# 13368 - A Precision Measurement of the Mass of the Cepheid V350 Sgr

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: AVAILABLE)

**INVESTIGATORS**



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|---|---|---|
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**VISITS**

| *Visit* | *Targets used in Visit* | *Configurations used in Visit* | *Orbits Used* | *Last Orbit Planner Run* | *OP Current with Visit?* |
|---|---|---|---|---|---|
| 01 | (1) V350-SGR<br>WAVE | STIS/CCD<br>STIS/FUV-MAMA | 3 | 17-Jun-2013 22:01:48.0 | yes |
| 02 | (1) V350-SGR<br>WAVE | STIS/CCD<br>STIS/FUV-MAMA | 3 | 17-Jun-2013 22:02:05.0 | yes |
| 03 | (1) V350-SGR<br>WAVE | STIS/CCD<br>STIS/FUV-MAMA | 3 | 17-Jun-2013 22:02:20.0 | yes |
| 04 | (1) V350-SGR<br>WAVE | STIS/CCD<br>STIS/FUV-MAMA | 3 | 17-Jun-2013 22:02:34.0 | yes |

12 Total Orbits Used

**ABSTRACT**

An important HST UV legacy is the measurement of the masses of Cepheids. HST has provided double-lined spectroscopic binaries since the orbital velocity amplitude of hot companions can be measured on high resolution ultraviolet spectra. STIS UV E140H echelle observations of the Cepheid V350 Sgr will yield a dramatic improvement in the precision of its mass (5% or 0.25 solar masses vs the current 17%). This will allow a unique and critical test of the role of convective overshoot in the evolution of intermediate mass stars, by coupling the measured mass with a luminosity. Furthermore, the very accurate masses (1-2%) recently determined for two Cepheids in eclipsing binaries in the LMC mean the mass--luminosity relation for Cepheids can be compared for two metallicities. This will improve both confidence in the use of Cepheids as primary extragalactic distance indicators and also our understanding of the evolution of intermediate mass stars.

**OBSERVING DESCRIPTION**

There are four identical visits of three orbits each.

Auto-wavecals will be turned off and replaced with deep wavecals at the beginning and end of each orbit. All but the first wavecal hide in the occultations and or guide-star re-acquisitions.

Other than the initial ACQ, the exposures for each orbit are put into a non-interruptable sequence to ensure that the wavecals stay close in time to each bracketed science exposure.

In each visit:

1st orbit

(1) Acquire target with 3s F28X52OIII ACQ exposure
(2) 3 s ACQ/PEAK with G430L and 0.2X0.09 aperture
(2) 120 s WAVE
(3) 1770 s E140H 1416
(4) 250 s WAVE

2nd and 3rd orbits
(1) 250 s WAVE
(2) 2990 s E140H 1416
(3) 250 s WAVE

**ADDITIONAL COMMENTS**

Notes to schedulers:

The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint, please SCHEDULE EACH VISIT AS THE FIRST FUV MAMA VISIT IN THAT DAY'S SAA FREE BLOCK, and START THE VISIT AS SOON AS POSSIBLE AFTER THAT DAY'S FUV HV RAMPUP.

These observations are timed to coincide with a particular phase of the binary system's four year orbital period and so should all execute between 15 Sep 2013 and 10 Nov 2013. After 10 Nov the target enters solar exclusion and cannot be observed again until mid-February, well after the requested phase window. It would be best if all visits execute within the same four day period to minimize the binary's velocity change between visits, but as the FUV MAMA dark rate increases with HV on time, no more than 1 visit should be executed during each SAA free block of orbits (this is the reason for the "AFTER BY" constraints included on visits 2, 3, and 4). If this combination of constraints should prove unschedulable, some of the requirements may be slightly relaxed after discussion with the proposal team.

Bright object screening:

The "unknown" objects reported by the BOT are just extra catalog entries for the target itself.

At FUV wavelengths, the SED is dominated by the companion, not the Cephied.

Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.

Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09

ETC calculation STIS.sp.507182

## Visit

**Proposal 13368, 3 orbit visit 1 (01), implementation** Tue Jun 18 02:02:44 GMT 2013

**Diagnostic Status: No Diagnostics**

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: BETWEEN 15-SEP-2013 AND 09-JAN-2014; SEQ 01,02,03,04 WITHIN 4.2 D

*Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint (about 3-4X average background), please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and start the visits as soon as possible after the HV is turned on for the day.*

## Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (1) | V350-SGR | RA: 18 45 17.4990 (281.3229125d) | Proper Motion RA: 1.40 mas/yr | V=7.47 | Reference Frame: ICRS |
| | Alt Name1: HD173297 | Dec: -20 38 50.57 (-20.64738d) | Proper Motion Dec: -4.40 mas/yr | FLAM(1417)=5e-14 | |
| | Alt Name2: HIP92013 | Equinox: J2000 | Epoch of Position: 2000 | | |

*Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.*

*At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.*

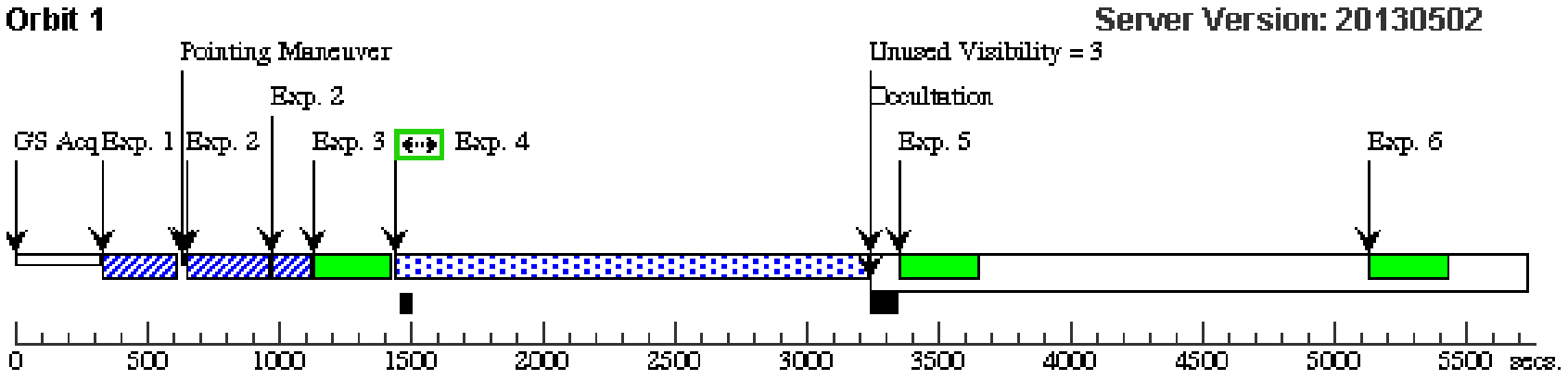
*Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.*

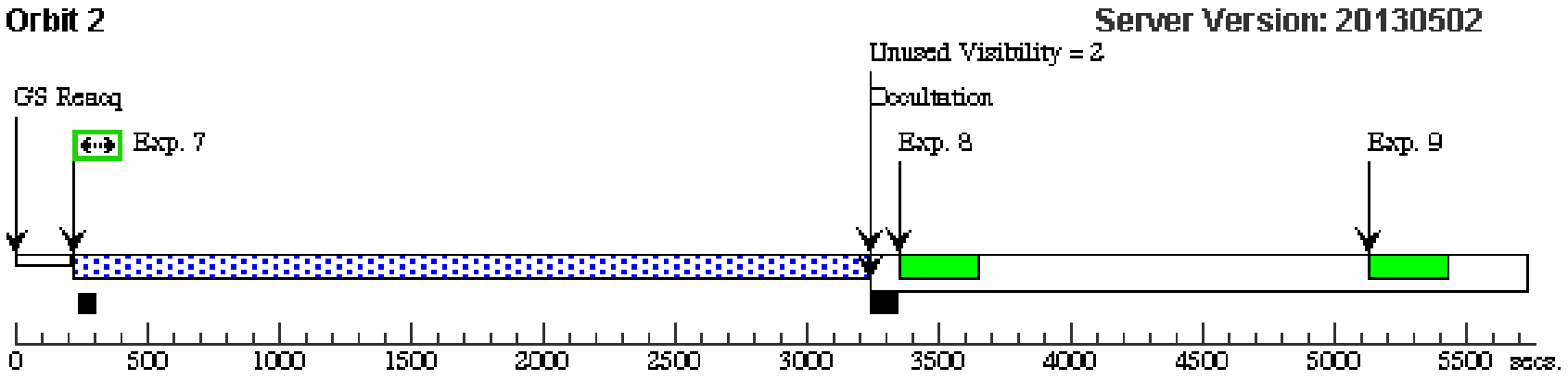
*Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.*

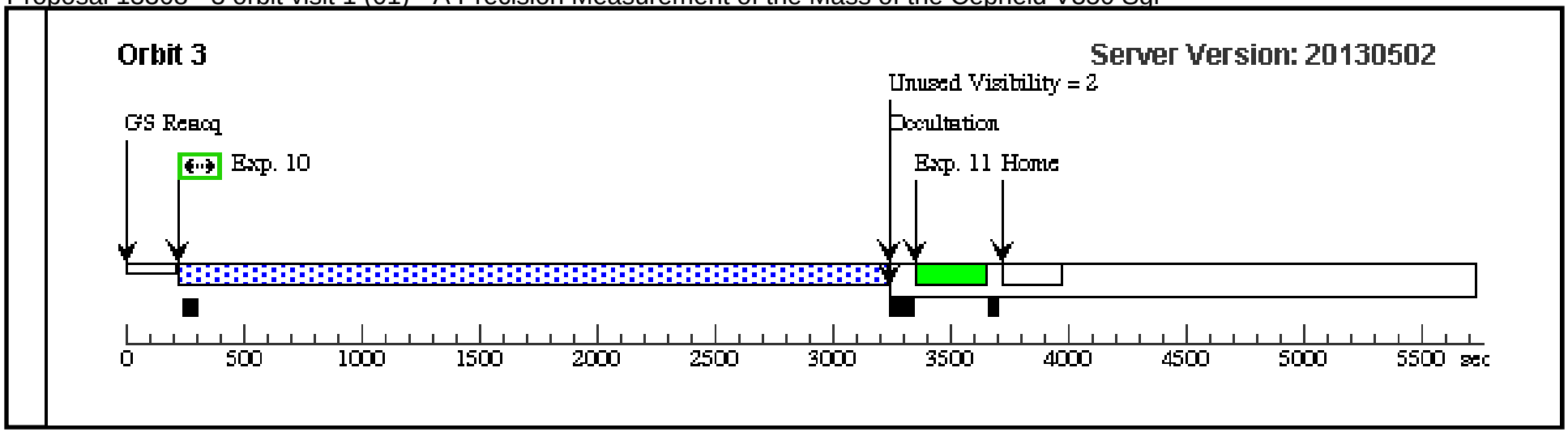
**Exposures**

| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ACQ (STIS.ta.512994) | (1) V350-SGR | STIS/CCD, ACQ, F28X50OIII | MIRROR | | | | 3 Secs (3 Secs)<br>*[==>]* | <br>***[1]*** |
| 2 | acq/peak (STIS.sp.512995) | (1) V350-SGR | STIS/CCD, ACQ/PEAK, 0.2X0.09 | G430L<br>4300 A | | | Sequence 2-5 Non-Int in 3 orbit visit 1 (01) | 3 Secs (3 Secs)<br>*[==>]* | <br>***[1]*** |
| *Comments: Expect 1e7 e- per dwell point from the source* | | | | | | | | | |
| 3 | wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 1 (01) | 120 Secs (120 Secs)<br>*[==>]* | <br>***[1]*** |
| 4 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 2-5 Non-Int in 3 orbit visit 1 (01) | 1770 Secs (1770 Secs)<br>*[==>]* | <br>***[1]*** |
| *Comments: At FUV wavelengths, the SED is dominated by the companion, not the Cephied.*<br>*Adopted SED based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766; other IUE spectra consistent.*<br>*Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09* | | | | | | | | | |
| 5 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 1 (01) | 250 Secs (250 Secs)<br>*[==>]* | <br>***[1]*** |
| 6 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 6-8 Non-Int in 3 orbit visit 1 (01) | 250 Secs (250 Secs)<br>*[==>]* | <br>***[1]*** |
| 7 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 6-8 Non-Int in 3 orbit visit 1 (01) | 2990 Secs (2990 Secs)<br>*[==>]* | <br>***[2]*** |
| 8 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 6-8 Non-Int in 3 orbit visit 1 (01) | 250 Secs (250 Secs)<br>*[==>]* | <br>***[2]*** |
| 9 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 9-11 Non-Int in 3 orbit visit 1 (01) | 250 Secs (250 Secs)<br>*[==>]* | <br>***[2]*** |
| 10 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 9-11 Non-Int in 3 orbit visit 1 (01) | 2990 Secs (2990 Secs)<br>*[==>]* | <br>***[3]*** |
| 11 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 9-11 Non-Int in 3 orbit visit 1 (01) | 250 Secs (250 Secs)<br>*[==>]* | <br>***[3]*** |

Orbit Structure

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GS Reacq
Occultation
Exp. 10
Exp. 11 Home
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1000
1500
2000
2500
3000
3500
4000
4500
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5500
sec

## Visit

**Proposal 13368, 3 orbit visit 2 (02), implementation** Tue Jun 18 02:02:50 GMT 2013

**Diagnostic Status: No Diagnostics**

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 01 BY 0.5 D TO 1.5 D; BETWEEN 15-SEP-2013 AND 09-JAN-2014

*Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint, please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and try to start the visits as soon as possible after the HV is turned on for the day.*

## Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (1) | V350-SGR | RA: 18 45 17.4990 (281.3229125d) | Proper Motion RA: 1.40 mas/yr | V=7.47 | Reference Frame: ICRS |
| | Alt Name1: HD173297 | Dec: -20 38 50.57 (-20.64738d) | Proper Motion Dec: -4.40 mas/yr | FLAM(1417)=5e-14 | |
| | Alt Name2: HIP92013 | Equinox: J2000 | Epoch of Position: 2000 | | |

*Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.*

*At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.*

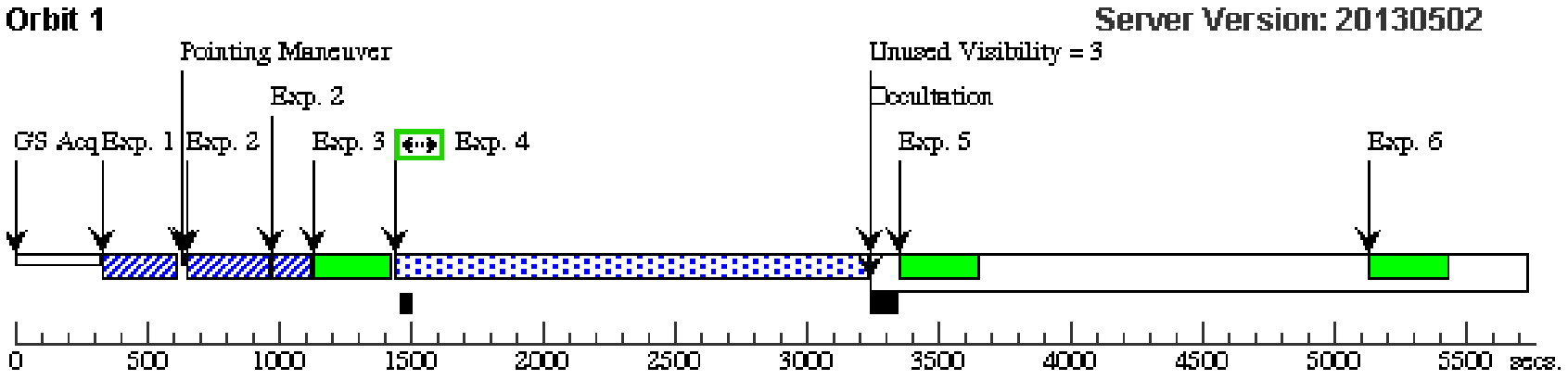
*Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.*

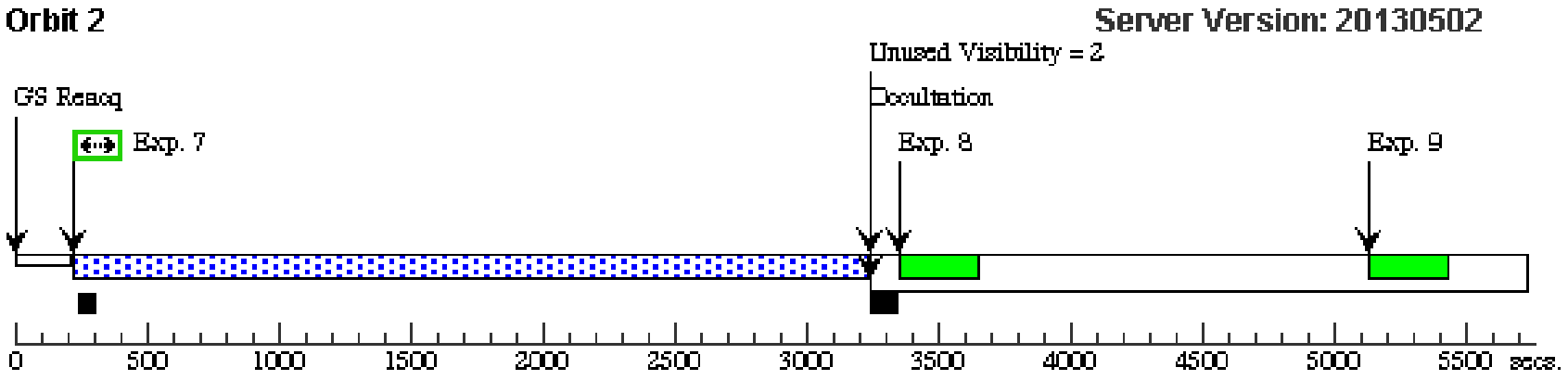
*Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.*

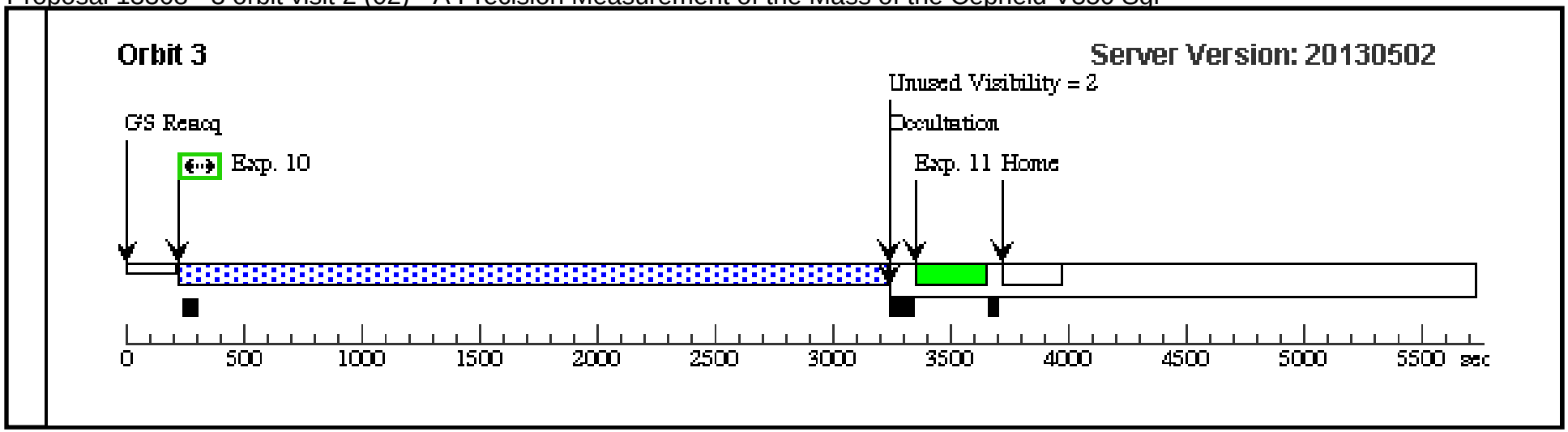
## Exposures

| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ACQ (STIS.ta.507184) | (1) V350-SGR | STIS/CCD, ACQ, F28X50OIII | MIRROR | | | | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| 2 | acq/peak (STIS.sp.507176) | (1) V350-SGR | STIS/CCD, ACQ/PEAK, 0.2X0.09 | G430L<br>4300 A | | | Sequence 2-5 Non-Int in 3 orbit visit 2 (02) | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect 1e7 e- per dwell point from the source* | | | | | | | | | |
| 3 | default wave | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 2 (02) | 120 Secs (120 Secs)<br>*[==>]* | *[1]* |
| 4 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 2-5 Non-Int in 3 orbit visit 2 (02) | 1770 Secs (1770 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect global rate of 157 c/s background + 82 c/s source* | | | | | | | | | |
| 5 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 2 (02) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 6 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 6-8 Non-Int in 3 orbit visit 2 (02) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 7 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 6-8 Non-Int in 3 orbit visit 2 (02) | 2990 Secs (2990 Secs)<br>*[==>]* | *[2]* |
| 8 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 6-8 Non-Int in 3 orbit visit 2 (02) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 9 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 9-11 Non-Int in 3 orbit visit 2 (02) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 10 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 9-11 Non-Int in 3 orbit visit 2 (02) | 2990 Secs (2990 Secs)<br>*[==>]* | *[3]* |
| 11 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 9-11 Non-Int in 3 orbit visit 2 (02) | 250 Secs (250 Secs)<br>*[==>]* | *[3]* |

Orbit Structure




Orbit 3
Server Version: 20130502
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Occultation
Exp. 10
Exp. 11 Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
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5500
sec

## Visit

**Proposal 13368, 3 orbit visit 3 (03), implementation** Tue Jun 18 02:02:53 GMT 2013

**Diagnostic Status: No Diagnostics**

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 02 BY 0.5 D TO 1.5 D; BETWEEN 15-SEP-2013 AND 09-JAN-2014

*Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint, please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and try to start the visits as soon as possible after the HV is turned on for the day.*

## Fixed Targets

| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (1) | V350-SGR | RA: 18 45 17.4990 (281.3229125d) | Proper Motion RA: 1.40 mas/yr | V=7.47 | Reference Frame: ICRS |
| | Alt Name1: HD173297 | Dec: -20 38 50.57 (-20.64738d) | Proper Motion Dec: -4.40 mas/yr | FLAM(1417)=5e-14 | |
| | Alt Name2: HIP92013 | Equinox: J2000 | Epoch of Position: 2000 | | |

*Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.*

*At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.*

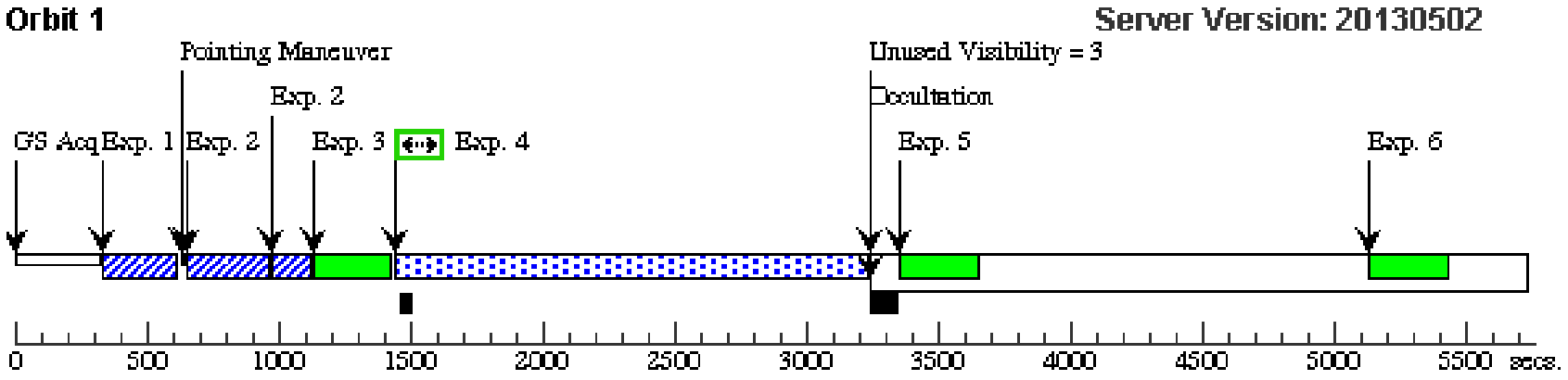
*Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.*

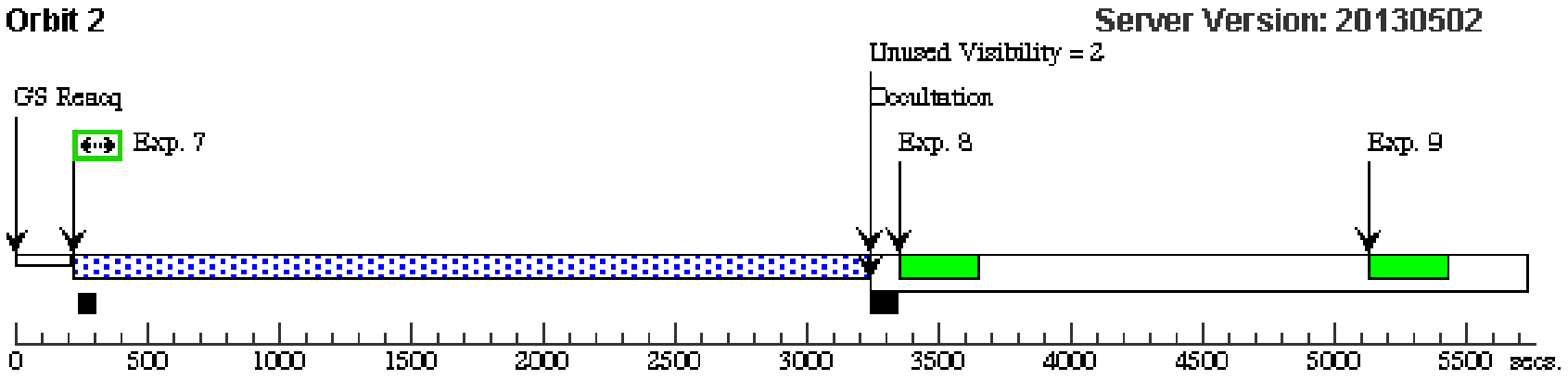
*Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.*

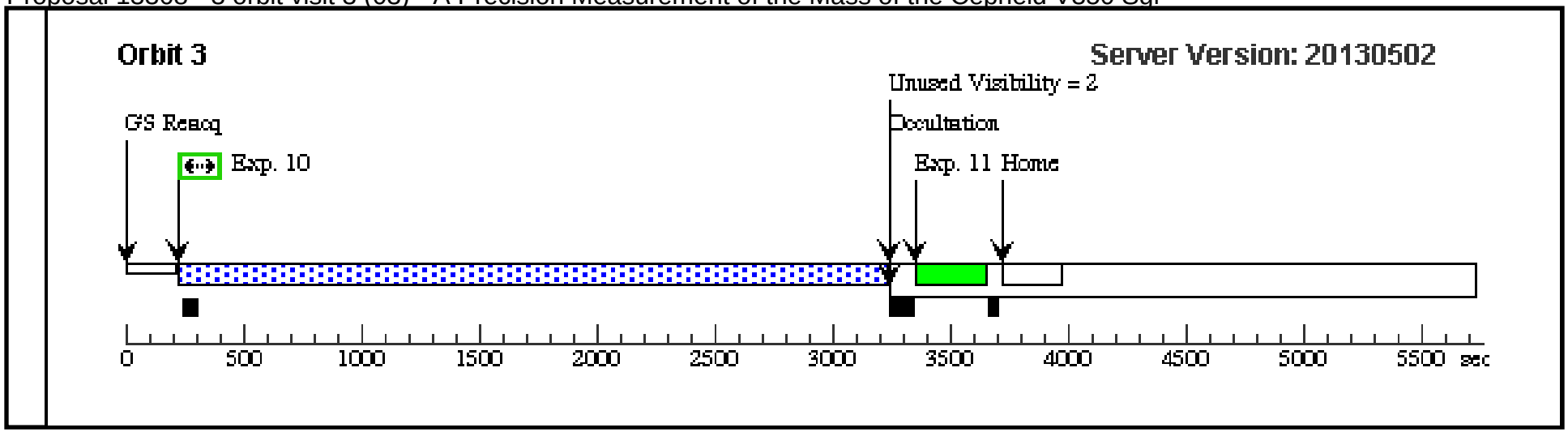
## Exposures

| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ACQ (STIS.ta.507184) | (1) V350-SGR | STIS/CCD, ACQ, F28X50OIII | MIRROR | | | | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| 2 | acq/peak (STIS.sp.507176) | (1) V350-SGR | STIS/CCD, ACQ/PEAK, 0.2X0.09 | G430L<br>4300 A | | | Sequence 2-5 Non-Int in 3 orbit visit 3 (03) | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect 1e7 e- per dwell point from the source* | | | | | | | | | |
| 3 | default wave | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 3 (03) | 120 Secs (120 Secs)<br>*[==>]* | *[1]* |
| 4 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 2-5 Non-Int in 3 orbit visit 3 (03) | 1770 Secs (1770 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect global rate of 157 c/s background + 82 c/s source* | | | | | | | | | |
| 5 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 3 (03) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 6 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 6-8 Non-Int in 3 orbit visit 3 (03) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 7 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 6-8 Non-Int in 3 orbit visit 3 (03) | 2990 Secs (2990 Secs)<br>*[==>]* | *[2]* |
| 8 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 6-8 Non-Int in 3 orbit visit 3 (03) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 9 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 9-11 Non-Int in 3 orbit visit 3 (03) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 10 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 9-11 Non-Int in 3 orbit visit 3 (03) | 2990 Secs (2990 Secs)<br>*[==>]* | *[3]* |
| 11 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 9-11 Non-Int in 3 orbit visit 3 (03) | 250 Secs (250 Secs)<br>*[==>]* | *[3]* |

Orbit Structure




Orbit 3
Server Version: 20130502
Unused Visibility = 2
GS Reacq
Occultation
Exp. 10
Exp. 11 Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

## Visit

**Proposal 13368, 3 orbit visit 4 (04), implementation** Tue Jun 18 02:02:56 GMT 2013

**Diagnostic Status: No Diagnostics**

Scientific Instruments: STIS/CCD, STIS/FUV-MAMA

Special Requirements: AFTER 03 BY 0.5 D TO 1.5 D; BETWEEN 15-SEP-2013 AND 09-JAN-2014

*Comments: Note to schedulers: The STIS FUV detector background rate increases with time after detector HV turn-on. Since our target is rather faint, please schedule each visit as the first FUV MAMA visit in that day's SAA free block of orbits, and try to start the visits as soon as possible after the HV is turned on for the day.*

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| | Alt Name1: HD173297 | Dec: -20 38 50.57 (-20.64738d) | Proper Motion Dec: -4.40 mas/yr | FLAM(1417)=5e-14 | |
| | Alt Name2: HIP92013 | Equinox: J2000 | Epoch of Position: 2000 | | |

*Comments: Coordinates are from Hipparcos, adjusted for proper motion to epoch 2000.*

*At FUV wavelengths, the SED is dominated by the ~ B9 or A0 companion, not the Cephied.*

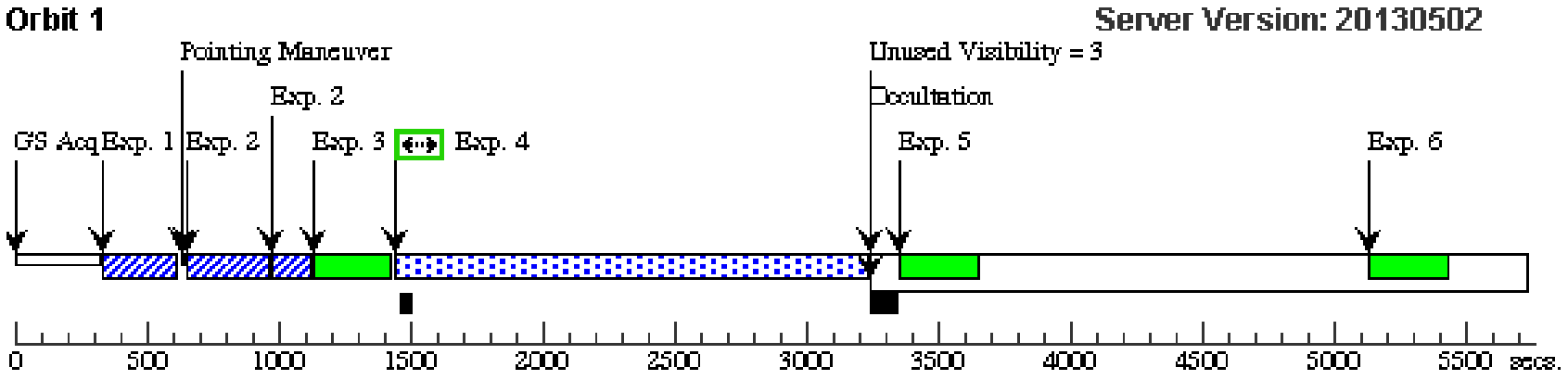
*Our adopted SED is based on the large aperture, low dispersion IUE spectrum SWP44358 + LWR22766. A few other IUE spectra taken at different epochs are consistent with these, ruling out any large scale FUV variability.*

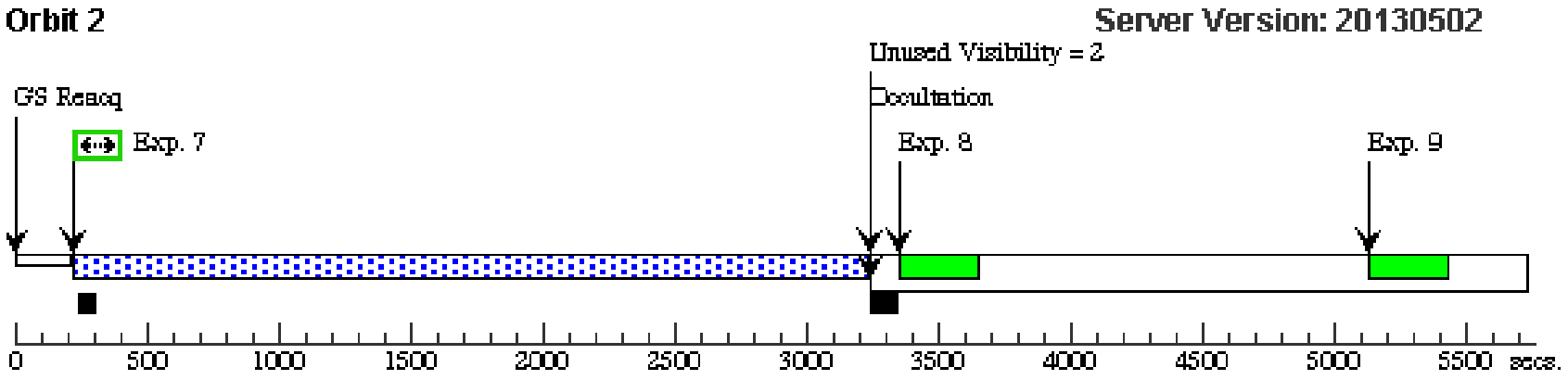
*Expect global rate of 157 c/s background + 82 c/s source for E140H, 1416, 0.2X0.09; ETC ID STIS.sp.507182.*

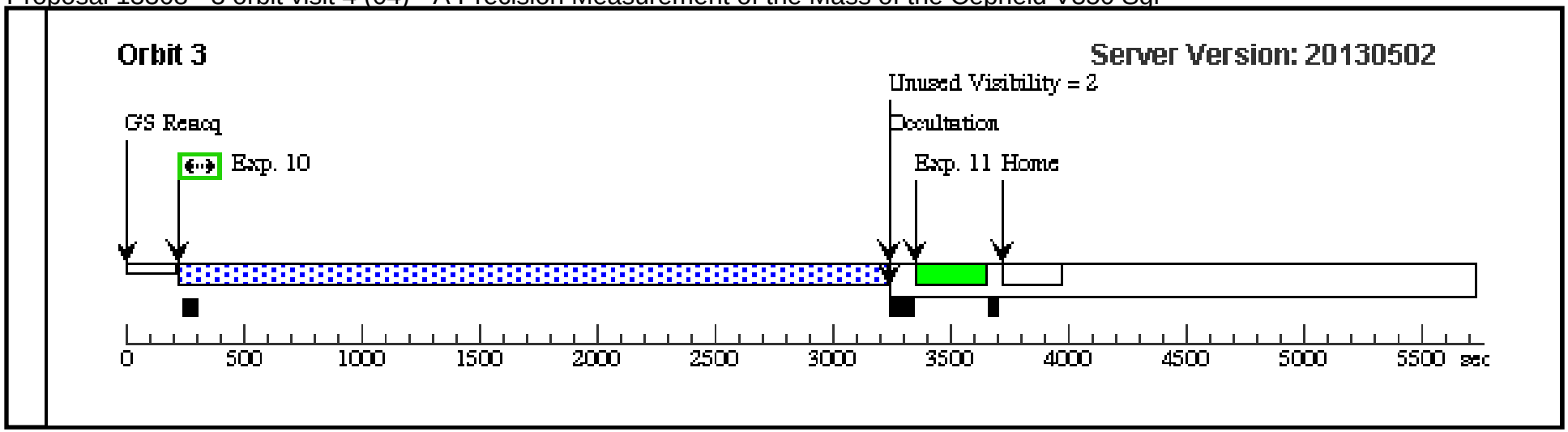
## Exposures

| # | Label (ETC Run) | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ACQ (STIS.ta.507184) | (1) V350-SGR | STIS/CCD, ACQ, F28X50OIII | MIRROR | | | | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| 2 | acq/peak (STIS.sp.507176) | (1) V350-SGR | STIS/CCD, ACQ/PEAK, 0.2X0.09 | G430L<br>4300 A | | | Sequence 2-5 Non-Int in 3 orbit visit 4 (04) | 3 Secs (3 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect 1e7 e- per dwell point from the source* | | | | | | | | | |
| 3 | default wave | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 4 (04) | 120 Secs (120 Secs)<br>*[==>]* | *[1]* |
| 4 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 2-5 Non-Int in 3 orbit visit 4 (04) | 1770 Secs (1770 Secs)<br>*[==>]* | *[1]* |
| *Comments: Expect global rate of 157 c/s background + 82 c/s source* | | | | | | | | | |
| 5 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 2-5 Non-Int in 3 orbit visit 4 (04) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 6 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 6-8 Non-Int in 3 orbit visit 4 (04) | 250 Secs (250 Secs)<br>*[==>]* | *[1]* |
| 7 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 6-8 Non-Int in 3 orbit visit 4 (04) | 2990 Secs (2990 Secs)<br>*[==>]* | *[2]* |
| 8 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 6-8 Non-Int in 3 orbit visit 4 (04) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 9 | long wave before | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | NEW ALIGNMENT | Sequence 9-11 Non-Int in 3 orbit visit 4 (04) | 250 Secs (250 Secs)<br>*[==>]* | *[2]* |
| 10 | E140H (STIS.sp.507182) | (1) V350-SGR | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | WAVECAL=NO | | Sequence 9-11 Non-Int in 3 orbit visit 4 (04) | 2990 Secs (2990 Secs)<br>*[==>]* | *[3]* |
| 11 | long wave after | WAVE | STIS/FUV-MAMA, ACCUM, 0.2X0.09 | E140H<br>1416 A | | | Sequence 9-11 Non-Int in 3 orbit visit 4 (04) | 250 Secs (250 Secs)<br>*[==>]* | *[3]* |

Orbit Structure

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Occultation
Exp. 10
Exp. 11 Home
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5500
sec