# 14252 - Environmental signatures on galaxy populations in the most massive clusters at z~1.5

Cycle: 23, Proposal Category: GO

(Availability Mode: SUPPORTED)

**INVESTIGATORS**



| *Name* | *Institution* | *E-Mail* |
|---|---|---|
| **Dr. Veronica Strazzullo (PI) (ESA Member) (Contact)** | **Universitats-Sternwarte Munchen** | **vstrazz@usm.lmu.de** |
| Dr. Joseph Mohr (CoI) (ESA Member) | Universitats-Sternwarte Munchen | jmohr@usm.lmu.de |
| Alexandro Saro (CoI) (ESA Member) | Universitats-Sternwarte Munchen | saro@usm.lmu.de |
| Dr. Maurilio Pannella (CoI) (ESA Member) | Max-Planck-Institut fur extraterrestrische Physik | mpannell@usm.lmu.de |
| Dr. Spencer Adam Stanford (CoI) (AdminUSPI) | University of California - Davis | stanford@physics.ucdavis.edu |
| Prof. Mark Brodwin (CoI) | University of Missouri - Kansas City | brodwinm@umkc.edu |
| Dr. Michael McDonald (CoI) | Massachusetts Institute of Technology | mcdonald@space.mit.edu |
| Mr. I-Non Chiu (CoI) (ESA Member) | Universitats-Sternwarte Munchen | inonchiu@usm.uni-muenchen.de |
| Dr. Joerg Dietrich (CoI) (ESA Member) | Universitats-Sternwarte Munchen | dietrich@usm.lmu.de |
| Sebastian Bocquet (CoI) (ESA Member) | Universitats-Sternwarte Munchen | bocquet@usm.lmu.de |
| Raffaella Capasso (CoI) (ESA Member) | Universitats-Sternwarte Munchen | capasso@usm.uni-muenchen.de |
| Prof. Bodo Ziegler (CoI) (ESA Member) | University of Vienna | bodo.ziegler@univie.ac.at |
| Dr. Ulrike Kuchner (CoI) (ESA Member) | University of Vienna | ulrike.kuchner@univie.ac.at |



**VISITS**

| *Visit* | *Targets used in Visit* | *Configurations used in Visit* | *Orbits Used* | *Last Orbit Planner Run* | *OP Current with Visit?* |
|---|---|---|---|---|---|
| 01 | (1) SPT-CLJ2040-4451 | ACS/WFC | 2 | 21-Jul-2015 22:15:05.0 | yes |

| *Visit* | *Targets used in Visit* | *Configurations used in Visit* | *Orbits Used* | *Last Orbit Planner Run* | *OP Current with Visit?* |
|---|---|---|---|---|---|
| 02 | (2) SPT-CLJ0607-4448 | ACS/WFC<br>WFC3/IR | 3 | 21-Jul-2015 22:15:08.0 | yes |
| 03 | (3) SPT-CLJ0459-4947 | ACS/WFC<br>WFC3/IR | 3 | 21-Jul-2015 22:15:12.0 | yes |
| 04 | (4) SPT-CLJ0421-4845 | ACS/WFC<br>WFC3/IR | 3 | 21-Jul-2015 22:15:15.0 | yes |
| 05 | (5) SPT-CLJ0446-4606 | ACS/WFC<br>WFC3/IR | 3 | 21-Jul-2015 22:15:18.0 | yes |

14 Total Orbits Used

**ABSTRACT**

We propose to obtain ACS/F814W and WFC3/F140W imaging of a complete sample of the five highest redshift clusters discovered in the SPT-SZ survey. This will enable a first uniform statistical study of galaxy populations in the most massive structures at z>1.4. This redshift is a crucial transition time for massive galaxies in cluster environments. It bridges the major star formation events at z~2 that built most of the stars in massive cluster early-types, and the z~1 regime largely characterized by passive evolution in cluster cores. Massive clusters at this time are still very rare. Cluster galaxies at this redshift have thus been investigated in only a handful of clusters selected in different ways that may well bias galaxy population studies. As an important next step beyond these initial studies, this project explores central questions that still remain controversial: How efficient is quenching of star formation in the most massive structures at z~1.5? How common are highly star-forming galaxies in the densest cluster-core environments? What are the morphologies of massive cluster galaxies, and how different is their structural evolution in clusters and in the field? How is the link between old stellar populations and bulge-dominated structure established so early? Answering these questions requires deep high-resolution observations to probe stellar populations and morphologies, and a statistically significant, unbiased, uniform sample of cluster galaxies in very massive structures, where environmental signatures are expected to be more evident. The combination of HST capabilities with a unique cluster sample now allows a first, timely and necessary step forward.

**OBSERVING DESCRIPTION**

This is a standard WFC3/IR and ACS/WFC deep imaging program of 5 SPT-selected galaxy clusters at z>1.4: SPT-CLJ2040-4451, SPT-CLJ0607-4448, SPT-CLJ0459-4947, SPT-CLJ0421-4845, SPT-CLJ0446-4606. All clusters are imaged with ACS/F814W for 2 orbits each (on source exposure

time ~4700-4800s). SPT-CLJ0607-4448, SPT-CLJ0459-4947, SPT-CLJ0421-4845, SPT-CLJ0446-4606 are also imaged with WFC3/F140W for 1 orbit each (on source time ~ 2424s).

WFC3/F140W observations of each cluster are acquired with 8 dithered exposures (on a dither-blob + dither-box-min pattern). ACS/F814W observations are acquired with 8 dithered exposures (on a dither-line + dither-box pattern). For all observations, sufficient dithering is required not only for artifact and cosmic ray removal but also for appropriate PSF reconstruction, in view of the morphological analysis to be carried out on these data. The adopted dithering for ACS observations also fills the gap between the two WFC detectors.

## Visit

**Proposal 14252, SPT-CLJ2040-4451 (01)** Wed Jul 22 02:15:20 GMT 2015

**Diagnostic Status: No Diagnostics**

Scientific Instruments: ACS/WFC

Special Requirements: (none)

*Comments: 2-orbit ACS/F814 observations of SPT-CLJ2040-4451 (4752s on source). 8 dithers.*

## Patterns

| # | Primary Pattern | | Secondary Pattern | | Exposures |
|---|---|---|---|---|---|
| (5) | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=2<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 | Pattern Type=ACS-WFC-DITHER-BOX<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.265<br>Line Spacing=0.187 | Coordinate Frame=POS-TARG<br>Pattern Orientation=20.67<br>Angle Between Sides=69.05<br>Center Pattern=false | (1) |

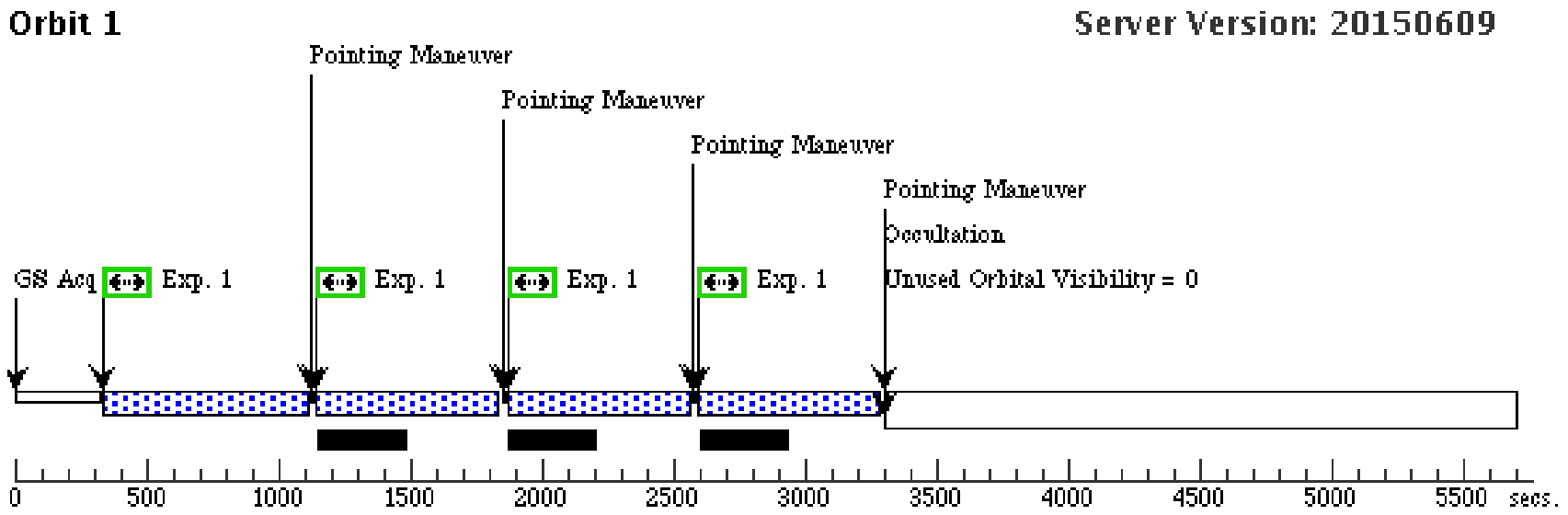
## Fixed Targets

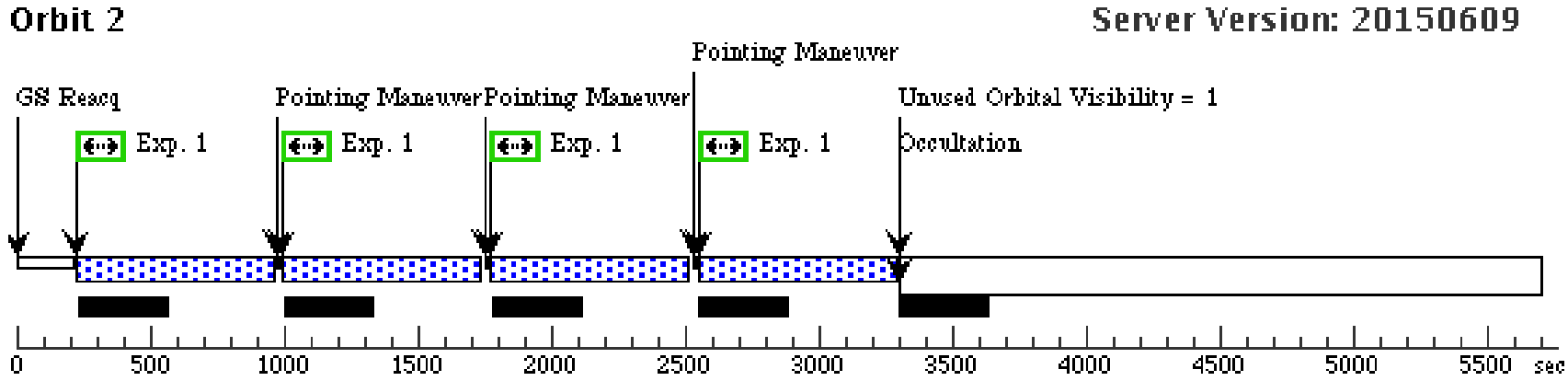
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (1) | SPT-CLJ2040-4451 | RA: 20 40 59.1170 (310.2463208d)<br>Dec: -44 51 31.88 (-44.85886d)<br>Equinox: J2000 | Redshift: 1.44 | V=(?)<br>Target cluster galaxies have F814W<25.8,<br>F140W<23.3 AB mag. Brightest source around (within ~4' box) has J~15.4,<br>r~13.5 mag (Vega). | Reference Frame: ICRS |

## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (1) SPT-CLJ2040-4451 | ACS/WFC, ACCUM, WFC | F814W | | | Pattern 5, Exps 1-1 in SPT-CLJ2040-4451 (01) (5) | 550 Secs (4752 Secs) | |
| | | | | | | | | *[==>570.0 Secs (Pattern 1,1)]*<br>*[==>570.0 Secs (Pattern 1,2)]*<br>*[==>570.0 Secs (Pattern 1,3)]*<br>*[==>570.0 Secs (Pattern 1,4)]* | ***[1]*** |
| | | | | | | | | *[==>618.0 Secs (Pattern 2,1)]*<br>*[==>618.0 Secs (Pattern 2,2)]*<br>*[==>618.0 Secs (Pattern 2,3)]*<br>*[==>618.0 Secs (Pattern 2,4)]* | ***[2]*** |

Orbit Structure



## Visit

**Proposal 14252, SPT-CLJ0607-4448 (02)** Wed Jul 22 02:15:20 GMT 2015

**Diagnostic Status: No Diagnostics**

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: (none)

*Comments: 2-orbit ACS/F814 (4742s on source) plus 1-orbit WFC3/F140W (2424s on source) observations of SPT-CLJ0607-4448. 8 dithers are used for both the ACS and the WFC3 imaging.*

## Patterns

| # | Primary Pattern | | Secondary Pattern | | Exposures |
|---|---|---|---|---|---|
| (4) | Pattern Type=WFC3-IR-DITHER-BLOB<br>Purpose=DITHER<br>Number Of Points=2<br>Point Spacing=5.183<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.859<br>Angle Between Sides=<br>Center Pattern=true | Pattern Type=WFC3-IR-DITHER-BOX-MIN<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.572<br>Line Spacing=0.365 | Coordinate Frame=POS-TARG<br>Pattern Orientation=18.528<br>Angle Between Sides=74.653<br>Center Pattern=false | (1) |
| (5) | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=2<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 | Pattern Type=ACS-WFC-DITHER-BOX<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.265<br>Line Spacing=0.187 | Coordinate Frame=POS-TARG<br>Pattern Orientation=20.67<br>Angle Between Sides=69.05<br>Center Pattern=false | (2) |

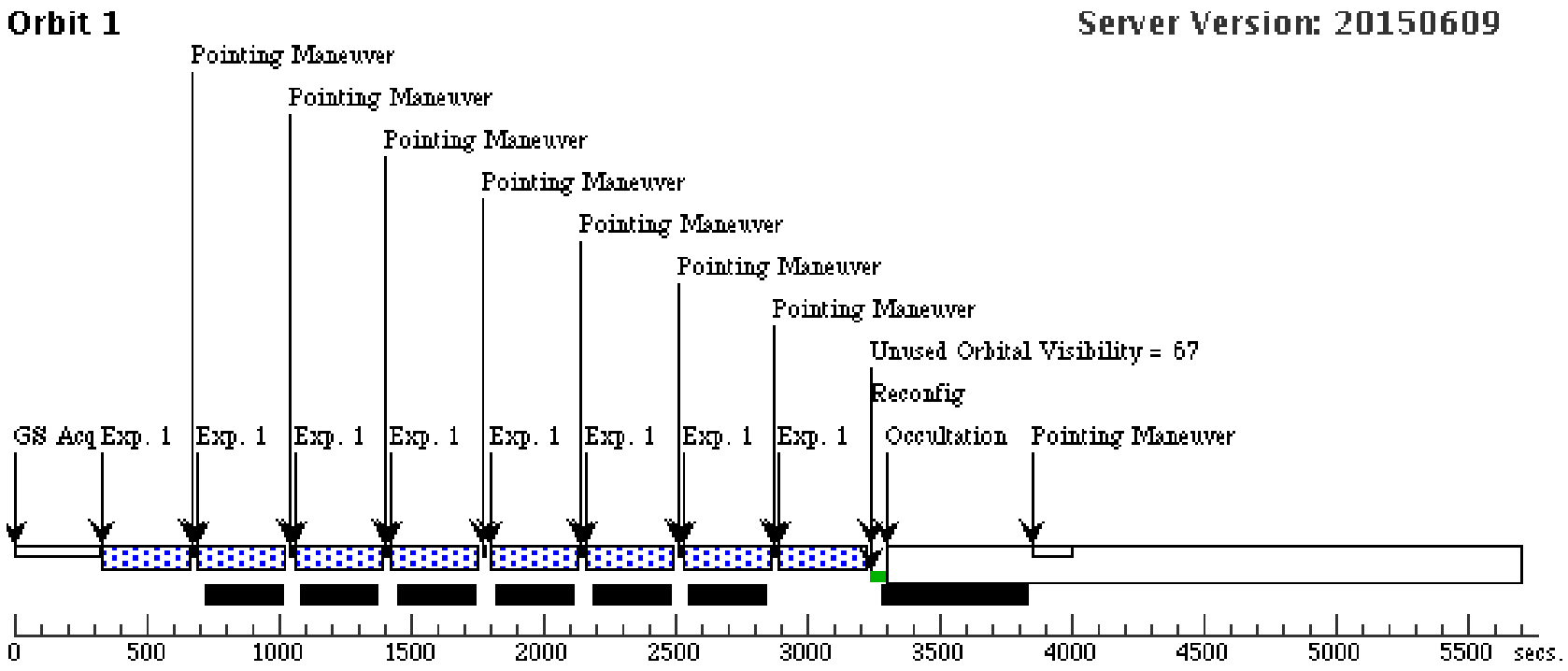
## Fixed Targets

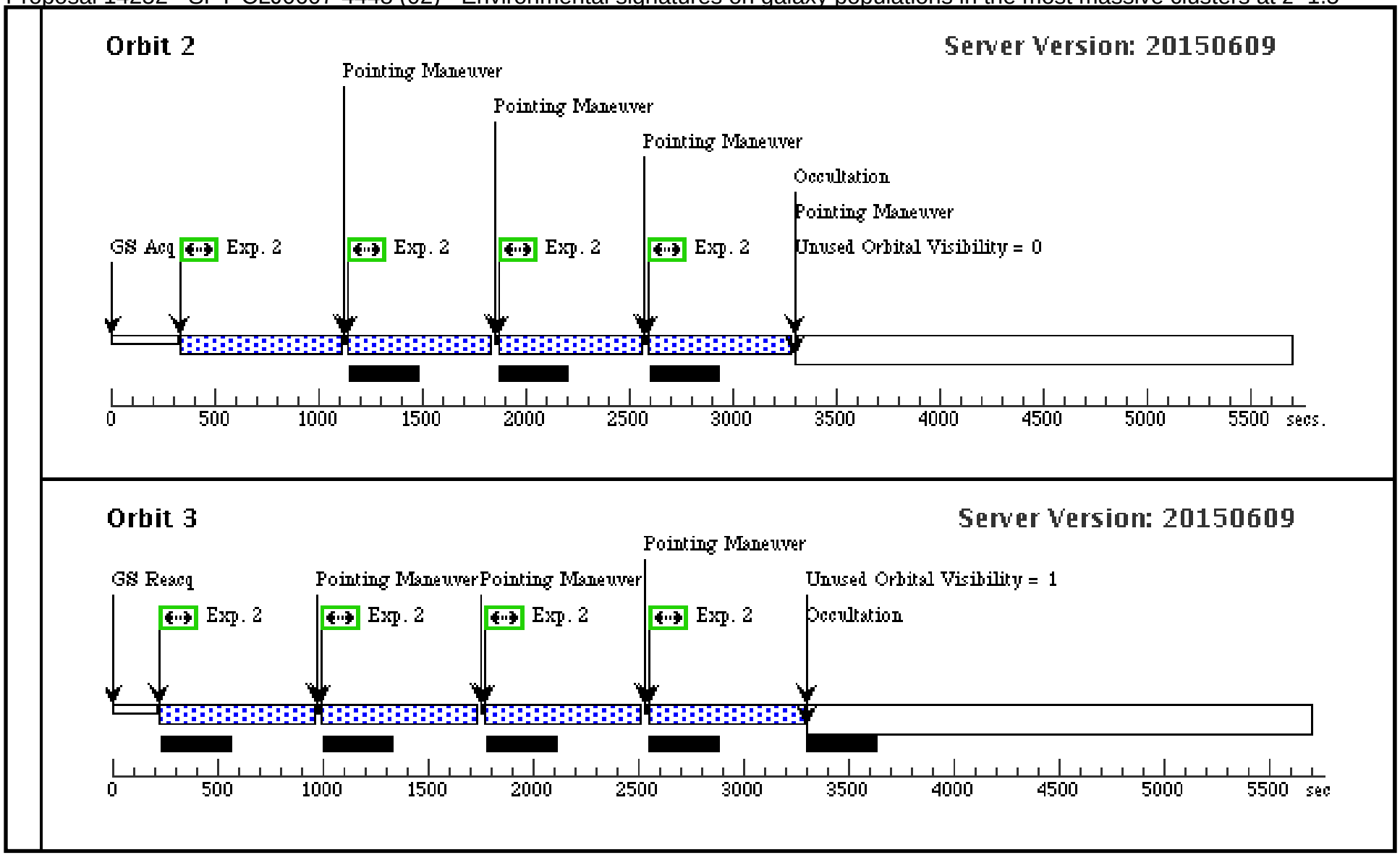
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (2) | SPT-CLJ0607-4448 | RA: 06 07 34.5460 (91.8939417d)<br>Dec: -44 48 12.86 (-44.80357d)<br>Equinox: J2000 | Redshift: 1.4 | V=(?)<br>Target cluster galaxies have F814W<25.8,<br>F140W<23.3 AB mag. Brightest source around (within ~4' box) has J~13.3,<br>r~12.2 mag (Vega). | Reference Frame: ICRS |

## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (2) SPT-CLJ0607-4448 | WFC3/IR, MULTIACCUM, IR-FIX | F140W | SAMP-SEQ=SPARS25;<br>NSAMP=13 | | Pattern 4, Exps 1-1 in SPT-CLJ0607-4448 (02) (4) | 302.938471 Secs (2423.508 Secs) | |
| | | | | | | | | *[==>(Pattern 1,1)]*<br>*[==>(Pattern 1,2)]*<br>*[==>(Pattern 1,3)]*<br>*[==>(Pattern 1,4)]*<br>*[==>(Pattern 2,1)]*<br>*[==>(Pattern 2,2)]*<br>*[==>(Pattern 2,3)]*<br>*[==>(Pattern 2,4)]* | ***[1]*** |
| 2 | | (2) SPT-CLJ0607-4448 | ACS/WFC, ACCUM, WFC | F814W | | | Pattern 5, Exps 2-2 in SPT-CLJ0607-4448 (02) (5) | 550 Secs (4752 Secs) | |
| | | | | | | | | *[==>570.0 Secs (Pattern 1,1)]*<br>*[==>570.0 Secs (Pattern 1,2)]*<br>*[==>570.0 Secs (Pattern 1,3)]*<br>*[==>570.0 Secs (Pattern 1,4)]* | ***[2]*** |
| | | | | | | | | *[==>618.0 Secs (Pattern 2,1)]*<br>*[==>618.0 Secs (Pattern 2,2)]*<br>*[==>618.0 Secs (Pattern 2,3)]*<br>*[==>618.0 Secs (Pattern 2,4)]* | ***[3]*** |

Orbit Structure

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Server Version: 20150609
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Occultation
Pointing Maneuver
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 3
Server Version: 20150609
Pointing Maneuver
GS Reacq
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 1
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

## Visit

**Proposal 14252, SPT-CLJ0459-4947 (03)** Wed Jul 22 02:15:20 GMT 2015

**Diagnostic Status: No Diagnostics**

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: (none)

*Comments: 2-orbit ACS/F814 (4840s on source) plus 1-orbit WFC3/F140W (2424s on source) observations of SPT-CLJ0459-4947. 8 dithers are used for both the ACS and the WFC3 imaging.*

## Patterns

| # | Primary Pattern | | Secondary Pattern | | Exposures |
|---|---|---|---|---|---|
| (4) | Pattern Type=WFC3-IR-DITHER-BLOB<br>Purpose=DITHER<br>Number Of Points=2<br>Point Spacing=5.183<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.859<br>Angle Between Sides=<br>Center Pattern=true | Pattern Type=WFC3-IR-DITHER-BOX-MIN<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.572<br>Line Spacing=0.365 | Coordinate Frame=POS-TARG<br>Pattern Orientation=18.528<br>Angle Between Sides=74.653<br>Center Pattern=false | (1) |
| (5) | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=2<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 | Pattern Type=ACS-WFC-DITHER-BOX<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.265<br>Line Spacing=0.187 | Coordinate Frame=POS-TARG<br>Pattern Orientation=20.67<br>Angle Between Sides=69.05<br>Center Pattern=false | (2) |

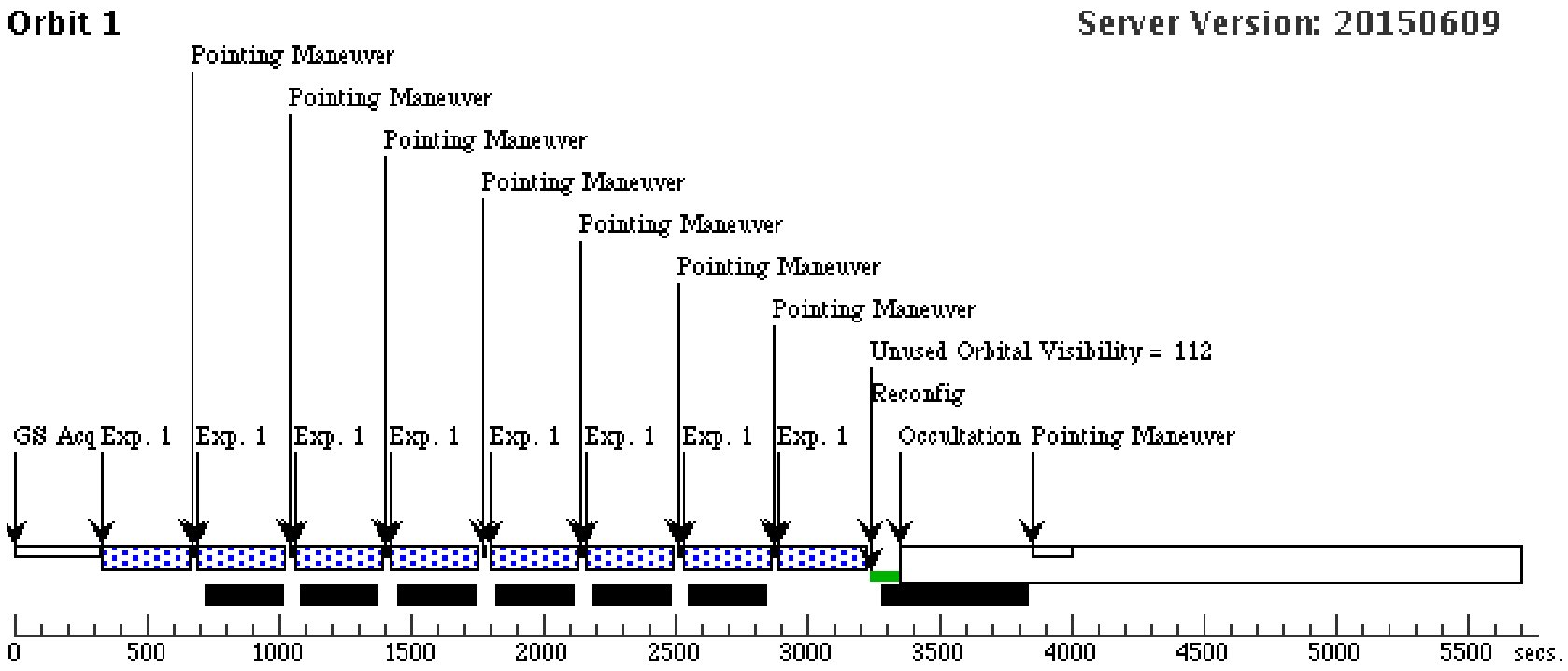
## Fixed Targets

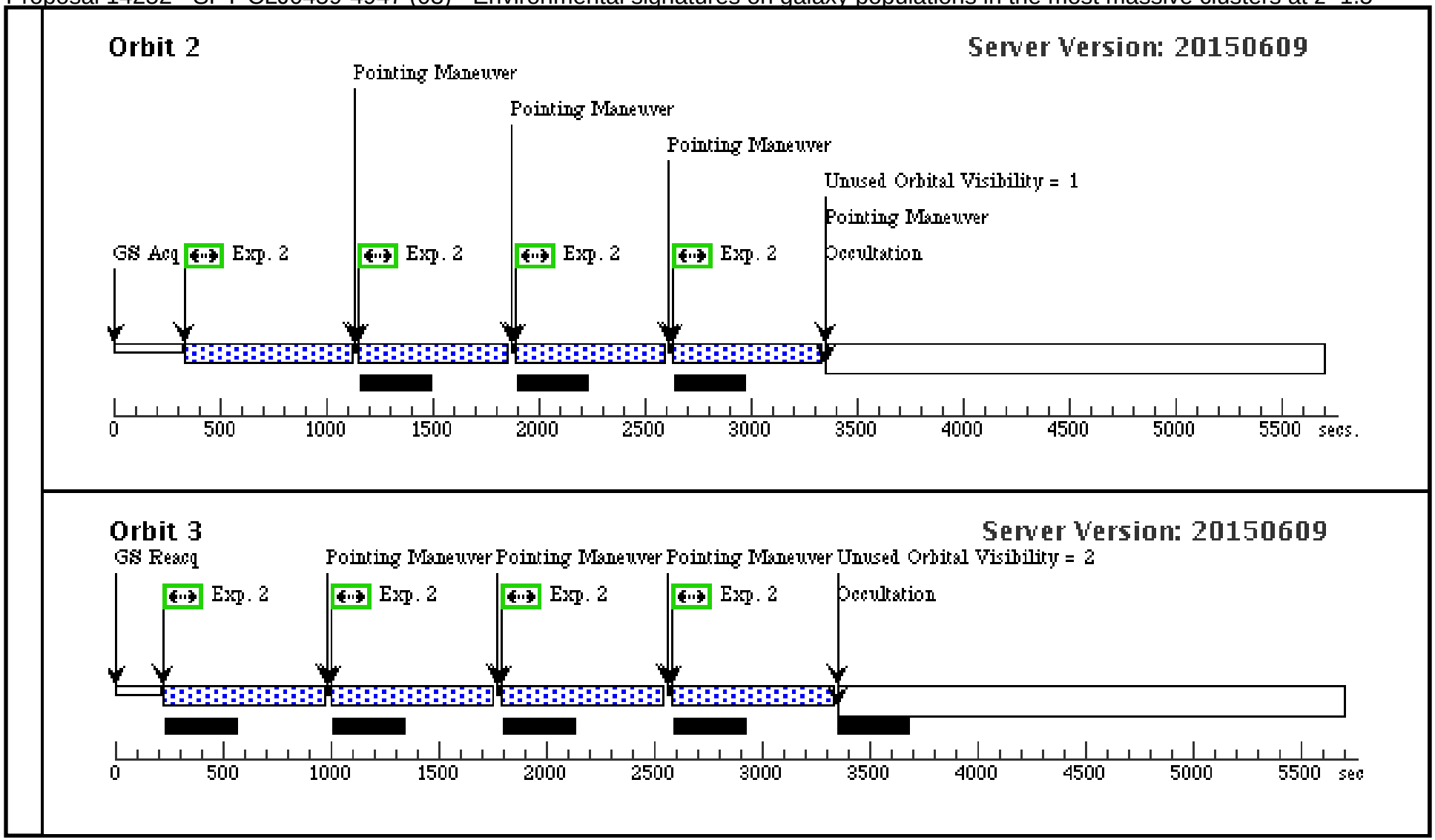
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (3) | SPT-CLJ0459-4947 | RA: 04 59 41.8900 (74.9245417d)<br>Dec: -49 47 10.19 (-49.78616d)<br>Equinox: J2000 | Redshift: 1.5 | V=(?)<br>Target cluster galaxies have F814W<25.8,<br>F140W<23.3 AB mag.Brightest source around (within ~4' box) has J~15.5,<br>r~14.5 mag (Vega). | Reference Frame: ICRS |

## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (3) SPT-CLJ0459-4947 | WFC3/IR, MULTIACCUM, IR-FIX | F140W | SAMP-SEQ=SPARS25;<br>NSAMP=13 | | Pattern 4, Exps 1-1 in SPT-CLJ0459-4947 (03) (4) | 302.938471 Secs (2423.508 Secs) | |
| | | | | | | | | *[==>(Pattern 1,1)]*<br>*[==>(Pattern 1,2)]*<br>*[==>(Pattern 1,3)]*<br>*[==>(Pattern 1,4)]*<br>*[==>(Pattern 2,1)]*<br>*[==>(Pattern 2,2)]*<br>*[==>(Pattern 2,3)]*<br>*[==>(Pattern 2,4)]* | ***[1]*** |
| 2 | | (3) SPT-CLJ0459-4947 | ACS/WFC, ACCUM, WFC | F814W | | | Pattern 5, Exps 2-2 in SPT-CLJ0459-4947 (03) (5) | 550 Secs (4840 Secs) | |
| | | | | | | | | *[==>581.0 Secs (Pattern 1,1)]*<br>*[==>581.0 Secs (Pattern 1,2)]*<br>*[==>581.0 Secs (Pattern 1,3)]*<br>*[==>581.0 Secs (Pattern 1,4)]* | ***[2]*** |
| | | | | | | | | *[==>629.0 Secs (Pattern 2,1)]*<br>*[==>629.0 Secs (Pattern 2,2)]*<br>*[==>629.0 Secs (Pattern 2,3)]*<br>*[==>629.0 Secs (Pattern 2,4)]* | ***[3]*** |

Orbit Structure




Orbit 2
Server Version: 20150609
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 1
Pointing Maneuver
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 3
Server Version: 20150609
GS Reacq
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 2
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

## Visit

**Proposal 14252, SPT-CLJ0421-4845 (04)** Wed Jul 22 02:15:21 GMT 2015

**Diagnostic Status: No Diagnostics**

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: (none)

*Comments: 2-orbit ACS/F814 (4840s on source) plus 1-orbit WFC3/F140W (2424s on source) observations of SPT-CLJ0421-4845. 8 dithers are used for both the ACS and the WFC3 imaging.*

## Patterns

| # | Primary Pattern | | Secondary Pattern | | Exposures |
|---|---|---|---|---|---|
| (4) | Pattern Type=WFC3-IR-DITHER-BLOB<br>Purpose=DITHER<br>Number Of Points=2<br>Point Spacing=5.183<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.859<br>Angle Between Sides=<br>Center Pattern=true | Pattern Type=WFC3-IR-DITHER-BOX-MIN<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.572<br>Line Spacing=0.365 | Coordinate Frame=POS-TARG<br>Pattern Orientation=18.528<br>Angle Between Sides=74.653<br>Center Pattern=false | (1) |
| (5) | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=2<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 | Pattern Type=ACS-WFC-DITHER-BOX<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.265<br>Line Spacing=0.187 | Coordinate Frame=POS-TARG<br>Pattern Orientation=20.67<br>Angle Between Sides=69.05<br>Center Pattern=false | (2) |

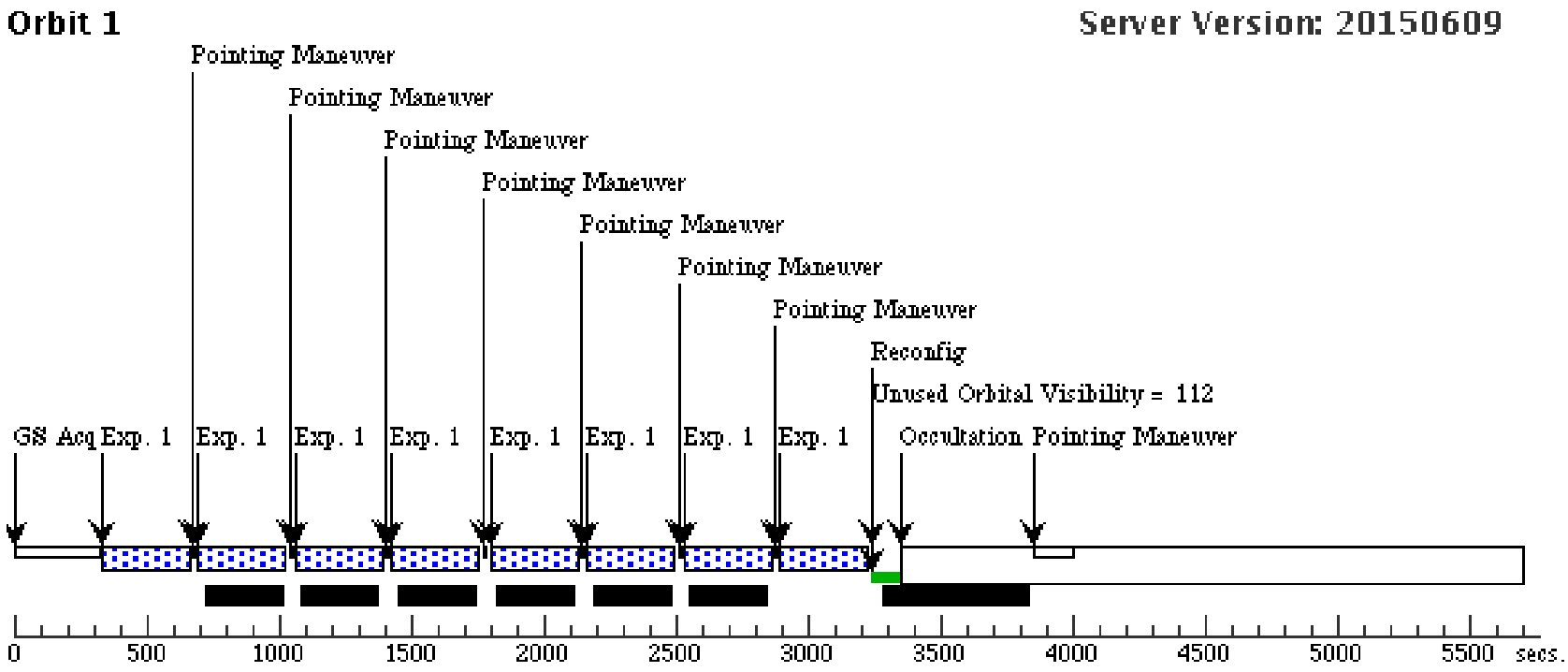
## Fixed Targets

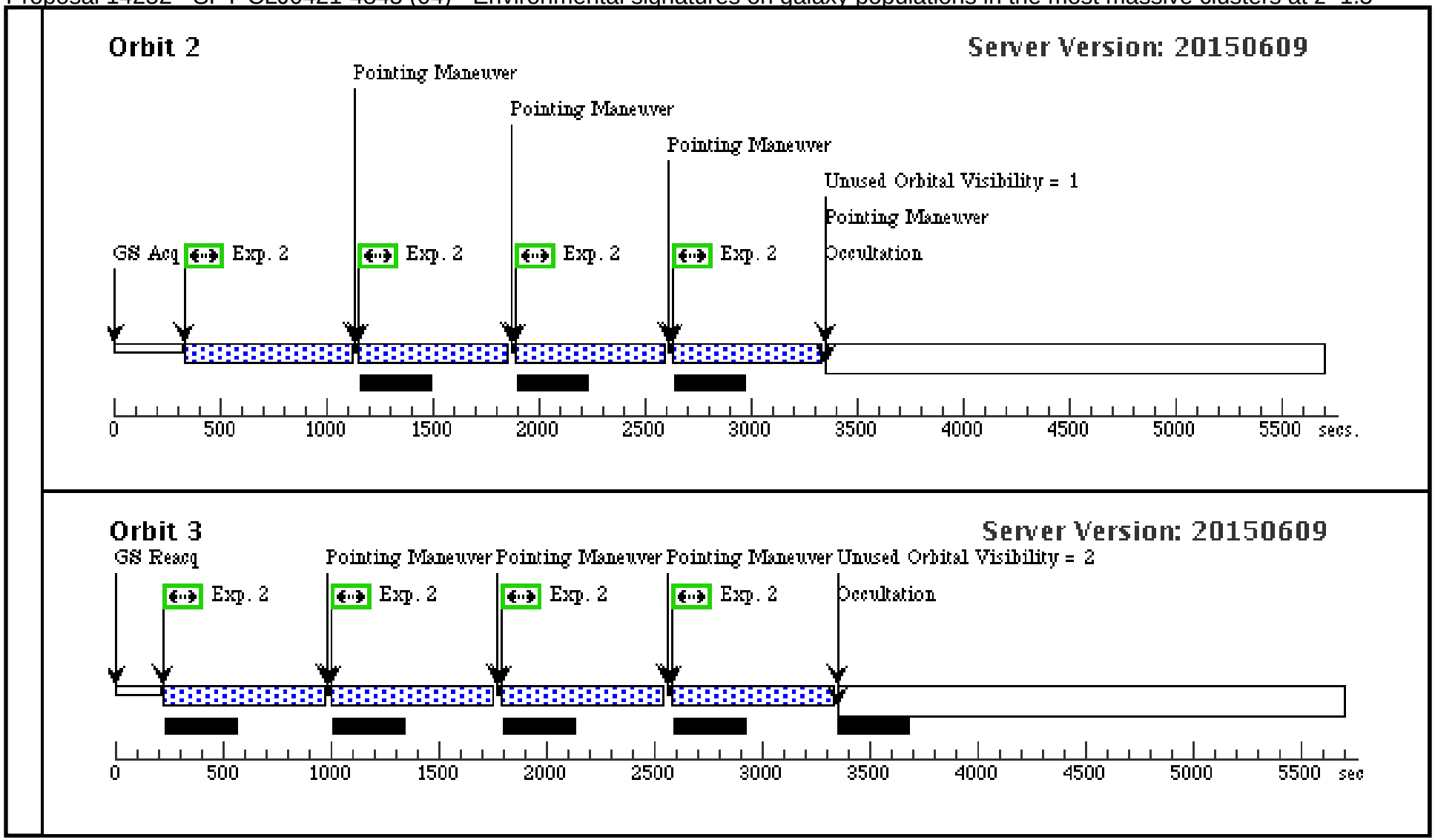
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (4) | SPT-CLJ0421-4845 | RA: 04 21 18.1330 (65.3255542d)<br>Dec: -48 45 38.20 (-48.76061d)<br>Equinox: J2000 | Redshift: 1.4 | V=(?)<br>Target cluster galaxies have F814W<25.8,<br>F140W<23.3 AB mag.Brightest source around (within ~4' box) has J~14.6,<br>r~13.3 mag (Vega). | Reference Frame: ICRS |

## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (4) SPT-CLJ0421-4845 | WFC3/IR, MULTIACCUM, IR-FIX | F140W | SAMP-SEQ=SPARS25;<br>NSAMP=13 | | Pattern 4, Exps 1-1 in SPT-CLJ0421-4845 (04) (4) | 302.938471 Secs (2423.508 Secs) | |
| | | | | | | | | *[==>(Pattern 1,1)]*<br>*[==>(Pattern 1,2)]*<br>*[==>(Pattern 1,3)]*<br>*[==>(Pattern 1,4)]*<br>*[==>(Pattern 2,1)]*<br>*[==>(Pattern 2,2)]*<br>*[==>(Pattern 2,3)]*<br>*[==>(Pattern 2,4)]* | ***[1]*** |
| 2 | | (4) SPT-CLJ0421-4845 | ACS/WFC, ACCUM, WFC | F814W | | | Pattern 5, Exps 2-2 in SPT-CLJ0421-4845 (04) (5) | 550 Secs (4840 Secs) | |
| | | | | | | | | *[==>581.0 Secs (Pattern 1,1)]*<br>*[==>581.0 Secs (Pattern 1,2)]*<br>*[==>581.0 Secs (Pattern 1,3)]*<br>*[==>581.0 Secs (Pattern 1,4)]* | ***[2]*** |
| | | | | | | | | *[==>629.0 Secs (Pattern 2,1)]*<br>*[==>629.0 Secs (Pattern 2,2)]*<br>*[==>629.0 Secs (Pattern 2,3)]*<br>*[==>629.0 Secs (Pattern 2,4)]* | ***[3]*** |

Orbit Structure




Orbit 2
Server Version: 20150609
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 1
Pointing Maneuver
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 3
Server Version: 20150609
GS Reacq
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 2
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

## Visit

**Proposal 14252, SPT-CLJ0446-4606 (05)** Wed Jul 22 02:15:21 GMT 2015

**Diagnostic Status: No Diagnostics**

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: (none)

*Comments: 2-orbit ACS/F814 (4840s on source) plus 1-orbit WFC3/F140W (2424s on source) observations of SPT-CLJ0446-4606. 8 dithers are used for both the ACS and the WFC3 imaging.*

## Patterns

| # | Primary Pattern | | Secondary Pattern | | Exposures |
|---|---|---|---|---|---|
| (4) | Pattern Type=WFC3-IR-DITHER-BLOB<br>Purpose=DITHER<br>Number Of Points=2<br>Point Spacing=5.183<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=41.859<br>Angle Between Sides=<br>Center Pattern=true | Pattern Type=WFC3-IR-DITHER-BOX-MIN<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.572<br>Line Spacing=0.365 | Coordinate Frame=POS-TARG<br>Pattern Orientation=18.528<br>Angle Between Sides=74.653<br>Center Pattern=false | (1) |
| (5) | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=2<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 | Pattern Type=ACS-WFC-DITHER-BOX<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=0.265<br>Line Spacing=0.187 | Coordinate Frame=POS-TARG<br>Pattern Orientation=20.67<br>Angle Between Sides=69.05<br>Center Pattern=false | (2) |

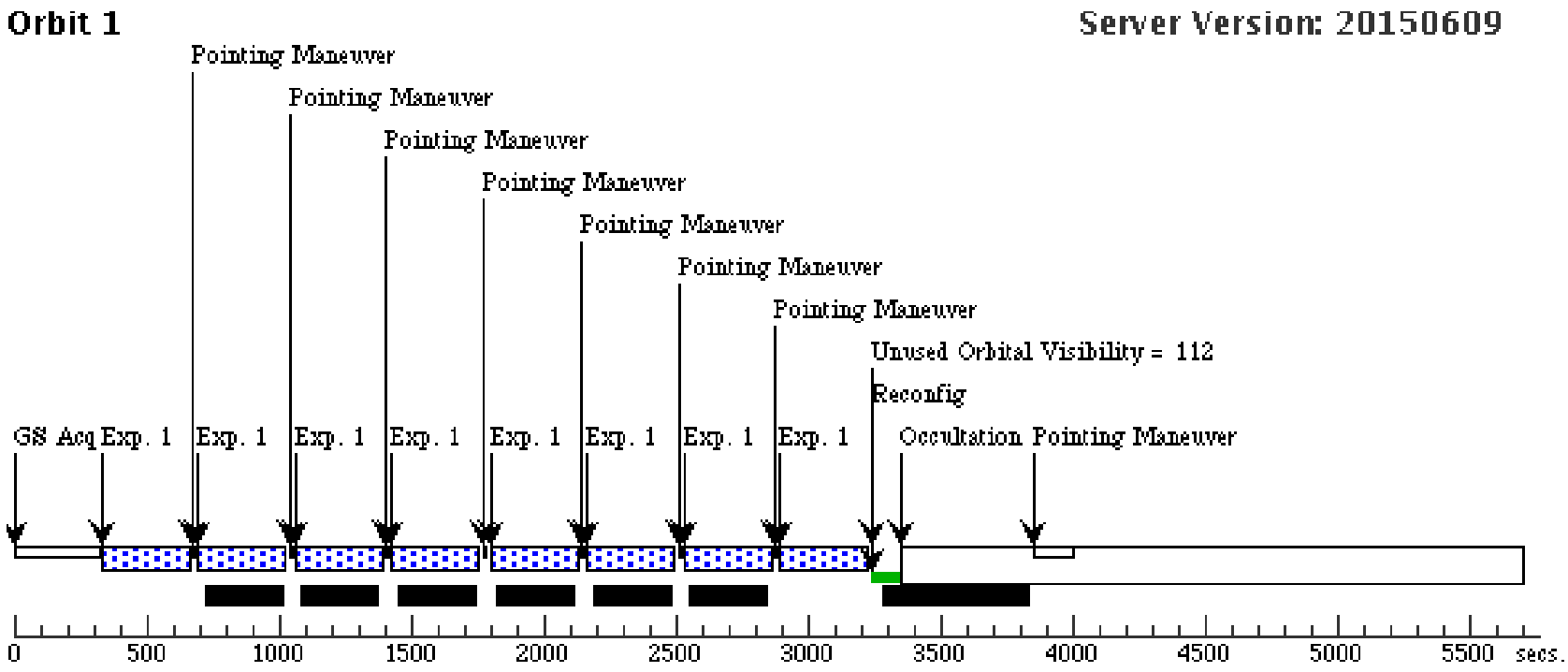
## Fixed Targets

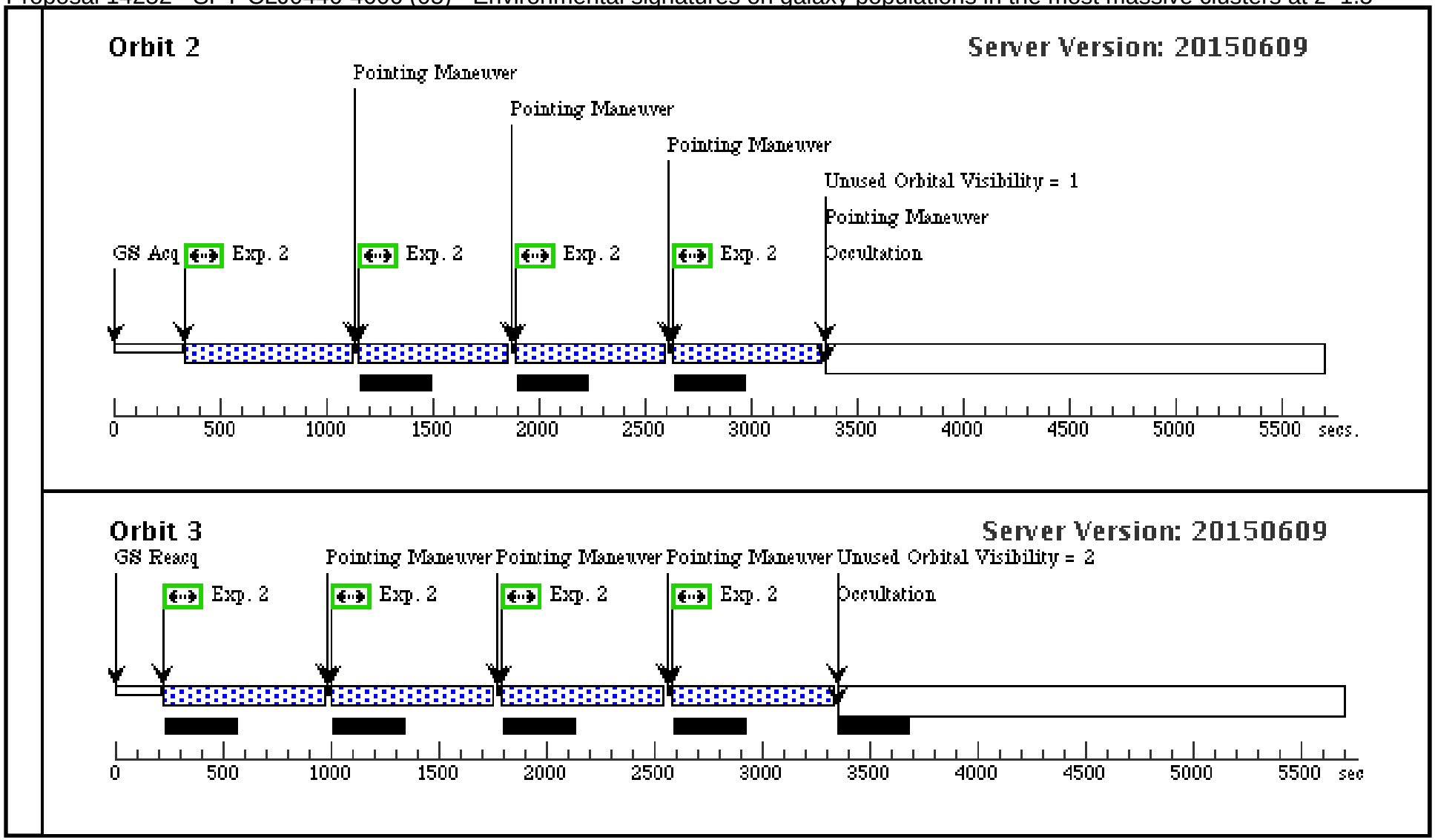
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (5) | SPT-CLJ0446-4606 | RA: 04 46 55.4680 (71.7311167d)<br>Dec: -46 06 0.87 (-46.10024d)<br>Equinox: J2000 | Redshift: 1.5 | V=(?)<br>Target cluster galaxies have F814W<25.8,<br>F140W<23.3 AB mag.Brightest source around (within ~4' box) has J~15.4,<br>r~14.4 mag (Vega). | Reference Frame: ICRS |

## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time (Total)/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (5) SPT-CLJ0446-4606 | WFC3/IR, MULTIACCUM, IR-FIX | F140W | SAMP-SEQ=SPARS25;<br>NSAMP=13 | | Pattern 4, Exps 1-1 in SPT-CLJ0446-4606 (05) (4) | 302.938471 Secs (2423.508 Secs) | |
| | | | | | | | | *[==>(Pattern 1,1)]*<br>*[==>(Pattern 1,2)]*<br>*[==>(Pattern 1,3)]*<br>*[==>(Pattern 1,4)]*<br>*[==>(Pattern 2,1)]*<br>*[==>(Pattern 2,2)]*<br>*[==>(Pattern 2,3)]*<br>*[==>(Pattern 2,4)]* | ***[1]*** |
| 2 | | (5) SPT-CLJ0446-4606 | ACS/WFC, ACCUM, WFC | F814W | | | Pattern 5, Exps 2-2 in SPT-CLJ0446-4606 (05) (5) | 550 Secs (4840 Secs) | |
| | | | | | | | | *[==>581.0 Secs (Pattern 1,1)]*<br>*[==>581.0 Secs (Pattern 1,2)]*<br>*[==>581.0 Secs (Pattern 1,3)]*<br>*[==>581.0 Secs (Pattern 1,4)]* | ***[2]*** |
| | | | | | | | | *[==>629.0 Secs (Pattern 2,1)]*<br>*[==>629.0 Secs (Pattern 2,2)]*<br>*[==>629.0 Secs (Pattern 2,3)]*<br>*[==>629.0 Secs (Pattern 2,4)]* | ***[3]*** |

Orbit Structure




Orbit 2
Server Version: 20150609
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 1
Pointing Maneuver
GS Acq
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 3
Server Version: 20150609
GS Reacq
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Orbital Visibility = 2
Exp. 2
Exp. 2
Exp. 2
Exp. 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec