



# 11738 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Cycle: 17, Proposal Category: GO  
(Availability Mode: SUPPORTED)

## INVESTIGATORS

| <i>Name</i>                                  | <i>Institution</i>                             | <i>E-Mail</i>                   |
|--|--|---------------------------------|
| <b>Dr. George K. Miley (PI) (ESA Member)</b> | <b>Sterrewacht Leiden</b>                      | <b>miley@strw.Leidenuniv.nl</b> |
| Dr. Carlos De Breuck (CoI) (ESA Member)      | European Southern Observatory - Germany        | cdebrec@eso.org                 |
| Dr. Wil J.M. van Breugel (CoI) (AdminUSPI)   | University of California - Merced              | vanbreugel1@llnl.gov            |
| Dr. Holland Ford (CoI)                       | The Johns Hopkins University                   | ford@pha.jhu.edu                |
| Dr. Nina Hatch (CoI) (ESA Member)            | Sterrewacht Leiden                             | hatch@strw.leidenuniv.nl        |
| Mr. Ernst Kuiper (CoI) (ESA Member)          | Sterrewacht Leiden                             | kuiper@strw.leidenuniv.nl       |
| Dr. Jaron Kurk (CoI) (ESA Member)            | Max-Planck-Institut für Astronomie, Heidelberg | kurk@mpia.de                    |
| Dr. Roderik A. Overzier (CoI)                | Max-Planck-Institut für Astrophysik            | overzier@MPA-Garching.MPG.DE    |
| Dr. Laura Pentericci (CoI) (ESA Member)      | INAF, Osservatorio Astronomico di Roma         | penteric@mporzio.astro.it       |
| Dr. Huub Rottgering (CoI) (ESA Member)       | Sterrewacht Leiden                             | rottgeri@strw.leidenuniv.nl     |
| Dr. Joop Shaye (CoI)                         | Sterrewacht Leiden                             | shaye@strw.leidenuniv.nl        |
| Dr. Bram Venemans (CoI) (ESA Member)         | University of Cambridge                        | venemans@ast.cam.ac.uk          |
| Dr. Andrew Zirm (CoI)                        | The Johns Hopkins University                   | azirm@pha.jhu.edu               |

## VISITS

| <i>Visit</i> | <i>Targets used in Visit</i> | <i>Configurations used in Visit</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 01           | (8) MRC0406-244              | ACS/WFC                             | 4                  | 05-Oct-2010 21:02:41.0        | yes                           |
| 02           | (8) MRC0406-244              | ACS/WFC                             | 4                  | 05-Oct-2010 21:02:53.0        | yes                           |
| 03           | (8) MRC0406-244              | WFC3/IR                             | 1                  | 05-Oct-2010 21:03:00.0        | yes                           |

| <i>Visit</i> | <i>Targets used in Visit</i> | <i>Configurations used in Visit</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|------------------------------|-------------------------------------|--------------------|-------------------------------|-------------------------------|
| 04           | (8) MRC0406-244              | WFC3/IR                             | 1                  | 05-Oct-2010 21:03:04.0        | yes                           |
| 05           | (1) TX0828+193               | ACS/WFC                             | 4                  | 05-Oct-2010 21:03:11.0        | yes                           |
| 06           | (1) TX0828+193               | ACS/WFC                             | 4                  | 05-Oct-2010 21:03:21.0        | yes                           |
| 07           | (1) TX0828+193               | WFC3/IR                             | 1                  | 05-Oct-2010 21:03:27.0        | yes                           |
| 08           | (1) TX0828+193               | WFC3/IR                             | 1                  | 05-Oct-2010 21:03:30.0        | yes                           |
| 13           | (1) TX0828+193               | WFC3/IR                             | 1                  | 05-Oct-2010 21:03:33.0        | yes                           |
| 09           | (7) 4C41.17                  | WFC3/IR                             | 2                  | 05-Oct-2010 21:03:37.0        | yes                           |
| 14           | (7) 4C41.17                  | WFC3/IR                             | 2                  | 05-Oct-2010 21:03:42.0        | yes                           |
| 10           | (7) 4C41.17                  | WFC3/IR                             | 3                  | 05-Oct-2010 21:03:49.0        | yes                           |
| 11           | (7) 4C41.17                  | WFC3/IR                             | 2                  | 05-Oct-2010 21:03:56.0        | yes                           |
| 12           | (7) 4C41.17                  | WFC3/IR                             | 3                  | 05-Oct-2010 21:04:03.0        | yes                           |

33 Total Orbits Used

## ABSTRACT

Distant luminous radio galaxies are among the brightest known galaxies in the early Universe, pinpoint likely progenitors of dominant cluster galaxies and are unique laboratories for studying massive galaxy formation. Spectacular images with the ACS and NICMOS of one such object, the "Spiderweb Galaxy" at  $z = 2.2$ , show in exquisite detail, hierarchical merging occurring 11 Gyr ago. By imaging 3 additional Spiderweb-like galaxies we wish to study this potentially crucial phase of massive galaxy evolution, when hierarchical merging, galaxy downsizing and AGN feedback are all likely to be occurring. Properties of the complete sample of Spiderweb galaxies will be used to (i) constrain models for the formation and evolution of the most massive galaxies that dominate rich clusters and (ii) investigate the nature of chain and tadpole galaxies, a fundamental but poorly understood constituent of the early Universe.

We shall image rest-frame UV and optical continuum emission from 3 radio galaxies with  $2.4 < z < 3.8$  that appear clumpy and large in shallow WFPC/PC observations. The new observations will typically reach  $\sim 2$  magnitudes fainter over 20-40 times larger area than previously. Photometric and morphological parameters will be measured for satellite galaxies ("flies") in the clumpy massive hosts and for galaxies in  $\sim 1.5$  Mpc x 1.5 Mpc regions of surrounding protoclusters. Locations, sizes, elongations, clumpiness, masses, and star formation rates of the merging satellite and protocluster galaxies will be compared with new state of the art simulations. Combination of ACS and WFC3 images will help disentangle the

properties of the young and old populations.

Specific goals include:

- (i) investigating star formation histories of the satellite galaxies and the extended emission,
- (ii) studying "downsizing" and merging scenarios and
- (iii) measuring the statistics of linear galaxies and relating them to models for the formation of massive galaxies and to the properties of the important but enigmatic class of chain/tadpole galaxies in the HUDF.

## **OBSERVING DESCRIPTION**

We observe 3 radio galaxies and their surrounding environments using ACS WFC and WFC3 IR.

Visits 1-4:

-----

Target 1: MRC 0406-244. Fixed target coordinates are the radio galaxy co-ordinates. An additional POS TARG x:0.0 y:+20.0 is added to the acquisition so that the radio galaxy lies at least ~30" from the WFC chip gap.

Instrument and filters:

Visit 1: ACS WFC, F606W - 4 orbits;

Visit 2: ACS WFC, F814W - 4 orbits;

Visit 3: WFC3-IR, F110W - 1 orbit;

Visit 4: WFC3-IR, F160W - 1 orbit.

Description: Each of the ACS orbits have been divided into 3 subexposures using the pattern ACS-WFC-DITHER-LINE in order to cover the ACS WFC chip gap. 2 out of the 4 orbits in each visit have a POS TARG of x:+0.222 y:+0.24 in order to achieve subpixel dithering.

The WFC3 IR F110W orbit (visit 3) is divided into 7 subpixel dithers using the WFC3-IR-DITHER\_LINE pattern. We use NSAMP=15 and SAMP-SEQ=SPARS25 as SPARS25 is the minimum integration time required to obtain background limited images.

The WFC3 IR F160W orbit (visit4) is divided into 4 subpixel dithers using the WFC3-IR-DITHER\_LINE pattern. We use NSAMP=14 and SAMP-SEQ=SPARS50 (also because it is the minimum integration time required to obtain background limited images).

Both visits 3+4 have POS TARG x:-20, y:-20 to place the FOV entirely in the ACS FOV.

The allowed roll angles are chosen such that the new observations will as much of the same area as existing HST observations as possible.

The orientation of visits 2-4 are fixed to be the same as visit 1.

Visits 5-8:

-----

Target 2: TX0828+193.

The set-up of visits 5-8 is identical to that of visits 1-4, except for a change of target and a different POS TARG x:-10.0 y:+17.0 added to the acquisition so that the radio galaxy lies at least ~30" from the WFC chip gap. The orientation of visits 6-8 are fixed to be the same as visit 5.

Visits 9-12:

-----

Target 3: 4c41.17.

The fixed target coordinates place the WFC3-IR FOV within the FOV of previous HST observations, whilst avoiding bright stars. The radio galaxy is offset from the center by ~21".

Instrument and filters:

VISIT 9: WFC3-IR , F160W - 2 orbits;

VISIT 10: WFC3-IR , F105W - 3 orbits;

VISIT 11: WFC3-IR , F105W - 2 orbits;

VISIT 12: WFC3-IR , F105W - 3 orbits.

Description:

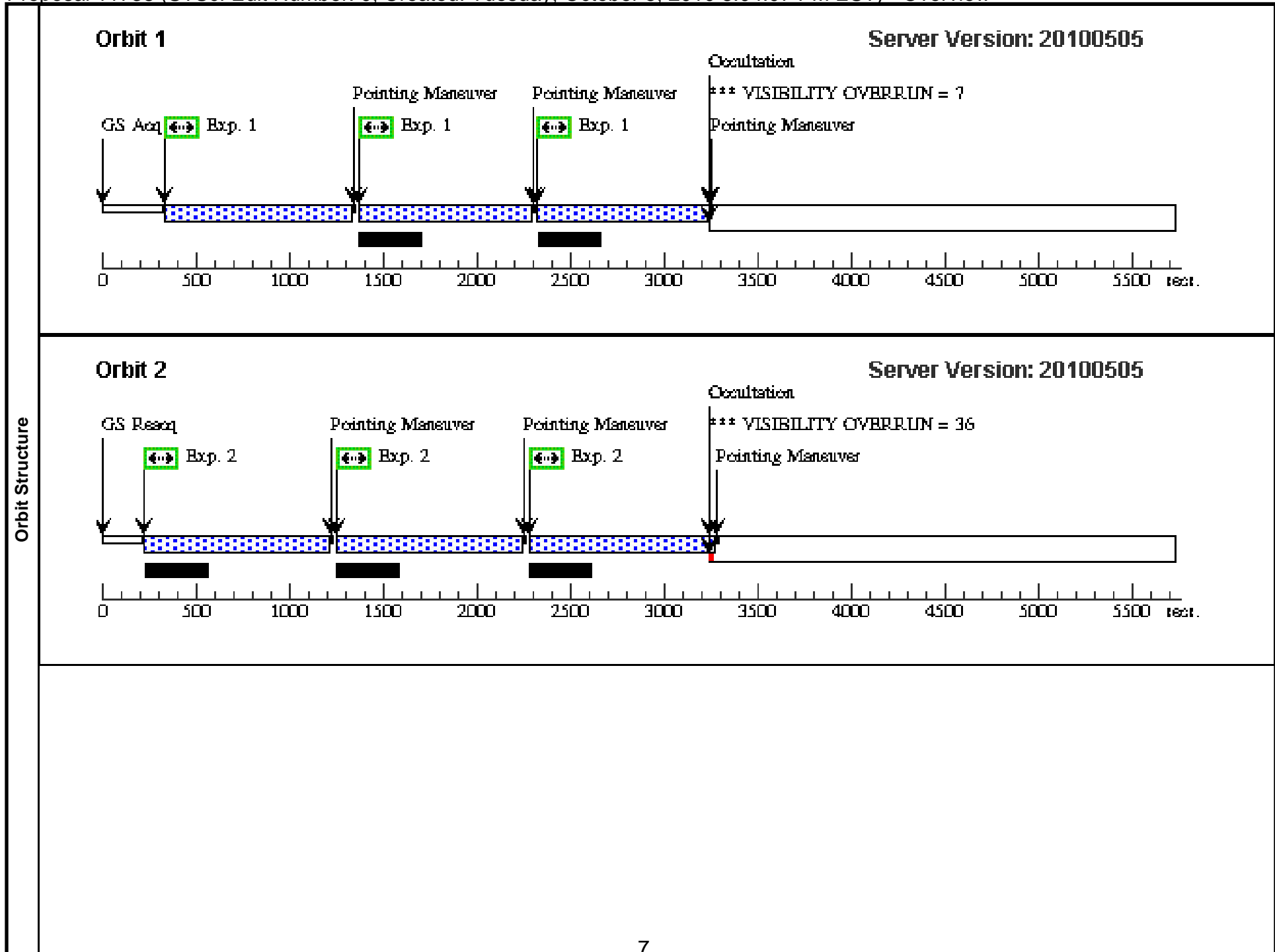
The WFC3 IR F160W orbit (visit 9) is divided into 4 subpixel dithers using the WFC3-IR-DITHER\_LINE pattern. We use NSAMP=14/15 and SAMP-SEQ=SPARS50.

Each orbit in visits 10-12 is divided into 4 subexposures using the pattern WFC3-IR-DITHER-LINE to achieve subpixel dithering.

We use NSAMP=15 and SAMP-SEQ=SPARS25 as SPARS25 is the minimum integration time required to obtain background limited images.

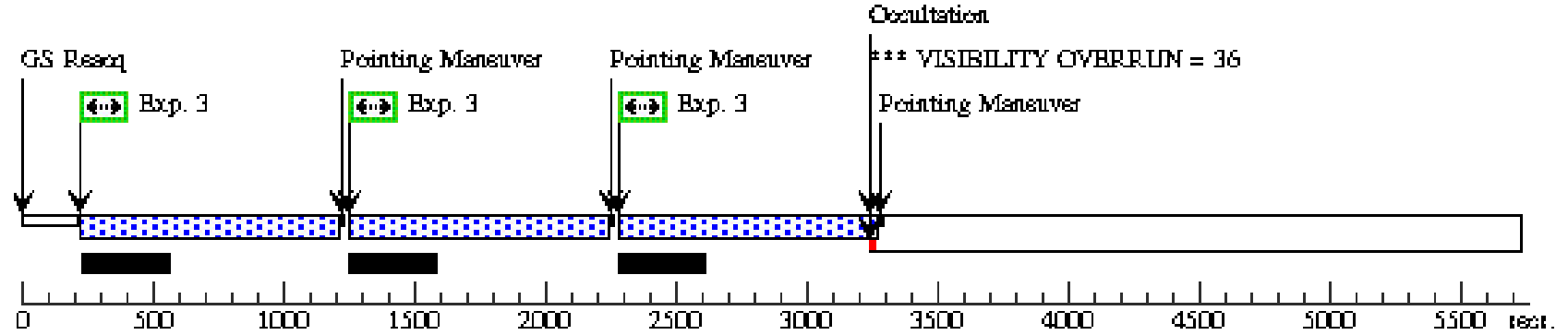
Roll angles: There is a bright ( $J=13.2\text{mag}$ ) star  $25''$  away from the target. The roll angles are chosen so the diffraction spikes from this star will not be within  $15''$  from the radio galaxy. The orientation of visits 10-12 are fixed to be the same as visit 9.

|                      |  |  |  |                                 |                      |                      |   |                             |   |              |
|----------------------|--|--|--|---------------------------------|----------------------|----------------------|---|-----------------------------|---|--------------|
| <b>Visit</b>         | <b>Proposal 11738, Visit 01, completed</b><br><b>Diagnostic Status: Warning</b><br>Scientific Instruments: ACS/WFC<br>Special Requirements: ORIENT 320D TO 140 D   |  |  |                                 |                      |                      |   |                             |   |              |
|                      | (Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN |  |  |                                 |                      |                      |   |                             |   |              |
| <b>Diagnosics</b>    |  |  |  |                                 |                      |                      |   |                             |   |              |
|                      |  |  |  |                                 |                      |                      |   |                             |   |              |
| <b>Patterns</b>      | <b>#</b>   | <b>Primary Pattern</b>   |  | <b>Secondary Pattern</b>        |                      | <b>Exposures</b>     |   |                             |   |              |
|                      | (1)  | Pattern Type=ACS-WFC-DITHER-<br>LINE<br>Purpose=DITHER<br>Number Of Points=3<br>Point Spacing=3.011<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.28<br>Angle Between Sides=<br>Center Pattern=false |                                 |                      | (1), (2), (3), (4)   |   |                             |   |              |
| <b>Fixed Targets</b> | <b>#</b>   | <b>Name</b>  | <b>Target Coordinates</b>  | <b>Targ. Coord. Corrections</b> | <b>Fluxes</b>        | <b>Miscellaneous</b> |   |                             |   |              |
|                      | (8)  | MRC0406-244  | RA: 04 08 51.6400 (62.2151667d)<br>Dec: -24 18 16.70 (-24.30464d)<br>Equinox: J2000                    |                                 | V=22                 | Reference Frame: NED |   |                             |   |              |
| <b>Exposures</b>     | <b>#</b>   | <b>Label</b>   | <b>Target</b>  | <b>Config,Mode,Aperture</b>     | <b>Spectral Els.</b> | <b>Opt. Params.</b>  | <b>Special Reqs.</b>                              | <b>Groups</b>               | <b>Exp. Time/[Actual Dur.]</b>                                    | <b>Orbit</b> |
|                      | 1  | MRC0406-2<br>44_F606W-<br>orbit1   | (8) MRC0406-244  | ACS/WFC, ACCUM, WFC             | F606W                |                      | POS TARG 0.0,20.0;<br>GS ACQ SCENARI<br>O BASE1B3 | Pattern 1, Exps 1-1 (<br>1) | 793 Secs<br>[=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)] | [1]          |
|                      | 2  | MRC0406-2<br>44_F606W-<br>orbit2   | (8) MRC0406-244  | ACS/WFC, ACCUM, WFC             | F606W                |                      | POS TARG 0.222,20<br>.240                         | Pattern 1, Exps 2-2 (<br>1) | 867 Secs<br>[=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)] | [2]          |
|                      | 3  | MRC0406-2<br>44_F606W-<br>orbit3   | (8) MRC0406-244  | ACS/WFC, ACCUM, WFC             | F606W                |                      | POS TARG 0.0,20.0                                 | Pattern 1, Exps 3-3 (<br>1) | 867 Secs<br>[=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)] | [3]          |
|                      | 4  | MRC0406-2<br>44_F606W-<br>orbit4   | (8) MRC0406-244  | ACS/WFC, ACCUM, WFC             | F606W                |                      | POS TARG 0.222,20<br>.240                         | Pattern 1, Exps 4-4 (<br>1) | 867 Secs<br>[=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)] | [4]          |



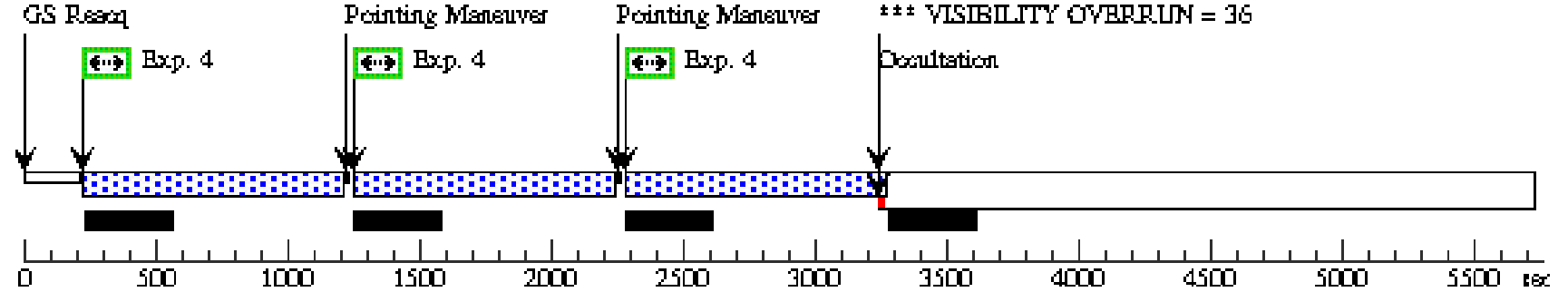
**Orbit 3**

Server Version: 20100505



**Orbit 4**

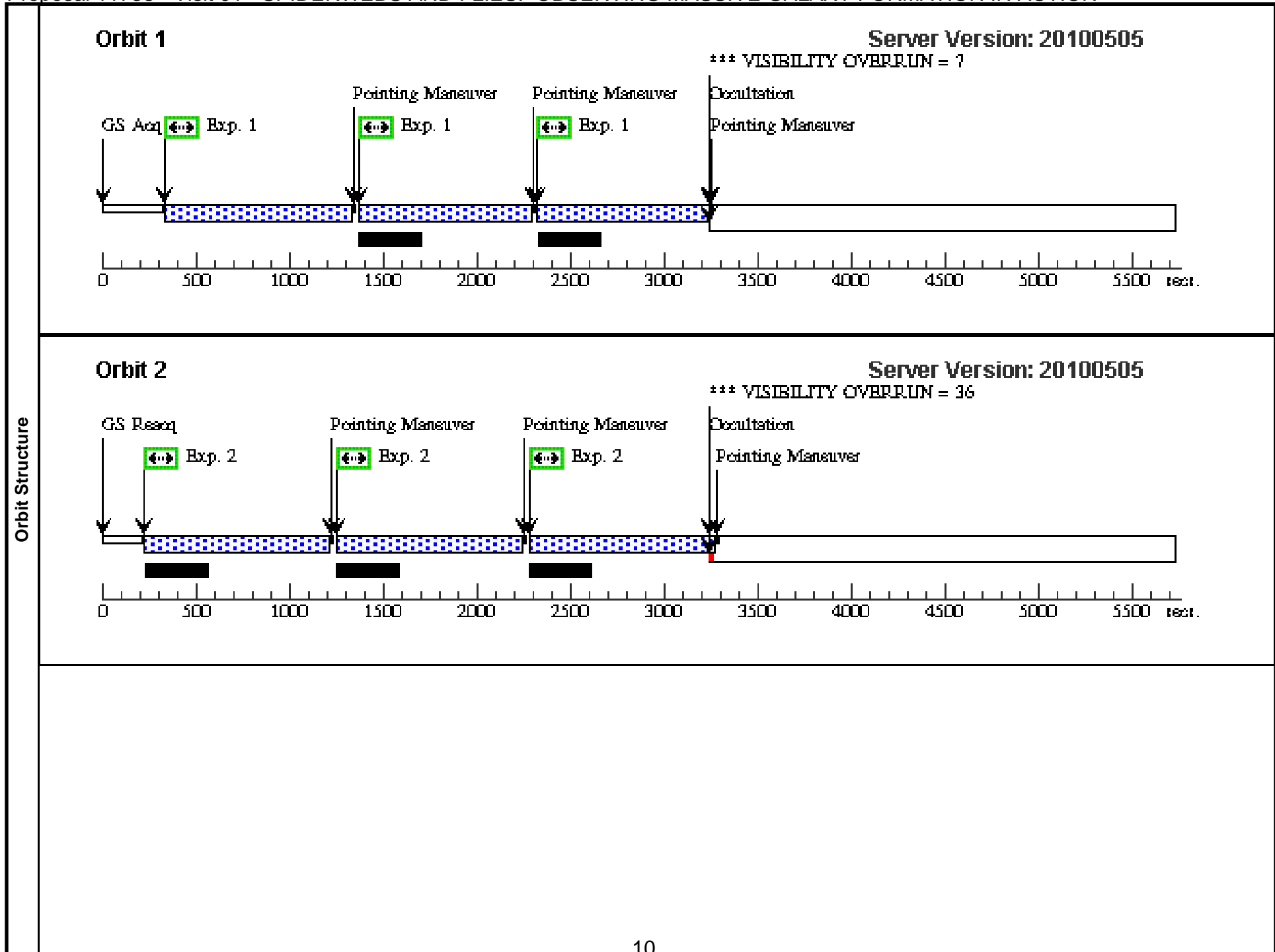
Server Version: 20100505



Proposal 11738 - Visit 01 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

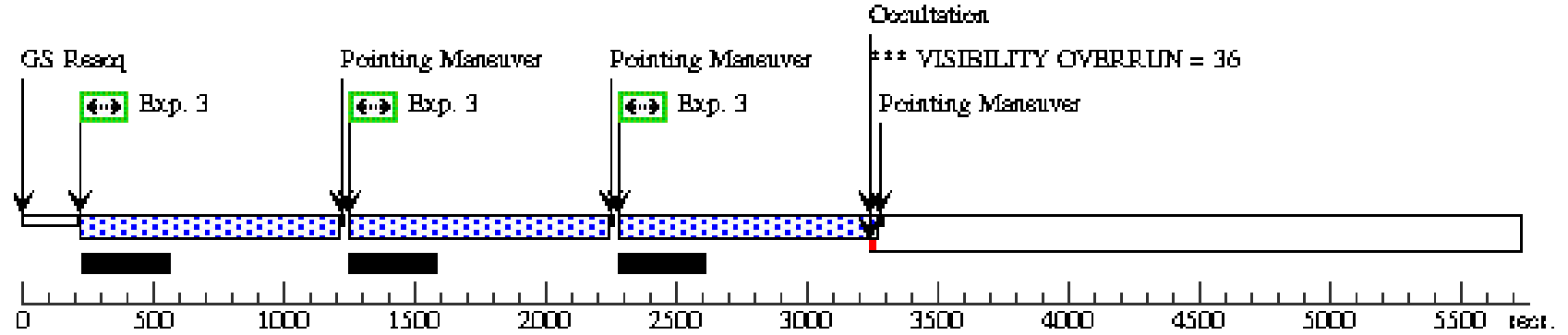
Wed Oct 06 01:04:09 GMT 2010

|                      |  |  |   |                      |                          |  |   |                             |   |                    |
|----------------------|--|--|---|----------------------|--------------------------|--|---|-----------------------------|---|--------------------|
| <b>Visit</b>         | Proposal 11738, Visit 02, completed<br>Diagnostic Status: Warning<br>Scientific Instruments: ACS/WFC<br>Special Requirements: SAME ORIENT AS 01  |  |   |                      |                          |  |   |                             |   |                    |
| <b>Diagnostics</b>   | (Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN |  |   |                      |                          |  |   |                             |   |                    |
| <b>Patterns</b>      | #  | Primary Pattern  |   |                      |                          | Secondary Pattern  |   |                             |   | Exposures          |
|                      | (1)  | Pattern Type=ACS-WFC-DITHER-<br>LINE<br>Purpose=DITHER<br>Number Of Points=3<br>Point Spacing=3.011<br>Line Spacing= |   |                      |                          | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.28<br>Angle Between Sides=<br>Center Pattern=false |   |                             |   | (1), (2), (3), (4) |
| <b>Fixed Targets</b> | #  | Name   | Target Coordinates  |                      | Targ. Coord. Corrections |  | Fluxes  | Miscellaneous               |   |                    |
|                      | (8)  | MRC0406-244  | RA: 04 08 51.6400 (62.2151667d)<br>Dec: -24 18 16.70 (-24.30464d)<br>Equinox: J2000 |                      |                          |  | V=22  | Reference Frame: NED        |   |                    |
| <b>Exposures</b>     | #  | Label  | Target  | Config,Mode,Aperture | Spectral Els.            | Opt. Params.   | Special Reqs.                                     | Groups                      | Exp. Time/[Actual Dur.]   | Orbit              |
|                      | 1  | MRC0406-2<br>44_F814W-<br>orbit1   | (8) MRC0406-244   | ACS/WFC, ACCUM, WFC  | F814W                    |  | POS TARG 0.0,20.0;<br>GS ACQ SCENARI<br>O BASE1B3 | Pattern 1, Exps 1-1 (<br>1) | 793 Secs<br>[==>793.0 Secs (Pattern 1)]<br>[==>793.0 Secs (Pattern 2)]<br>[==>793.0 Secs (Pattern 3)] | [1]                |
|                      | 2  | MRC0406-2<br>44_F814W-<br>orbit2   | (8) MRC0406-244   | ACS/WFC, ACCUM, WFC  | F814W                    |  | POS TARG 0.222,20<br>.24                          | Pattern 1, Exps 2-2 (<br>1) | 867 Secs<br>[==>867.0 Secs (Pattern 1)]<br>[==>867.0 Secs (Pattern 2)]<br>[==>867.0 Secs (Pattern 3)] | [2]                |
|                      | 3  | MRC0406-2<br>44_F814W-<br>orbit3   | (8) MRC0406-244   | ACS/WFC, ACCUM, WFC  | F814W                    |  | POS TARG 0.0,20.0                                 | Pattern 1, Exps 3-3 (<br>1) | 867 Secs<br>[==>867.0 Secs (Pattern 1)]<br>[==>867.0 Secs (Pattern 2)]<br>[==>867.0 Secs (Pattern 3)] | [3]                |
|                      | 4  | MRC0406-2<br>44_F814W-<br>orbit4   | (8) MRC0406-244   | ACS/WFC, ACCUM, WFC  | F814W                    |  | POS TARG 0.222,20<br>.24                          | Pattern 1, Exps 4-4 (<br>1) | 867 Secs<br>[==>867.0 Secs (Pattern 1)]<br>[==>867.0 Secs (Pattern 2)]<br>[==>867.0 Secs (Pattern 3)] | [4]                |



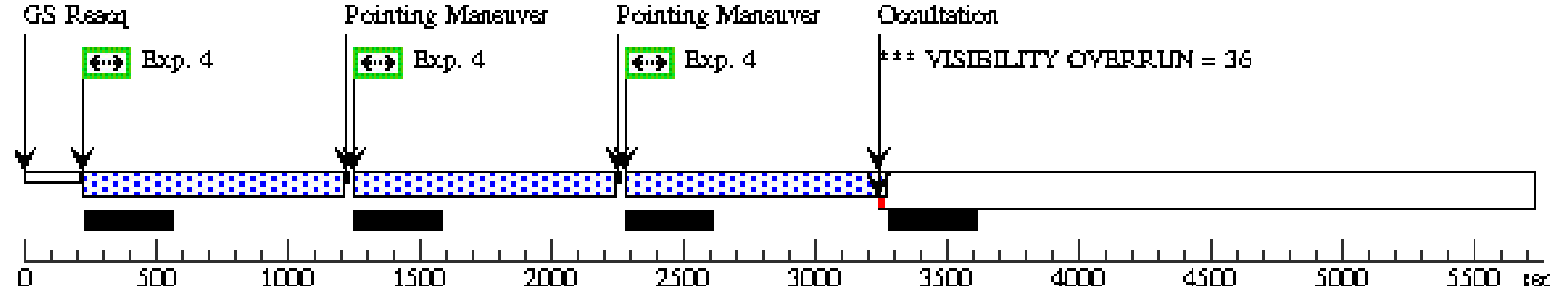
**Orbit 3**

Server Version: 20100505



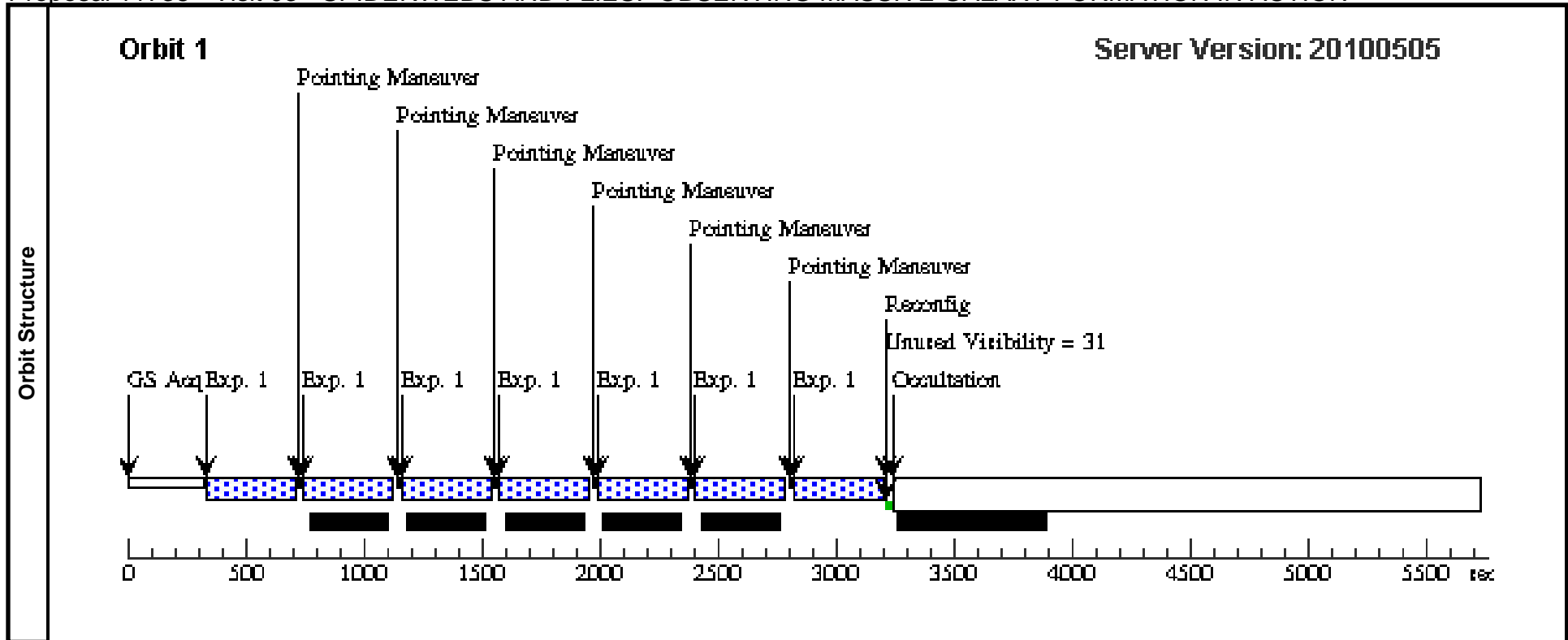
**Orbit 4**

Server Version: 20100505



Proposal 11738 - Visit 02 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

| Visit         | Proposal 11738, Visit 03, completed <span style="float: right;">Wed Oct 06 01:04:10 GMT 2010</span><br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 01 |   |   |                         |                          |                                   |  |                         |  |           |       |
|---------------|--|---|---|-------------------------|--------------------------|-----------------------------------|--|-------------------------|--|-----------|-------|
| Patterns      | #  | Primary Pattern   |   |                         |                          | Secondary Pattern                 |  |                         |  | Exposures |       |
|               | (3)  | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=7<br>Point Spacing=0.636<br>Line Spacing=<br>Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |   |                         |                          |                                   |  |                         |  | (1)       |       |
| Fixed Targets | #  | Name  | Target Coordinates  |                         | Targ. Coord. Corrections |                                   | Fluxes   |                         | Miscellaneous  |           |       |
|               | (8)  | MRC0406-244   | RA: 04 08 51.6400 (62.2151667d)<br>Dec: -24 18 16.70 (-24.30464d)<br>Equinox: J2000 |                         |                          |                                   | V=22   |                         | Reference Frame: NED   |           |       |
| Exposures     | #  | Label   | Target  | Config,Mode,Aperture    | Spectral Els.            | Opt. Params.                      | Special Reqs.                                    | Groups                  | Exp. Time/[Actual Dur.]  |           | Orbit |
|               | 1  | MRC0406-244_F110W-orbit1  | (8) MRC0406-244   | WFC3/IR, MULTIACCUM, IR | F110W                    | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S25 | POS TARG -20,-20;<br>GS ACQ SCENARI<br>O BASE1B3 | Pattern 3, Exps 1-1 (3) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)]<br>[==>(Pattern 5)]<br>[==>(Pattern 6)]<br>[==>(Pattern 7)] |           | [1]   |



Proposal 11738 - Visit 03 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

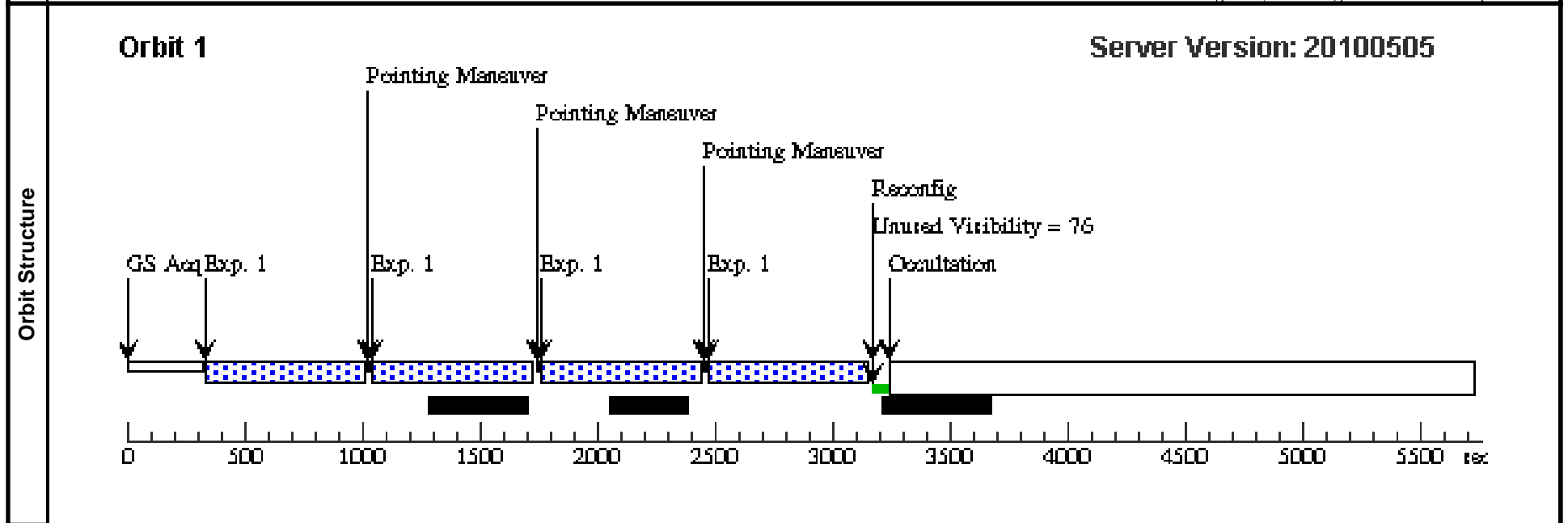
Wed Oct 06 01:04:10 GMT 2010

|              |  |  |  |
|--------------|--|--|--|
| <b>Visit</b> | Proposal 11738, Visit 04, completed<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 01 |  |  |
|              |  |  |  |

| <b>Patterns</b> | #   | Primary Pattern   | Secondary Pattern | Exposures |
|-----------------|-----|---|-------------------|-----------|
|                 | (2) | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing=<br>Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |                   | (1)       |

| <b>Fixed Targets</b> | #   | Name        | Target Coordinates  | Targ. Coord. Corrections | Fluxes | Miscellaneous        |
|----------------------|-----|-------------|---|--------------------------|--------|----------------------|
|                      | (8) | MRC0406-244 | RA: 04 08 51.6400 (62.2151667d)<br>Dec: -24 18 16.70 (-24.30464d)<br>Equinox: J2000 |                          | V=22   | Reference Frame: NED |

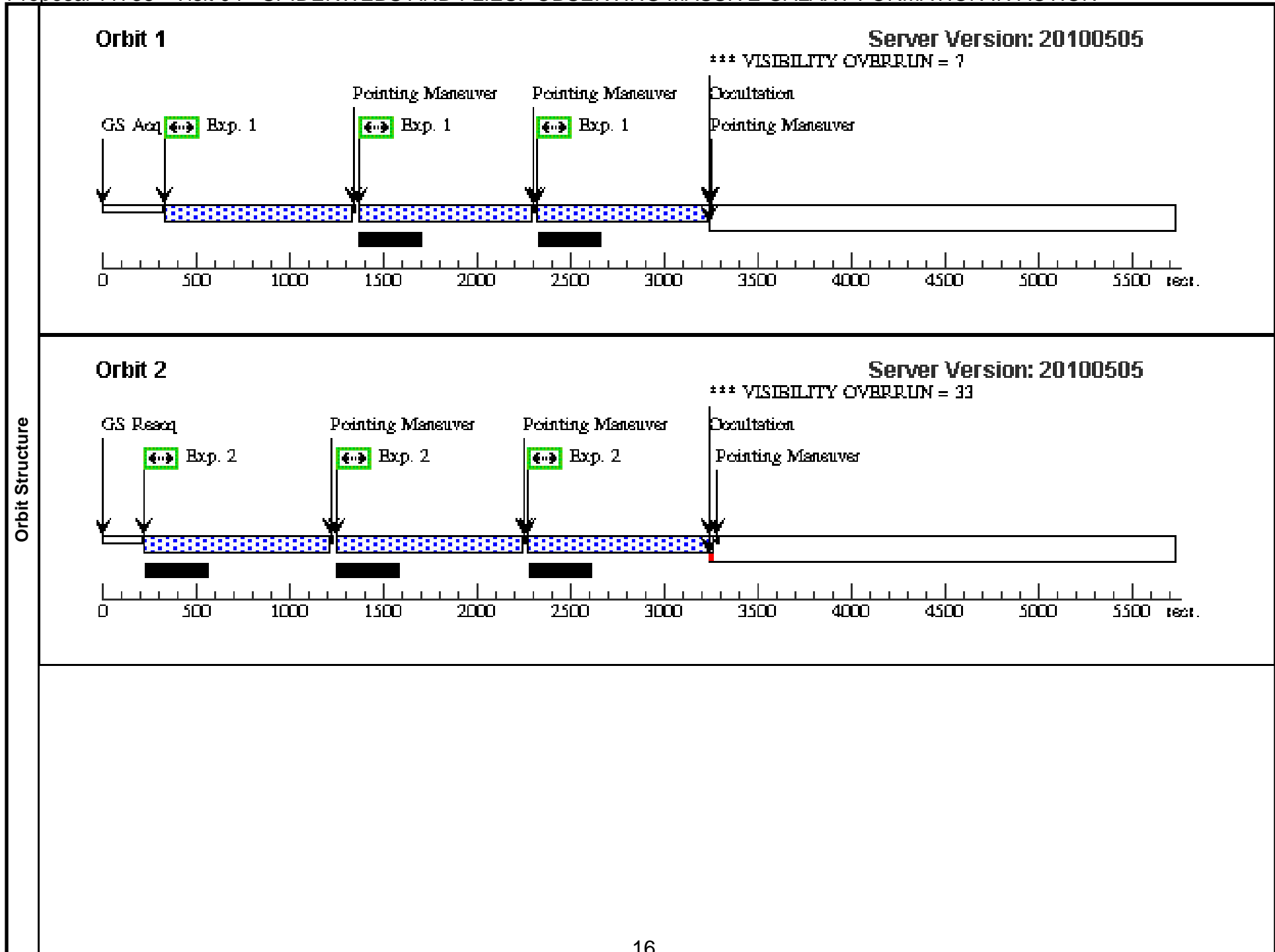
| <b>Exposures</b> | # | Label                            | Target          | Config,Mode,Aperture    | Spectral Els. | Opt. Params.                      | Special Reqs.    | Groups                  | Exp. Time/[Actual Dur.]  | Orbit |
|------------------|---|----------------------------------|-----------------|-------------------------|---------------|-----------------------------------|------------------|-------------------------|--|-------|
|                  | 1 | MRC0406-2<br>44_F160W-<br>orbit1 | (8) MRC0406-244 | WFC3/IR, MULTIACCUM, IR | F160W         | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 | POS TARG -20,-20 | Pattern 2, Exps 1-1 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [1]   |



Proposal 11738 - Visit 04 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:10 GMT 2010

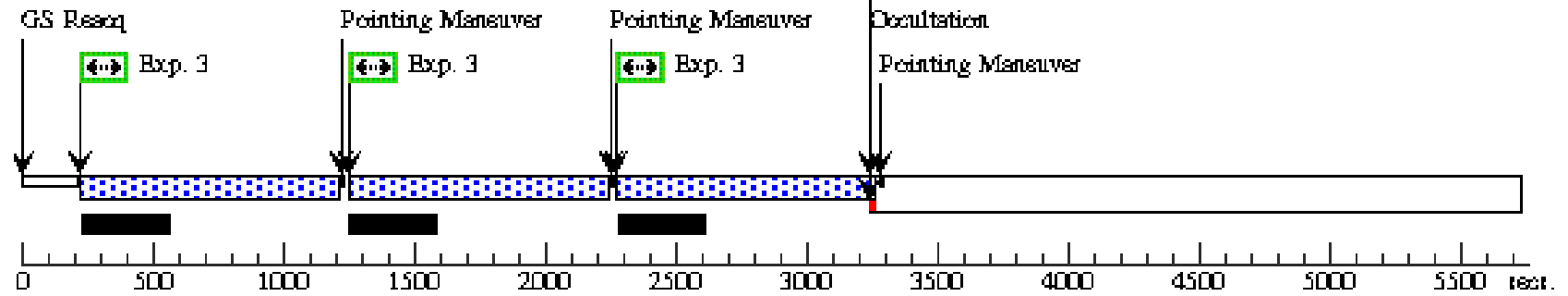
|   |  |  |   |                             |                                 |  |                         |                            |                                |                    |              |
|---|--|--|---|-----------------------------|---------------------------------|--|-------------------------|----------------------------|--------------------------------|--------------------|--------------|
| <b>Visit</b>  | <b>Proposal 11738, Visit 05, completed</b><br><b>Diagnostic Status: Warning</b><br>Scientific Instruments: ACS/WFC<br>Special Requirements: ORIENT 60D TO 150 D  |  |   |                             |                                 |  |                         |                            |                                |                    |              |
|   | (Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN |  |   |                             |                                 |  |                         |                            |                                |                    |              |
| <b>Diagnosics</b>   |  |  |   |                             |                                 |  |                         |                            |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         |                            |                                |                    |              |
| <b>Patterns</b>   | <b>#</b>   | <b>Primary Pattern</b>   |   |                             |                                 | <b>Secondary Pattern</b>   |                         |                            |                                | <b>Exposures</b>   |              |
|   | (1)  | Pattern Type=ACS-WFC-DITHER-<br>LINE<br>Purpose=DITHER<br>Number Of Points=3<br>Point Spacing=3.011<br>Line Spacing= |   |                             |                                 | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.28<br>Angle Between Sides=<br>Center Pattern=false |                         |                            |                                | (1), (2), (3), (4) |              |
| <b>Fixed Targets</b>  | <b>#</b>   | <b>Name</b>  | <b>Target Coordinates</b>   |                             | <b>Targ. Coord. Corrections</b> |  | <b>Fluxes</b>           |                            | <b>Miscellaneous</b>           |                    |              |
|   | (1)  | TX0828+193   | RA: 08 30 53.4500 (127.7227083d)<br>Dec: +19 13 16.00 (19.22111d)<br>Equinox: J2000 |                             |                                 |  | V=22                    |                            | Reference Frame: NED           |                    |              |
| <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> |  |  |   |                             |                                 |  |                         |                            |                                |                    |              |
| <b>Exposures</b>  | <b>#</b>   | <b>Label</b>   | <b>Target</b>   | <b>Config,Mode,Aperture</b> | <b>Spectral Els.</b>            | <b>Opt. Params.</b>  | <b>Special Reqs.</b>    | <b>Groups</b>              | <b>Exp. Time/[Actual Dur.]</b> |                    | <b>Orbit</b> |
|   | 1  | TX0828+193_F606W_orbit1  | (1) TX0828+193  | ACS/WFC, ACCUM, WFC2        | F606W                           |  | POS TARG -10.0,17<br>.0 | Pattern 1, Exps 1-1 (1)    | 793 Secs                       |                    |              |
|   |  |  |   |                             |                                 |  |                         |                            | [=>(Pattern 1)]                |                    |              |
|   |  |  |   |                             |                                 |  |                         |                            | [=>(Pattern 2)]                |                    | [1]          |
|   |  |  |   |                             |                                 |  |                         |                            | [=>(Pattern 3)]                |                    |              |
| 2   | TX0828+193_F606W_orbit2  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  | F606W                       |                                 | POS TARG -9.778,1<br>7.24  | Pattern 1, Exps 2-2 (1) | 867 Secs                   |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 1)] |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 2)] |                                | [2]                |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 3)] |                                |                    |              |
| 3   | TX0828+193_F606W_orbit3  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  | F606W                       |                                 | POS TARG -10.0,17<br>.0  | Pattern 1, Exps 3-3 (1) | 867 Secs                   |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 1)] |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 2)] |                                | [3]                |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 3)] |                                |                    |              |
| 4   | TX0828+193_F606W_orbit4  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  | F606W                       |                                 | POS TARG -9.778,1<br>7.24  | Pattern 1, Exps 4-4 (1) | 867 Secs                   |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 1)] |                                |                    |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 2)] |                                | [4]                |              |
|   |  |  |   |                             |                                 |  |                         | [=>866.0 Secs (Pattern 3)] |                                |                    |              |



**Orbit 3**

Server Version: 20100505

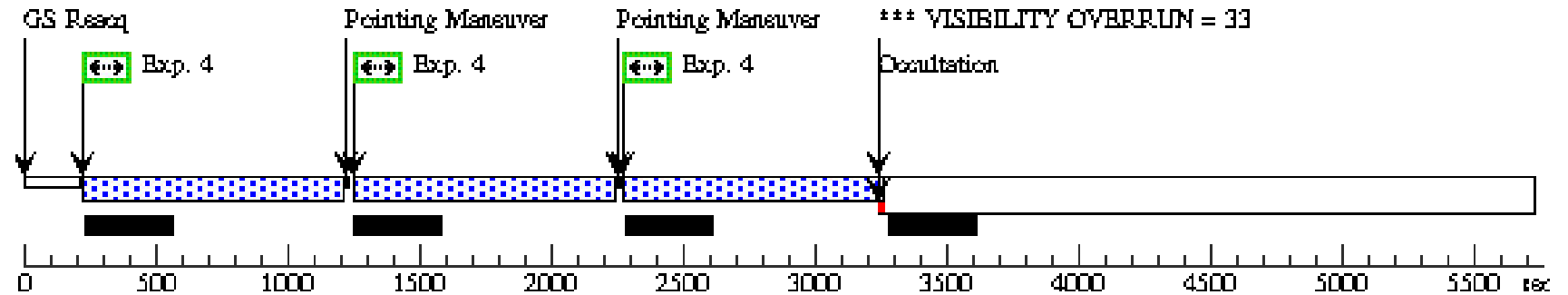
\*\*\* VISIBILITY OVERRUN = 33



**Orbit 4**

Server Version: 20100505

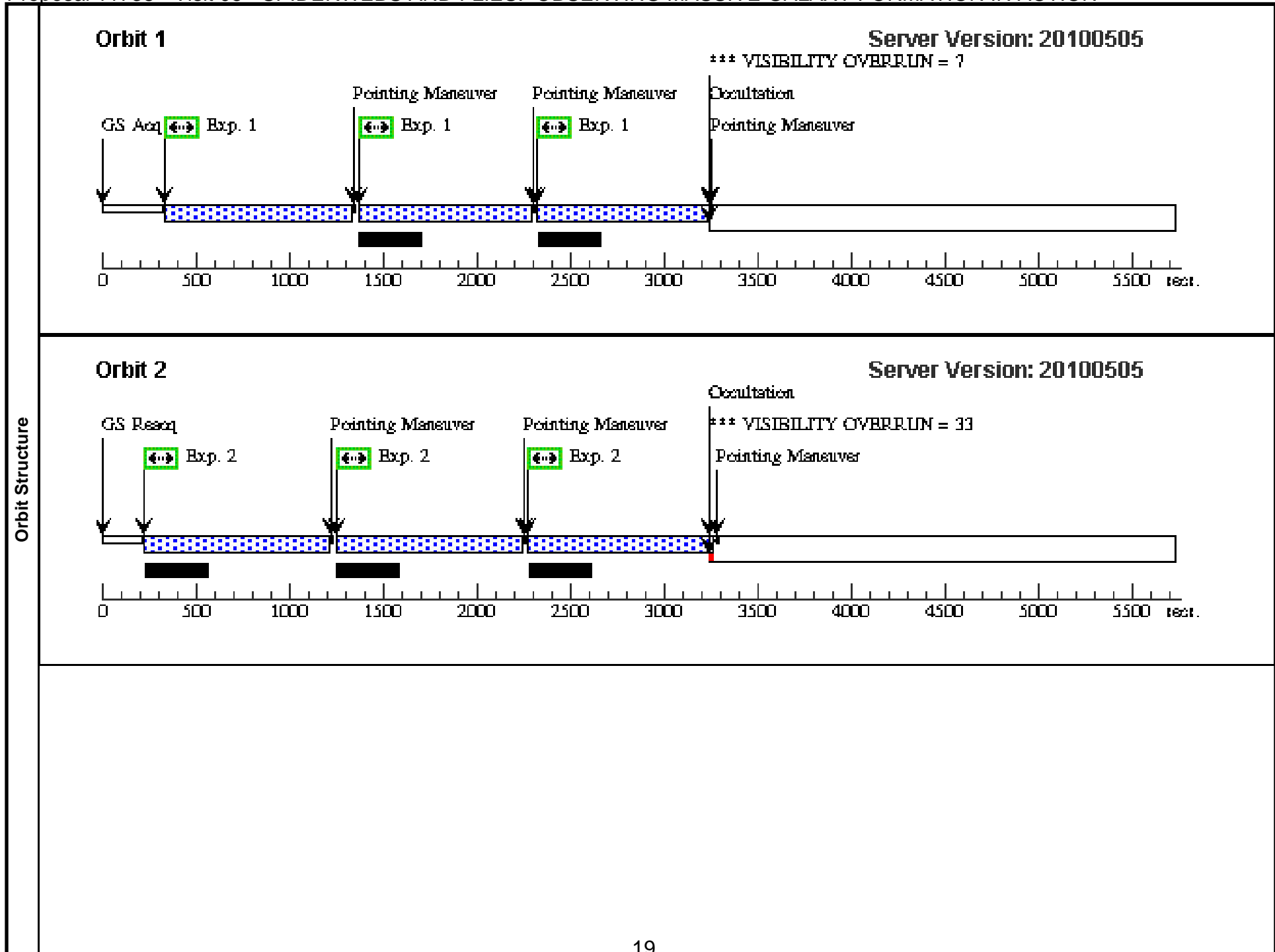
\*\*\* VISIBILITY OVERRUN = 33



Proposal 11738 - Visit 05 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

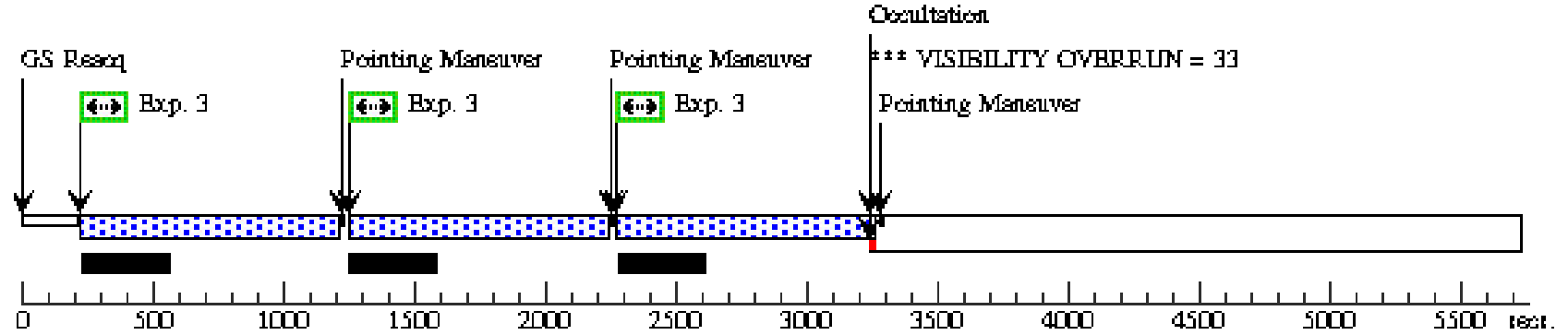
Wed Oct 06 01:04:11 GMT 2010

|                      |  |  |   |                      |                          |  |                       |                         |                         |                         |       |
|----------------------|--|--|---|----------------------|--------------------------|--|-----------------------|-------------------------|-------------------------|-------------------------|-------|
| <b>Visit</b>         | Proposal 11738, Visit 06, completed<br>Diagnostic Status: Warning<br>Scientific Instruments: ACS/WFC<br>Special Requirements: SAME ORIENT AS 05  |  |   |                      |                          |  |                       |                         |                         |                         |       |
| <b>Diagnostics</b>   | (Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN<br>(Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN |  |   |                      |                          |  |                       |                         |                         |                         |       |
| <b>Patterns</b>      | #  | Primary Pattern  |   |                      |                          | Secondary Pattern  |                       |                         |                         | Exposures               |       |
|                      | (1)  | Pattern Type=ACS-WFC-DITHER-<br>LINE<br>Purpose=DITHER<br>Number Of Points=3<br>Point Spacing=3.011<br>Line Spacing= |   |                      |                          | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.28<br>Angle Between Sides=<br>Center Pattern=false |                       |                         |                         | (1), (2), (3), (4)      |       |
| <b>Fixed Targets</b> | #  | Name   | Target Coordinates  |                      | Targ. Coord. Corrections |  | Fluxes                |                         | Miscellaneous           |                         |       |
|                      | (1)  | TX0828+193   | RA: 08 30 53.4500 (127.7227083d)<br>Dec: +19 13 16.00 (19.22111d)<br>Equinox: J2000 |                      |                          |  | V=22                  |                         | Reference Frame: NED    |                         |       |
|                      | Comments: This object was generated by the targetselector and retrieved from the NED database.   |  |   |                      |                          |  |                       |                         |                         |                         |       |
| <b>Exposures</b>     | #  | Label  | Target  | Config,Mode,Aperture |                          | Spectral Els.  | Opt. Params.          | Special Reqs.           | Groups                  | Exp. Time/[Actual Dur.] | Orbit |
|                      | 1  | TX0828+193_F814W_orbit1  | (1) TX0828+193  | ACS/WFC, ACCUM, WFC2 |                          | F814W  |                       | POS TARG -10.0,17.0     | Pattern 1, Exps 1-1 (1) | 793 Secs                |       |
|                      |  |  |   |                      |                          |  |                       |                         |                         | [==(Pattern 1)]         | [1]   |
|                      |  |  |   |                      |                          |  |                       |                         |                         | [==(Pattern 2)]         |       |
|                      |  |  |   |                      |                          |  |                       |                         |                         | [==(Pattern 3)]         |       |
| 2                    | TX0828+193_F814W_orbit2  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  |                      | F814W                    |  | POS TARG -9.778,17.24 | Pattern 1, Exps 2-2 (1) | 866 Secs                |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 1)]         | [2]                     |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 2)]         |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 3)]         |                         |       |
| 3                    | TX0828+193_F814W_orbit3  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  |                      | F814W                    |  | POS TARG -10.0,17.0   | Pattern 1, Exps 3-3 (1) | 866 Secs                |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 1)]         | [3]                     |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 2)]         |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 3)]         |                         |       |
| 4                    | TX0828+193_F814W_orbit4  | (1) TX0828+193   | ACS/WFC, ACCUM, WFC2  |                      | F814W                    |  | POS TARG -9.778,17.24 | Pattern 1, Exps 4-4 (1) | 866 Secs                |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 1)]         | [4]                     |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 2)]         |                         |       |
|                      |  |  |   |                      |                          |  |                       |                         | [==(Pattern 3)]         |                         |       |



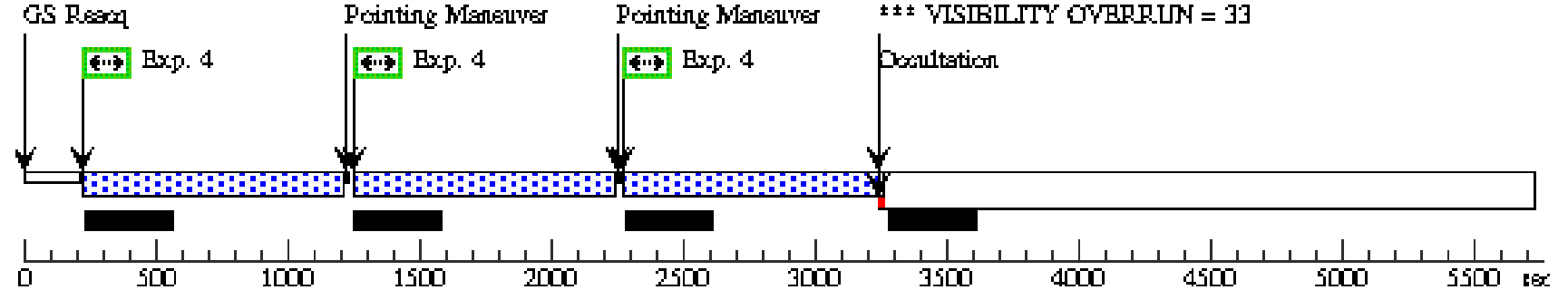
**Orbit 3**

Server Version: 20100505



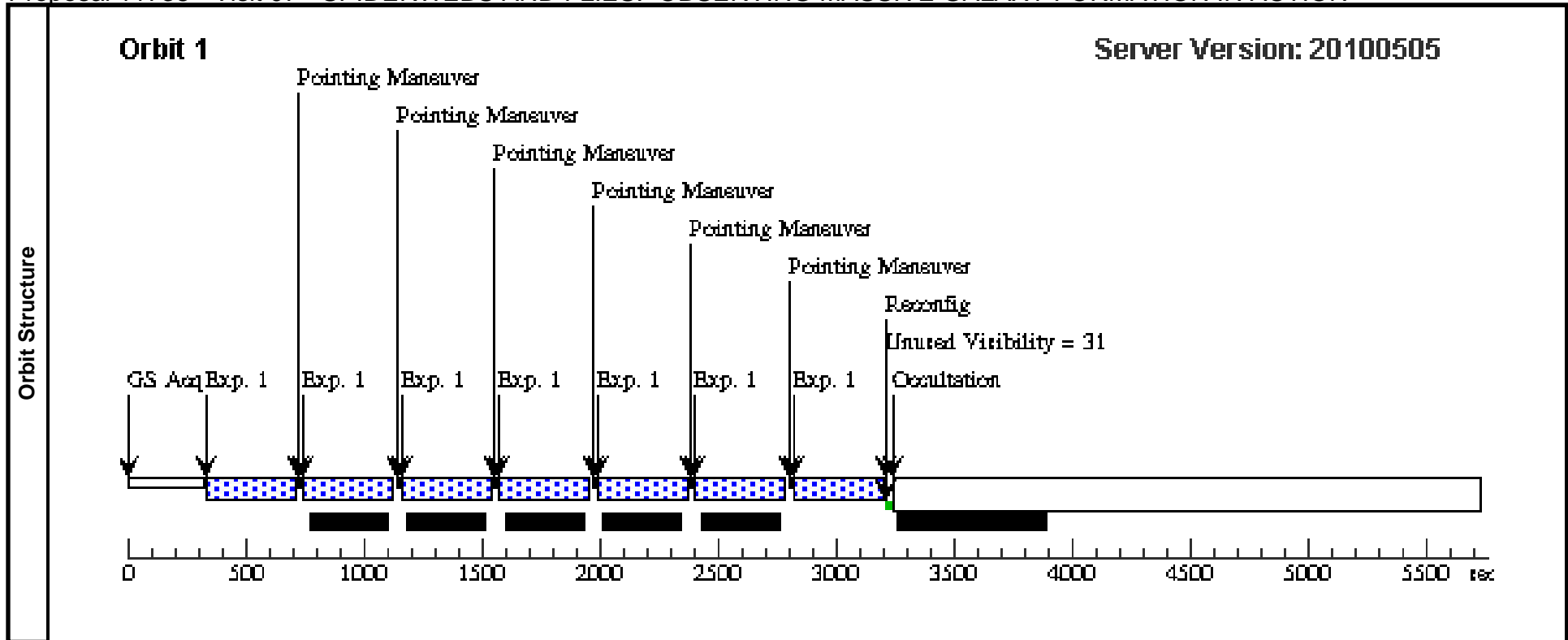
**Orbit 4**

Server Version: 20100505



Proposal 11738 - Visit 06 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

|                      |  |   |   |                                 |                      |                             |                      |                         |  |              |
|----------------------|--|---|---|---------------------------------|----------------------|-----------------------------|----------------------|-------------------------|--|--------------|
| <b>Visit</b>         | Proposal 11738, Visit 07, completed <span style="float: right;">Wed Oct 06 01:04:12 GMT 2010</span><br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 05 |   |   |                                 |                      |                             |                      |                         |  |              |
|                      | <b>Patterns</b>  | #   | <b>Primary Pattern</b>  | <b>Secondary Pattern</b>        | <b>Exposures</b>     |                             |                      |                         |  |              |
| (3)                  |  | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=7<br>Point Spacing=0.636<br>Line Spacing=<br>Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |   | (1)                             |                      |                             |                      |                         |  |              |
| <b>Fixed Targets</b> | #  | <b>Name</b>   | <b>Target Coordinates</b>   | <b>Targ. Coord. Corrections</b> | <b>Fluxes</b>        | <b>Miscellaneous</b>        |                      |                         |  |              |
|                      | (1)  | TX0828+193  | RA: 08 30 53.4500 (127.7227083d)<br>Dec: +19 13 16.00 (19.22111d)<br>Equinox: J2000<br>Comments: This object was generated by the targetselector and retrieved from the NED database. |                                 | V=22                 | Reference Frame: NED        |                      |                         |  |              |
| <b>Exposures</b>     | #  | <b>Label</b>  | <b>Target</b>   | <b>Config,Mode,Aperture</b>     | <b>Spectral Els.</b> | <b>Opt. Params.</b>         | <b>Special Reqs.</b> | <b>Groups</b>           | <b>Exp. Time/[Actual Dur.]</b>   | <b>Orbit</b> |
|                      | 1  | TX0828+193_F110W_orbit1   | (1) TX0828+193  | WFC3/IR, MULTIACCUM, IR         | F110W                | NSAMP=15; SAMP-SEQ=SPAR S25 | POS TARG 15.0,10.0   | Pattern 3, Exps 1-1 (3) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)]<br>[==>(Pattern 5)]<br>[==>(Pattern 6)]<br>[==>(Pattern 7)] | [1]          |



Proposal 11738 - Visit 07 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

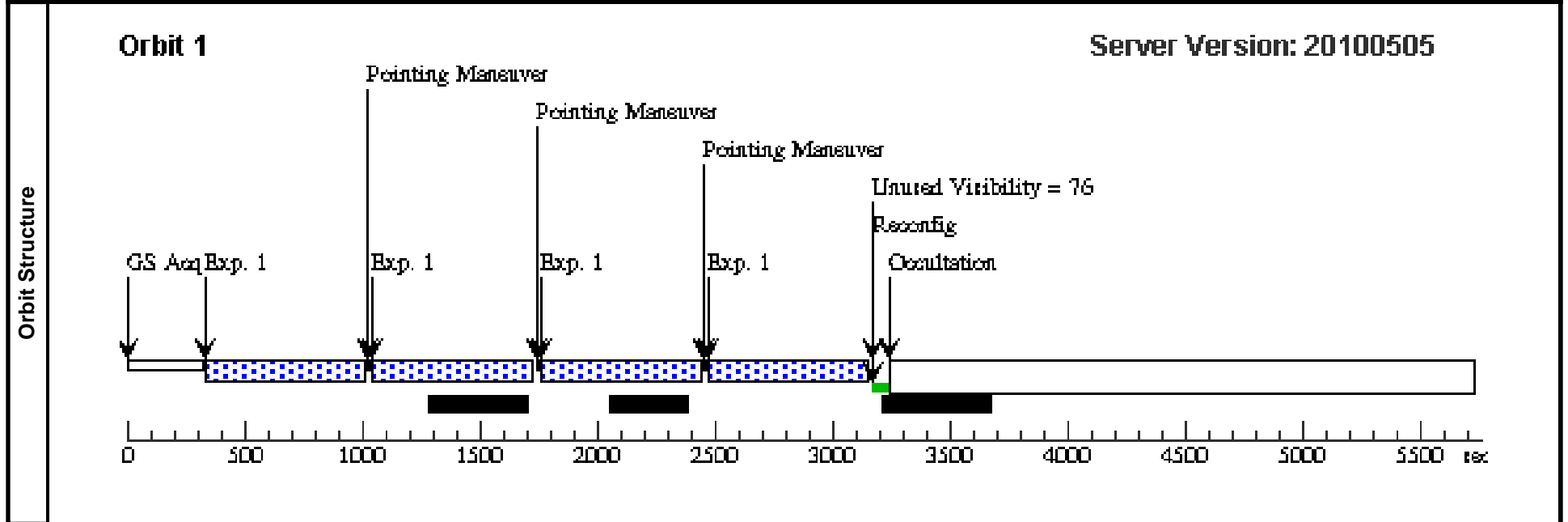
Wed Oct 06 01:04:12 GMT 2010

|              |   |  |  |
|--------------|---|--|--|
| <b>Visit</b> | Proposal 11738, Visit 08, failed<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 05 |  |  |
|              |   |  |  |

| <b>Patterns</b> | #   | Primary Pattern  | Secondary Pattern   | Exposures |
|-----------------|-----|--|---|-----------|
|                 | (2) | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false | (1)       |

| <b>Fixed Targets</b> | #   | Name       | Target Coordinates  | Targ. Coord. Corrections | Fluxes | Miscellaneous        |
|----------------------|---|------------|---|--------------------------|--------|----------------------|
|                      | (1)   | TX0828+193 | RA: 08 30 53.4500 (127.7227083d)<br>Dec: +19 13 16.00 (19.22111d)<br>Equinox: J2000 |                          | V=22   | Reference Frame: NED |
|                      | <i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i> |            |   |                          |        |                      |

| <b>Exposures</b> | # | Label                   | Target         | Config,Mode,Aperture    | Spectral Els. | Opt. Params.                | Special Reqs.    | Groups                  | Exp. Time/[Actual Dur.]  | Orbit |
|------------------|---|-------------------------|----------------|-------------------------|---------------|-----------------------------|------------------|-------------------------|--|-------|
|                  | 1 | TX0828+193_F160W_orbit1 | (1) TX0828+193 | WFC3/IR, MULTIACCUM, IR | F160W         | NSAMP=14; SAMP-SEQ=SPAR S50 | POS TARG 15.0,10 | Pattern 2, Exps 1-1 (2) | [=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)]<br>[=>(Pattern 4)] | [1]   |



Proposal 11738 - Visit 08 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:12 GMT 2010

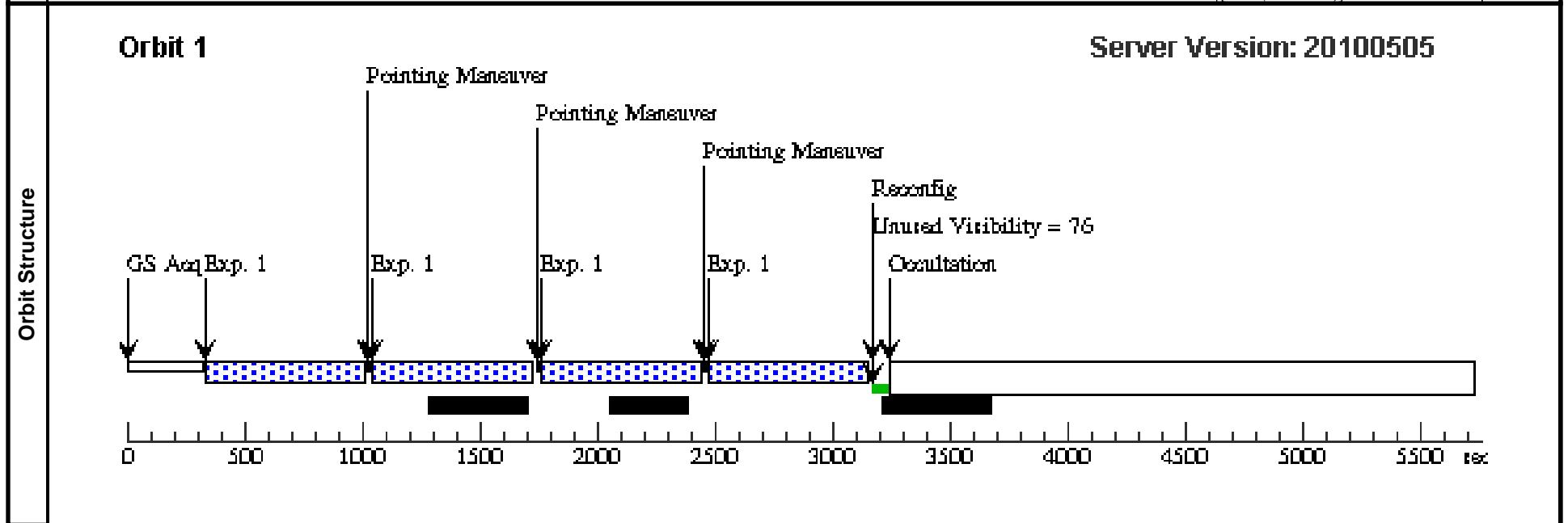
|              |   |  |  |
|--------------|---|--|--|
| <b>Visit</b> | <b>Proposal 11738, Visit 13, scheduling</b> |  |  |
|              | <b>Diagnostic Status: No Diagnostics</b>    |  |  |
|              | Scientific Instruments: WFC3/IR             |  |  |
|              | Special Requirements: SAME ORIENT AS 05     |  |  |

| <b>Patterns</b> | #   | Primary Pattern  | Secondary Pattern   | Exposures |
|-----------------|-----|--|---|-----------|
|                 | (2) | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |           |

| <b>Fixed Targets</b> | #   | Name       | Target Coordinates  | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|----------------------|-----|------------|---|--------------------------|--------|---------------|
|                      | (1) | TX0828+193 | RA: 08 30 53.4500 (127.7227083d)<br>Dec: +19 13 16.00 (19.22111d)<br>Equinox: J2000 |                          |        | V=22          |

*Comments: This object was generated by the targetselector and retrieved from the NED database.*

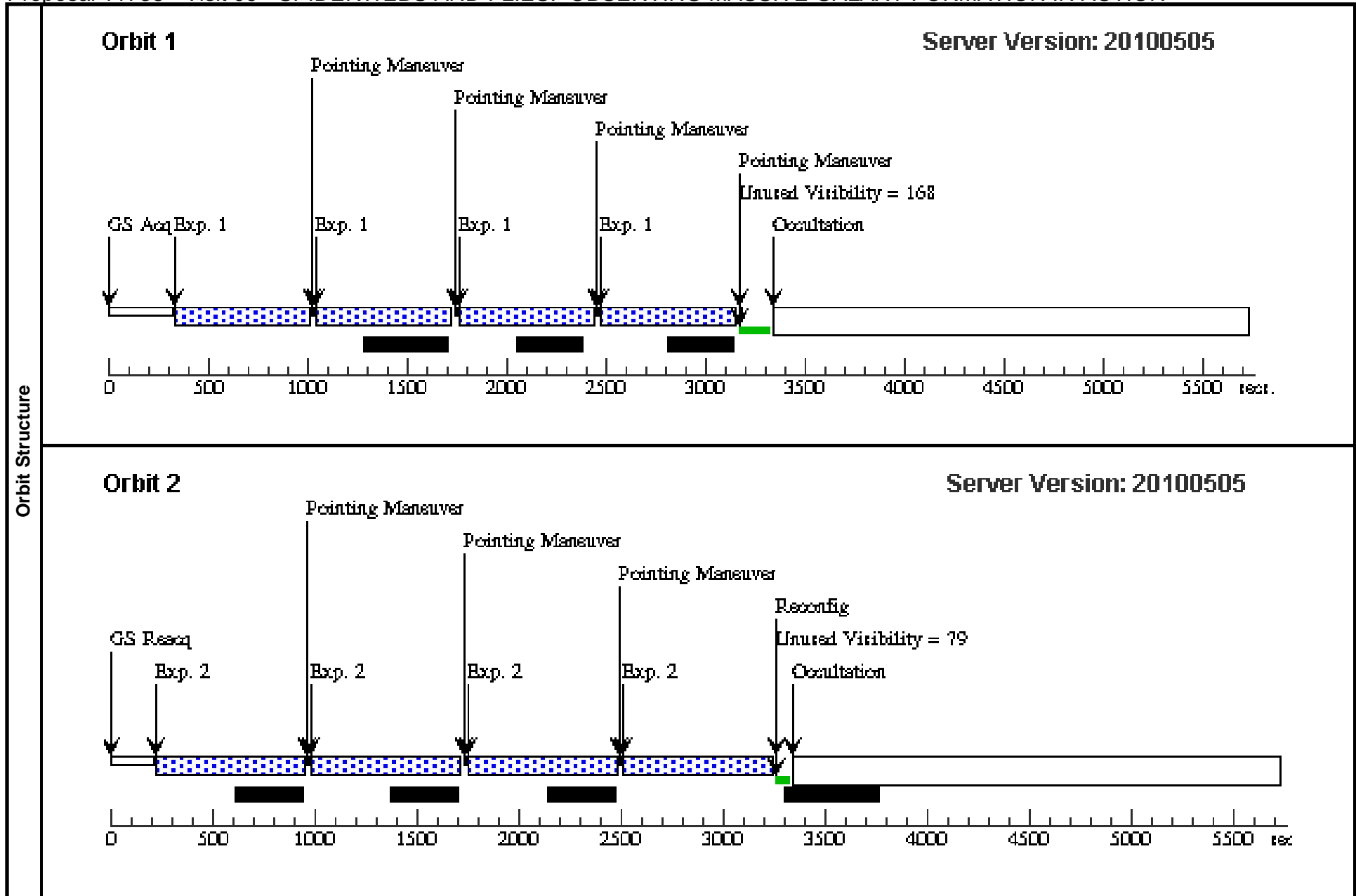
| <b>Exposures</b> | # | Label                   | Target         | Config,Mode,Aperture    | Spectral Els. | Opt. Params.                      | Special Reqs.    | Groups                  | Exp. Time/[Actual Dur.]  | Orbit |
|------------------|---|-------------------------|----------------|-------------------------|---------------|-----------------------------------|------------------|-------------------------|--|-------|
|                  | 1 | TX0828+193_F160W_orbit1 | (1) TX0828+193 | WFC3/IR, MULTIACCUM, IR | F160W         | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 | POS TARG 15.0,10 | Pattern 2, Exps 1-1 (2) | [=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)]<br>[=>(Pattern 4)] | [1]   |



Proposal 11738 - Visit 13 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:13 GMT 2010

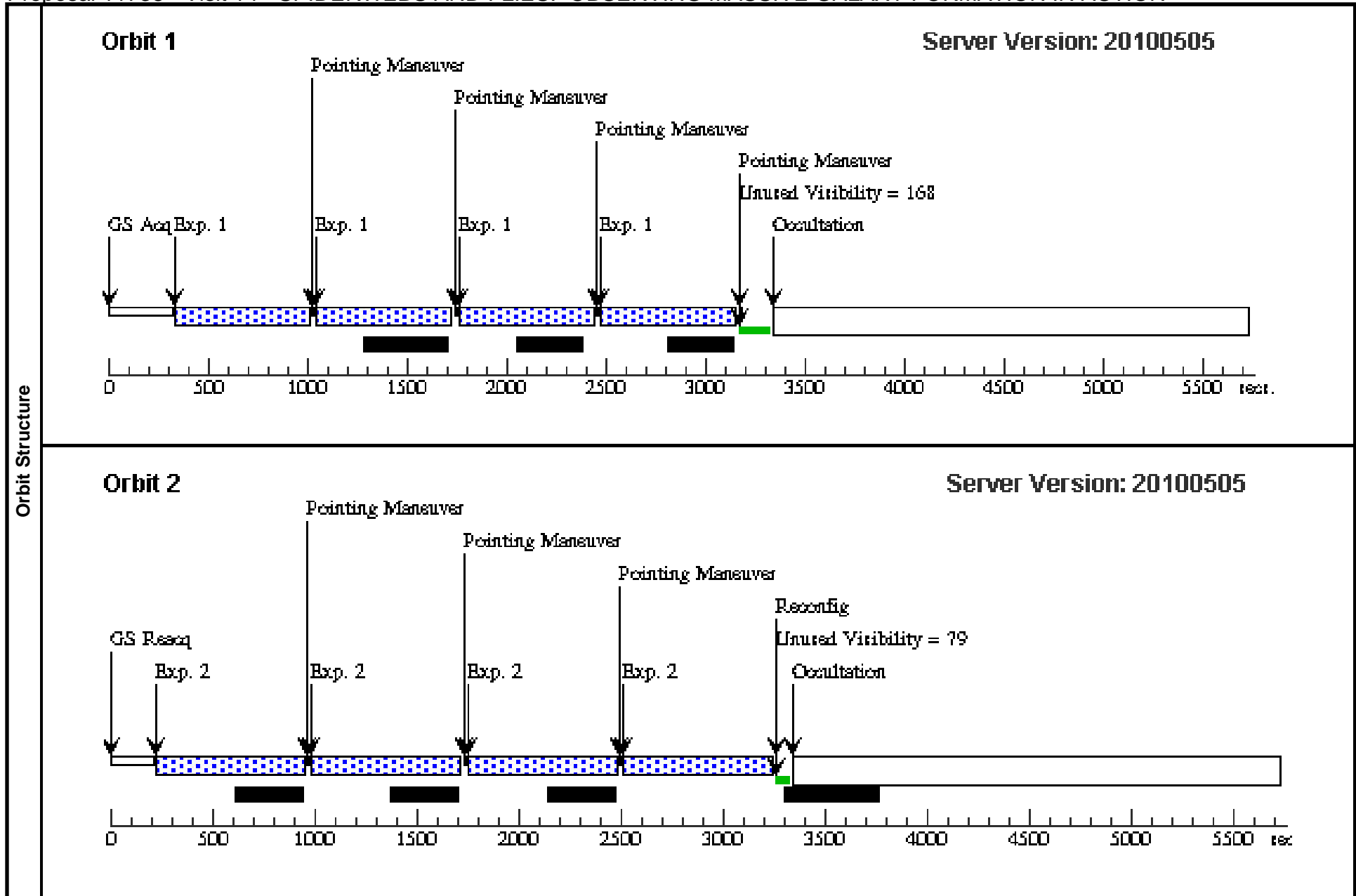
| Visit         | <b>Proposal 11738, Visit 09, failed</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/IR<br>Special Requirements: ORIENT 87D TO 111.0 D; ORIENT 173D TO 201 D; ORIENT 267D TO 291 D |                          |  |   |                                   |                                   |               |                         |  |  |
|---------------|---|--------------------------|--|---|-----------------------------------|-----------------------------------|---------------|-------------------------|--|--|
|               | Patterns  | #                        | Primary Pattern  | Secondary Pattern   | Exposures                         |                                   |               |                         |  |  |
|               |   | (2)                      | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |                                   | (1), (2)                          |               |                         |  |  |
| Fixed Targets | #   | Name                     | Target Coordinates   | Targ. Coord. Corrections  | Fluxes                            | Miscellaneous                     |               |                         |  |  |
|               | (7)   | 4C41.17                  | RA: 06 50 53.8500 (102.7243750d)<br>Dec: +41 30 35.60 (41.50989d)<br>Equinox: J2000                              |   | V=22                              | Reference Frame: NED              |               |                         |  |  |
| Exposures     | #   | Label                    | Target   | Config,Mode,Aperture  | Spectral Els.                     | Opt. Params.                      | Special Reqs. | Groups                  | Exp. Time/[Actual Dur.]  | Orbit  |
|               | 1   | 4C41.17_F1<br>60W_orbit1 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F160W                             | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 |               |                         | Pattern 2, Exps 1-1 (2)  | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] |
| 2             | 4C41.17_F1<br>60W_orbit2  | (7) 4C41.17              | WFC3/IR, MULTIACCUM, IR  | F160W   | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |                                   |               | Pattern 2, Exps 2-2 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]  |



Proposal 11738 - Visit 09 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:13 GMT 2010

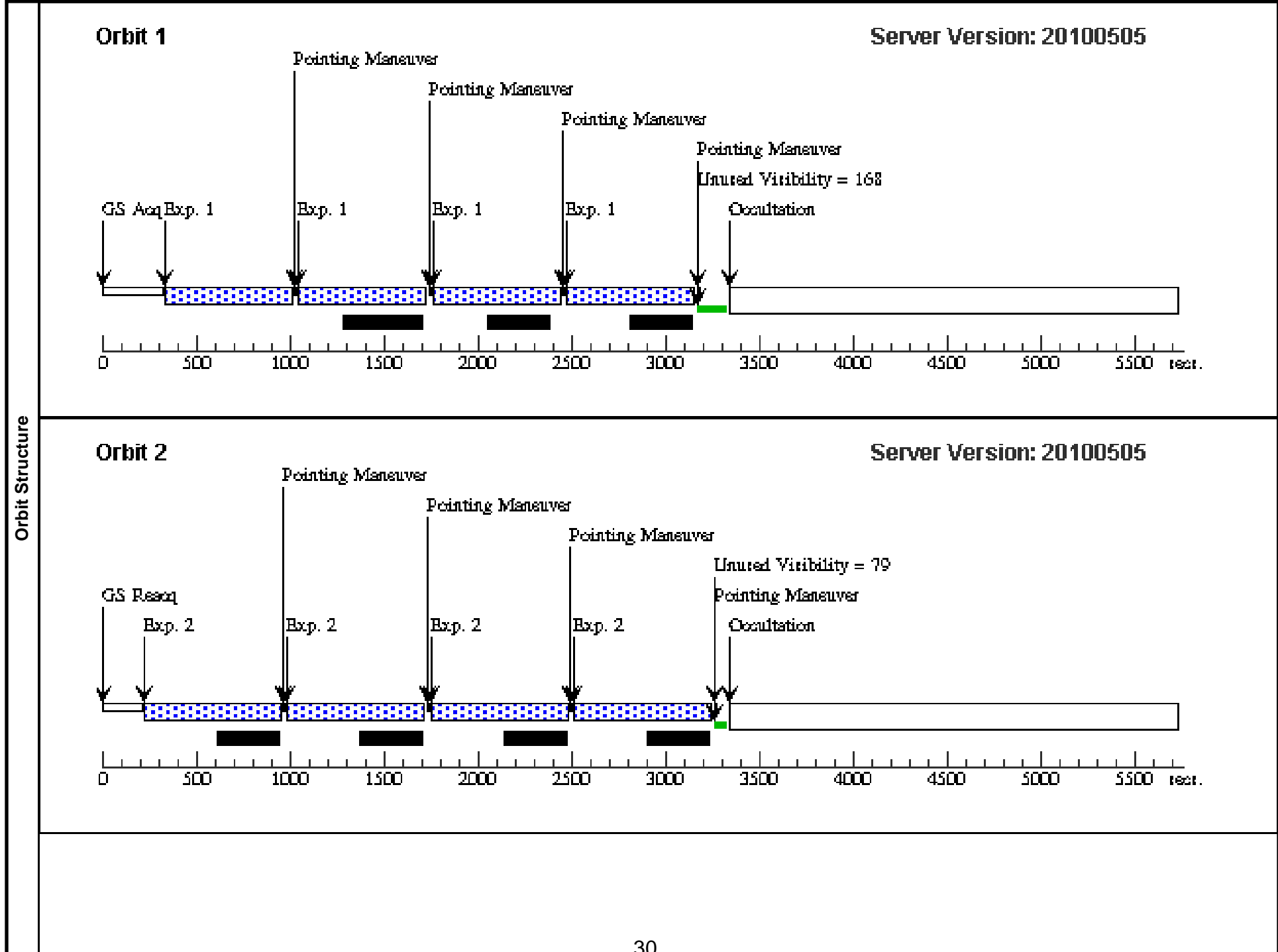
| Visit         | <b>Proposal 11738, Visit 14, implementation</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 10 |                          |  |   |                                   |                                   |               |                         |  |  |
|---------------|---|--------------------------|--|---|-----------------------------------|-----------------------------------|---------------|-------------------------|--|--|
|               | Patterns  | #                        | Primary Pattern  | Secondary Pattern   | Exposures                         |                                   |               |                         |  |  |
|               |   | (2)                      | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |                                   | (1), (2)                          |               |                         |  |  |
| Fixed Targets | #   | Name                     | Target Coordinates   | Targ. Coord. Corrections  | Fluxes                            | Miscellaneous                     |               |                         |  |  |
|               | (7)   | 4C41.17                  | RA: 06 50 53.8500 (102.7243750d)<br>Dec: +41 30 35.60 (41.50989d)<br>Equinox: J2000                              |   | V=22                              | Reference Frame: NED              |               |                         |  |  |
| Exposures     | #   | Label                    | Target   | Config,Mode,Aperture  | Spectral Els.                     | Opt. Params.                      | Special Reqs. | Groups                  | Exp. Time/[Actual Dur.]  | Orbit  |
|               | 1   | 4C41.17_F1<br>60W_orbit1 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F160W                             | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 |               |                         | Pattern 2, Exps 1-1 (2)  | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] |
| 2             | 4C41.17_F1<br>60W_orbit2  | (7) 4C41.17              | WFC3/IR, MULTIACCUM, IR  | F160W   | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |                                   |               | Pattern 2, Exps 2-2 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]  |

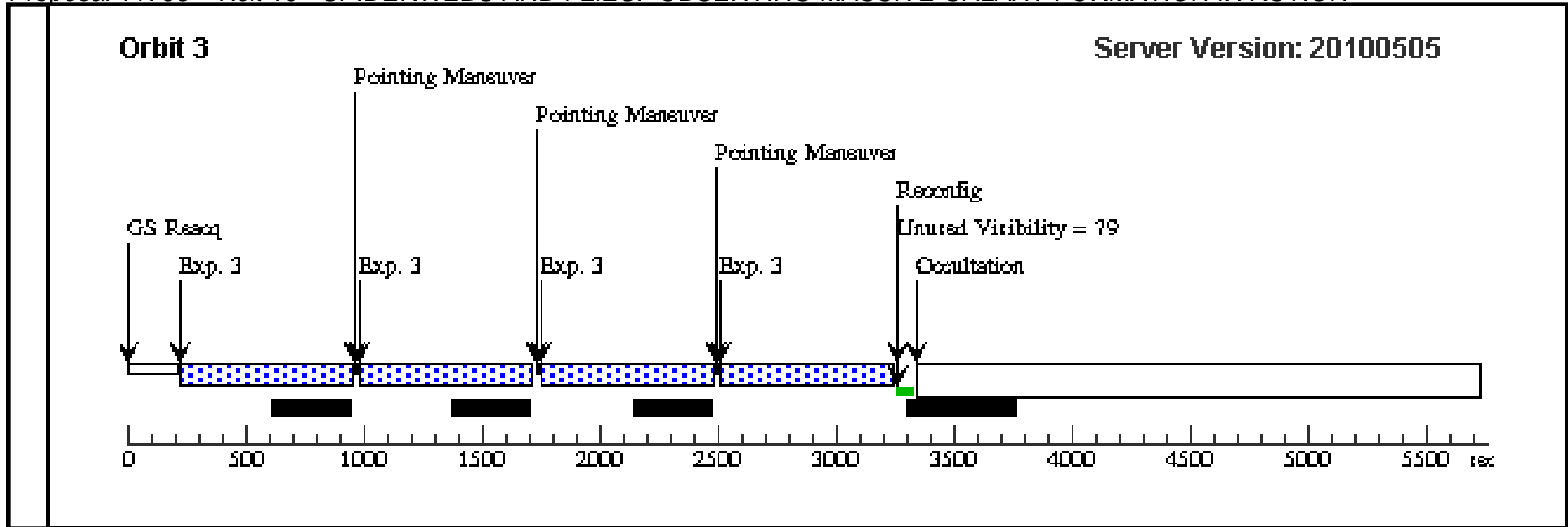


Proposal 11738 - Visit 14 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:13 GMT 2010

| Visit         | <b>Proposal 11738, Visit 10, completed</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 09 |                          |  |   |               |                                   |               |                         |  |       |
|---------------|--|--------------------------|--|---|---------------|-----------------------------------|---------------|-------------------------|--|-------|
|               | Patterns   | #                        | Primary Pattern  | Secondary Pattern   | Exposures     |                                   |               |                         |  |       |
|               |  | (2)                      | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |               | (1), (2), (3)                     |               |                         |  |       |
| Fixed Targets | #  | Name                     | Target Coordinates   | Targ. Coord. Corrections  | Fluxes        | Miscellaneous                     |               |                         |  |       |
|               | (7)  | 4C41.17                  | RA: 06 50 53.8500 (102.7243750d)<br>Dec: +41 30 35.60 (41.50989d)<br>Equinox: J2000                              |   | V=22          | Reference Frame: NED              |               |                         |  |       |
| Exposures     | #  | Label                    | Target   | Config,Mode,Aperture  | Spectral Els. | Opt. Params.                      | Special Reqs. | Groups                  | Exp. Time/[Actual Dur.]  | Orbit |
|               | 1  | 4C41.17_F1<br>05W_orbit1 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 1-1 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [1]   |
|               | 2  | 4C41.17_F1<br>05W_orbit2 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 2-2 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]   |
|               | 3  | 4C41.17_F1<br>05W_orbit3 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 3-3 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [3]   |

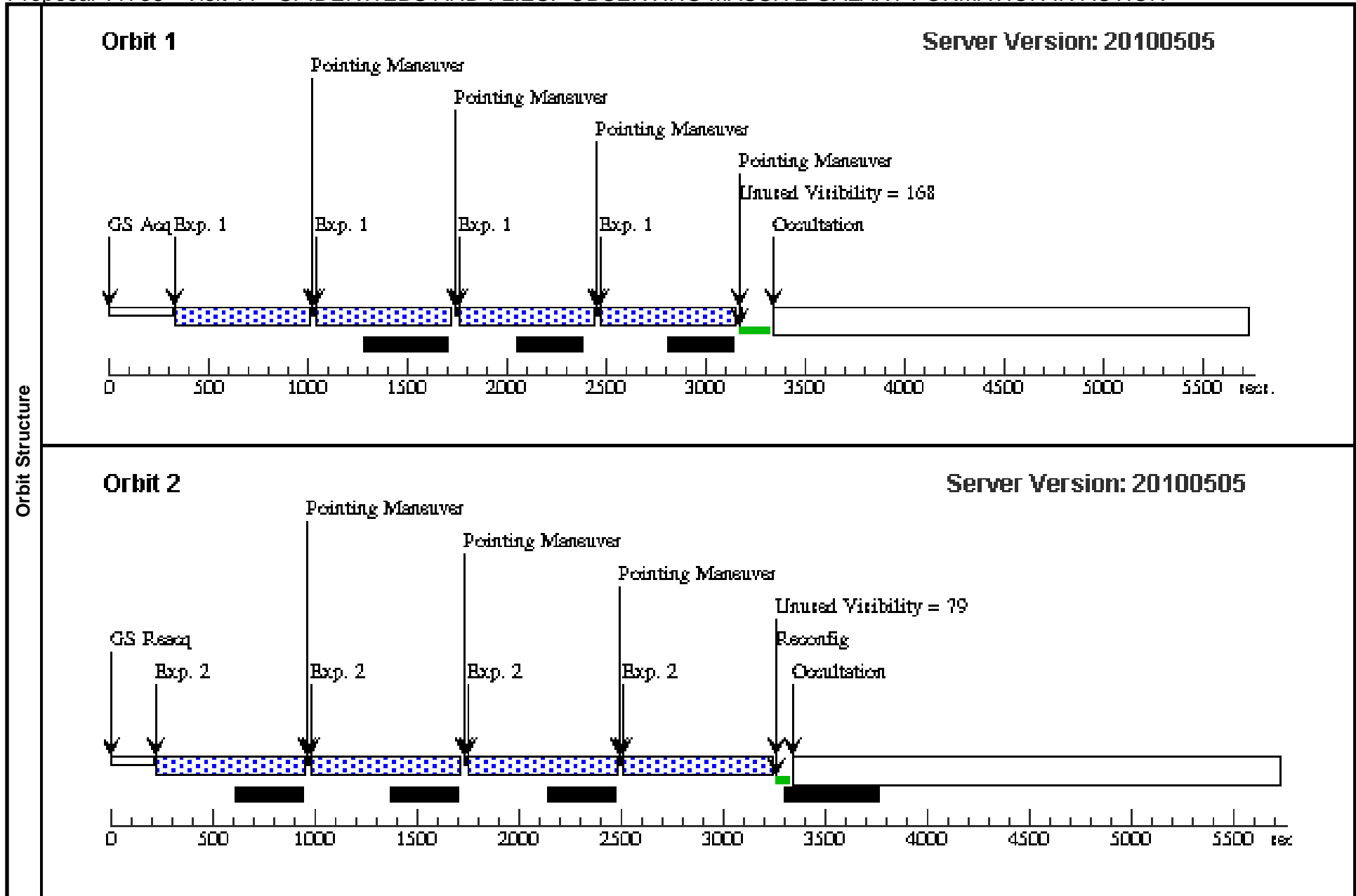




Proposal 11738 - Visit 10 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:14 GMT 2010

| Visit         | Proposal 11738, Visit 11, completed<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 09 |                          |  |   |                                   |                                   |               |                         |  |  |
|---------------|--|--------------------------|--|---|-----------------------------------|-----------------------------------|---------------|-------------------------|--|--|
|               | Patterns   | #                        | Primary Pattern  | Secondary Pattern   | Exposures                         |                                   |               |                         |  |  |
|               |  | (2)                      | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |                                   | (1), (2)                          |               |                         |  |  |
| Fixed Targets | #  | Name                     | Target Coordinates   | Targ. Coord. Corrections  | Fluxes                            | Miscellaneous                     |               |                         |  |  |
|               | (7)  | 4C41.17                  | RA: 06 50 53.8500 (102.7243750d)<br>Dec: +41 30 35.60 (41.50989d)<br>Equinox: J2000                              |   | V=22                              | Reference Frame: NED              |               |                         |  |  |
| Exposures     | #  | Label                    | Target   | Config,Mode,Aperture  | Spectral Els.                     | Opt. Params.                      | Special Reqs. | Groups                  | Exp. Time/[Actual Dur.]  | Orbit  |
|               | 1  | 4C41.17_F1<br>05W_orbit4 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W                             | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 |               |                         | Pattern 2, Exps 1-1 (2)  | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] |
| 2             | 4C41.17_F1<br>05W_orbit5   | (7) 4C41.17              | WFC3/IR, MULTIACCUM, IR  | F105W   | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |                                   |               | Pattern 2, Exps 2-2 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]  |



Proposal 11738 - Visit 11 - SPIDERWEBS AND FLIES: OBSERVING MASSIVE GALAXY FORMATION IN ACTION

Wed Oct 06 01:04:14 GMT 2010

| Visit         | Proposal 11738, Visit 12, completed<br>Diagnostic Status: No Diagnostics<br>Scientific Instruments: WFC3/IR<br>Special Requirements: SAME ORIENT AS 09 |                          |  |   |               |                                   |               |                         |  |       |
|---------------|--|--------------------------|--|---|---------------|-----------------------------------|---------------|-------------------------|--|-------|
|               | Patterns   | #                        | Primary Pattern  | Secondary Pattern   | Exposures     |                                   |               |                         |  |       |
|               |  | (2)                      | Pattern Type=WFC3-IR-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.636<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.788<br>Angle Between Sides=<br>Center Pattern=false |               | (1), (2), (3)                     |               |                         |  |       |
| Fixed Targets | #  | Name                     | Target Coordinates   | Targ. Coord. Corrections  | Fluxes        | Miscellaneous                     |               |                         |  |       |
|               | (7)  | 4C41.17                  | RA: 06 50 53.8500 (102.7243750d)<br>Dec: +41 30 35.60 (41.50989d)<br>Equinox: J2000                              |   | V=22          | Reference Frame: NED              |               |                         |  |       |
| Exposures     | #  | Label                    | Target   | Config,Mode,Aperture  | Spectral Els. | Opt. Params.                      | Special Reqs. | Groups                  | Exp. Time/[Actual Dur.]  | Orbit |
|               | 1  | 4C41.17_F1<br>05W_orbit6 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=14;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 1-1 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [1]   |
|               | 2  | 4C41.17_F1<br>05W_orbit7 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 2-2 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]   |
|               | 3  | 4C41.17_F1<br>05W_orbit8 | (7) 4C41.17  | WFC3/IR, MULTIACCUM, IR   | F105W         | NSAMP=15;<br>SAMP-SEQ=SPAR<br>S50 |               | Pattern 2, Exps 3-3 (2) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [3]   |

