# 12373 - AGN heating and cooling in the most luminous group cool core

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

**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) A3581<br>(2) A3581-2 | WFC3/UVIS | 3 | 01-Nov-2010 21:20:17.0 | yes |

3 Total Orbits Used

**ABSTRACT**


Outbursts of SMBHs have significant impact on structure formation and evolution. Their imprint on ICM (e.g., shocks, cavities, elevated entropy) provides an historical chronicle of the SMBH activity. Because of the expected bigger impact of AGN heating on the group gas than the cluster gas, group cool cores are ideal places to study SMBH outbursts. We propose an 89 ks observation of the most X-ray luminous group cool core at z<0.05 (also the second brightest one) that only has 7 ks Chandra data. It also hosts one of the most spectacular Ha filaments in nearby groups. The requested ACIS data, in combination with the joint VLA and HST observations, will be used to examine cavities, shocks, the relation between gas in different phases and star formation, and the AGN activity history.

**OBSERVING DESCRIPTION**

We will use WFC3/UVIS and ACS to study star formation in the cool core of A3581. We plan deep exposures in the F336W (U) band and supporting exposures on the F475W and F814W with ACS.

## Visit

**Proposal 12373, Visit 01, implementation** Tue Nov 02 01:20:24 GMT 2010

**Diagnostic Status: No Diagnostics**

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 0.0D TO 30 D; ORIENT 60D TO 140 D; ORIENT 200D TO 270 D; ORIENT 300D TO 310 D; ORIENT 350D TO 359.9 D

## Patterns

| # | Primary Pattern | | Secondary Pattern | Exposures |
|---|---|---|---|---|
| (2) | Pattern Type=WFC3-UVIS-MOS-DITH-LINE<br>Purpose=MOSAIC<br>Number Of Points=3<br>Point Spacing=2.4<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.754<br>Angle Between Sides=<br>Center Pattern=true | | (1), (2), (3), (4) |

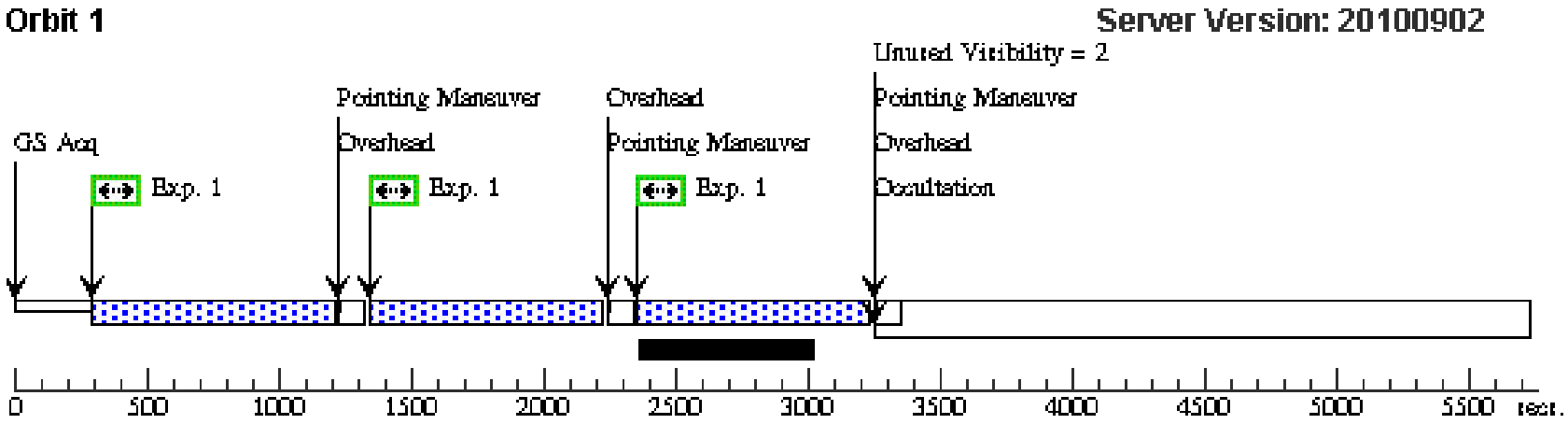
## Fixed Targets

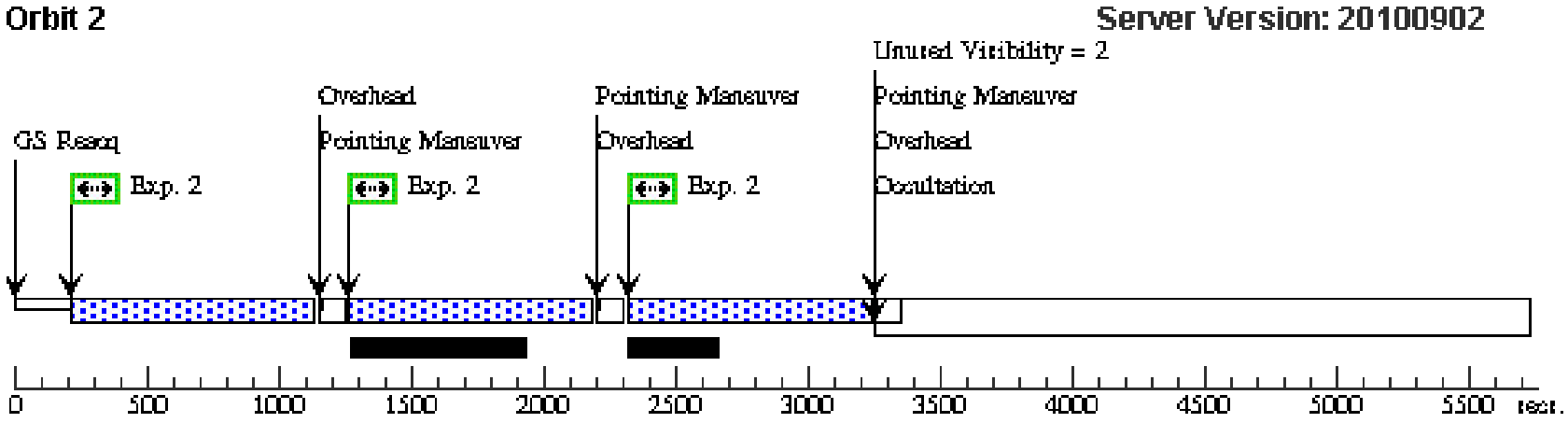
| # | Name | Target Coordinates | Targ. Coord. Corrections | Fluxes | Miscellaneous |
|---|---|---|---|---|---|
| (1) | A3581 | RA: 14 07 29.6550 (211.8735625d)<br>Dec: -27 01 2.92 (-27.01748d)<br>Equinox: J2000 | Proper Motion RA: null<br>Proper Motion Dec: null<br>Epoch of Position: | V=12.9+/-0.5 | Reference Frame: ICRS |
| (2) | A3581-2 | RA: 14 07 29.7880 (211.8741167d)<br>Dec: -27 01 4.90 (-27.01803d)<br>Equinox: J2000 | Proper Motion RA: null<br>Proper Motion Dec: null<br>Epoch of Position: | V=12.9+/-0.5 | Reference Frame: ICRS |

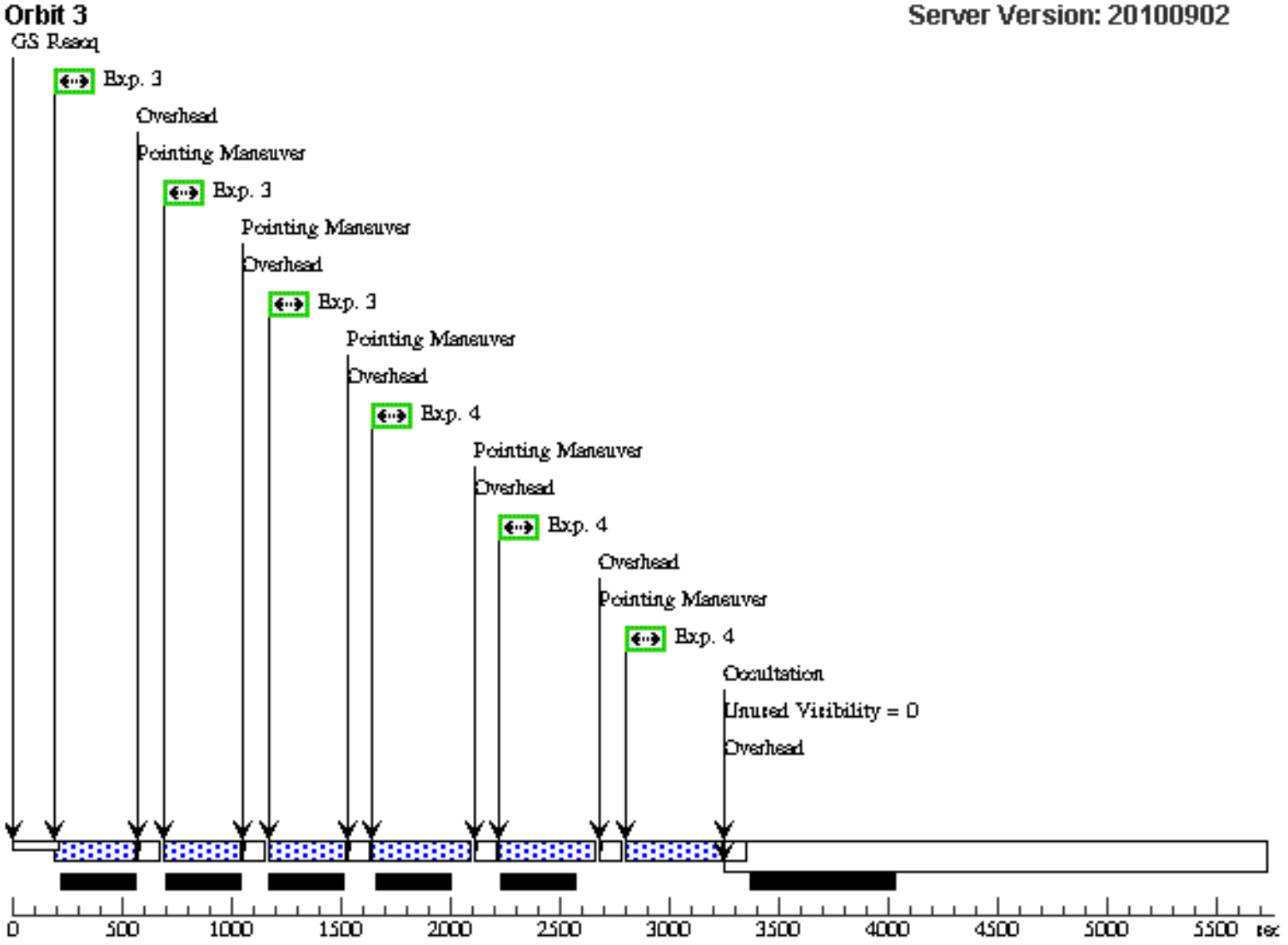
## Exposures

| # | Label | Target | Config,Mode,Aperture | Spectral Els. | Opt. Params. | Special Reqs. | Groups | Exp. Time/[Actual Dur.] | Orbit |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | (1) A3581 | WFC3/UVIS, ACCUM, UVIS | F300X | | | Pattern 2, Exps 1-1 in Visit 01 (2) | 886 Secs<br>*[==>(Pattern 1)]*<br>*[==>(Pattern 2)]*<br>*[==>(Pattern 3)]* | ***[1]*** |
| 2 | | (2) A3581-2 | WFC3/UVIS, ACCUM, UVIS | F300X | | | Pattern 2, Exps 2-2 in Visit 01 (2) | 923 Secs<br>*[==>(Pattern 1)]*<br>*[==>(Pattern 2)]*<br>*[==>(Pattern 3)]* | ***[2]*** |
| 3 | | (1) A3581 | WFC3/UVIS, ACCUM, UVIS | F814W | | | Pattern 2, Exps 3-3 in Visit 01 (2) | 348 Secs<br>*[==>(Pattern 1)]*<br>*[==>(Pattern 2)]*<br>*[==>(Pattern 3)]* | ***[3]*** |
| 4 | | (1) A3581 | WFC3/UVIS, ACCUM, UVIS | F555W | | | Pattern 2, Exps 4-4 in Visit 01 (2) | 445 Secs<br>*[==>(Pattern 1)]*<br>*[==>(Pattern 2)]*<br>*[==>(Pattern 3)]* | ***[3]*** |

Orbit Structure




Orbit 3
Server Version: 20100902
GS Reacq
Exp. 3
Overhead
Pointing Maneuver
Exp. 3
Pointing Maneuver
Overhead
Exp. 3
Pointing Maneuver
Overhead
Exp. 4
Pointing Maneuver
Overhead
Exp. 4
Overhead
Pointing Maneuver
Exp. 4
Occultation
Unused Visibility = 0
Overhead
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec