



## 10822 - CIII] Imagery of Planetary Nebulae

Cycle: 15, Proposal Category: GO

(Availability Mode: SUPPORTED)

### INVESTIGATORS

| <i>Name</i>                        | <i>Institution</i>   | <i>E-Mail</i>                 |
|------------------------------------|--|-------------------------------|
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| Dr. Brent Alan Buckalew (CoI)      | University of Wyoming  | brentb@ipac.caltech.edu       |

### VISITS

| <i>Visit</i> | <i>Targets</i> | <i>Configurations</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current<br/>with Visit?</i> |
|--------------|----------------|-----------------------|--------------------|-------------------------------|-----------------------------------|
| 01           | (1) NGC2392    | WFPC2                 | 2                  | 16-May-2006 21:11:10.0        | yes                               |
| 02           | (2) NGC3242    | WFPC2                 | 2                  | 16-May-2006 21:11:15.0        | yes                               |
| 03           | (3) NGC6543    | WFPC2                 | 2                  | 16-May-2006 21:11:19.0        | yes                               |
| 04           | (4) NGC6720    | WFPC2                 | 3                  | 16-May-2006 21:11:23.0        | yes                               |
| 05           | (5) NGC7662    | WFPC2                 | 2                  | 16-May-2006 21:11:27.0        | yes                               |

11 Total Orbits Used

## **ABSTRACT**

We propose to image five planetary nebulae (PNe) with the F185W filter of WFPC2 in order to study the spatial distribution of the ultraviolet C III] 1909 Angstrom line relative to [O III] 5007 Angstrom and other optical lines. This program follows a Cycle 12 SNAP program (GO 9740) of WFPC2 F185W imaging of PNe and H II regions which validated the feasibility of obtaining images of bright PNe in C III] through careful continuum subtraction and calibrations based on archival IUE SWP and LWP/R spectra. However, in the SNAP program only short (10 minute) exposures of four PNe were taken; we now propose much longer exposures (60-72 minutes) to obtain the desired signal-to-noise to develop high quality C++ ionization maps for comparison with O++ and other ions via photoionization modeling. The five PNe chosen: NGC 2392, NGC 3242, NGC 6543, NGC 6720, and NGC 7662 were selected on the basis of their high surface brightness, extensive UV spectra available from IUE and HST, and numerous WFPC2 images in the archives in other emission lines. We expect the results of this study to impact the utility and accuracy of using the C III] 1909 lines compared to [O III] 5007 for C/O abundance derivations in PNe and H II regions.

## **OBSERVING DESCRIPTION**

The observations consist of long WFPC2 exposures of five planetary nebulae (PNe) centered in the WF3 CCD (WF3-FIX) through the F185W (for the UV CIII] 1909 Ang line + continuum) filter and shorter (3 x 60 sec) exposures with the F547M (continuum) filter.

The project has been granted 11 orbits (despite a typo in the front pages of the original APT submission. Thanks to the PC, Shelly Meyett, for clearing this matter up with the time allocation powers at STScI!

For NGC 2392, NGC 3242, and NGC 7662, visibility lengths over two orbits permit three 60 sec F547M exposures and 900+800 sec F185W exposures in the first orbit, followed by two 1200 sec exposures in the second orbit.

For NGC 6543, slightly longer visibility orbits permit two 900 sec F185W exposures in the first orbit and two 1300 sec exposures in the second orbit.

For NGC 6720, which has a lower surface brightness, three orbits are allocated, with exposures as per the three PNe in the first group over the first two orbits, plus a duplication of the second orbit F185W (1200 + 1200 sec) exposures in the third orbit.

Proposal 10822 - Overview

No special requirements are made, "point and shoot!"

RJD 5/12/2006

**REAL TIME JUSTIFICATION**

None

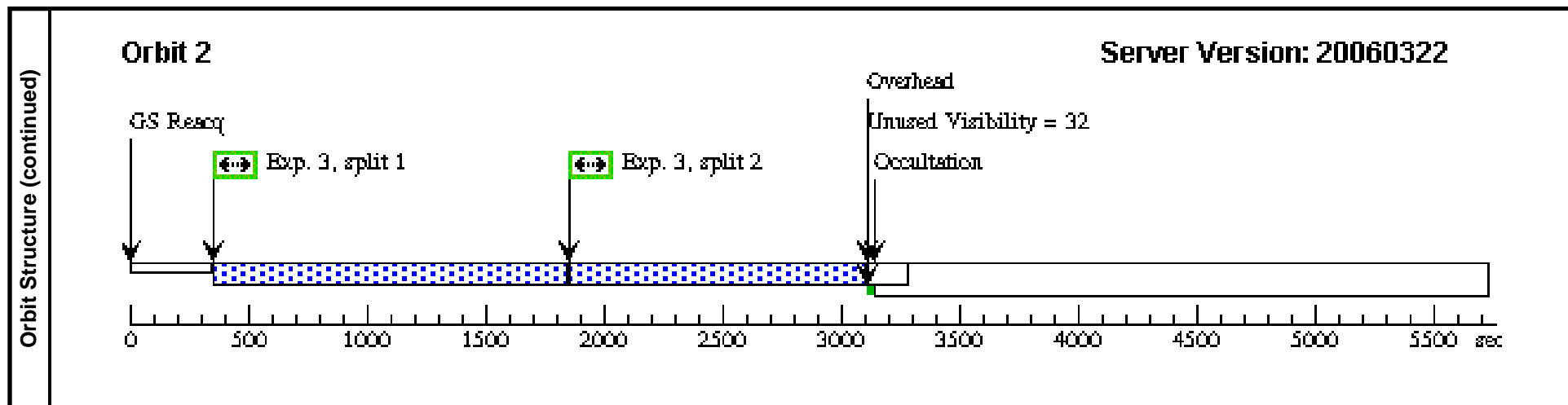
**CALIBRATION JUSTIFICATION**

None

Proposal 10822 - Visit 01 - CIII] Imagery of Planetary Nebulae

Wed May 17 01:11:29 GMT 2006

| Visit           | <b>Proposal 10822, Visit 01</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFPC2<br>Special Requirements: (none)  |   |                          |   |                       |               |        |   |                          |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
|-----------------|---|---|--------------------------|---|-----------------------|---------------|--------|---|--------------------------|---------------|---------------|---------------|---------|---|-------|---|-----------------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|
| Fixed Targets   | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>NGC2392</td> <td>RA: 07 29 10.7700 (112.2948750d)<br/>Dec: +20 54 42.50 (20.91181d)<br/>Equinox: J2000</td> <td></td> <td>V=10.1+/-0.1<br/>F(1909+cont)=2.0E-13 ergs cm-2 sec-1 arcsec-1</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: Updated 5/11/06 RJD</i></p>   |   |                          |   |                       | #             | Name   | Target Coordinates  | Targ. Coord. Corrections | Fluxes        | Miscellaneous | (1)           | NGC2392 | RA: 07 29 10.7700 (112.2948750d)<br>Dec: +20 54 42.50 (20.91181d)<br>Equinox: J2000 |       | V=10.1+/-0.1<br>F(1909+cont)=2.0E-13 ergs cm-2 sec-1 arcsec-1 | Reference Frame: ICRS |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| #               | Name  | Target Coordinates  | Targ. Coord. Corrections | Fluxes  | Miscellaneous         |               |        |   |                          |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| (1)             | NGC2392   | RA: 07 29 10.7700 (112.2948750d)<br>Dec: +20 54 42.50 (20.91181d)<br>Equinox: J2000 |                          | V=10.1+/-0.1<br>F(1909+cont)=2.0E-13 ergs cm-2 sec-1 arcsec-1 | Reference Frame: ICRS |               |        |   |                          |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| Exposures       | <table border="1"> <thead> <tr> <th>#</th> <th>Label</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Reqs.</th> <th>Groups</th> <th>Exp. Time/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1) NGC2392</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F547M</td> <td></td> <td></td> <td></td> <td></td> <td>60.0 Secs X 3<br/>[=&gt;60.0 Secs (Copy 1)]<br/>[=&gt;60.0 Secs (Copy 2)]<br/>[=&gt;60.0 Secs (Copy 3)]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>(1) NGC2392</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F185W</td> <td></td> <td></td> <td></td> <td></td> <td>1700.0 Secs<br/>[=&gt;900.0 Secs (Split 1)]<br/>[=&gt;800.0 Secs (Split 2)]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>(1) NGC2392</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F185W</td> <td></td> <td></td> <td></td> <td></td> <td>2400.0 Secs<br/>[=&gt;1200.0 Secs (Split 1)]<br/>[=&gt;1200.0 Secs (Split 2)]</td> <td>[2]</td> </tr> </tbody> </table> |   |                          |   |                       | #             | Label  | Target  | Config,Mode,Aperture     | Spectral Els. | Opt. Params.  | Special Reqs. | Groups  | Exp. Time/[Actual Dur.]   | Orbit | 1   | (1) NGC2392           | WFPC2, IMAGE, WF3-FIX | F547M |  |  |  |  | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1] | 2 | (1) NGC2392 | WFPC2, IMAGE, WF3-FIX | F185W |  |  |  |  | 1700.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>800.0 Secs (Split 2)] | [1] | 3 | (1) NGC2392 | WFPC2, IMAGE, WF3-FIX | F185W |  |  |  |  | 2400.0 Secs<br>[=>1200.0 Secs (Split 1)]<br>[=>1200.0 Secs (Split 2)] | [2] |
| #               | Label   | Target  | Config,Mode,Aperture     | Spectral Els.   | Opt. Params.          | Special Reqs. | Groups | Exp. Time/[Actual Dur.]   | Orbit                    |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 1               | (1) NGC2392   | WFPC2, IMAGE, WF3-FIX   | F547M                    |   |                       |               |        | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1]                      |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 2               | (1) NGC2392   | WFPC2, IMAGE, WF3-FIX   | F185W                    |   |                       |               |        | 1700.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>800.0 Secs (Split 2)]                         | [1]                      |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 3               | (1) NGC2392   | WFPC2, IMAGE, WF3-FIX   | F185W                    |   |                       |               |        | 2400.0 Secs<br>[=>1200.0 Secs (Split 1)]<br>[=>1200.0 Secs (Split 2)]                       | [2]                      |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| Orbit Structure | <div style="text-align: right;">Server Version: 20060322</div> <p><b>Orbit 1</b></p> <p>Timeline labels: GS Acq, Exp. 1, copy 1, Exp. 1, copy 2, Exp. 1, copy 3, Overhead, Exp. 2, split 1, Exp. 2, split 2, Occultation, Overhead, Unused Visibility = 32</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec.</p>   |   |                          |   |                       |               |        |   |                          |               |               |               |         |   |       |   |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |



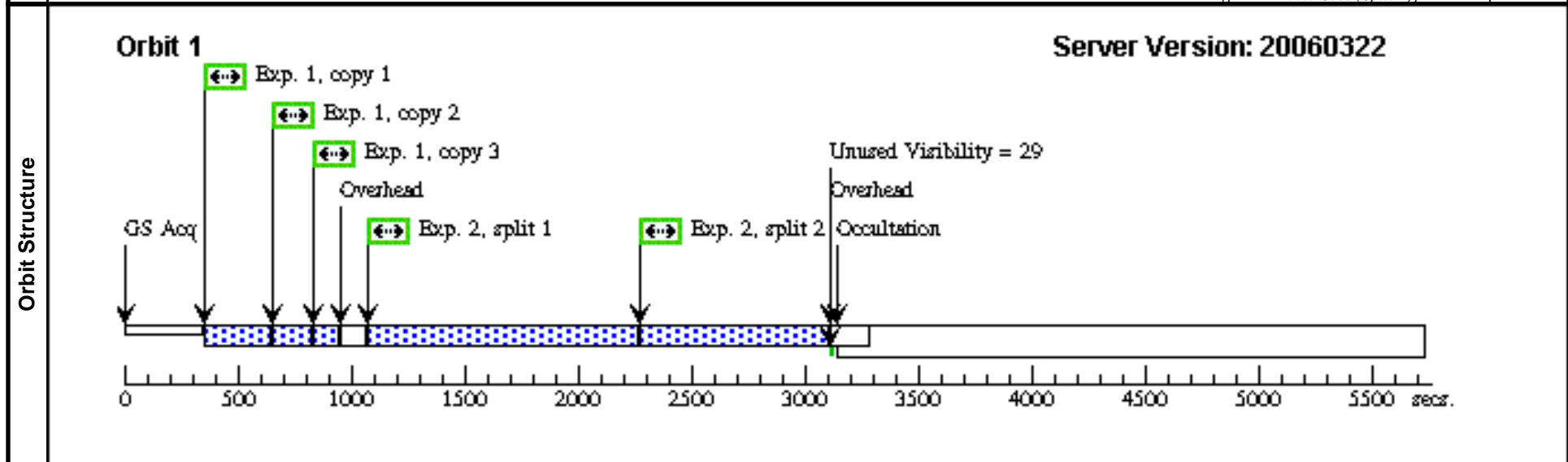
Proposal 10822 - Visit 02 - CIII] Imagery of Planetary Nebulae

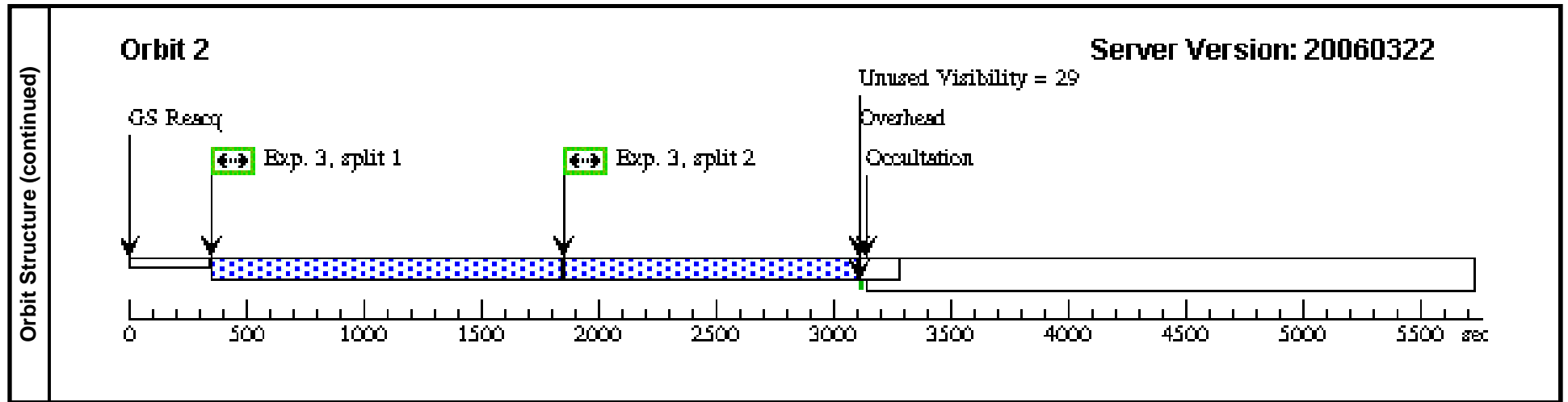
Wed May 17 01:11:29 GMT 2006

|              |  |  |  |  |  |
|--------------|--|--|--|--|--|
| <b>Visit</b> | <b>Proposal 10822, Visit 02</b>          |  |  |  |  |
|              | <b>Diagnostic Status: No Diagnostics</b> |  |  |  |  |
|              | Scientific Instruments: WFPC2            |  |  |  |  |
|              | Special Requirements: (none)             |  |  |  |  |

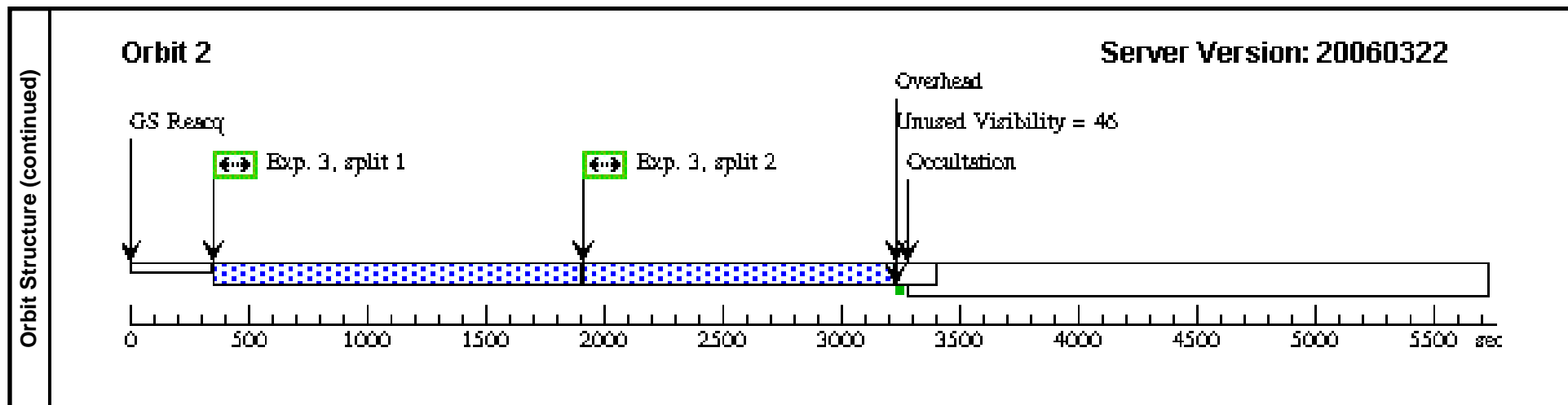
| <b>Fixed Targets</b> | #                                    | Name    | Target Coordinates   | Targ. Coord. Corrections | Fluxes  | Miscellaneous         |
|----------------------|--------------------------------------|---------|--|--------------------------|---|-----------------------|
|                      | (2)                                  | NGC3242 | RA: 10 24 46.1100 (156.1921250d)<br>Dec: -18 38 32.60 (-18.64239d)<br>Equinox: J2000 |                          | V=10.3<br>F(1909+cont)=2.5E-13 ergs sec-1 cm-2 arcsec-2 | Reference Frame: ICRS |
|                      | <i>Comments: Updated 5/11/06 RJD</i> |         |  |                          |   |                       |

| <b>Exposures</b> | # | Label | Target      | Config,Mode,Aperture  | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time/[Actual Dur.]   | Orbit |
|------------------|---|-------|-------------|-----------------------|---------------|--------------|---------------|--------|---|-------|
|                  | 1 |       | (2) NGC3242 | WFPC2, IMAGE, WF3-FIX | F547M         |              |               |        | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1]   |
|                  | 2 |       | (2) NGC3242 | WFPC2, IMAGE, WF3-FIX | F185W         |              |               |        | 1700.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>800.0 Secs (Split 2)]                         | [1]   |
|                  | 3 |       | (2) NGC3242 | WFPC2, IMAGE, WF3-FIX | F185W         |              |               |        | 2400.0 Secs<br>[=>1200.0 Secs (Split 1)]<br>[=>1200.0 Secs (Split 2)]                       | [2]   |





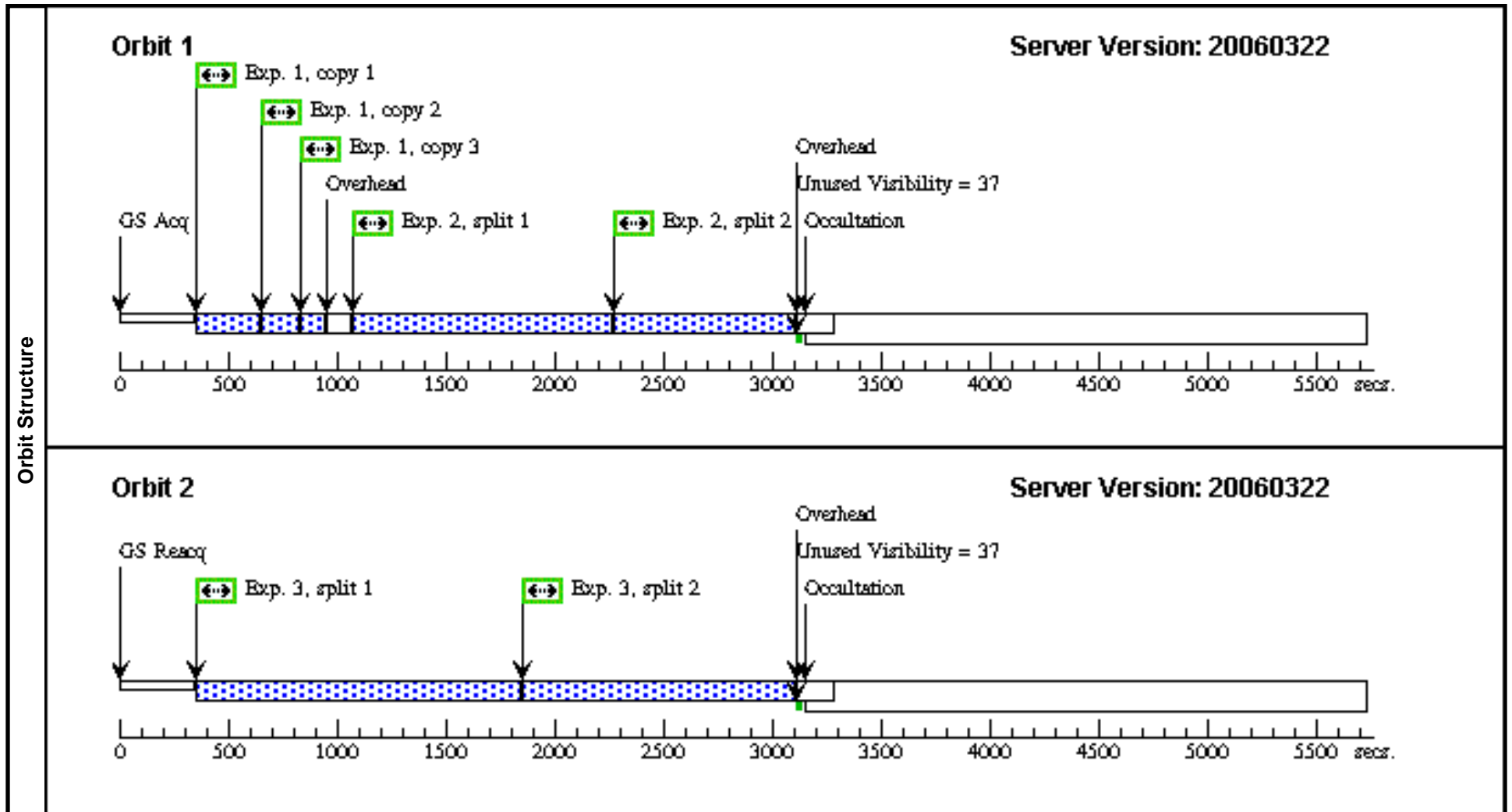
| Visit           | <b>Proposal 10822, Visit 03</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFPC2<br>Special Requirements: (none)   |   |                          |  |                       |              |        |   |                          |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
|-----------------|--|---|--------------------------|--|-----------------------|--------------|--------|---|--------------------------|---------------|---------------|--------------|---------|---|-------|--|-----------------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|
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| #               | Name   | Target Coordinates  | Targ. Coord. Corrections | Fluxes   | Miscellaneous         |              |        |   |                          |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| (3)             | NGC6543  | RA: 17 58 33.4200 (269.6392500d)<br>Dec: +66 37 59.50 (66.63319d)<br>Equinox: J2000 |                          | V=9.8<br>F(1909+cont)=1.5E-13 ergs sec-1 cm-2 arcsec-2 | Reference Frame: ICRS |              |        |   |                          |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| Exposures       | <table border="1"> <thead> <tr> <th>#</th> <th>Label</th> <th>Target</th> <th>Config,Mode,Aperture</th> <th>Spectral Els.</th> <th>Opt. Params.</th> <th>Special Req.</th> <th>Groups</th> <th>Exp. Time/[Actual Dur.]</th> <th>Orbit</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(3) NGC6543</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F547M</td> <td></td> <td></td> <td></td> <td></td> <td>60.0 Secs X 3<br/>[=&gt;60.0 Secs (Copy 1)]<br/>[=&gt;60.0 Secs (Copy 2)]<br/>[=&gt;60.0 Secs (Copy 3)]</td> <td>[1]</td> </tr> <tr> <td>2</td> <td>(3) NGC6543</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F185W</td> <td></td> <td></td> <td></td> <td></td> <td>1800.0 Secs<br/>[=&gt;900.0 Secs (Split 1)]<br/>[=&gt;900.0 Secs (Split 2)]</td> <td>[1]</td> </tr> <tr> <td>3</td> <td>(3) NGC6543</td> <td>WFPC2, IMAGE, WF3-FIX</td> <td>F185W</td> <td></td> <td></td> <td></td> <td></td> <td>2600.0 Secs<br/>[=&gt;1300.0 Secs (Split 1)]<br/>[=&gt;1300.0 Secs (Split 2)]</td> <td>[2]</td> </tr> </tbody> </table> |   |                          |  |                       | #            | Label  | Target  | Config,Mode,Aperture     | Spectral Els. | Opt. Params.  | Special Req. | Groups  | Exp. Time/[Actual Dur.]   | Orbit | 1  | (3) NGC6543           | WFPC2, IMAGE, WF3-FIX | F547M |  |  |  |  | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1] | 2 | (3) NGC6543 | WFPC2, IMAGE, WF3-FIX | F185W |  |  |  |  | 1800.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>900.0 Secs (Split 2)] | [1] | 3 | (3) NGC6543 | WFPC2, IMAGE, WF3-FIX | F185W |  |  |  |  | 2600.0 Secs<br>[=>1300.0 Secs (Split 1)]<br>[=>1300.0 Secs (Split 2)] | [2] |
| #               | Label  | Target  | Config,Mode,Aperture     | Spectral Els.  | Opt. Params.          | Special Req. | Groups | Exp. Time/[Actual Dur.]   | Orbit                    |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 1               | (3) NGC6543  | WFPC2, IMAGE, WF3-FIX   | F547M                    |  |                       |              |        | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1]                      |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 2               | (3) NGC6543  | WFPC2, IMAGE, WF3-FIX   | F185W                    |  |                       |              |        | 1800.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>900.0 Secs (Split 2)]                         | [1]                      |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 3               | (3) NGC6543  | WFPC2, IMAGE, WF3-FIX   | F185W                    |  |                       |              |        | 2600.0 Secs<br>[=>1300.0 Secs (Split 1)]<br>[=>1300.0 Secs (Split 2)]                       | [2]                      |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| Orbit Structure | <div style="text-align: right;">Server Version: 20060322</div> <p><b>Orbit 1</b></p> <p>Timeline labels: GS Acq, Exp. 1, copy 1, Exp. 1, copy 2, Exp. 1, copy 3, Overhead, Exp. 2, split 1, Exp. 2, split 2, Occultation, Unused Visibility = 46</p> <p>X-axis: 0, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500 sec.</p>  |   |                          |  |                       |              |        |   |                          |               |               |              |         |   |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |

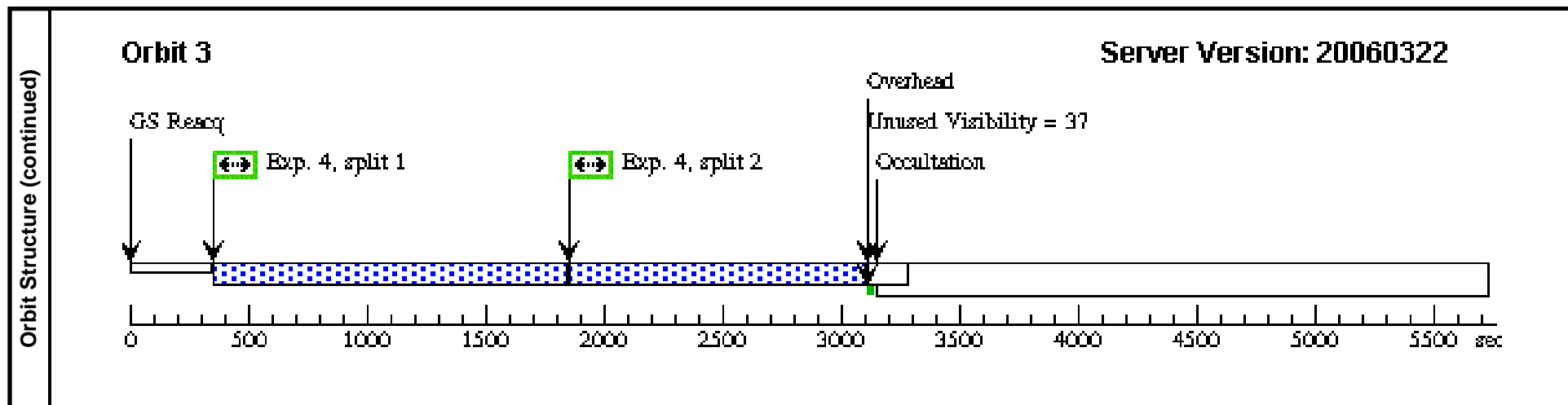


Proposal 10822 - Visit 04 - CIII] Imagery of Planetary Nebulae

Wed May 17 01:11:31 GMT 2006

| Visit     | <b>Proposal 10822, Visit 04</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFPC2<br>Special Requirements: (none) |         |   |                       |   |                       |               |        |   |       |
|-----------|--|---------|---|-----------------------|---|-----------------------|---------------|--------|---|-------|
|           | Fixed Targets  | #       | Name  | Target Coordinates    | Targ. Coord. Corrections                                | Fluxes                | Miscellaneous |        |   |       |
|           | (4)  | NGC6720 | RA: 18 53 35.0800 (283.3961667d)<br>Dec: +33 01 45.00 (33.02917d)<br>Equinox: J2000 |                       | V=15.0<br>F(1909+cont)=2.8E-14 ergs sec-1 cm-2 arcsec-2 | Reference Frame: ICRS |               |        |   |       |
|           | <i>Comments: Updated 5/11/06 RJD</i>   |         |   |                       |   |                       |               |        |   |       |
| Exposures | #  | Label   | Target  | Config,Mode,Aperture  | Spectral Els.   | Opt. Params.          | Special Reqs. | Groups | Exp. Time/[Actual Dur.]   | Orbit |
|           | 1  |         | (4) NGC6720   | WFPC2, IMAGE, WF3-FIX | F547M   |                       |               |        | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1]   |
|           | 2  |         | (4) NGC6720   | WFPC2, IMAGE, WF3-FIX | F185W   |                       |               |        | 1700.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>800.0 Secs (Split 2)]                         | [1]   |
|           | 3  |         | (4) NGC6720   | WFPC2, IMAGE, WF3-FIX | F185W   |                       |               |        | 2400.0 Secs<br>[=>1200.0 Secs (Split 1)]<br>[=>1200.0 Secs (Split 2)]                       | [2]   |
|           | 4  |         | (4) NGC6720   | WFPC2, IMAGE, WF3-FIX | F185W   |                       |               |        | 2400.0 Secs<br>[=>(Split 1)]<br>[=>(Split 2)]   | [3]   |





| Visit           | Proposal 10822, Visit 05<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFPC2<br>Special Requirements: (none)  |  |                          |  |                       |               |        |   |       |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
|-----------------|---|--|--------------------------|--|-----------------------|---------------|--------|---|-------|--|---|-------|--------------------|--------------------------|---------------|---------------|---------------|---------|--|-------|--|-----------------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|---|-------------|-----------------------|-------|--|--|--|--|---|-----|
| Fixed Targets   | <table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(5)</td> <td>NGC7662</td> <td>RA: 23 25 54.0000 (351.4750000d)<br/>Dec: +42 32 6.03 (42.53501d)<br/>Equinox: J2000</td> <td></td> <td>V=9.4<br/>F(1909+cont)=1.3E-13 ergs sec-1 cm-2 arcsec-2</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p>Comments: Udated 5/11/06 RJD</p>   |  |                          |  |                       |               |        |   |       |  | # | Name  | Target Coordinates | Targ. Coord. Corrections | Fluxes        | Miscellaneous | (5)           | NGC7662 | RA: 23 25 54.0000 (351.4750000d)<br>Dec: +42 32 6.03 (42.53501d)<br>Equinox: J2000 |       | V=9.4<br>F(1909+cont)=1.3E-13 ergs sec-1 cm-2 arcsec-2 | Reference Frame: ICRS |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| #               | Name  | Target Coordinates   | Targ. Coord. Corrections | Fluxes   | Miscellaneous         |               |        |   |       |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| (5)             | NGC7662   | RA: 23 25 54.0000 (351.4750000d)<br>Dec: +42 32 6.03 (42.53501d)<br>Equinox: J2000 |                          | V=9.4<br>F(1909+cont)=1.3E-13 ergs sec-1 cm-2 arcsec-2 | Reference Frame: ICRS |               |        |   |       |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
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| #               | Label   | Target   | Config,Mode,Aperture     | Spectral Els.  | Opt. Params.          | Special Reqs. | Groups | Exp. Time/[Actual Dur.]   | Orbit |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 1               | (5) NGC7662   | WFPC2, IMAGE, WF3-FIX  | F547M                    |  |                       |               |        | 60.0 Secs X 3<br>[=>60.0 Secs (Copy 1)]<br>[=>60.0 Secs (Copy 2)]<br>[=>60.0 Secs (Copy 3)] | [1]   |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 2               | (5) NGC7662   | WFPC2, IMAGE, WF3-FIX  | F185W                    |  |                       |               |        | 1700.0 Secs<br>[=>900.0 Secs (Split 1)]<br>[=>800.0 Secs (Split 2)]                         | [1]   |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| 3               | (5) NGC7662   | WFPC2, IMAGE, WF3-FIX  | F185W                    |  |                       |               |        | 2400.0 Secs<br>[=>1200.0 Secs (Split 1)]<br>[=>1200.0 Secs (Split 2)]                       | [2]   |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |
| Orbit Structure | <div style="text-align: right;">Server Version: 20060322</div> <p><b>Orbit 1</b></p> <p>Timeline (seconds):</p> <ul style="list-style-type: none"> <li>0: GS Acq</li> <li>~400: Exp. 1, copy 1</li> <li>~600: Exp. 1, copy 2</li> <li>~800: Exp. 1, copy 3</li> <li>~1000: Exp. 2, split 1</li> <li>~2300: Exp. 2, split 2</li> <li>~3100: Occultation</li> <li>~3200: Overhead</li> </ul> <p>Unused Visibility = 54</p>  |  |                          |  |                       |               |        |   |       |  |   |       |                    |                          |               |               |               |         |  |       |  |                       |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |   |             |                       |       |  |  |  |  |   |     |

