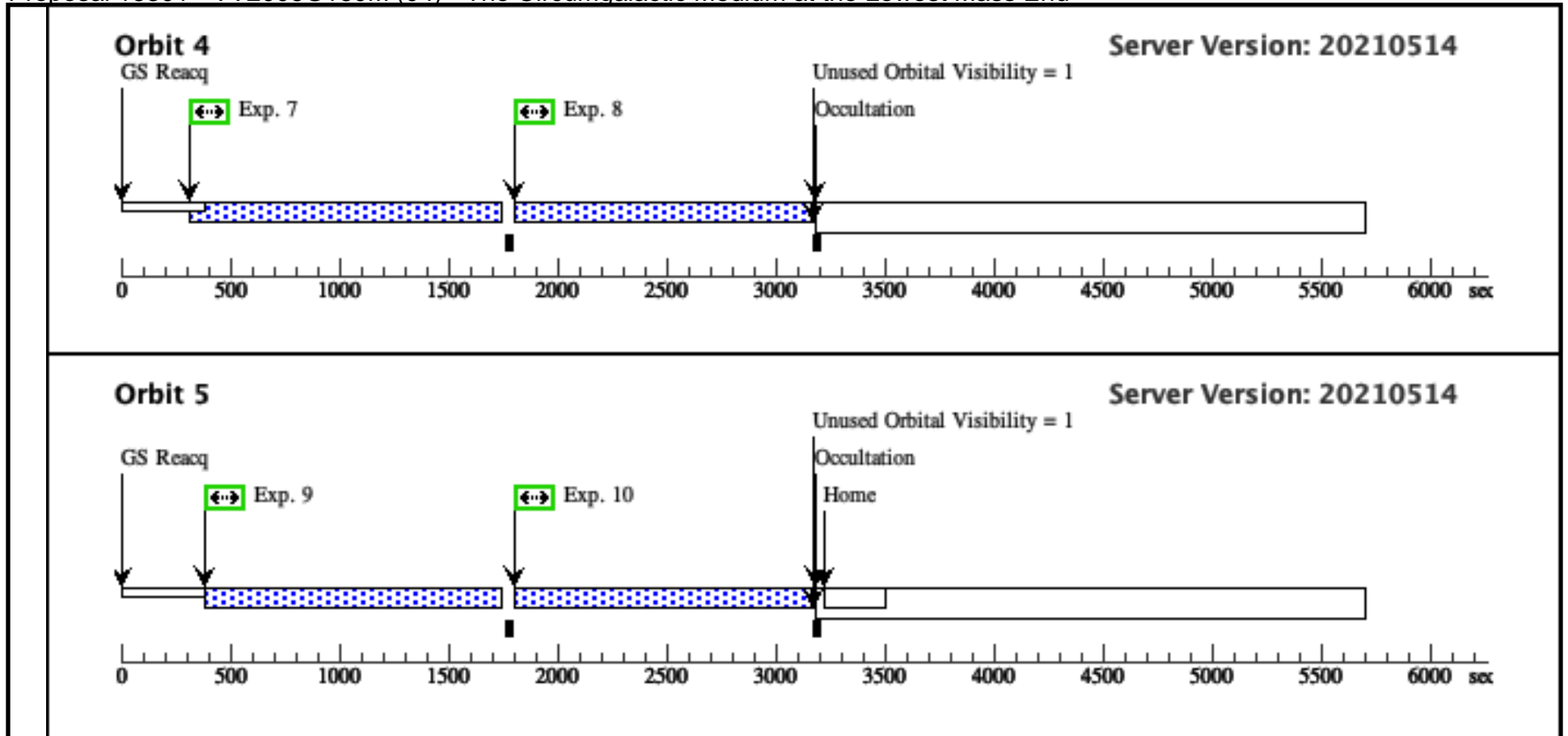


Proposal 16301 - VV2006G160M (04) - The Circumgalactic Medium at the Lowest Mass End

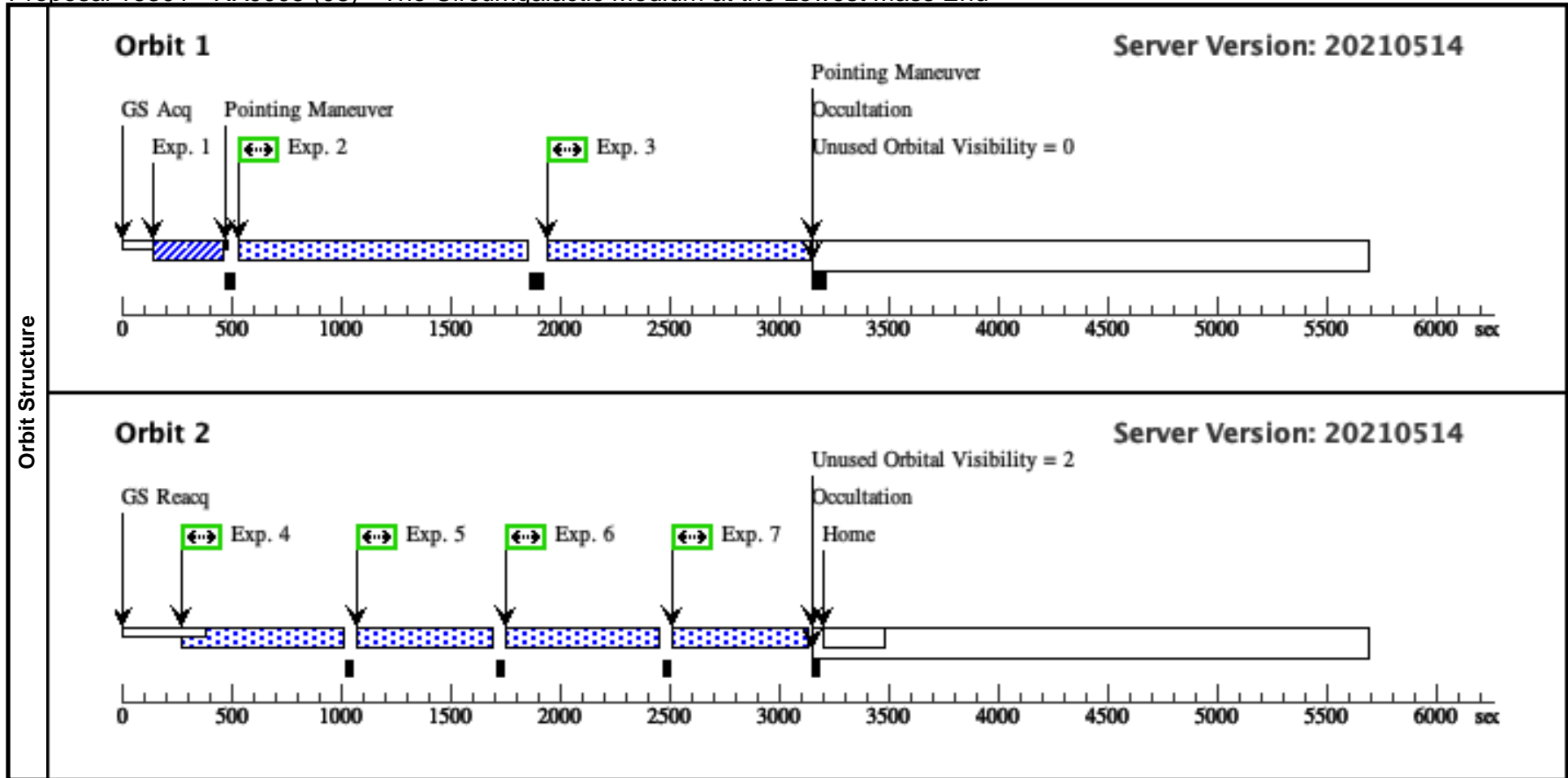
Thu Jul 29 15:00:31 GMT 2021

| Visit  | <b>Proposal 16301, VV2006G160M (04), completed</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 5 orbits</i> |  |                             |                         |                       |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|--|---|--|-----------------------------|-------------------------|-----------------------|-----------------------------------|---------------|--------|--|--------------------------------|-----|---|------|--------------------|--------------------------|--------|---------------|-----|-------------------------|--|-----------------|----------------------|-----------------------|--|--|--|--|--|--|------------------------|--|--|--|--|--|--------------------------|--|--|--|--|--|--------------------|--|--|--|--|
|  | Fixed Targets   | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(2)</td> <td>VV2006-J001641.9-312657</td> <td>RA: 00 16 41.8831 (4.1745129d)<br/>Dec: -31 26 56.72 (-31.44909d)<br/>Equinox: J2000</td> <td>Redshift: 0.361</td> <td>V=16.45<br/>FUV=17.43</td> <td>Reference Frame: ICRS</td> </tr> <tr> <td colspan="6"><i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Slight tweak of the coords to be the ICRS SIMBAD.</i></td> </tr> <tr> <td colspan="6"><i>Category=GALAXY</i></td> </tr> <tr> <td colspan="6"><i>Description=[QSO]</i></td> </tr> <tr> <td colspan="6"><i>Extended=NO</i></td> </tr> </tbody> </table> |                             |                         |                       |                                   |               |        |  |                                |     | # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous | (2) | VV2006-J001641.9-312657 | RA: 00 16 41.8831 (4.1745129d)<br>Dec: -31 26 56.72 (-31.44909d)<br>Equinox: J2000 | Redshift: 0.361 | V=16.45<br>FUV=17.43 | Reference Frame: ICRS | <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Slight tweak of the coords to be the ICRS SIMBAD.</i> |  |  |  |  |  | <i>Category=GALAXY</i> |  |  |  |  |  | <i>Description=[QSO]</i> |  |  |  |  |  | <i>Extended=NO</i> |  |  |  |  |
| #  | Name  | Target Coordinates   | Targ. Coord. Corrections    | Fluxes                  | Miscellaneous         |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| (2)  | VV2006-J001641.9-312657   | RA: 00 16 41.8831 (4.1745129d)<br>Dec: -31 26 56.72 (-31.44909d)<br>Equinox: J2000   | Redshift: 0.361             | V=16.45<br>FUV=17.43    | Reference Frame: ICRS |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Slight tweak of the coords to be the ICRS SIMBAD.</i> |   |  |                             |                         |                       |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Category=GALAXY</i>   |   |  |                             |                         |                       |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Description=[QSO]</i>   |   |  |                             |                         |                       |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| <i>Extended=NO</i>   |   |  |                             |                         |                       |                                   |               |        |  |                                |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
| Exposures  | #   | Label (ETC Run)  | Target                      | Config,Mode,Aperture    | Spectral Els.         | Opt. Params.                      | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.]            | Orbit                          |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 1   | VV2006-AC Q (COS.ta.144 8374)  | (2) VV2006-J001641.9-312657 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB               |                                   |               |        |  | 11.9 Secs (11.9 Secs)<br>[==>] | [1] |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 2   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=94<br>70;<br>FP-POS=1 |               |        | 1000 Secs (1096 Secs)<br>[==>1096.0 Secs ] | [1]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 3   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=94<br>70;<br>FP-POS=2 |               |        | 1100 Secs (1196 Secs)<br>[==>1196.0 Secs ] | [1]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 4   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=94<br>70;<br>FP-POS=3 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [2]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 5   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=94<br>70;<br>FP-POS=3 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [2]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 6   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A       | BUFFER-TIME=94<br>70;<br>FP-POS=4 |               |        | 2700 Secs (2724 Secs)<br>[==>2724.0 Secs ] | [3]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 7   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=94<br>70;<br>FP-POS=1 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [4]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 8   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=94<br>70;<br>FP-POS=2 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [4]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 9   | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=94<br>70;<br>FP-POS=3 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [5]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |
|  | 10  | VV2006 (COS.sp.144 8997)   | (2) VV2006-J001641.9-312657 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A       | BUFFER-TIME=94<br>70;<br>FP-POS=4 |               |        | 1100 Secs (1304 Secs)<br>[==>1304.0 Secs ] | [5]                            |     |   |      |                    |                          |        |               |     |                         |  |                 |                      |                       |  |  |  |  |  |  |                        |  |  |  |  |  |                          |  |  |  |  |  |                    |  |  |  |  |

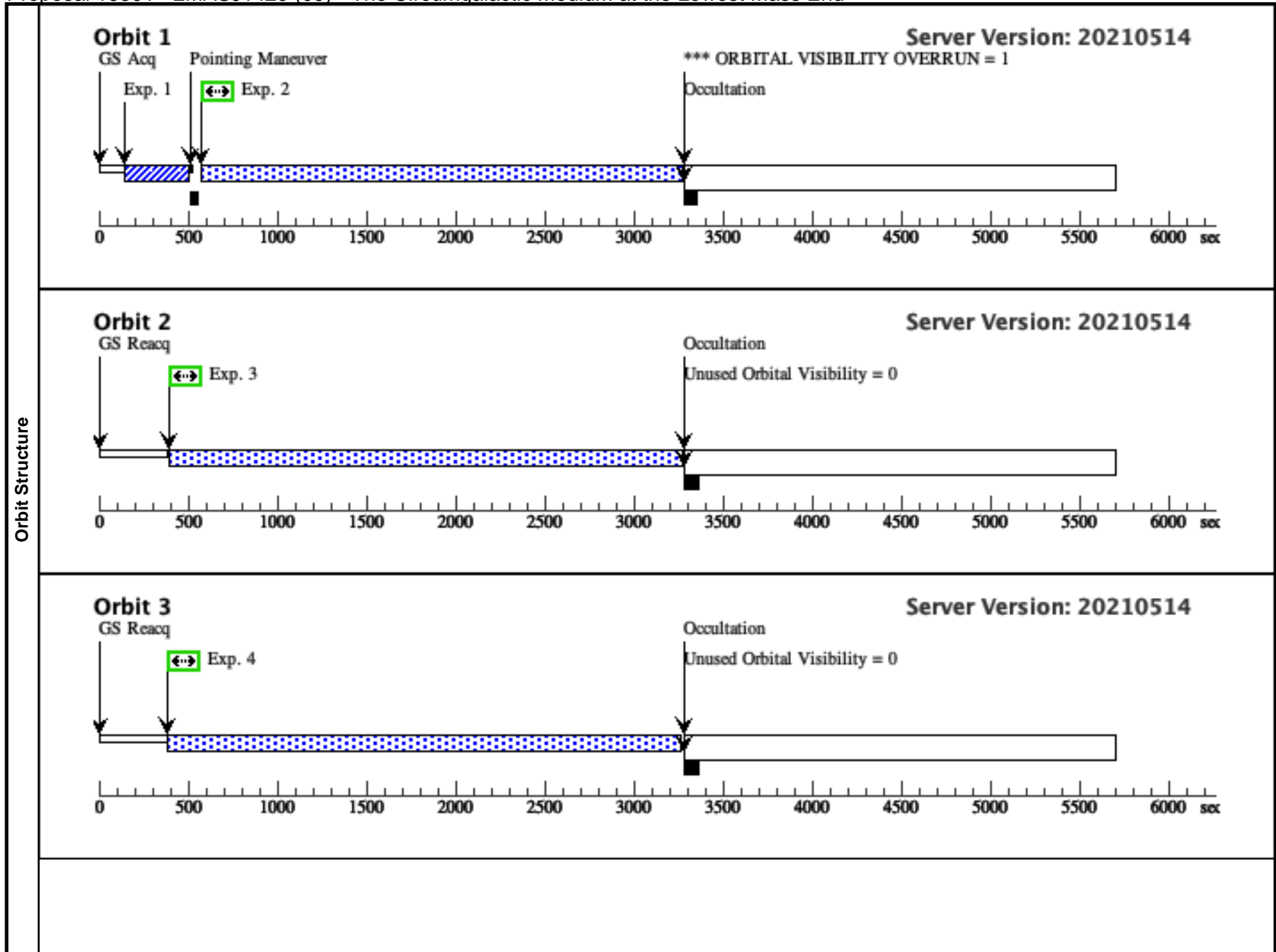


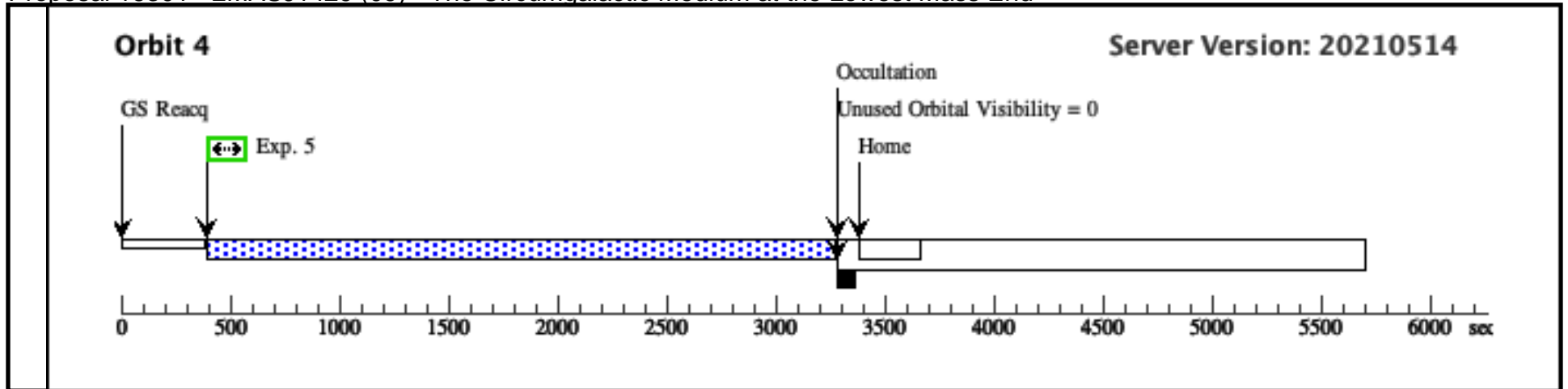








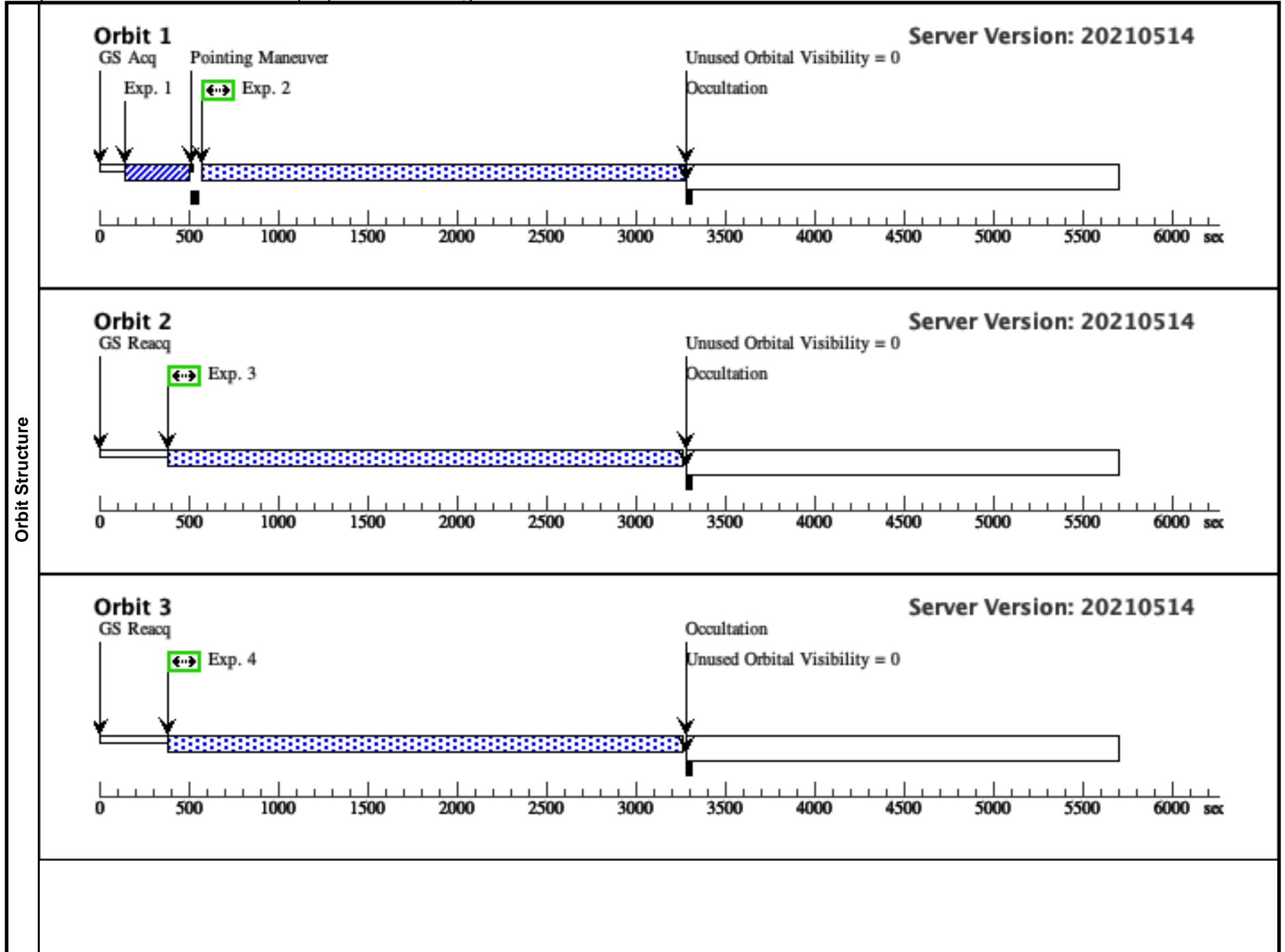


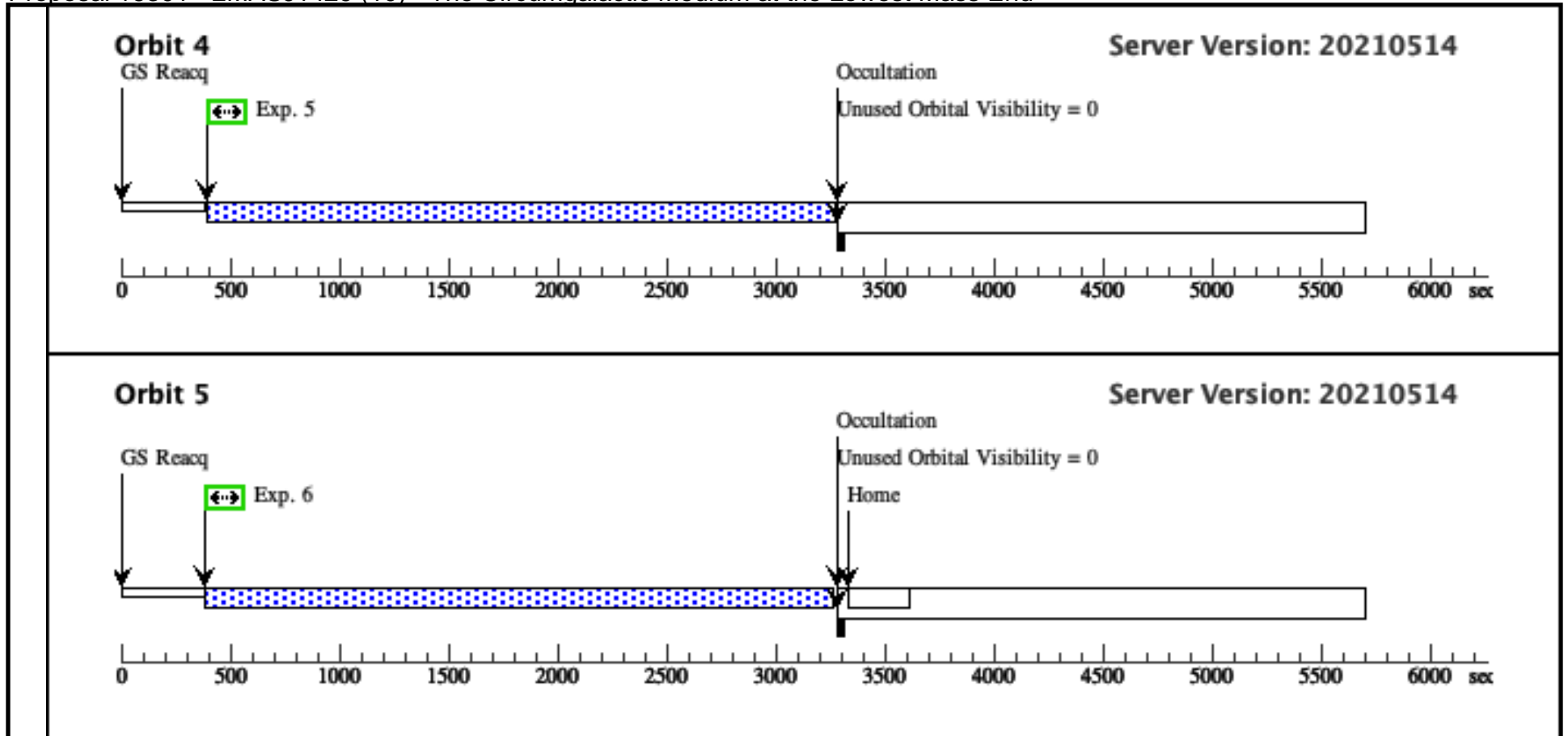


Proposal 16301 - 2MASJ1429 (10) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:32 GMT 2021

| Visit     | <b>Proposal 16301, 2MASJ1429 (10), scheduling</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 4 orbits G130, 9+ G160</i> |   |                                |   |                          |                                    |                       |        |  |       |
|-----------|--|---|--------------------------------|---|--------------------------|------------------------------------|-----------------------|--------|--|-------|
|           | Fixed Targets  | #   | Name                           | Target Coordinates  | Targ. Coord. Corrections | Fluxes                             | Miscellaneous         |        |  |       |
|           |  | (5)                                       | 2MASXJ14292507+4518318         | RA: 14 29 25.0681 (217.3544504d)<br>Dec: +45 18 31.94 (45.30887d)<br>Equinox: J2000 | Redshift: 0.075          | V=17.26<br>FUV=18.25               | Reference Frame: ICRS |        |  |       |
|           | <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<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  | 2MASJ1429<br>-ACQ<br>(COS.ta.144<br>9028) | (5) 2MASXJ142925<br>07+4518318 | COS/NUV, ACQ/IMAGE, PSA   | MIRRORB                  |                                    |                       |        | 25.5 Secs (25.5 Secs)<br>[==>]             | [1]   |
|           | 2  | 2MASJ1429<br>G160<br>(COS.sp.144<br>9026) | (5) 2MASXJ142925<br>07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A          | BUFFER-TIME=14<br>000;<br>FP-POS=1 |                       |        | 2400 Secs (2485 Secs)<br>[==>2485.0 Secs ] | [1]   |
|           | 3  | 2MASJ1429<br>G160<br>(COS.sp.144<br>9026) | (5) 2MASXJ142925<br>07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A          | BUFFER-TIME=14<br>000;<br>FP-POS=2 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [2]   |
|           | 4  | 2MASJ1429<br>G160<br>(COS.sp.144<br>9026) | (5) 2MASXJ142925<br>07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A          | BUFFER-TIME=14<br>000;<br>FP-POS=3 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [3]   |
|           | 5  | 2MASJ1429<br>G160<br>(COS.sp.144<br>9026) | (5) 2MASXJ142925<br>07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A          | BUFFER-TIME=14<br>000;<br>FP-POS=3 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [4]   |
|           | 6  | 2MASJ1429<br>G160<br>(COS.sp.144<br>9026) | (5) 2MASXJ142925<br>07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A          | BUFFER-TIME=14<br>000;<br>FP-POS=4 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [5]   |

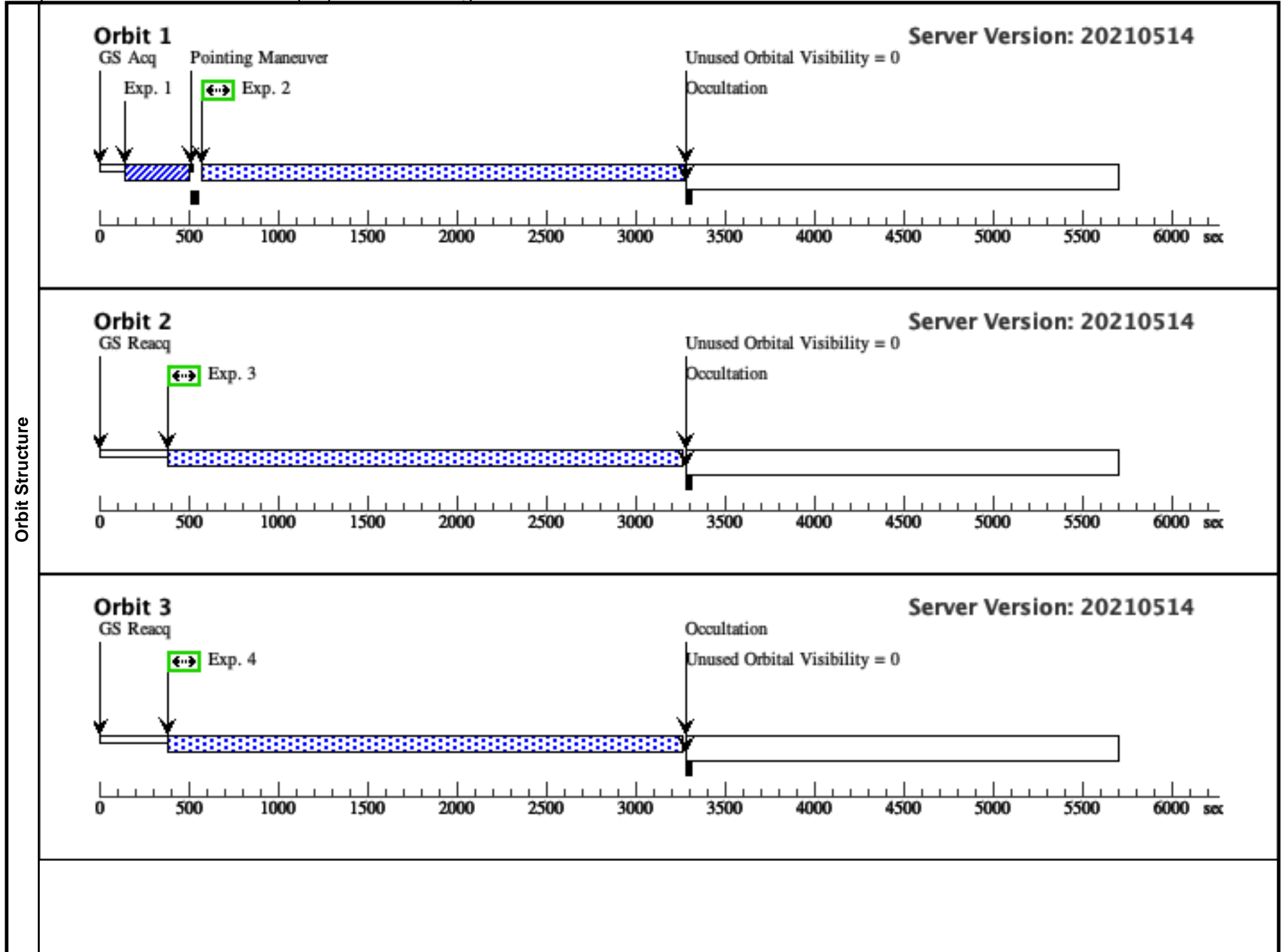


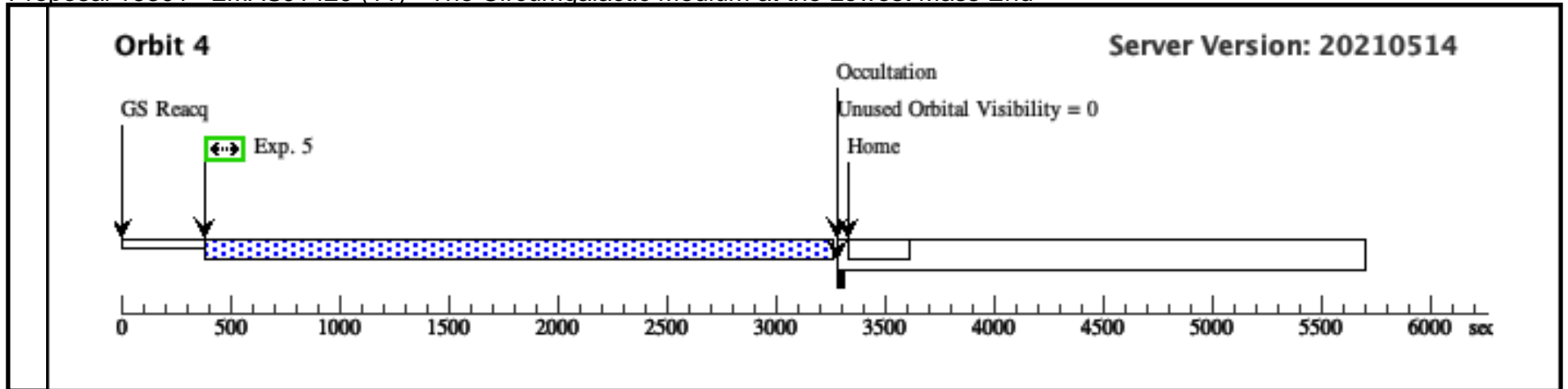


Proposal 16301 - 2MASJ1429 (11) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:32 GMT 2021

| Visit     | <b>Proposal 16301, 2MASJ1429 (11), scheduling</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: COS/FUV, COS/NUV<br>Special Requirements: (none)<br><i>Comments: 4 orbits G130, 9+ G160</i> |                                  |                             |   |                          |                                 |                       |        |  |       |
|-----------|--|----------------------------------|-----------------------------|---|--------------------------|---------------------------------|-----------------------|--------|--|-------|
|           | Fixed Targets  | #                                | Name                        | Target Coordinates  | Targ. Coord. Corrections | Fluxes                          | Miscellaneous         |        |  |       |
|           |  | (5)                              | 2MASXJ14292507+4518318      | RA: 14 29 25.0681 (217.3544504d)<br>Dec: +45 18 31.94 (45.30887d)<br>Equinox: J2000 | Redshift: 0.075          | V=17.26<br>FUV=18.25            | Reference Frame: ICRS |        |  |       |
|           | <i>Comments:</i><br>Category=GALAXY<br>Description=[QSO]<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  | 2MASJ1429-ACQ (COS.ta.144 9028)  | (5) 2MASXJ142925 07+4518318 | COS/NUV, ACQ/IMAGE, PSA   | MIRRORB                  |                                 |                       |        | 25.5 Secs (25.5 Secs)<br>[==>]             | [1]   |
|           | 2  | 2MASJ1429 G160 (COS.sp.144 9026) | (5) 2MASXJ142925 07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A          | BUFFER-TIME=14 000;<br>FP-POS=1 |                       |        | 2400 Secs (2478 Secs)<br>[==>2478.0 Secs ] | [1]   |
|           | 3  | 2MASJ1429 G160 (COS.sp.144 9026) | (5) 2MASXJ142925 07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A          | BUFFER-TIME=14 000;<br>FP-POS=2 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [2]   |
|           | 4  | 2MASJ1429 G160 (COS.sp.144 9026) | (5) 2MASXJ142925 07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A          | BUFFER-TIME=14 000;<br>FP-POS=3 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [3]   |
|           | 5  | 2MASJ1429 G160 (COS.sp.144 9026) | (5) 2MASXJ142925 07+4518318 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A          | BUFFER-TIME=14 000;<br>FP-POS=4 |                       |        | 2700 Secs (2829 Secs)<br>[==>2829.0 Secs ] | [4]   |





Proposal 16301 - PG1415 (13) - The Circumgalactic Medium at the Lowest Mass End

Thu Jul 29 15:00:32 GMT 2021

| <b>Visit</b>         | <p><b>Proposal 16301, PG1415 (13), scheduling</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: (none)</p> <p><i>Comments: 2 G130M, 3 G160M</i></p>  |   |                          |                      |                          |        |               |     |            |   |                 |                      |                       |  |  |  |  |
|----------------------|--|---|--------------------------|----------------------|--------------------------|--------|---------------|-----|------------|---|-----------------|----------------------|-----------------------|--|--|--|--|
| <b>Diagnostics</b>   | (PG1415 (13)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN  |   |                          |                      |                          |        |               |     |            |   |                 |                      |                       |  |  |  |  |
| <b>Fixed Targets</b> | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(6)</td> <td>PG1415+451</td> <td>RA: 14 17 0.8223 (214.2534263d)<br/>Dec: +44 56 6.33 (44.93509d)<br/>Equinox: J2000</td> <td>Redshift: 0.113</td> <td>V=16.63<br/>FUV=17.25</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments:<br/>Category=GALAXY<br/>Description=[QSO]<br/>Extended=NO</i></p> | #   | Name                     | Target Coordinates   | Targ. Coord. Corrections | Fluxes | Miscellaneous | (6) | PG1415+451 | RA: 14 17 0.8223 (214.2534263d)<br>Dec: +44 56 6.33 (44.93509d)<br>Equinox: J2000 | Redshift: 0.113 | V=16.63<br>FUV=17.25 | Reference Frame: ICRS |  |  |  |  |
| #                    | Name   | Target Coordinates  | Targ. Coord. Corrections | Fluxes               | Miscellaneous            |        |               |     |            |   |                 |                      |                       |  |  |  |  |
| (6)                  | PG1415+451   | RA: 14 17 0.8223 (214.2534263d)<br>Dec: +44 56 6.33 (44.93509d)<br>Equinox: J2000 | Redshift: 0.113          | V=16.63<br>FUV=17.25 | Reference Frame: ICRS    |        |               |     |            |   |                 |                      |                       |  |  |  |  |

Proposal 16301 - PG1415 (13) - The Circumgalactic Medium at the Lowest Mass End

| Exposures | # | Label<br>(ETC Run)                     | Target         | Config,Mode,Aperture    | Spectral Els.   | Opt. Params.                      | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.]            | Orbit                          |     |
|-----------|---|--|----------------|-------------------------|-----------------|-----------------------------------|---------------|--------|--|--------------------------------|-----|
|           | 1 | PG1415-AC<br>Q<br>(COS.ta.145<br>1285) | (6) PG1415+451 | COS/NUV, ACQ/IMAGE, PSA | MIRRORB         |                                   |               |        |  | 10.7 Secs (10.7 Secs)<br>[==>] | [1] |
|           | 2 | PG1415G13<br>0<br>(COS.sp.145<br>0106) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | BUFFER-TIME=30<br>50;<br>FP-POS=3 |               |        | 2400 Secs (2511 Secs)<br>[==>2511.0 Secs ] | [1]                            |     |
|           | 3 | PG1415G13<br>0<br>(COS.sp.145<br>0106) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G130M<br>1291 A | BUFFER-TIME=30<br>50;<br>FP-POS=4 |               |        | 2700 Secs (2782 Secs)<br>[==>2782.0 Secs ] | [2]                            |     |
|           | 4 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A | BUFFER-TIME=89<br>00;<br>FP-POS=1 |               |        | 1100 Secs (1332 Secs)<br>[==>1332.0 Secs ] | [3]                            |     |
|           | 5 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A | BUFFER-TIME=89<br>00;<br>FP-POS=2 |               |        | 1100 Secs (1332 Secs)<br>[==>1332.0 Secs ] | [3]                            |     |
|           | 6 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1589 A | BUFFER-TIME=89<br>00;<br>FP-POS=3 |               |        | 1100 Secs (1295 Secs)<br>[==>1295.0 Secs ] | [4]                            |     |
|           | 7 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A | BUFFER-TIME=89<br>00;<br>FP-POS=1 |               |        | 1100 Secs (1295 Secs)<br>[==>1295.0 Secs ] | [4]                            |     |
|           | 8 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A | BUFFER-TIME=89<br>00;<br>FP-POS=2 |               |        | 1100 Secs (1333 Secs)<br>[==>1333.0 Secs ] | [5]                            |     |
|           | 9 | PG1415G16<br>0<br>(COS.sp.145<br>1286) | (6) PG1415+451 | COS/FUV, TIME-TAG, PSA  | G160M<br>1611 A | BUFFER-TIME=89<br>00;<br>FP-POS=3 |               |        | 1100 Secs (1333 Secs)<br>[==>1333.0 Secs ] | [5]                            |     |

