



## 12537 - Venus observed as an extrasolar planet

Cycle: 19, Proposal Category: GO

(Availability Mode: AVAILABLE)

### INVESTIGATORS

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## VISITS

| <b>Visit</b> | <b>Targets used in Visit</b>                    | <b>Configurations used in Visit</b> | <b>Orbits Used</b> | <b>Last Orbit Planner Run</b> | <b>OP Current with Visit?</b> |
|--------------|-------------------------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 10           | (1) MOON-OFFSET-GUIDE-STAR-1                    | S/C                                 | 1                  | 25-May-2012 21:01:36.0        | yes                           |
| 11           | (2) MOON-HIPPARCHUS-C<br>ANY<br>CCDFLAT<br>WAVE | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 1                  | 25-May-2012 21:02:01.0        | yes                           |
| 12           | (4) MOON-OFFSET-GUIDE-STAR-2                    | S/C                                 | 1                  | 25-May-2012 21:02:14.0        | yes                           |
| 13           | (3) MOON-DOLLOND-E<br>ANY<br>CCDFLAT<br>WAVE    | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 1                  | 25-May-2012 21:02:34.0        | yes                           |
| 20           | (5) MOON-OFFSET-GUIDE-STAR-3                    | S/C                                 | 1                  | 25-May-2012 21:02:43.0        | yes                           |
| 21           | (2) MOON-HIPPARCHUS-C<br>ANY<br>CCDFLAT         | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 4                  | 25-May-2012 21:05:12.0        | yes                           |
| 25           | (6) MOON-OFFSET-GUIDE-STAR-4                    | S/C                                 | 1                  | 25-May-2012 21:05:59.0        | yes                           |
| 30           | (2) MOON-HIPPARCHUS-C<br>ANY<br>CCDFLAT         | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 5                  | 25-May-2012 21:10:26.0        | yes                           |
| 40           | (2) MOON-HIPPARCHUS-C<br>ANY<br>CCDFLAT         | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 3                  | 25-May-2012 21:13:45.0        | yes                           |
| 43           | (7) MOON-OFFSET-GUIDE-STAR-5                    | S/C                                 | 1                  | 25-May-2012 21:14:25.0        | yes                           |
| 45           | (2) MOON-HIPPARCHUS-C<br>ANY<br>CCDFLAT         | ACS/WFC<br>STIS/CCD<br>WFC3/UVIS    | 2                  | 25-May-2012 21:15:20.0        | yes                           |

21 Total Orbits Used

## **ABSTRACT**

In a relatively near future, numerous transiting extrasolar planets will be discovered (gaseous giant planets, Earth-size planets and temperate Uranus in the form of "Ocean-planets"). Space telescopes operating in the UV-optical-IR will allow the study of their atmospheres. We have to show if and how these observations will give access to the detection of atmospheric species, particularly when telluric planets will be observed, to demonstrate that life may be possible on one of them. For that purpose, we propose to use the unique event of the century, the Venus transit in 2012 (next Venus transits are in 2117 and 2125!), to demonstrate the feasibility of these observations and show precisely what a Venus-like planet will look-like.

To observe the Venus transit with similar conditions as extrasolar planets (no spatial resolution), we propose to observe the solar light reflected on the Moon during the Venus transit on June 5-6 2012, lasting about 7h 40mn, i.e. about 4 HST orbits. A total of 5 HST orbits will allow us to obtain high S/N transit spectra and reference spectra to reveal the detectable atmospheric species with current space instrumentations.

Similarly, in a companion proposal, we propose to observe the Earth transit on the Moon through the reflected light during a total Moon eclipse to directly compare the observed atmospheric signatures of Earth-like and Venus-like extrasolar planets.

## **OBSERVING DESCRIPTION**

Moon observations.

# Proposal 12537 - Visit 10 - Venus observed as an extrasolar planet

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------|----------------------|-------------------------------------------|--------------------------------------------------------------------|---------------|--------|-------------------------|-------|
| Visit                | <b>Proposal 12537, Visit 10, completed</b> <span style="float: right;">Sat May 26 01:15:41 GMT 2012</span>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
|                      | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: S/C<br>Special Requirements: PCS MODE FINE; NOTRACK; BETWEEN 11-JAN-2012:00:00:00 AND 11-JAN-2012:08:00:00; SEQ 10,11,12,13 WITHIN 1.75 Orbits<br><i>Comments: Guide star acquisition at pointing offset from the Moon.</i>                                                                                                                                                                                                                                                                                                                                                                                                     |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
| Solar System Targets | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Name                     | Level 1                      | Level 2              | Level 3                                   | Window                                                             | Ephem Center  |        |                         |       |
|                      | (1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MOON-OFFSET-GUIDE-STAR-1 | STD=EARTH                    | STD=MOON             | TYPE=POS_ANGLE,RAD=36000,ANG=90,REF=NORTH | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | EARTH         |        |                         |       |
| Exposures            | #                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Label                    | Target                       | Config,Mode,Aperture | Spectral Els.                             | Opt. Params.                                                       | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|                      | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | dummy exposure           | (1) MOON-OFFSET-GUIDE-STAR-1 | S/C, POINTING, V1    |                                           |                                                                    |               |        | 1 Secs<br>[==>]         | [1]   |
| Orbit Structure      | <div style="display: flex; justify-content: space-between;"> <div> <b>Orbit 1</b><br/> <div style="border: 1px solid green; padding: 2px; display: inline-block;">Exp. 1</div><br/> GS Acq Unused Visibility = 2900<br/> <div style="position: relative; height: 20px; border: 1px solid black;"> <div style="position: absolute; left: 0; top: 0; width: 100%; height: 100%; background-color: green;"></div> </div> </div> <div> <b>Server Version: 20120312</b><br/> Occultation<br/> <div style="position: relative; height: 20px; border: 1px solid black;"> <div style="position: absolute; left: 0; top: 0; width: 100%; height: 100%; background-color: white;"></div> </div> </div> </div> |                          |                              |                      |                                           |                                                                    |               |        |                         |       |

# Proposal 12537 - Visit 11 - Venus observed as an extrasolar planet

|                                                                                                |                                                                                                                                          |                   |           |          |                                    |                                                                    |                              |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|----------|------------------------------------|--------------------------------------------------------------------|------------------------------|
| Visit                                                                                          | Proposal 12537, Visit 11, completed                                                                                                      |                   |           |          |                                    |                                                                    | Sat May 26 01:15:42 GMT 2012 |
|                                                                                                | Diagnostic Status: Warning                                                                                                               |                   |           |          |                                    |                                                                    |                              |
|                                                                                                | Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC                                                                                     |                   |           |          |                                    |                                                                    |                              |
|                                                                                                | Special Requirements: PCS MODE GYRO; ORIENT 299.0D TO 303.0 D; VISIBILITY INTERVAL 36 M                                                  |                   |           |          |                                    |                                                                    |                              |
| Comments: Test orbit at a similar Moon phase on 11 January 2012 as during the transit of Venus |                                                                                                                                          |                   |           |          |                                    |                                                                    |                              |
| Diagnostics                                                                                    | (Visit 11) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS. |                   |           |          |                                    |                                                                    |                              |
|                                                                                                |                                                                                                                                          |                   |           |          |                                    |                                                                    |                              |
| Solar System Targets                                                                           | #                                                                                                                                        | Name              | Level 1   | Level 2  | Level 3                            | Window                                                             | Ephem Center                 |
|                                                                                                | (2)                                                                                                                                      | MOON-HIPPARCHUS-C | STD=EARTH | STD=MOON | TYPE=PGRAPHIC, LONG=-8.2, LAT=-7.3 | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | HUBBLE                       |
|                                                                                                | Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT                                                                            |                   |           |          |                                    |                                                                    |                              |
|                                                                                                | Lunar target: Hipparchus-C crater: 8.2 East, 7.3 South                                                                                   |                   |           |          |                                    |                                                                    |                              |
| The E8.2 longitude has been translated into -8.2 in APT.                                       |                                                                                                                                          |                   |           |          |                                    |                                                                    |                              |

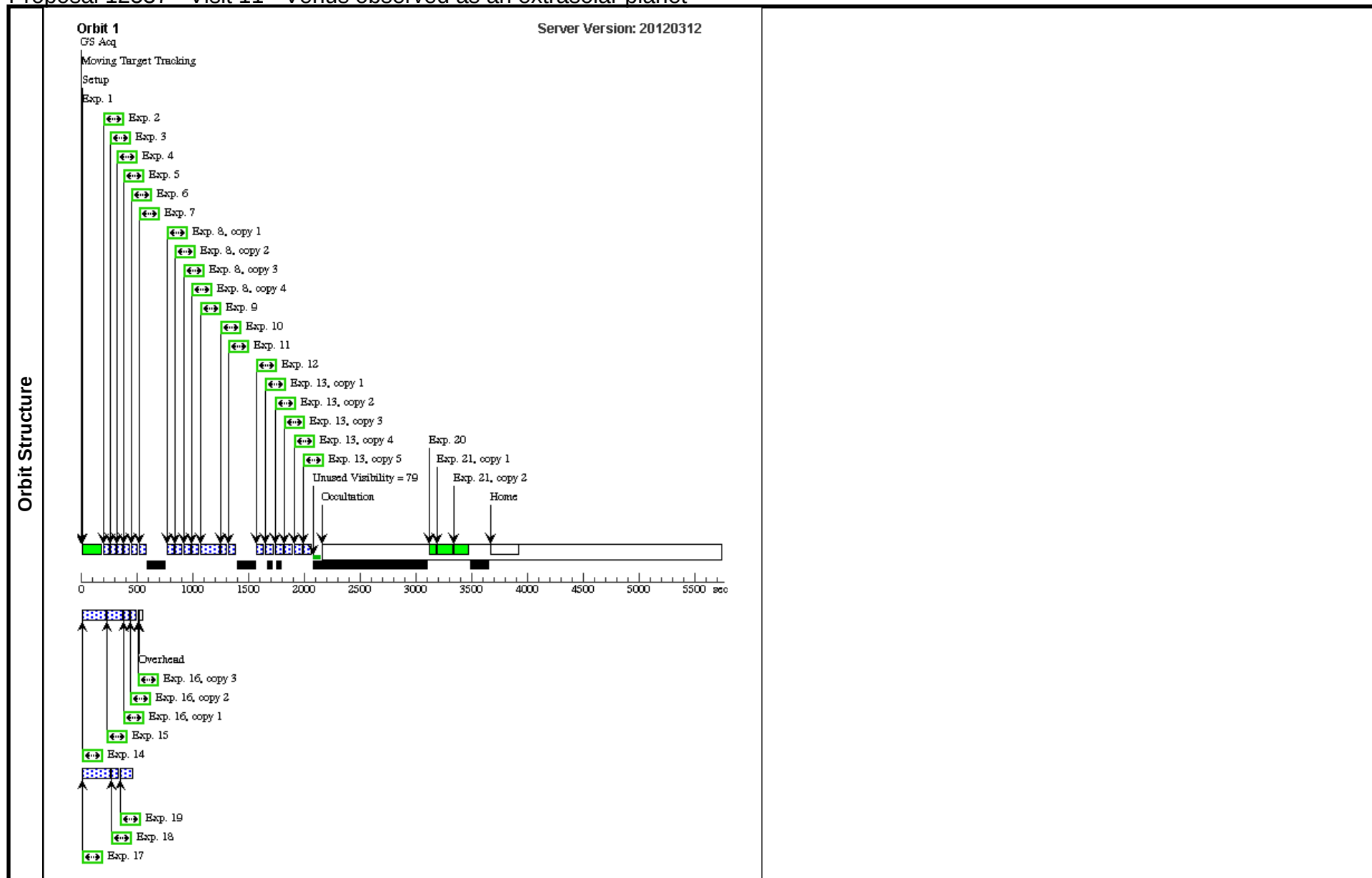
# Proposal 12537 - Visit 11 - Venus observed as an extrasolar planet

| Exposures | #  | Label<br>(ETC Run)                                                   | Target                    | Config,Mode,Aperture       | Spectral Els.   | Opt. Params.                          | Special Reqs. | Groups                                      | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|----|----------------------------------------------------------------------|---------------------------|----------------------------|-----------------|---------------------------------------|---------------|---------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1  | G430L WA<br>VE                                                       | WAVE                      | STIS/CCD, ACCUM, 52X0.05   | G430L<br>4300 A |                                       |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | [==>]                                                                                            | [1]   |
|           | 2  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4;<br>WAVECAL=NO |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 15 Secs<br>[==>]                                                                                 | [1]   |
|           | 3  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4;<br>WAVECAL=NO |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 17 Secs<br>[==>]                                                                                 | [1]   |
|           | 4  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 20 Secs<br>[==>]                                                                                 | [1]   |
|           | 5  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 23 Secs<br>[==>]                                                                                 | [1]   |
|           | 6  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 25 Secs<br>[==>]                                                                                 | [1]   |
|           | 7  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 27 Secs<br>[==>]                                                                                 | [1]   |
|           | 8  | STIS/G430L                                                           | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 30 Secs X 4<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]                  | [1]   |
|           | 9  | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 20 Secs<br>[==>]                                                                                 | [1]   |
|           | 10 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 25 Secs<br>[==>]                                                                                 | [1]   |
|           | 11 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 30 Secs<br>[==>]                                                                                 | [1]   |
|           | 12 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 35 Secs<br>[==>]                                                                                 | [1]   |
|           | 13 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 40 Secs X 5<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)] | [1]   |
|           | 14 | WFC3/UVI<br>S/F280N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS     | F280N           | CR-SPLIT=NO                           |               | Prime + Parallel Gro<br>up 1-19 in Visit 11 | 60 Secs<br>[==>]                                                                                 | [1]   |

# Proposal 12537 - Visit 11 - Venus observed as an extrasolar planet

|    |                                                                  |         |                                   |                 |             |                                         |               |     |
|----|------------------------------------------------------------------|---------|-----------------------------------|-----------------|-------------|-----------------------------------------|---------------|-----|
| 15 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.192652<br>) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N           | CR-SPLIT=NO | Prime + Parallel Group 1-19 in Visit 11 | 2.6 Secs      |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>]         | [1] |
| 16 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.192652<br>)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO | Prime + Parallel Group 1-19 in Visit 11 | 2.6 Secs X 3  |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>(Copy 1)] |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>(Copy 2)] | [1] |
| 17 | ACS/WFC/<br>F502N (full frame)<br>(ACS.im.186037)                | ANY     | ACS/WFC, ACCUM, WFC               | F502N           |             | Prime + Parallel Group 1-19 in Visit 11 | 0.5 Secs      |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>]         | [1] |
| 18 | ACS/WFC/<br>F502N (512x512)                                      | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           |             | Prime + Parallel Group 1-19 in Visit 11 | 0.5 Secs      |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>]         | [1] |
| 19 | ACS/WFC/<br>F660N (512x512)                                      | ANY     | ACS/WFC, ACCUM, WFC1-512          | F660N           |             | Prime + Parallel Group 1-19 in Visit 11 | 0.5 Secs      |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>]         | [1] |
| 20 | G750L WA<br>VE                                                   | WAVE    | STIS/CCD, ACCUM, 52X0.05          | G750L<br>7751 A |             |                                         | [==>]         | [1] |
|    |                                                                  |         |                                   |                 |             |                                         |               |     |
| 21 | G750L Fringe Flat                                                | CCDFLAT | STIS/CCD, ACCUM, 52X0.05          | G750L<br>7751 A |             |                                         | [==>(Copy 1)] |     |
|    |                                                                  |         |                                   |                 |             |                                         | [==>(Copy 2)] | [1] |

# Proposal 12537 - Visit 11 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 12 - Venus observed as an extrasolar planet

|                      |                                                                                                                                                                                                      |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------------|----------------------|-------------------------------------------|--------------------------------------------------------------------|---------------|--------|-------------------------|-------|
| Visit                | <b>Proposal 12537, Visit 12, completed</b> <span style="float: right;">Sat May 26 01:15:44 GMT 2012</span>                                                                                           |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
|                      | <b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: S/C<br>Special Requirements: PCS MODE FINE; NOTRACK<br><i>Comments: Guide star acquisition at pointing offset from the Moon.</i> |                          |                              |                      |                                           |                                                                    |               |        |                         |       |
| Solar System Targets | #                                                                                                                                                                                                    | Name                     | Level 1                      | Level 2              | Level 3                                   | Window                                                             | Ephem Center  |        |                         |       |
|                      | (4)                                                                                                                                                                                                  | MOON-OFFSET-GUIDE-STAR-2 | STD=EARTH                    | STD=MOON             | TYPE=POS_ANGLE,RAD=36000,ANG=91,REF=NORTH | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | EARTH         |        |                         |       |
| Exposures            | #                                                                                                                                                                                                    | Label                    | Target                       | Config,Mode,Aperture | Spectral Els.                             | Opt. Params.                                                       | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|                      | 1                                                                                                                                                                                                    | dummy exposure           | (4) MOON-OFFSET-GUIDE-STAR-2 | S/C, POINTING, V1    |                                           |                                                                    |               |        | 1 Secs<br>[==>]         | [1]   |
| Orbit Structure      | <div> <div>Orbit 1</div> <div> <div> <div>Exp. 1</div> <div>GS Acq Unused Visibility = 2900</div> <div>Occultation</div> </div> </div> </div> <div>Server Version: 20120312</div>                    |                          |                              |                      |                                           |                                                                    |               |        |                         |       |

# Proposal 12537 - Visit 13 - Venus observed as an extrasolar planet

|                      |                                                                                                                                                                                                                                                                                                                                               |                |           |          |                                      |                                                                                                                 |                              |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------|----------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------|
| Visit                | <p>Proposal 12537, Visit 13, completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC</p> <p>Special Requirements: PCS MODE GYRO; ORIENT 288.0D TO 292.0 D; VISIBILITY INTERVAL 36 M</p> <p>Comments: Test orbit at a similar Moon phase on 11 January 2012 as during the transit of Venus</p> |                |           |          |                                      |                                                                                                                 | Sat May 26 01:15:44 GMT 2012 |
|                      | <p>(Visit 13) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS.</p>                                                                                                                                                                                               |                |           |          |                                      |                                                                                                                 |                              |
| Diagnos              |                                                                                                                                                                                                                                                                                                                                               |                |           |          |                                      |                                                                                                                 |                              |
|                      |                                                                                                                                                                                                                                                                                                                                               |                |           |          |                                      |                                                                                                                 |                              |
| Solar System Targets | #                                                                                                                                                                                                                                                                                                                                             | Name           | Level 1   | Level 2  | Level 3                              | Window                                                                                                          | Ephem Center                 |
|                      | (3)                                                                                                                                                                                                                                                                                                                                           | MOON-DOLLOND-E | STD=EARTH | STD=MOON | TYPE=PGRAPHIC, LONG=-15.7, LAT=-10.2 | MOSS Planning Start: 01-JAN-2012:00:00:00<br>MOSS Planning End: 01-FEB-2012:00:00:00<br>MOSS Show Windows: true | HUBBLE                       |
|                      | <p>Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT</p> <p>Lunar target: Dollond-E crater: 15.7 East, 10.2 South</p> <p>The E15.7 longitude has been translated into -15.7 in APT.</p>                                                                                                                                           |                |           |          |                                      |                                                                                                                 |                              |
|                      |                                                                                                                                                                                                                                                                                                                                               |                |           |          |                                      |                                                                                                                 |                              |

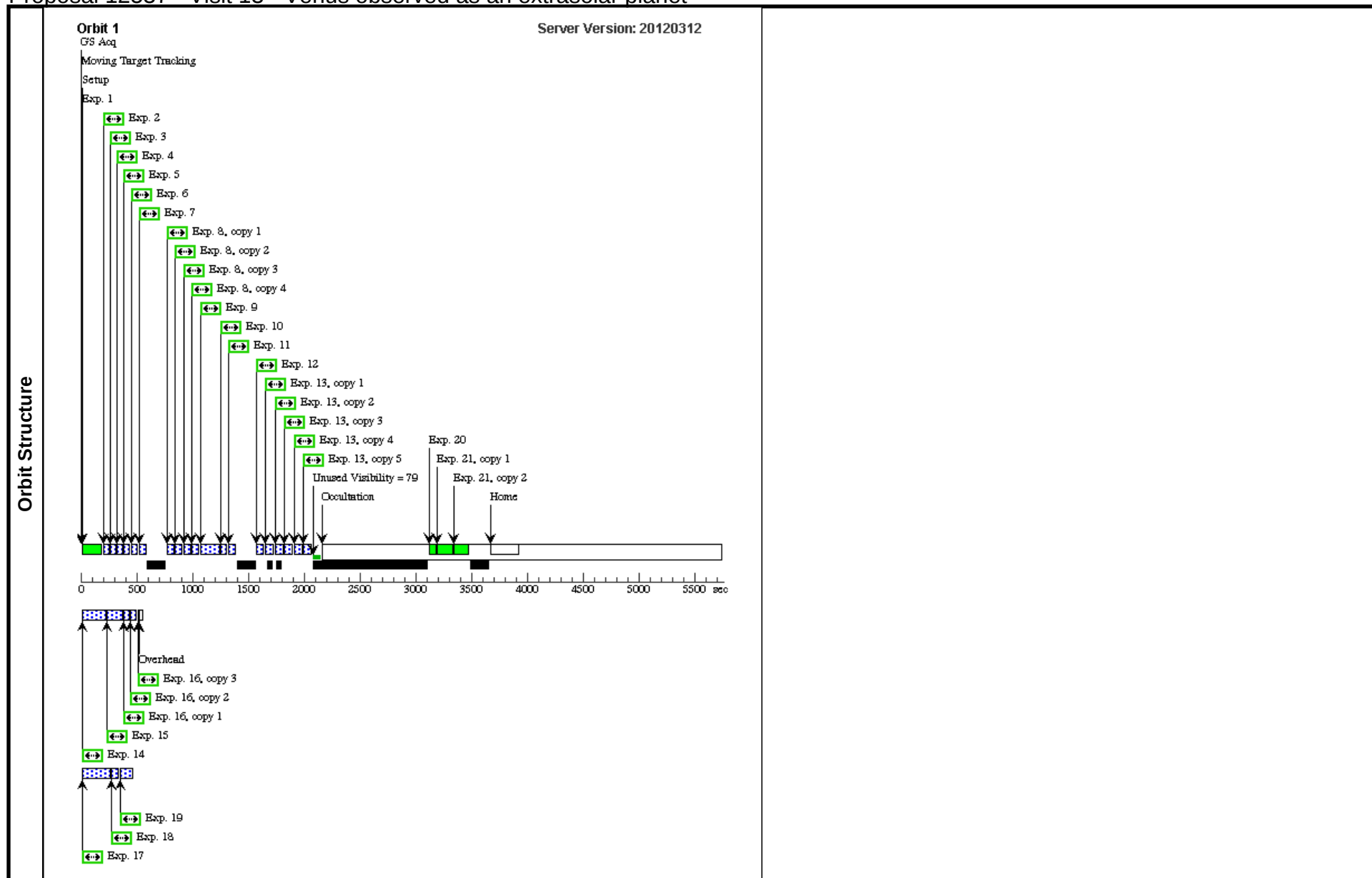
# Proposal 12537 - Visit 13 - Venus observed as an extrasolar planet

| Exposures | #  | Label<br>(ETC Run)                                                   | Target                 | Config,Mode,Aperture       | Spectral Els.   | Opt. Params.                          | Special Reqs. | Groups                                      | Exp. Time/[Actual Dur.]                                                                          | Orbit |
|-----------|----|----------------------------------------------------------------------|------------------------|----------------------------|-----------------|---------------------------------------|---------------|---------------------------------------------|--------------------------------------------------------------------------------------------------|-------|
|           | 1  | G430L WA<br>VE                                                       | WAVE                   | STIS/CCD, ACCUM, 52X0.05   | G430L<br>4300 A |                                       |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | [==>]                                                                                            | [1]   |
|           | 2  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4;<br>WAVECAL=NO |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 15 Secs<br>[==>]                                                                                 | [1]   |
|           | 3  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4;<br>WAVECAL=NO |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 17 Secs<br>[==>]                                                                                 | [1]   |
|           | 4  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 20 Secs<br>[==>]                                                                                 | [1]   |
|           | 5  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 23 Secs<br>[==>]                                                                                 | [1]   |
|           | 6  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 25 Secs<br>[==>]                                                                                 | [1]   |
|           | 7  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 27 Secs<br>[==>]                                                                                 | [1]   |
|           | 8  | STIS/G430L                                                           | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 30 Secs X 4<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]                  | [1]   |
|           | 9  | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 20 Secs<br>[==>]                                                                                 | [1]   |
|           | 10 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 25 Secs<br>[==>]                                                                                 | [1]   |
|           | 11 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 30 Secs<br>[==>]                                                                                 | [1]   |
|           | 12 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 35 Secs<br>[==>]                                                                                 | [1]   |
|           | 13 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (3) MOON-DOLLO<br>ND-E | STIS/CCD, ACCUM, 52X0.05E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4                |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 40 Secs X 5<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)] | [1]   |
|           | 14 | WFC3/UVI<br>S/F280N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY                    | WFC3/UVIS, ACCUM, UVIS     | F280N           | CR-SPLIT=NO                           |               | Prime + Parallel Gro<br>up 1-19 in Visit 13 | 60 Secs<br>[==>]                                                                                 | [1]   |

# Proposal 12537 - Visit 13 - Venus observed as an extrasolar planet

|    |                      |         |                                   |        |             |                                         |               |     |
|----|----------------------|---------|-----------------------------------|--------|-------------|-----------------------------------------|---------------|-----|
| 15 | WFC3/UVI             | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N  | CR-SPLIT=NO | Prime + Parallel Group 1-19 in Visit 13 | 2.6 Secs      |     |
|    | S/F953N (full-frame) |         |                                   |        |             |                                         | [==>]         | [1] |
|    | (WFC3UVI             |         |                                   |        |             |                                         |               |     |
|    | S.im.192652          |         |                                   |        |             |                                         |               |     |
|    | )                    |         |                                   |        |             |                                         |               |     |
|    |                      |         |                                   |        |             |                                         |               |     |
| 16 | WFC3/UVI             | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N  | CR-SPLIT=NO | Prime + Parallel Group 1-19 in Visit 13 | 2.6 Secs X 3  |     |
|    | S/F953N (512x512)    |         |                                   |        |             |                                         | [==>(Copy 1)] |     |
|    | (WFC3UVI             |         |                                   |        |             |                                         | [==>(Copy 2)] | [1] |
| 17 | ACS/WFC/             | ANY     | ACS/WFC, ACCUM, WFC               | F502N  |             | Prime + Parallel Group 1-19 in Visit 13 | 0.5 Secs      |     |
|    | F502N (full frame)   |         |                                   |        |             |                                         | [==>]         | [1] |
|    | (ACS.im.186037)      |         |                                   |        |             |                                         |               |     |
| 18 | ACS/WFC/             | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N  |             | Prime + Parallel Group 1-19 in Visit 13 | 0.5 Secs      |     |
|    | F502N (512x512)      |         |                                   |        |             |                                         | [==>]         | [1] |
| 19 | ACS/WFC/             | ANY     | ACS/WFC, ACCUM, WFC1-512          | F660N  |             | Prime + Parallel Group 1-19 in Visit 13 | 0.5 Secs      |     |
|    | F660N (512x512)      |         |                                   |        |             |                                         | [==>]         | [1] |
| 20 | G750L WA             | WAVE    | STIS/CCD, ACCUM, 52X0.05          | G750L  |             |                                         | [==>]         | [1] |
|    | VE                   |         |                                   | 7751 A |             |                                         |               |     |
| 21 | G750L Fringe Flat    | CCDFLAT | STIS/CCD, ACCUM, 52X0.05          | G750L  |             |                                         | [==>(Copy 1)] |     |
|    |                      |         |                                   | 7751 A |             |                                         | [==>(Copy 2)] | [1] |

# Proposal 12537 - Visit 13 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 20 - Venus observed as an extrasolar planet

|                                                                            |                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------|----------------------|--------------------------|--------------|-------------------------|--------|-------------------------|--|------------------------------|
| Visit                                                                      | Proposal 12537, Visit 20, scheduling                                                                                                                                                          |                          |                                                                                      |                      |                          |              |                         |        |                         |  | Sat May 26 01:15:45 GMT 2012 |
|                                                                            | Diagnostic Status: No Diagnostics                                                                                                                                                             |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
|                                                                            | Scientific Instruments: S/C                                                                                                                                                                   |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
|                                                                            | Special Requirements: BETWEEN 05-JUN-2012:14:30 AND 05-JUN-2012:16; SEQ 20,21,25,30,40 WITHIN 10.5 Orbits                                                                                     |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
| Comments: Guide star acquisition at pointing that is offset from the Moon. |                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
| Fixed Targets                                                              | #                                                                                                                                                                                             | Name                     | Target Coordinates                                                                   |                      | Targ. Coord. Corrections |              | Fluxes                  |        | Miscellaneous           |  |                              |
|                                                                            | (5)                                                                                                                                                                                           | MOON-OFFSET-GUIDE-STAR-3 | RA: 18 49 10.7639 (282.2948496d)<br>Dec: -20 43 39.15 (-20.72754d)<br>Equinox: J2000 |                      |                          |              | V=20                    |        | Reference Frame: ICRS   |  |                              |
|                                                                            | Comments: A pointing 10.2 degrees from the Moon                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
|                                                                            |                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
| Exposures                                                                  | #                                                                                                                                                                                             | Label                    | Target                                                                               | Config,Mode,Aperture | Spectral Els.            | Opt. Params. | Special Reqs.           | Groups | Exp. Time/[Actual Dur.] |  | Orbit                        |
|                                                                            | 1                                                                                                                                                                                             | dummy exposure           | (5) MOON-OFFSET-GUIDE-STAR-3                                                         | S/C, POINTING, V1    |                          |              | GS ACQ SCENARIO BASE1B3 |        | 1 Secs                  |  |                              |
|                                                                            |                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        | [==>]                   |  | [1]                          |
|                                                                            |                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |
| Orbit Structure                                                            | <div><div>Orbit 1</div><div>Server Version: 20120312</div></div> <div><div><div><div>Exp. 1</div><div>GS Acq</div><div>Unused Visibility = 2915</div></div><div>Occultation</div></div></div> |                          |                                                                                      |                      |                          |              |                         |        |                         |  |                              |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|                      |                                                                                                                                          |                   |           |          |                                    |                                                                    |              |                              |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|----------|------------------------------------|--------------------------------------------------------------------|--------------|------------------------------|
| Visit                | Proposal 12537, Visit 21, implementation                                                                                                 |                   |           |          |                                    |                                                                    |              | Sat May 26 01:15:45 GMT 2012 |
|                      | Diagnostic Status: Warning                                                                                                               |                   |           |          |                                    |                                                                    |              |                              |
| Diagnostics          | Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC                                                                                     |                   |           |          |                                    |                                                                    |              |                              |
|                      | Special Requirements: PCS MODE GYRO; ORIENT 282.0D TO 295.0 D                                                                            |                   |           |          |                                    |                                                                    |              |                              |
|                      | Comments: 3 pre-transit orbits on 6 June 2012                                                                                            |                   |           |          |                                    |                                                                    |              |                              |
| Solar System Targets | (Visit 21) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS. |                   |           |          |                                    |                                                                    |              |                              |
|                      | #                                                                                                                                        | Name              | Level 1   | Level 2  | Level 3                            | Window                                                             | Ephem Center |                              |
| Solar System Targets | (2)                                                                                                                                      | MOON-HIPPARCHUS-C | STD=EARTH | STD=MOON | TYPE=PGRAPHIC, LONG=-8.2, LAT=-7.3 | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | HUBBLE       |                              |
|                      | Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT                                                                            |                   |           |          |                                    |                                                                    |              |                              |
|                      | Lunar target: Hipparchus-C crater: 8.2 East, 7.3 South                                                                                   |                   |           |          |                                    |                                                                    |              |                              |
| Solar System Targets | The E8.2 longitude has been translated into -8.2 in APT.                                                                                 |                   |           |          |                                    |                                                                    |              |                              |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

| Exposures | # | Label<br>(ETC Run)                                               | Target                    | Config,Mode,Aperture                 | Spectral Els.   | Opt. Params.           | Special Reqs. | Groups                                       | Exp. Time/[Actual Dur.]                                                                                                                                                                                                     | Orbit |
|-----------|---|------------------------------------------------------------------|---------------------------|--------------------------------------|-----------------|------------------------|---------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | STIS/G430L<br>(STIS.sp.18<br>5997)                               | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.5E1            | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 11 Secs X 12<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)] | [1]   |
|           | 2 | WFC3/UVI<br>S/F343N (full-frame)<br>(WFC3UVI<br>S.im.186051<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F343N           | CR-SPLIT=NO            |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 0.5 Secs<br>[==>]                                                                                                                                                                                                           | [1]   |
|           | 3 | WFC3/UVI<br>S/F280N (full-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F280N           | CR-SPLIT=NO            |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 60 Secs<br>[==>]                                                                                                                                                                                                            | [1]   |
|           | 4 | WFC3/UVI<br>S/F280N (512x512)<br>(WFC3UVI<br>S.im.186030<br>)    | ANY                       | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F502N           | CR-SPLIT=NO            |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 60 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]                                                                                                                                                              | [1]   |
|           | 5 | ACS/WFC/<br>F660N (full-frame)<br>(ACS.im.18<br>9709)            | ANY                       | ACS/WFC, ACCUM, WFC                  | F660N           |                        |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 0.5 Secs<br>[==>]                                                                                                                                                                                                           | [1]   |
|           | 6 | ACS/WFC/<br>F660N (512x512)<br>(ACS.im.18<br>9709)               | ANY                       | ACS/WFC, ACCUM, WFC1-512             | F502N           |                        |               | Prime + Parallel Group<br>up 1-6 in Visit 21 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                                                                                                                                                                              | [1]   |
|           |   |                                                                  |                           |                                      |                 |                        |               |                                              |                                                                                                                                                                                                                             |       |
|           |   |                                                                  |                           |                                      |                 |                        |               |                                              |                                                                                                                                                                                                                             |       |
|           |   |                                                                  |                           |                                      |                 |                        |               |                                              |                                                                                                                                                                                                                             |       |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|   |                                                                          |                           |                 |                        |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |
|---|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 7 | STIS/G750L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 7-12 in Visit 21 | 5 Secs X 36                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | [2] |
|   |                                                                          |                           |                 |                        |                                             | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)] |     |
| 8 | WFC3/UVI ANY<br>S/F395N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186086<br>) | WFC3/UVIS, ACCUM, UVIS    | F395N           |                        | Prime + Parallel Gro<br>up 7-12 in Visit 21 | 1.2 Secs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | [2] |
|   |                                                                          |                           |                 |                        |                                             | [==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|  |    |                                                                  |         |                                   |                 |             |                                         |                                                               |     |
|--|----|------------------------------------------------------------------|---------|-----------------------------------|-----------------|-------------|-----------------------------------------|---------------------------------------------------------------|-----|
|  | 9  | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644<br>) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N           | CR-SPLIT=NO | Prime + Parallel Group 7-12 in Visit 21 | 2 Secs<br>[==>]                                               | [2] |
|  | 10 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051<br>)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO | Prime + Parallel Group 7-12 in Visit 21 | 2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [2] |
|  | 11 | ACS/WFC/<br>F502N (full-frame)<br>(ACS.im.186037)                | ANY     | ACS/WFC, ACCUM, WFC               | F502N           |             | Prime + Parallel Group 7-12 in Visit 21 | 0.5 Secs<br>[==>]                                             | [2] |
|  | 12 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.186037)                   | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           |             | Prime + Parallel Group 7-12 in Visit 21 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                | [2] |
|  | 13 | G750L Fringe Flat                                                | CCDFLAT | STIS/CCD, ACCUM, 52X0.5           | G750L<br>7751 A |             |                                         | [==>(Copy 1)]<br>[==>(Copy 2)]                                | [2] |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|    |                                                                          |                           |                 |                        |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |     |
|----|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 14 | STIS/G430L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 11 Secs X 32<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)] | [3] |
| 15 | WFC3/UVI ANY<br>S/F502N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189264<br>) | WFC3/UVIS, ACCUM, UVIS    | F502N           | CR-SPLIT=NO            | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 0.5 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | [3] |
| 16 | WFC3/UVI ANY<br>S/F953N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189644<br>) | WFC3/UVIS, ACCUM, UVIS    | F953N           | CR-SPLIT=NO            | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 2 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | [3] |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|    |                                                                   |     |                                      |       |             |                                              |                                |     |
|----|-------------------------------------------------------------------|-----|--------------------------------------|-------|-------------|----------------------------------------------|--------------------------------|-----|
| 17 | WFC3/UVI<br>S/F953N (51<br>2x512)<br>(WFC3UVI<br>S.im.186051<br>) | ANY | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F953N | CR-SPLIT=NO | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 2 Secs X 3                     |     |
|    |                                                                   |     |                                      |       |             |                                              | [==>(Copy 1)]                  | [3] |
|    |                                                                   |     |                                      |       |             |                                              | [==>(Copy 2)]<br>[==>(Copy 3)] |     |
| 18 | ACS/WFC/<br>F502N (full-<br>frame)<br>(ACS.im.18<br>6037)         | ANY | ACS/WFC, ACCUM, WFC                  | F502N |             | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 0.5 Secs                       |     |
|    |                                                                   |     |                                      |       |             |                                              | [==>]                          | [3] |
| 19 | ACS/WFC/<br>F502N (512<br>x512)<br>(ACS.im.18<br>6037)            | ANY | ACS/WFC, ACCUM, WFC1-512             | F502N |             | Prime + Parallel Gro<br>up 14-19 in Visit 21 | 0.5 Secs X 2                   |     |
|    |                                                                   |     |                                      |       |             |                                              | [==>(Copy 1)]<br>[==>(Copy 2)] | [3] |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|    |                                                                          |                           |                 |                        |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |     |
|----|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 20 | STIS/G750L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 5 Secs X 34<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)] | [4] |
| 21 | WFC3/UVI ANY<br>S/F502N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189264<br>) | WFC3/UVIS, ACCUM, UVIS    | F502N           | CR-SPLIT=NO            | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 0.5 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | [4] |
| 22 | WFC3/UVI ANY<br>S/F953N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189644<br>) | WFC3/UVIS, ACCUM, UVIS    | F953N           | CR-SPLIT=NO            | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 2 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | [4] |

# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet

|  |    |                                                                   |         |                                      |                 |             |                                              |                                                 |     |
|--|----|-------------------------------------------------------------------|---------|--------------------------------------|-----------------|-------------|----------------------------------------------|-------------------------------------------------|-----|
|  | 23 | WFC3/UVI<br>S/F953N (51<br>2x512)<br>(WFC3UVI<br>S.im.186051<br>) | ANY     | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 2 Secs X 3                                      |     |
|  |    |                                                                   |         |                                      |                 |             |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [4] |
|  | 24 | ACS/WFC/<br>F502N (full-<br>frame)<br>(ACS.im.18<br>6037)         | ANY     | ACS/WFC, ACCUM, WFC                  | F502N           |             | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 0.5 Secs                                        |     |
|  |    |                                                                   |         |                                      |                 |             |                                              | [==>]                                           | [4] |
|  | 25 | ACS/WFC/<br>F502N (512<br>x512)<br>(ACS.im.18<br>6037)            | ANY     | ACS/WFC, ACCUM, WFC1-512             | F502N           |             | Prime + Parallel Gro<br>up 20-25 in Visit 21 | 0.5 Secs X 2                                    |     |
|  |    |                                                                   |         |                                      |                 |             |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]                  | [4] |
|  | 26 | G750L Frin<br>ge Flat                                             | CCDFLAT | STIS/CCD, ACCUM, 52X0.5              | G750L<br>7751 A |             |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]                  | [4] |
|  |    |                                                                   |         |                                      |                 |             |                                              |                                                 |     |

# Orbit 1

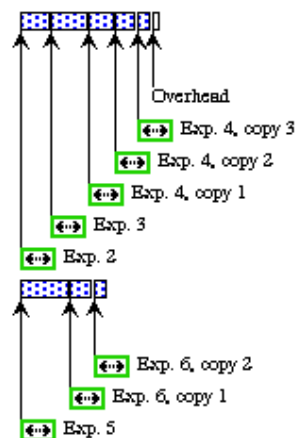
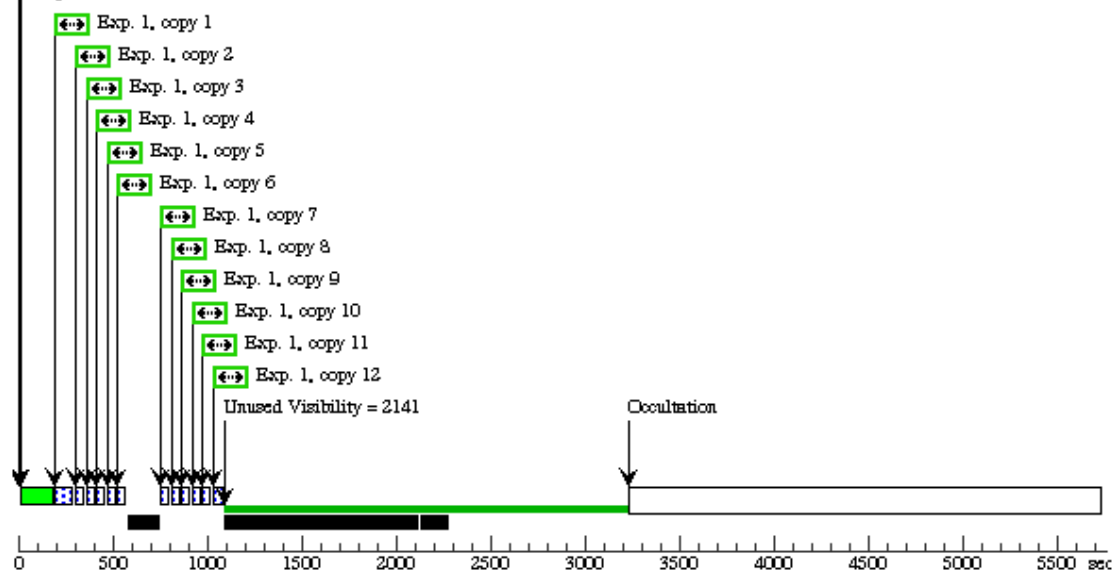
Server Version: 20120312

GS Acq

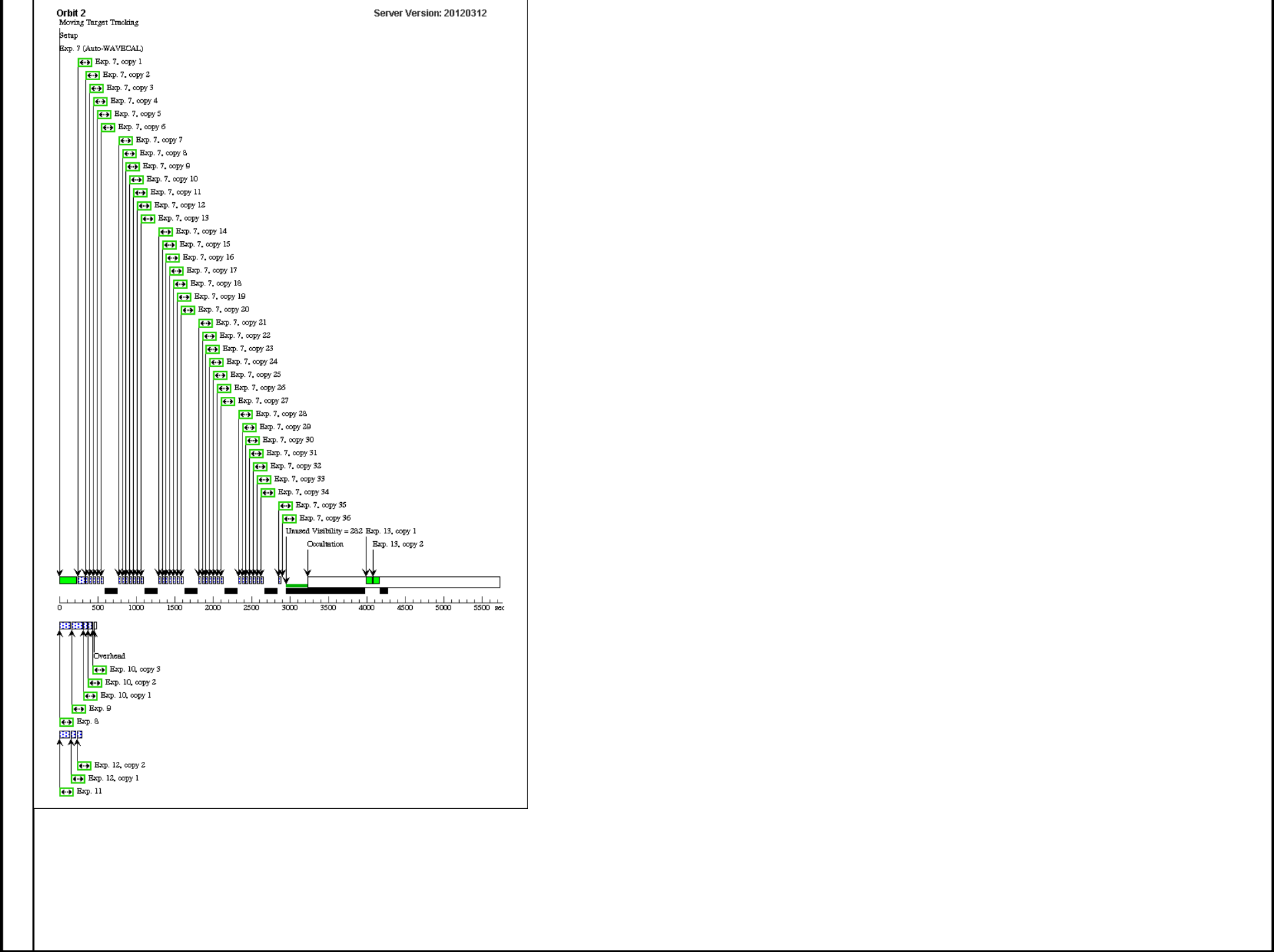
Moving Target Tracking

Exp. 1 (Auto-WAVECAL)

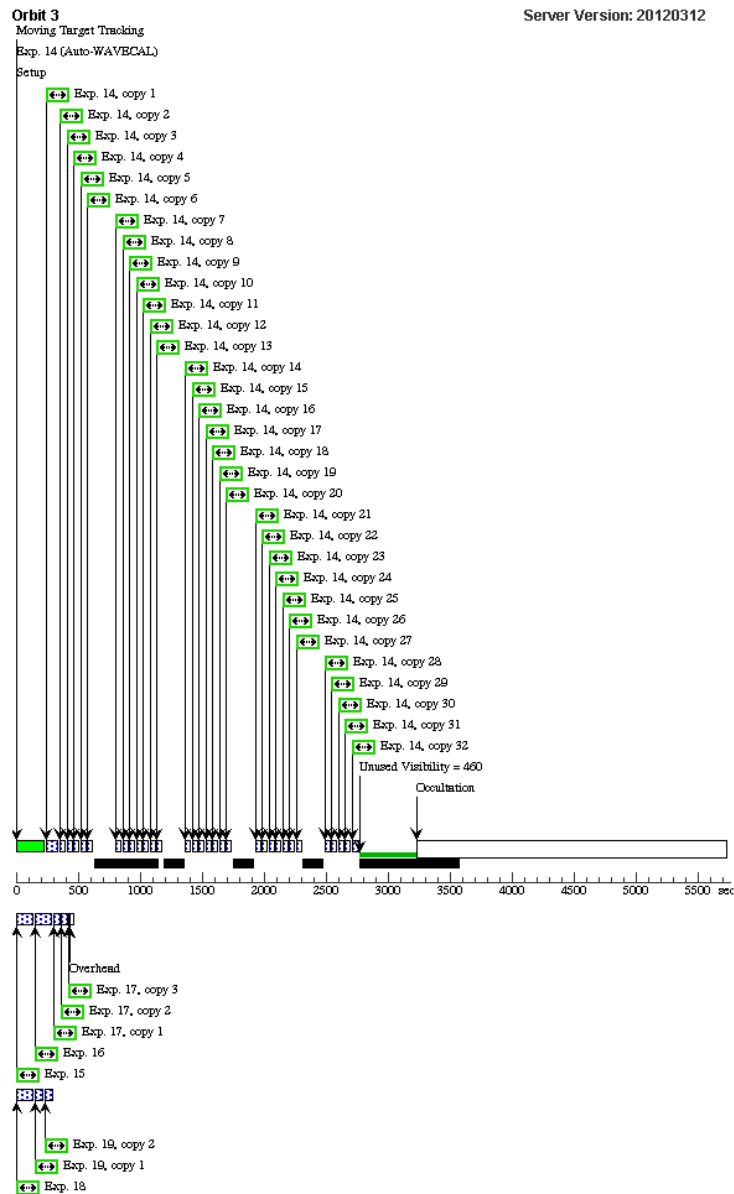
Setup



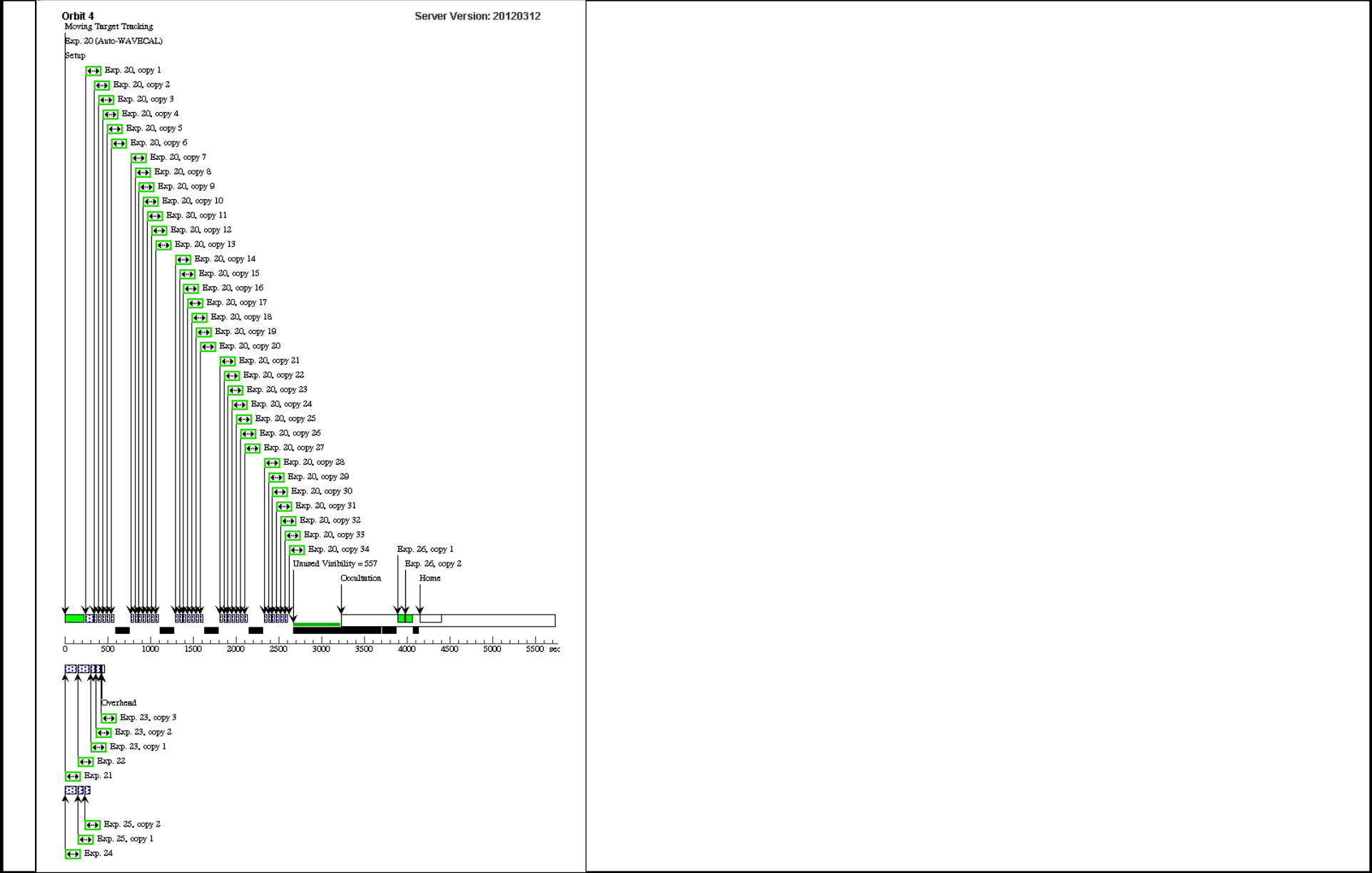
Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet



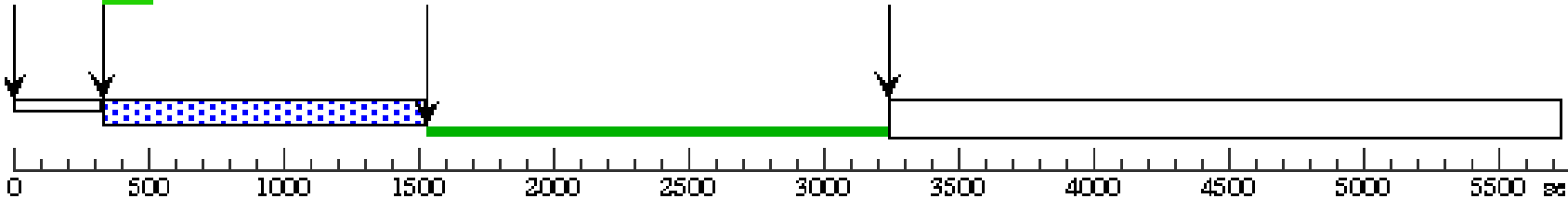
# Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet



Proposal 12537 - Visit 21 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 25 - Venus observed as an extrasolar planet

|                                                                            |                                                                                                                                                                                                                                                                                                                       |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------|----------------------|--------------------------|--------------|---------------|--------|-------------------------|-----------|------------------------------|
| Visit                                                                      | Proposal 12537, Visit 25, scheduling                                                                                                                                                                                                                                                                                  |                          |                                                                                      |                      |                          |              |               |        |                         |           | Sat May 26 01:15:50 GMT 2012 |
|                                                                            | Diagnostic Status: No Diagnostics                                                                                                                                                                                                                                                                                     |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                            | Scientific Instruments: S/C                                                                                                                                                                                                                                                                                           |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                            | Special Requirements: (none)                                                                                                                                                                                                                                                                                          |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Comments: Guide star acquisition at pointing that is offset from the Moon. |                                                                                                                                                                                                                                                                                                                       |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Fixed Targets                                                              | #                                                                                                                                                                                                                                                                                                                     | Name                     | Target Coordinates                                                                   |                      | Targ. Coord. Corrections |              | Fluxes        |        | Miscellaneous           |           |                              |
|                                                                            | (6)                                                                                                                                                                                                                                                                                                                   | MOON-OFFSET-GUIDE-STAR-4 | RA: 19 07 16.5800 (286.8190833d)<br>Dec: -20 16 11.91 (-20.26997d)<br>Equinox: J2000 |                      |                          |              | V=20          |        | Reference Frame: ICRS   |           |                              |
|                                                                            | Comments: A pointing 10 degrees from the Moon                                                                                                                                                                                                                                                                         |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                            |                                                                                                                                                                                                                                                                                                                       |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Exposures                                                                  | #                                                                                                                                                                                                                                                                                                                     | Label                    | Target                                                                               | Config,Mode,Aperture | Spectral Els.            | Opt. Params. | Special Reqs. | Groups | Exp. Time/[Actual Dur.] |           | Orbit                        |
|                                                                            | 1                                                                                                                                                                                                                                                                                                                     | gyro bias exposure       | (6) MOON-OFFSET-GUIDE-STAR-4                                                         | S/C, POINTING, V1    |                          |              |               |        |                         | 1200 Secs |                              |
|                                                                            |                                                                                                                                                                                                                                                                                                                       |                          |                                                                                      |                      |                          |              |               |        |                         | [==>]     | [1]                          |
|                                                                            | Comments: Need 20 minutes under FGS guidance in order to obtain a gyro bias update.                                                                                                                                                                                                                                   |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Orbit Structure                                                            | <div><div>Orbit 1</div><div>GS Acq  Exp. 1</div><div>Unused Visibility = 1716</div><div>Occultation</div><div>Server Version: 20120312</div></div> |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                            |                                                                                                                                                                                                                                                                                                                       |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|                                                          |                                                                                                                                          |                   |           |          |                                  |                                                                    |                              |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|----------|----------------------------------|--------------------------------------------------------------------|------------------------------|
| Visit                                                    | Proposal 12537, Visit 30, implementation                                                                                                 |                   |           |          |                                  |                                                                    | Sat May 26 01:15:50 GMT 2012 |
|                                                          | Diagnostic Status: Warning                                                                                                               |                   |           |          |                                  |                                                                    |                              |
|                                                          | Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC                                                                                     |                   |           |          |                                  |                                                                    |                              |
|                                                          | Special Requirements: PCS MODE GYRO; SAME ORIENT AS 21                                                                                   |                   |           |          |                                  |                                                                    |                              |
| Comments: 4 in-transit orbits                            |                                                                                                                                          |                   |           |          |                                  |                                                                    |                              |
| Diagnostics                                              | (Visit 30) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS. |                   |           |          |                                  |                                                                    |                              |
|                                                          |                                                                                                                                          |                   |           |          |                                  |                                                                    |                              |
| Solar System Targets                                     | #                                                                                                                                        | Name              | Level 1   | Level 2  | Level 3                          | Window                                                             | Ephem Center                 |
|                                                          | (2)                                                                                                                                      | MOON-HIPPARCHUS-C | STD=EARTH | STD=MOON | TYPE=PGRAPHIC,LONG=-8.2,LAT=-7.3 | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | HUBBLE                       |
|                                                          | Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT                                                                            |                   |           |          |                                  |                                                                    |                              |
|                                                          | Lunar target: Hipparchus-C crater: 8.2 East, 7.3 South                                                                                   |                   |           |          |                                  |                                                                    |                              |
| The E8.2 longitude has been translated into -8.2 in APT. |                                                                                                                                          |                   |           |          |                                  |                                                                    |                              |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

| Exposures | # | Label<br>(ETC Run)                                                   | Target                    | Config,Mode,Aperture                 | Spectral Els.   | Opt. Params.           | Special Reqs.  | Groups                                     | Exp. Time/[Actual Dur.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Orbit |
|-----------|---|----------------------------------------------------------------------|---------------------------|--------------------------------------|-----------------|------------------------|----------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
|           | 1 | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.5E1            | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 |                | Prime + Parallel Gro<br>up 1-6 in Visit 30 | 5 Secs X 27<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)] | [1]   |
|           | 2 | WFC3/UVI<br>S/F502N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189264<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F502N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 1-6 in Visit 30 | 0.5 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | [1]   |
|           | 3 | WFC3/UVI<br>S/F953N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189644<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F953N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 1-6 in Visit 30 | 2.0 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | [1]   |
|           | 4 | WFC3/UVI<br>S/F953N (51<br>2x512)<br>(WFC3UVI<br>S.im.186051<br>)    | ANY                       | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 1-6 in Visit 30 | 2.0 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]                                                                                                                                                                                                                                                                                                                                                                                                                                          | [1]   |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|    |                                                                      |                           |                                      |                 |                        |                |                                             |                                                                                                                                                                                                                                                                                                                                                                                              |     |
|----|----------------------------------------------------------------------|---------------------------|--------------------------------------|-----------------|------------------------|----------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 5  | ACS/WFC/<br>F502N (full-<br>frame)<br>(ACS.im.18<br>6037)            | ANY                       | ACS/WFC, ACCUM, WFC                  | F502N           |                        | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 1-6 in Visit 30  | 0.5 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                            | [1] |
| 6  | ACS/WFC/<br>F502N (512<br>x512)<br>(ACS.im.18<br>6037)               | ANY                       | ACS/WFC, ACCUM, WFC1-512             | F502N           |                        | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 1-6 in Visit 30  | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                                                                                                                                                                                                                                                                                                                                               | [1] |
| 7  | STIS/G750L<br>(STIS.sp.18<br>5997)                                   | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.5E1            | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 |                | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 5 Secs X 21<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)] | [2] |
| 8  | WFC3/UVI<br>S/F502N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189264<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F502N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 0.5 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                            | [2] |
| 9  | WFC3/UVI<br>S/F953N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.189644<br>) | ANY                       | WFC3/UVIS, ACCUM, UVIS               | F953N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 2.0 Secs<br>[==>]                                                                                                                                                                                                                                                                                                                                                                            | [2] |
| 10 | WFC3/UVI<br>S/F953N (51<br>2x512)<br>(WFC3UVI<br>S.im.186051<br>)    | ANY                       | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO            | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 2.0 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]                                                                                                                                                                                                                                                                                                                              | [2] |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|  |    |                                                           |         |                          |                 |                |                                             |                                                |     |
|--|----|-----------------------------------------------------------|---------|--------------------------|-----------------|----------------|---------------------------------------------|------------------------------------------------|-----|
|  | 11 | ACS/WFC/<br>F502N (full-<br>frame)<br>(ACS.im.18<br>6037) | ANY     | ACS/WFC, ACCUM, WFC      | F502N           | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 0.5 Secs<br>[==>]                              | [2] |
|  | 12 | ACS/WFC/<br>F502N (512<br>x512)<br>(ACS.im.18<br>6037)    | ANY     | ACS/WFC, ACCUM, WFC1-512 | F502N           | SAA CONTOUR 24 | Prime + Parallel Gro<br>up 7-12 in Visit 30 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)] | [2] |
|  | 13 | G750L Frin<br>ge Flat                                     | CCDFLAT | STIS/CCD, ACCUM, 52X0.5  | G750L<br>7751 A |                |                                             | [==>(Copy 1)]<br>[==>(Copy 2)]                 | [2] |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|    |                                                                          |                           |                 |                        |                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
|----|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 14 | STIS/G430L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 14-19 in Visit 30                   | 11 Secs X 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | [3] |
|    |                                                                          |                           |                 |                        |                                                                | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)] |     |
| 15 | WFC3/UVI ANY<br>S/F343N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186051<br>) | WFC3/UVIS, ACCUM, UVIS    | F343N           | CR-SPLIT=NO            | SAA CONTOUR 24<br>Prime + Parallel Gro<br>up 14-19 in Visit 30 | 0.5 Secs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | [3] |
|    |                                                                          |                           |                 |                        |                                                                | [==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|  |    |                                                                  |     |                                   |       |             |                |                                          |                                                                |     |
|--|----|------------------------------------------------------------------|-----|-----------------------------------|-------|-------------|----------------|------------------------------------------|----------------------------------------------------------------|-----|
|  | 16 | WFC3/UVI<br>S/F280N (full-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY | WFC3/UVIS, ACCUM, UVIS            | F280N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 30 | 60 Secs<br>[==>]                                               | [3] |
|  | 17 | WFC3/UVI<br>S/F280N (512x512)<br>(WFC3UVI<br>S.im.186030<br>)    | ANY | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F502N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 30 | 60 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [3] |
|  | 18 | ACS/WFC/<br>F660N (full-frame)<br>(ACS.im.189709)                | ANY | ACS/WFC, ACCUM, WFC               | F660N |             | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 30 | 0.5 Secs<br>[==>]                                              | [3] |
|  | 19 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.189709)                   | ANY | ACS/WFC, ACCUM, WFC1-512          | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 30 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                 | [3] |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|    |                                                                                     |                 |                        |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
|----|-------------------------------------------------------------------------------------|-----------------|------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 20 | STIS/G750L (2) MOON-HIPPAR STIS/CCD, ACCUM, 52X0.5E1<br>(STIS.sp.18 CHUS-C<br>5997) | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 20-25 in Visit 30 | 5 Secs X 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
|    |                                                                                     |                 |                        |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)]<br>[==>(Copy 38)]<br>[==>(Copy 39)]<br>[==>(Copy 40)]<br>[==>(Copy 41)] | [4] |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|    |                                                              |         |                                   |                 |                |                                          |                                                                                                           |     |
|----|--------------------------------------------------------------|---------|-----------------------------------|-----------------|----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----|
| 21 | WFC3/UVI<br>S/F280N (full-frame)<br>(WFC3UVI<br>S.im.186030) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F280N           | SAA CONTOUR 24 | Prime + Parallel Group 20-25 in Visit 30 | 60 Secs<br>[==>]                                                                                          | [4] |
| 22 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N           | CR-SPLIT=NO    | SAA CONTOUR 24                           | Prime + Parallel Group 20-25 in Visit 30<br>2 Secs<br>[==>]                                               | [4] |
| 23 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO    | SAA CONTOUR 24                           | Prime + Parallel Group 20-25 in Visit 30<br>2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [4] |
| 24 | ACS/WFC/<br>F660N (full-frame)<br>(ACS.im.186037)            | ANY     | ACS/WFC, ACCUM, WFC               | F660N           | SAA CONTOUR 24 | Prime + Parallel Group 20-25 in Visit 30 | 0.5 Secs<br>[==>]                                                                                         | [4] |
| 25 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.186037)               | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           | SAA CONTOUR 24 | Prime + Parallel Group 20-25 in Visit 30 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                                                            | [4] |
| 26 | G750L Fringe Flat                                            | CCDFLAT | STIS/CCD, ACCUM, 52X0.5           | G750L<br>7751 A |                |                                          | [==>(Copy 1)]<br>[==>(Copy 2)]                                                                            | [4] |

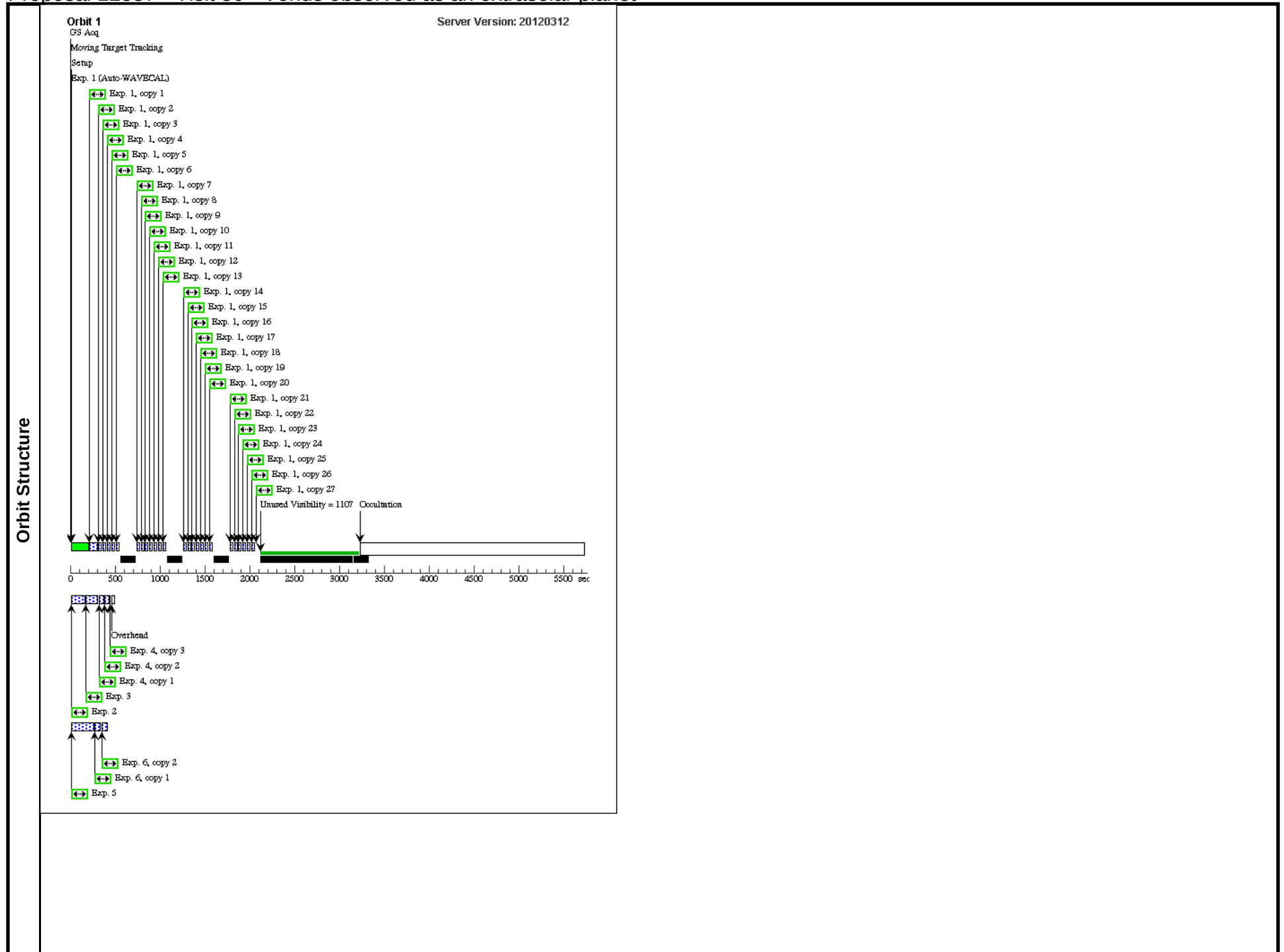
# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|  |    |                                                                          |                           |                 |                        |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
|--|----|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
|  | 27 | STIS/G430L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 27-32 in Visit 30 | 11 Secs X 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | [5] |
|  |    |                                                                          |                           |                 |                        |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)] |     |
|  | 28 | WFC3/UVI ANY<br>S/F395N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186086<br>) | WFC3/UVIS, ACCUM, UVIS    | F395N           | SAA CONTOUR 24         | Prime + Parallel Gro<br>up 27-32 in Visit 30 | 1.2 Secs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | [5] |
|  |    |                                                                          |                           |                 |                        |                                              | [==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

|  |    |                                                                  |     |                                      |       |             |                |                                          |                                                               |     |
|--|----|------------------------------------------------------------------|-----|--------------------------------------|-------|-------------|----------------|------------------------------------------|---------------------------------------------------------------|-----|
|  | 29 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644<br>) | ANY | WFC3/UVIS, ACCUM, UVIS               | F953N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 27-32 in Visit 30 | 2 Secs<br>[==>]                                               |     |
|  |    |                                                                  |     |                                      |       |             |                |                                          |                                                               | [5] |
|  | 30 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051<br>)    | ANY | WFC3/UVIS, ACCUM,<br>UVIS2-M512C-SUB | F953N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 27-32 in Visit 30 | 2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] |     |
|  |    |                                                                  |     |                                      |       |             |                |                                          |                                                               | [5] |
|  | 31 | ACS/WFC/<br>F502N (full-frame)<br>(ACS.im.189709)                | ANY | ACS/WFC, ACCUM, WFC                  | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 27-32 in Visit 30 | 0.5 Secs<br>[==>]                                             |     |
|  |    |                                                                  |     |                                      |       |             |                |                                          |                                                               | [5] |
|  | 32 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.189709)                   | ANY | ACS/WFC, ACCUM, WFC1-512             | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 27-32 in Visit 30 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                |     |
|  |    |                                                                  |     |                                      |       |             |                |                                          |                                                               | [5] |

# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet

## Orbit 2

Server Version: 20120312

Moving Target Tracking

Exp. 7, copy 1

Setup

Exp. 7, copy 2

Exp. 7, copy 3

Exp. 7, copy 4

Exp. 7, copy 5

Exp. 7, copy 6

Exp. 7, copy 7

Exp. 7, copy 8

Exp. 7, copy 9

Exp. 7, copy 10

Exp. 7, copy 11

Exp. 7, copy 12

Exp. 7, copy 13

Exp. 7, copy 14

Exp. 7, copy 15

Exp. 7, copy 16

Exp. 7, copy 17

Exp. 7, copy 18

Exp. 7, copy 19

Exp. 7, copy 20

Exp. 7, copy 21

Exp. 7 (Auto-WAVECAL)

Unused Visibility = 1538

Exp. 13, copy 1

Exp. 13, copy 2

Occultation

Overhead

Exp. 10, copy 3

Exp. 10, copy 2

Exp. 10, copy 1

Exp. 9

Exp. 8

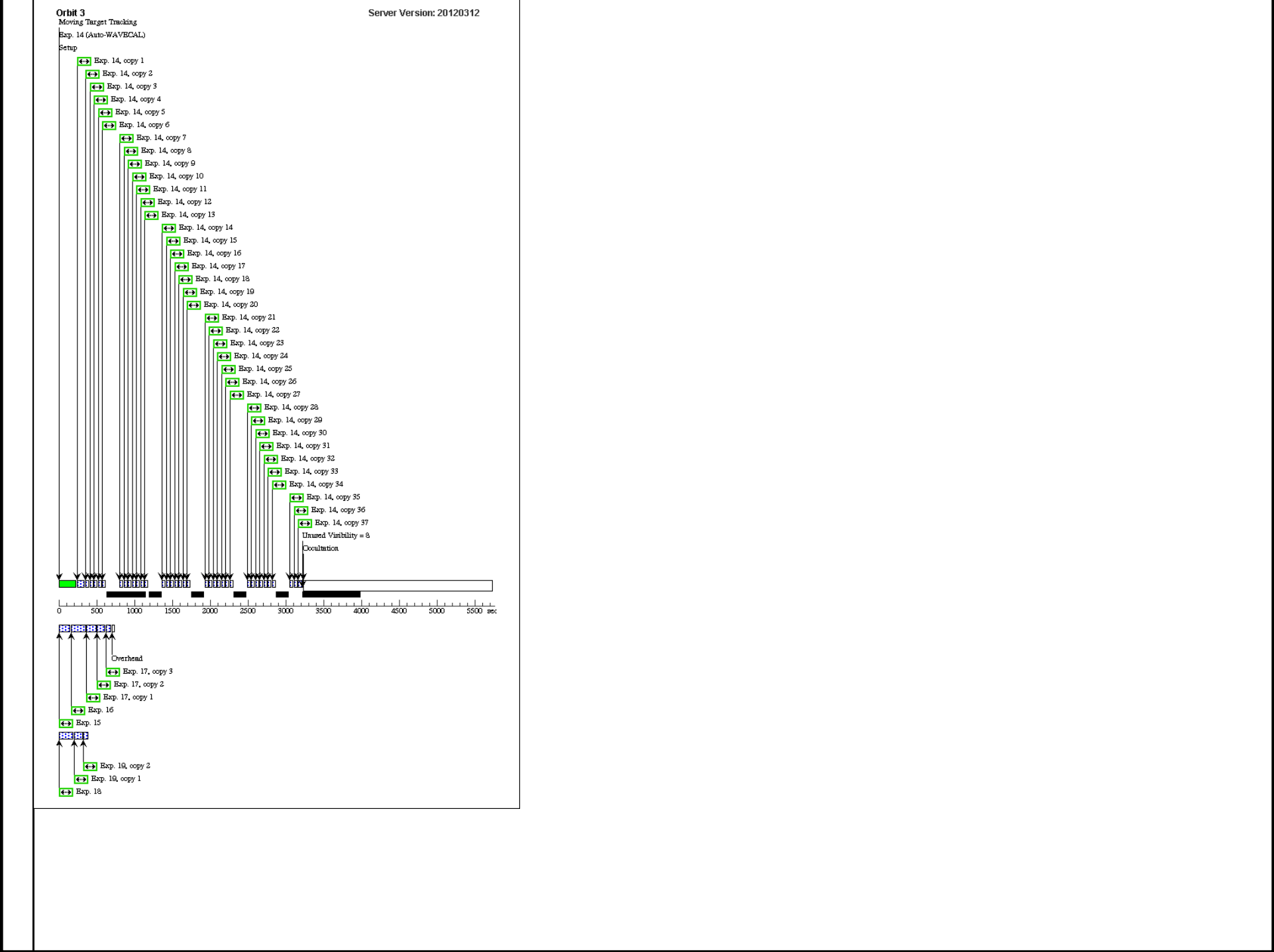
Exp. 12, copy 2

Exp. 12, copy 1

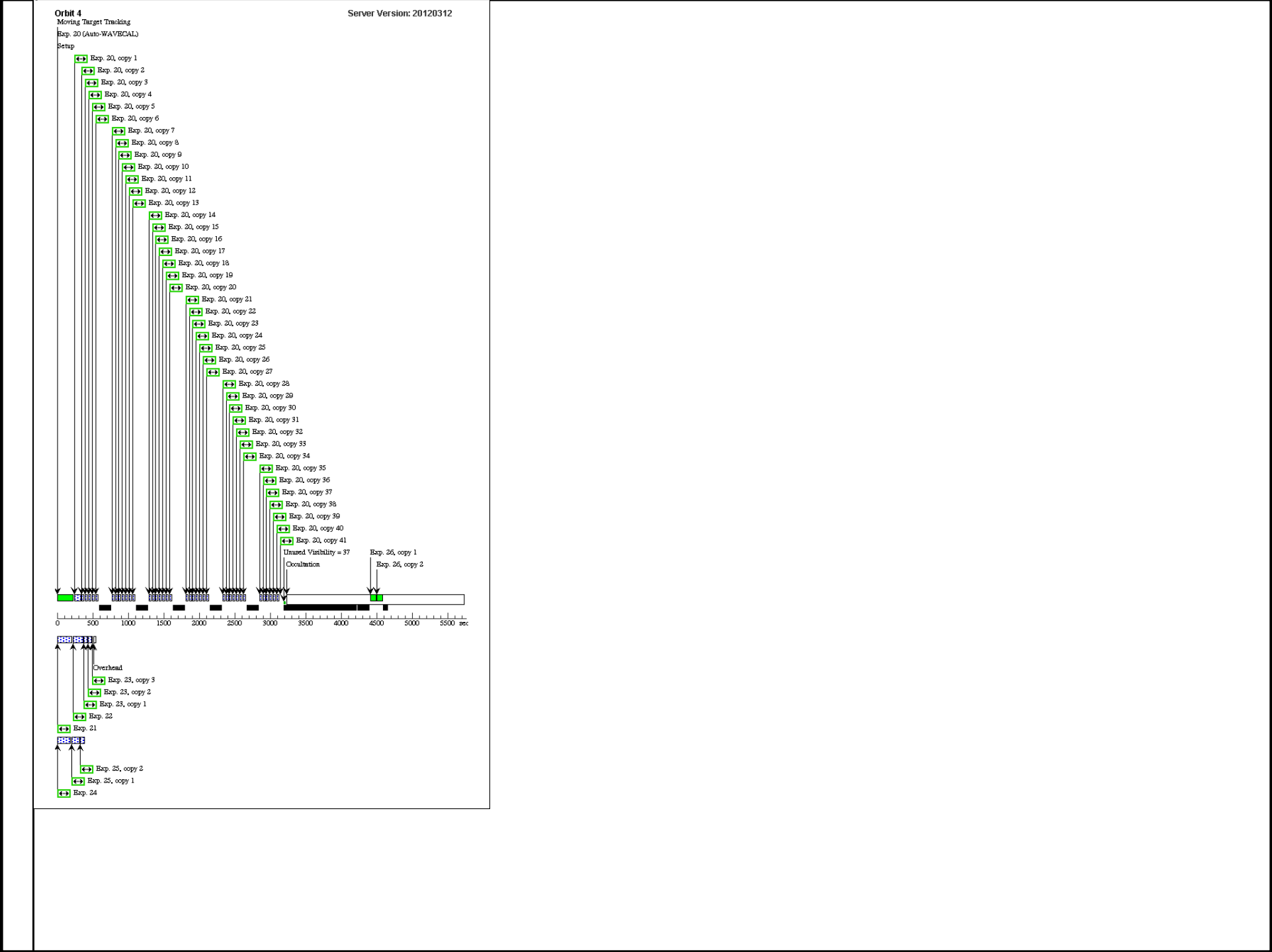
Exp. 11

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 sec

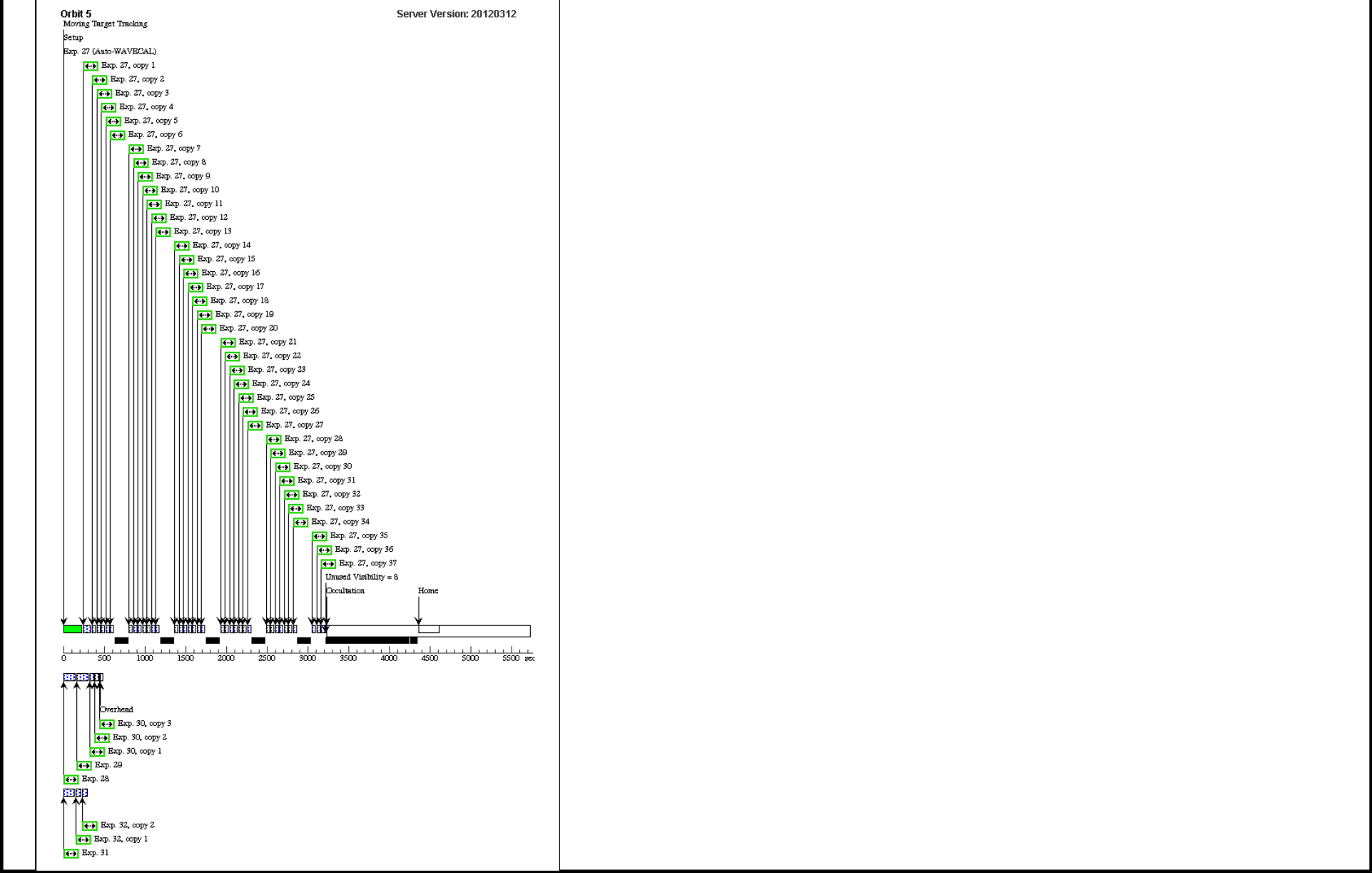
Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet



Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet



Proposal 12537 - Visit 30 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|                                                                                                                                                                                                |                                                                                                                                                                                               |                   |           |          |                                    |                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|----------|------------------------------------|------------------------------------------------------------------------------|
| Visit                                                                                                                                                                                          | <b>Proposal 12537, Visit 40, implementation</b> <span>Sat May 26 01:15:56 GMT 2012</span>                                                                                                     |                   |           |          |                                    |                                                                              |
|                                                                                                                                                                                                | <b>Diagnostic Status: Warning</b><br>Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC<br>Special Requirements: PCS MODE GYRO; SAME ORIENT AS 21<br><i>Comments: 3 post-transit orbits</i> |                   |           |          |                                    |                                                                              |
| Diagnosics                                                                                                                                                                                     | (Visit 40) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS.                                                      |                   |           |          |                                    |                                                                              |
| Solar System Targets                                                                                                                                                                           | #                                                                                                                                                                                             | Name              | Level 1   | Level 2  | Level 3                            | Ephem Center                                                                 |
|                                                                                                                                                                                                | (2)                                                                                                                                                                                           | MOON-HIPPARCHUS-C | STD=EARTH | STD=MOON | TYPE=PGRAPHIC, LONG=-8.2, LAT=-7.3 | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012<br>HUBBLE |
| <i>Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT<br/> Lunar target: Hipparchus-C crater: 8.2 East, 7.3 South<br/> The E8.2 longitude has been translated into -8.2 in APT.</i> |                                                                                                                                                                                               |                   |           |          |                                    |                                                                              |

# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|           | # | Label<br>(ETC Run)                 | Target                    | Config,Mode,Aperture      | Spectral Els.   | Opt. Params.           | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------------------|---------------------------|---------------------------|-----------------|------------------------|---------------|--------------------------------------------|-------------------------|-------|
|           |   |                                    |                           |                           |                 |                        |               |                                            |                         |       |
| Exposures | 1 | STIS/G750L<br>(STIS.sp.18<br>5997) | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.5E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 |               | Prime + Parallel Gro<br>up 1-6 in Visit 40 | 5 Secs X 41             | [1]   |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 1)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 2)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 3)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 4)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 5)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 6)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 7)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 8)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 9)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 10)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 11)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 12)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 13)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 14)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 15)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 16)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 17)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 18)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 19)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 20)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 21)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 22)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 23)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 24)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 25)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 26)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 27)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 28)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 29)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 30)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 31)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 32)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 33)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 34)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 35)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 36)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 37)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 38)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 39)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 40)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 41)]          |       |

# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|  |   |                                                              |         |                                   |                 |             |                |                                        |                                                               |     |
|--|---|--------------------------------------------------------------|---------|-----------------------------------|-----------------|-------------|----------------|----------------------------------------|---------------------------------------------------------------|-----|
|  | 2 | WFC3/UVI<br>S/F502N (full-frame)<br>(WFC3UVI<br>S.im.189264) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F502N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 40 | 0.5 Secs<br>[==>]                                             | [1] |
|  | 3 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 40 | 2 Secs<br>[==>]                                               | [1] |
|  | 4 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 40 | 2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [1] |
|  | 5 | ACS/WFC/<br>F502N (full-frame)<br>(ACS.im.186037)            | ANY     | ACS/WFC, ACCUM, WFC               | F502N           |             | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 40 | 0.5 Secs<br>[==>]                                             | [1] |
|  | 6 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.186037)               | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           |             | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 40 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                | [1] |
|  | 7 | G750L Fringe Flat                                            | CCDFLAT | STIS/CCD, ACCUM, 52X0.5           | G750L<br>7751 A |             |                |                                        | [==>(Copy 1)]<br>[==>(Copy 2)]                                | [1] |
|  |   |                                                              |         |                                   |                 |             |                |                                        |                                                               |     |

# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|   |                                                                          |                           |                 |                        |                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
|---|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|---------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 8 | STIS/G430L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 8-13 in Visit 40                   | 11 Secs X 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | [2] |
|   |                                                                          |                           |                 |                        |                                                               | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)] |     |
| 9 | WFC3/UVI ANY<br>S/F343N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186051<br>) | WFC3/UVIS, ACCUM, UVIS    | F343N           | CR-SPLIT=NO            | SAA CONTOUR 24<br>Prime + Parallel Gro<br>up 8-13 in Visit 40 | 0.5 Secs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | [2] |
|   |                                                                          |                           |                 |                        |                                                               | [==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |

# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|  |    |                                                                  |     |                                   |       |             |                |                                         |                                                                |     |
|--|----|------------------------------------------------------------------|-----|-----------------------------------|-------|-------------|----------------|-----------------------------------------|----------------------------------------------------------------|-----|
|  | 10 | WFC3/UVI<br>S/F280N (full-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY | WFC3/UVIS, ACCUM, UVIS            | F280N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 40 | 60 Secs<br>[==>]                                               | [2] |
|  | 11 | WFC3/UVI<br>S/F280N (512x512)<br>(WFC3UVI<br>S.im.186030<br>)    | ANY | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F502N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 40 | 60 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [2] |
|  | 12 | ACS/WFC/<br>F502N (full-frame)<br>(ACS.im.189709)                | ANY | ACS/WFC, ACCUM, WFC               | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 40 | 0.5 Secs<br>[==>]                                              | [2] |
|  | 13 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.189709)                   | ANY | ACS/WFC, ACCUM, WFC1-512          | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 40 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                 | [2] |

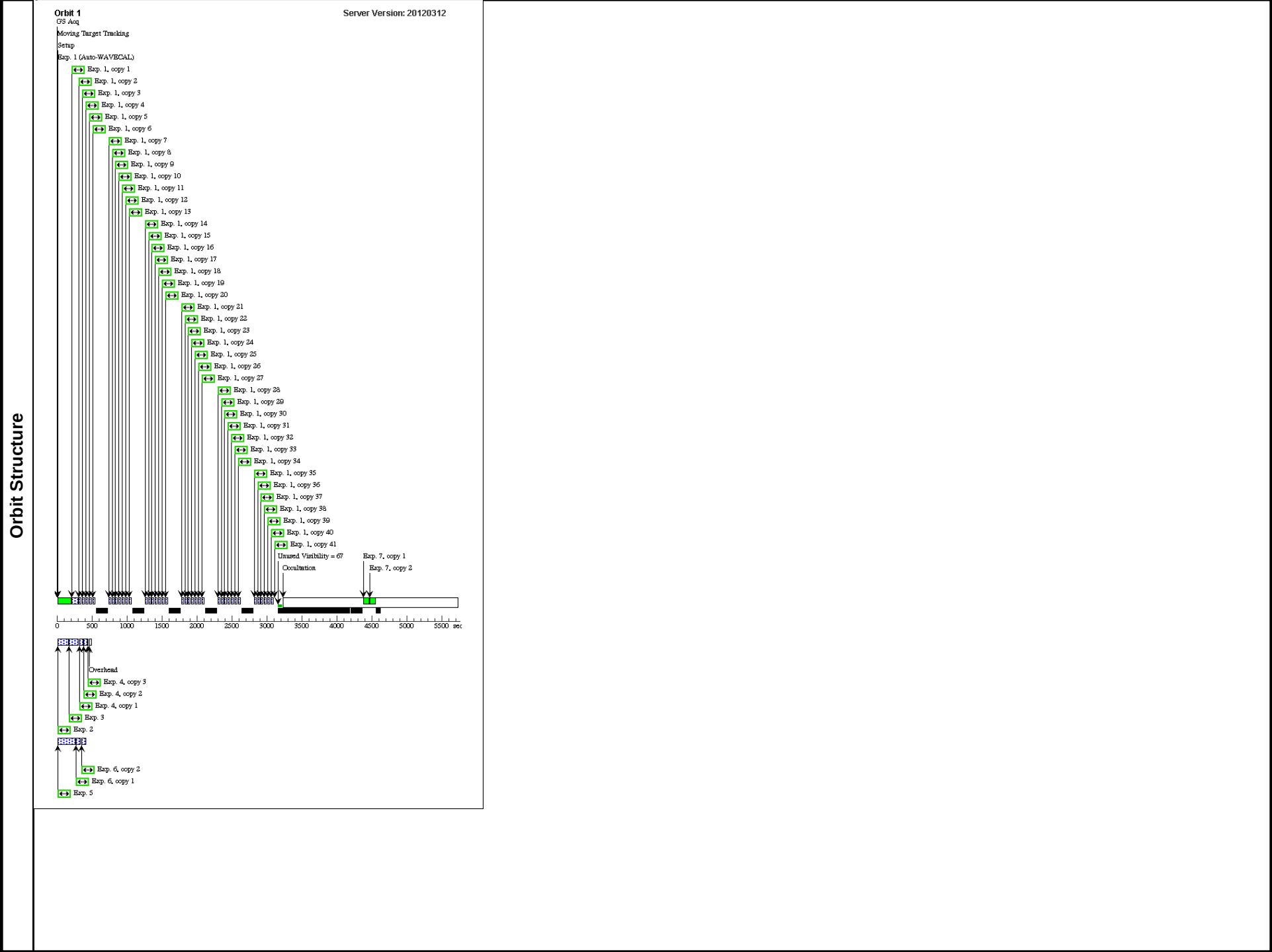
# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|    |                                                                                  |                 |                        |                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |
|----|----------------------------------------------------------------------------------|-----------------|------------------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 14 | STIS/G750L (2) MOON-HIPPAR STIS/CCD, ACCUM, 52X0.5E1<br>(STIS.sp.18 CHUS-C 5997) | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 14-19 in Visit 40 | 5 Secs X 41                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |     |
|    |                                                                                  |                 |                        |                                              | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)]<br>[==>(Copy 38)]<br>[==>(Copy 39)]<br>[==>(Copy 40)]<br>[==>(Copy 41)] | [3] |

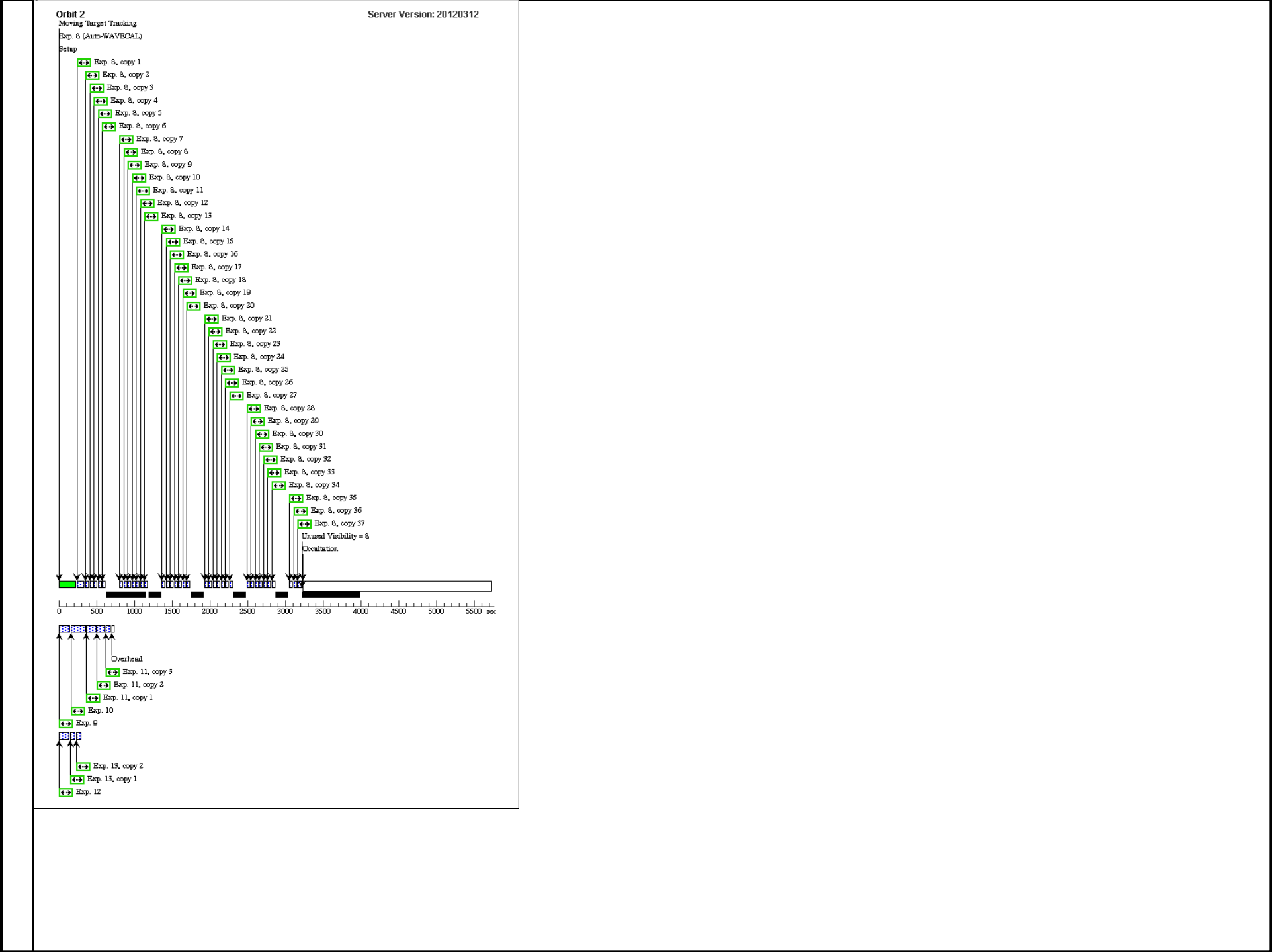
# Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet

|    |                                                              |         |                                   |                 |                |                                          |                                                                                                           |     |
|----|--------------------------------------------------------------|---------|-----------------------------------|-----------------|----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----|
| 15 | WFC3/UVI<br>S/F395N (full-frame)<br>(WFC3UVI<br>S.im.186086) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F395N           | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 40 | 1.2 Secs<br>[==>]                                                                                         | [3] |
| 16 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F953N           | CR-SPLIT=NO    | SAA CONTOUR 24                           | Prime + Parallel Group 14-19 in Visit 40<br>2 Secs<br>[==>]                                               | [3] |
| 17 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N           | CR-SPLIT=NO    | SAA CONTOUR 24                           | Prime + Parallel Group 14-19 in Visit 40<br>2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [3] |
| 18 | ACS/WFC/<br>F660N (full-frame)<br>(ACS.im.186037)            | ANY     | ACS/WFC, ACCUM, WFC               | F660N           | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 40 | 0.5 Secs<br>[==>]                                                                                         | [3] |
| 19 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.186037)               | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           | SAA CONTOUR 24 | Prime + Parallel Group 14-19 in Visit 40 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                                                            | [3] |
| 20 | G750L Fringe Flat                                            | CCDFLAT | STIS/CCD, ACCUM, 52X0.5           | G750L<br>7751 A |                |                                          | [==>(Copy 1)]<br>[==>(Copy 2)]                                                                            | [3] |

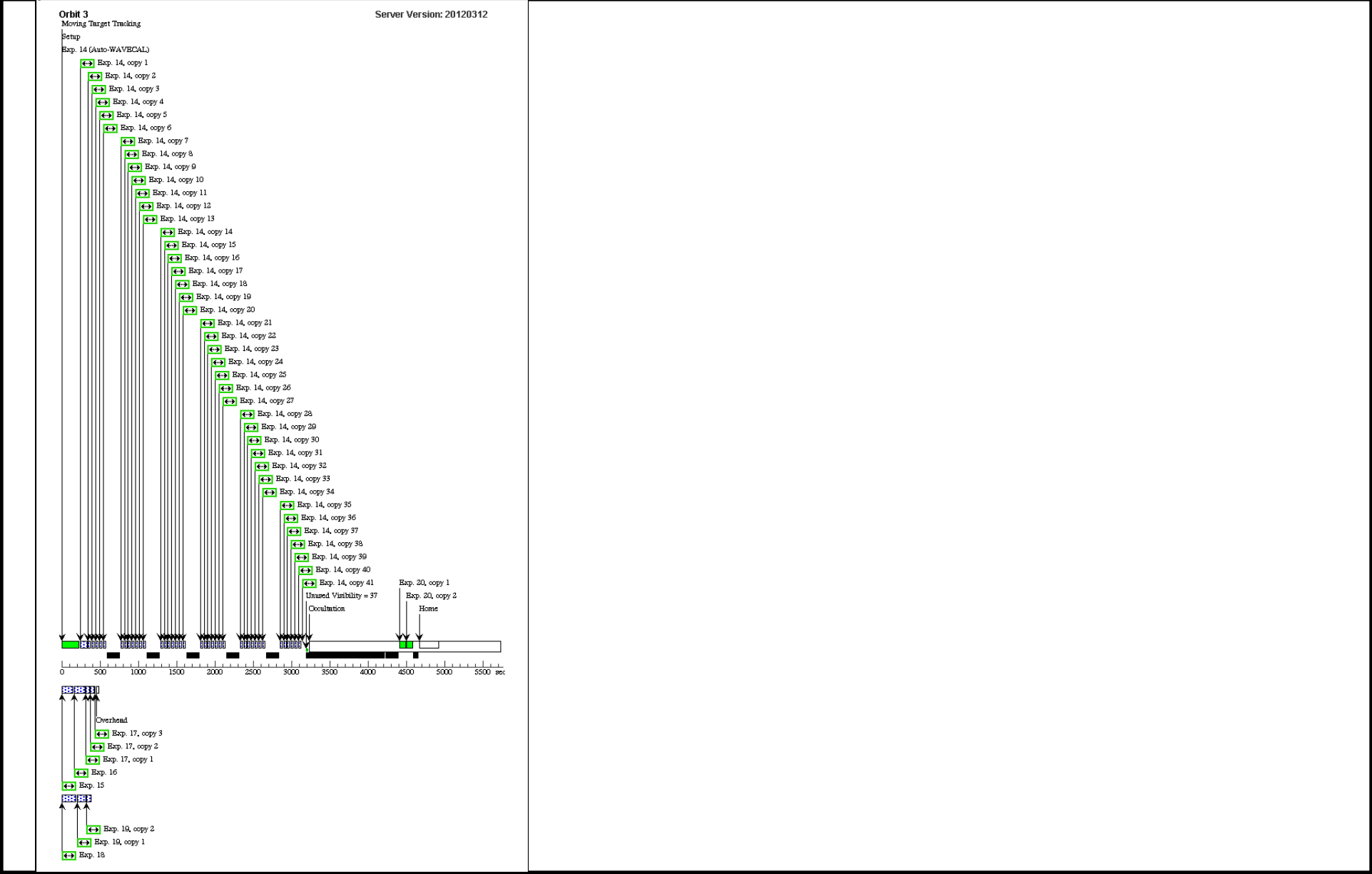
Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet



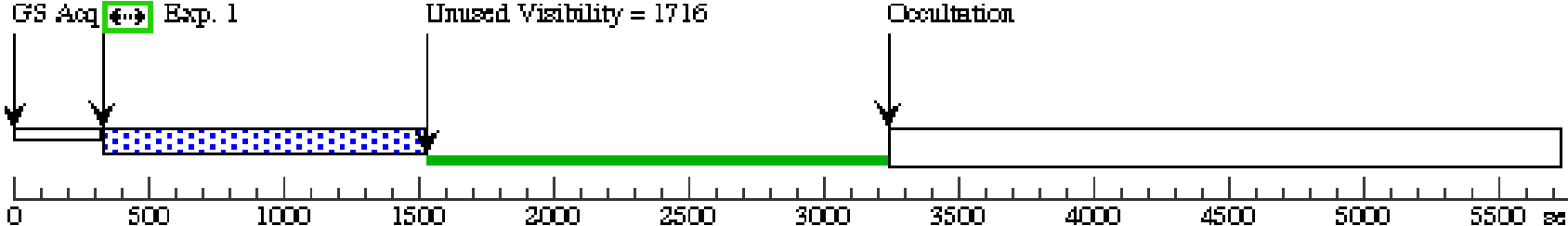
Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet



Proposal 12537 - Visit 40 - Venus observed as an extrasolar planet



# Proposal 12537 - Visit 43 - Venus observed as an extrasolar planet

|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                 |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------------------------|----------------------|--------------------------|--------------|---------------|--------|-------------------------|-----------|------------------------------|
| Visit                                                                                                                                                 | Proposal 12537, Visit 43, implementation                                                                                                                                                                                                                                                                        |                          |                                                                                      |                      |                          |              |               |        |                         |           | Sat May 26 01:15:59 GMT 2012 |
|                                                                                                                                                       | Diagnostic Status: No Diagnostics                                                                                                                                                                                                                                                                               |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                                                                                                       | Scientific Instruments: S/C                                                                                                                                                                                                                                                                                     |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                                                                                                       | Special Requirements: BETWEEN 2012.158:06:30 AND 2012.158:07:30; SEQ 43,45 WITHIN 1.1 Orbits; ON HOLD                                                                                                                                                                                                           |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                                                                                                       | Comments: Guide star acquisition at pointing that is offset from the Moon.                                                                                                                                                                                                                                      |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| On Hold Comments: Visits 43 and 45 are contingency alternatives to visit 40 to be used only in the event of problematic performance by HST's gyro #4. |                                                                                                                                                                                                                                                                                                                 |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Fixed Targets                                                                                                                                         | #                                                                                                                                                                                                                                                                                                               | Name                     | Target Coordinates                                                                   |                      | Targ. Coord. Corrections |              | Fluxes        |        | Miscellaneous           |           |                              |
|                                                                                                                                                       | (7)                                                                                                                                                                                                                                                                                                             | MOON-OFFSET-GUIDE-STAR-5 | RA: 19 41 17.2200 (295.3217500d)<br>Dec: -19 05 24.81 (-19.09022d)<br>Equinox: J2000 |                      |                          |              | V=20          |        | Reference Frame: ICRS   |           |                              |
|                                                                                                                                                       | Comments: A pointing 10 degrees from the Moon                                                                                                                                                                                                                                                                   |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Exposures                                                                                                                                             | #                                                                                                                                                                                                                                                                                                               | Label                    | Target                                                                               | Config,Mode,Aperture | Spectral Els.            | Opt. Params. | Special Reqs. | Groups | Exp. Time/[Actual Dur.] |           | Orbit                        |
|                                                                                                                                                       | 1                                                                                                                                                                                                                                                                                                               | gyro bias exposure       | (7) MOON-OFFSET-GUIDE-STAR-5                                                         | S/C, POINTING, V1    |                          |              |               |        |                         | 1200 Secs |                              |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                 |                          |                                                                                      |                      |                          |              |               |        |                         | [==>]     | [1]                          |
| Comments: Need 20 minutes under FGS guidance in order to obtain a gyro bias update.                                                                   |                                                                                                                                                                                                                                                                                                                 |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
| Orbit Structure                                                                                                                                       | <div>Orbit 1</div> <div>GS Acq  Exp. 1</div> <div>Unused Visibility = 1716</div> <div>Occultation</div> <div>Server Version: 20120312</div>  |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |
|                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                 |                          |                                                                                      |                      |                          |              |               |        |                         |           |                              |

# Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

|                      |                                                                                                                                                                                           |                   |           |          |                                    |                                                                    |                              |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|----------|------------------------------------|--------------------------------------------------------------------|------------------------------|
| Visit                | Proposal 12537, Visit 45, implementation                                                                                                                                                  |                   |           |          |                                    |                                                                    | Sat May 26 01:16:00 GMT 2012 |
|                      | Diagnostic Status: Warning                                                                                                                                                                |                   |           |          |                                    |                                                                    |                              |
|                      | Scientific Instruments: STIS/CCD, WFC3/UVIS, ACS/WFC                                                                                                                                      |                   |           |          |                                    |                                                                    |                              |
|                      | Special Requirements: PCS MODE GYRO; SAME ORIENT AS 21; ON HOLD                                                                                                                           |                   |           |          |                                    |                                                                    |                              |
|                      | Comments: 3 post-transit orbits.<br>On Hold Comments: Visits 43 and 45 are contingency alternatives to visit 40 to be used only in the event of problematic performance by HST's gyro #4. |                   |           |          |                                    |                                                                    |                              |
| Diagnostics          | (Visit 45) Warning (Form): A target acquisition should probably be performed before doing spectroscopy or coronagraphy with STIS or COS.                                                  |                   |           |          |                                    |                                                                    |                              |
| Solar System Targets | #                                                                                                                                                                                         | Name              | Level 1   | Level 2  | Level 3                            | Window                                                             | Ephem Center                 |
|                      | (2)                                                                                                                                                                                       | MOON-HIPPARCHUS-C | STD=EARTH | STD=MOON | TYPE=PGRAPHIC, LONG=-8.2, LAT=-7.3 | MOSS Planning Start: 01-JAN-2012<br>MOSS Planning End: 01-JUL-2012 | HUBBLE                       |
|                      | Comments: Moon test orbit: 2012 January 11th 00:00 to 08:00UT<br>Lunar target: Hipparchus-C crater: 8.2 East, 7.3 South<br>The E8.2 longitude has been translated into -8.2 in APT.       |                   |           |          |                                    |                                                                    |                              |

# Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

|           | # | Label<br>(ETC Run)                 | Target                    | Config,Mode,Aperture      | Spectral Els.   | Opt. Params.           | Special Reqs. | Groups                                     | Exp. Time/[Actual Dur.] | Orbit |
|-----------|---|------------------------------------|---------------------------|---------------------------|-----------------|------------------------|---------------|--------------------------------------------|-------------------------|-------|
|           |   |                                    |                           |                           |                 |                        |               |                                            |                         |       |
| Exposures | 1 | STIS/G750L<br>(STIS.sp.18<br>5997) | (2) MOON-HIPPAR<br>CHUS-C | STIS/CCD, ACCUM, 52X0.5E1 | G750L<br>7751 A | CR-SPLIT=NO;<br>GAIN=4 |               | Prime + Parallel Gro<br>up 1-6 in Visit 45 | 5 Secs X 41             | [1]   |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 1)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 2)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 3)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 4)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 5)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 6)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 7)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 8)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 9)]           |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 10)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 11)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 12)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 13)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 14)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 15)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 16)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 17)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 18)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 19)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 20)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 21)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 22)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 23)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 24)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 25)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 26)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 27)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 28)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 29)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 30)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 31)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 32)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 33)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 34)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 35)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 36)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 37)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 38)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 39)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 40)]          |       |
|           |   |                                    |                           |                           |                 |                        |               |                                            | [==>(Copy 41)]          |       |

# Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

|  |   |                                                                  |         |                                   |                 |             |                |                                        |                                                                |     |
|--|---|------------------------------------------------------------------|---------|-----------------------------------|-----------------|-------------|----------------|----------------------------------------|----------------------------------------------------------------|-----|
|  | 2 | WFC3/UVI<br>S/F343N (full-frame)<br>(WFC3UVI<br>S.im.186051<br>) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F343N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 45 | 0.5 Secs<br>[==>]                                              | [1] |
|  | 3 | WFC3/UVI<br>S/F280N (full-frame)<br>(WFC3UVI<br>S.im.186030<br>) | ANY     | WFC3/UVIS, ACCUM, UVIS            | F280N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 45 | 60 Secs<br>[==>]                                               | [1] |
|  | 4 | WFC3/UVI<br>S/F280N (512x512)<br>(WFC3UVI<br>S.im.186030<br>)    | ANY     | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F502N           | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 45 | 60 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [1] |
|  | 5 | ACS/WFC/<br>F660N (full-frame)<br>(ACS.im.189709)                | ANY     | ACS/WFC, ACCUM, WFC               | F660N           |             | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 45 | 0.5 Secs<br>[==>]                                              | [1] |
|  | 6 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.189709)                   | ANY     | ACS/WFC, ACCUM, WFC1-512          | F502N           |             | SAA CONTOUR 24 | Prime + Parallel Group 1-6 in Visit 45 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                 | [1] |
|  | 7 | G750L Fringe Flat                                                | CCDFLAT | STIS/CCD, ACCUM, 52X0.5           | G750L<br>7751 A |             |                |                                        | [==>(Copy 1)]<br>[==>(Copy 2)]                                 | [1] |
|  |   |                                                                  |         |                                   |                 |             |                |                                        |                                                                |     |

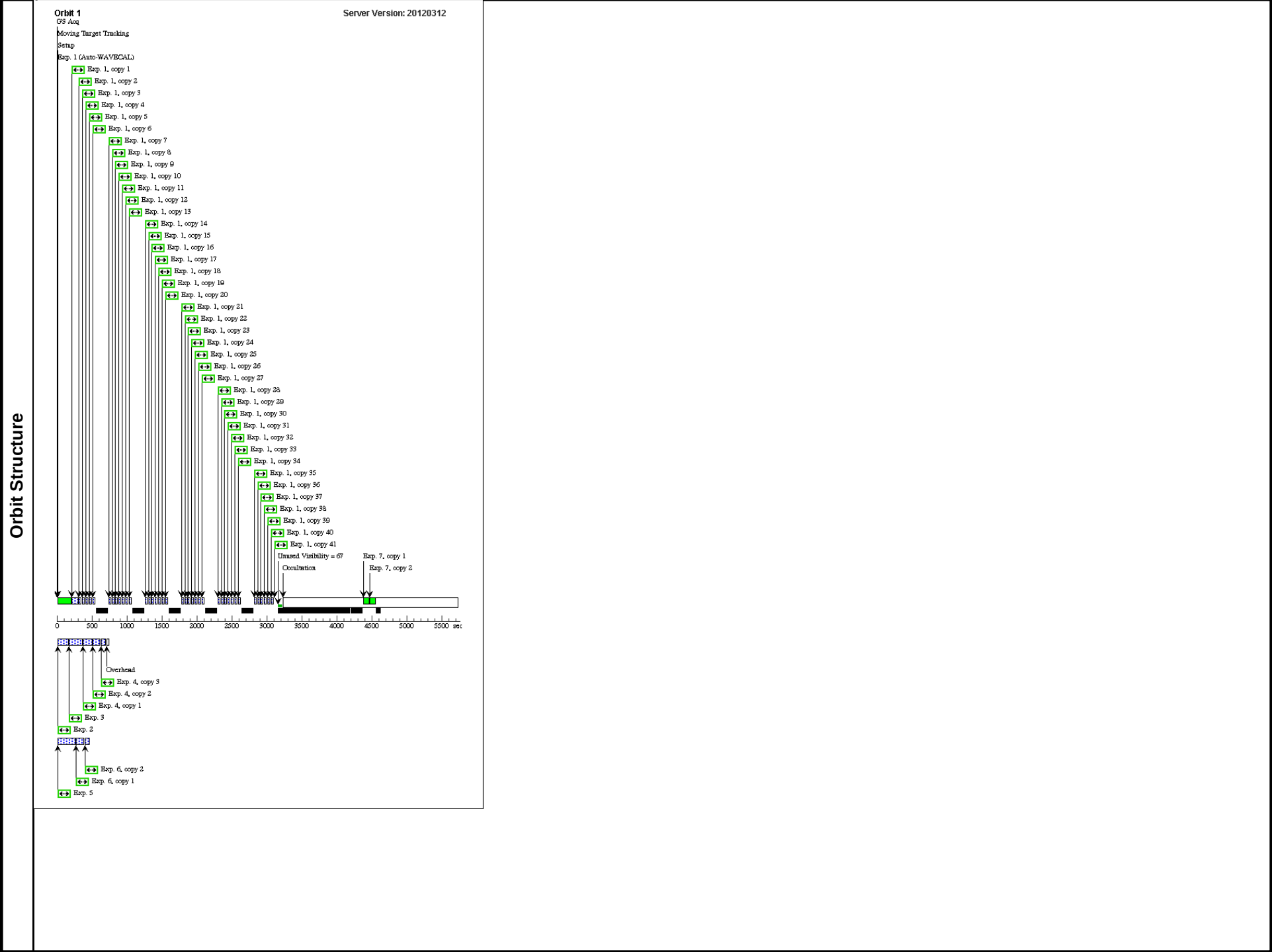
# Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

|   |                                                                          |                           |                 |                        |                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |     |
|---|--------------------------------------------------------------------------|---------------------------|-----------------|------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 8 | STIS/G430L (2) MOON-HIPPAR<br>(STIS.sp.18 CHUS-C<br>5997)                | STIS/CCD, ACCUM, 52X0.5E1 | G430L<br>4300 A | CR-SPLIT=NO;<br>GAIN=4 | Prime + Parallel Gro<br>up 8-13 in Visit 45 | 11 Secs X 37                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | [2] |
|   |                                                                          |                           |                 |                        |                                             | [==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)]<br>[==>(Copy 4)]<br>[==>(Copy 5)]<br>[==>(Copy 6)]<br>[==>(Copy 7)]<br>[==>(Copy 8)]<br>[==>(Copy 9)]<br>[==>(Copy 10)]<br>[==>(Copy 11)]<br>[==>(Copy 12)]<br>[==>(Copy 13)]<br>[==>(Copy 14)]<br>[==>(Copy 15)]<br>[==>(Copy 16)]<br>[==>(Copy 17)]<br>[==>(Copy 18)]<br>[==>(Copy 19)]<br>[==>(Copy 20)]<br>[==>(Copy 21)]<br>[==>(Copy 22)]<br>[==>(Copy 23)]<br>[==>(Copy 24)]<br>[==>(Copy 25)]<br>[==>(Copy 26)]<br>[==>(Copy 27)]<br>[==>(Copy 28)]<br>[==>(Copy 29)]<br>[==>(Copy 30)]<br>[==>(Copy 31)]<br>[==>(Copy 32)]<br>[==>(Copy 33)]<br>[==>(Copy 34)]<br>[==>(Copy 35)]<br>[==>(Copy 36)]<br>[==>(Copy 37)] |     |
| 9 | WFC3/UVI ANY<br>S/F395N (fu<br>ll-frame)<br>(WFC3UVI<br>S.im.186086<br>) | WFC3/UVIS, ACCUM, UVIS    | F395N           | SAA CONTOUR 24         | Prime + Parallel Gro<br>up 8-13 in Visit 45 | 1.2 Secs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | [2] |
|   |                                                                          |                           |                 |                        |                                             | [==>]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |

# Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

|  |    |                                                                  |     |                                   |       |             |                |                                         |                                                               |     |
|--|----|------------------------------------------------------------------|-----|-----------------------------------|-------|-------------|----------------|-----------------------------------------|---------------------------------------------------------------|-----|
|  | 10 | WFC3/UVI<br>S/F953N (full-frame)<br>(WFC3UVI<br>S.im.189644<br>) | ANY | WFC3/UVIS, ACCUM, UVIS            | F953N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 45 | 2 Secs<br>[==>]                                               |     |
|  | 11 | WFC3/UVI<br>S/F953N (512x512)<br>(WFC3UVI<br>S.im.186051<br>)    | ANY | WFC3/UVIS, ACCUM, UVIS2-M512C-SUB | F953N | CR-SPLIT=NO | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 45 | 2 Secs X 3<br>[==>(Copy 1)]<br>[==>(Copy 2)]<br>[==>(Copy 3)] | [2] |
|  | 12 | ACS/WFC/<br>F502N (full-frame)<br>(ACS.im.186037)                | ANY | ACS/WFC, ACCUM, WFC               | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 45 | 0.5 Secs<br>[==>]                                             | [2] |
|  | 13 | ACS/WFC/<br>F502N (512x512)<br>(ACS.im.186037)                   | ANY | ACS/WFC, ACCUM, WFC1-512          | F502N |             | SAA CONTOUR 24 | Prime + Parallel Group 8-13 in Visit 45 | 0.5 Secs X 2<br>[==>(Copy 1)]<br>[==>(Copy 2)]                | [2] |

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Proposal 12537 - Visit 45 - Venus observed as an extrasolar planet

