



## 10769 - X-Ray Sources in Starburst Galaxies

Cycle: 14, Proposal Category: GO

(Availability Mode: SUPPORTED)

### INVESTIGATORS

| <i>Name</i>                                    | <i>Institution</i>                    | <i>E-Mail</i>                  |
|--|---------------------------------------|--------------------------------|
| <b>Dr. Philip Kaaret (PI)</b>                  | <b>University of Iowa</b>             | <b>philip-kaaret@uiowa.edu</b> |
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### VISITS

| <i>Visit</i> | <i>Targets</i> | <i>Configurations</i> | <i>Orbits Used</i> | <i>Last Orbit Planner Run</i> | <i>OP Current with Visit?</i> |
|--------------|----------------|-----------------------|--------------------|-------------------------------|-------------------------------|
| 01           | (1) NGC7541    | ACS/WFC<br>NIC3       | 2                  | 05-Oct-2005 21:09:16.0        | yes                           |
| 02           | (2) NGC4194    | ACS/WFC<br>NIC3       | 2                  | 05-Oct-2005 21:09:27.0        | yes                           |

4 Total Orbits Used

### ABSTRACT

We propose to observe a sample of nearby, M82-like, starburst galaxies with high star formation rates. The data will be used to better understand the correlation between the X-ray point population in a galaxy and its star formation rate, to measure the high end of X-ray point source luminosity function to verify or refute the cutoff reported at high luminosities, and, using joint NICMOS and ACS/WFC observations, to study the spatial relation between X-ray source and star forming regions.

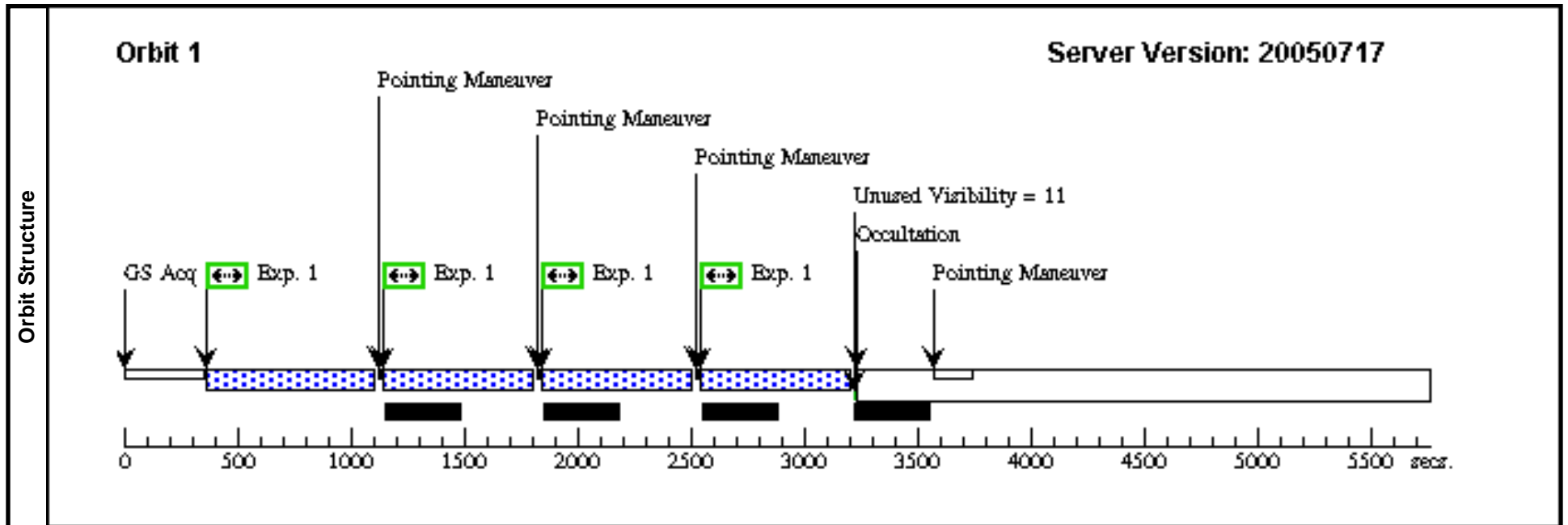
**OBSERVING DESCRIPTION**

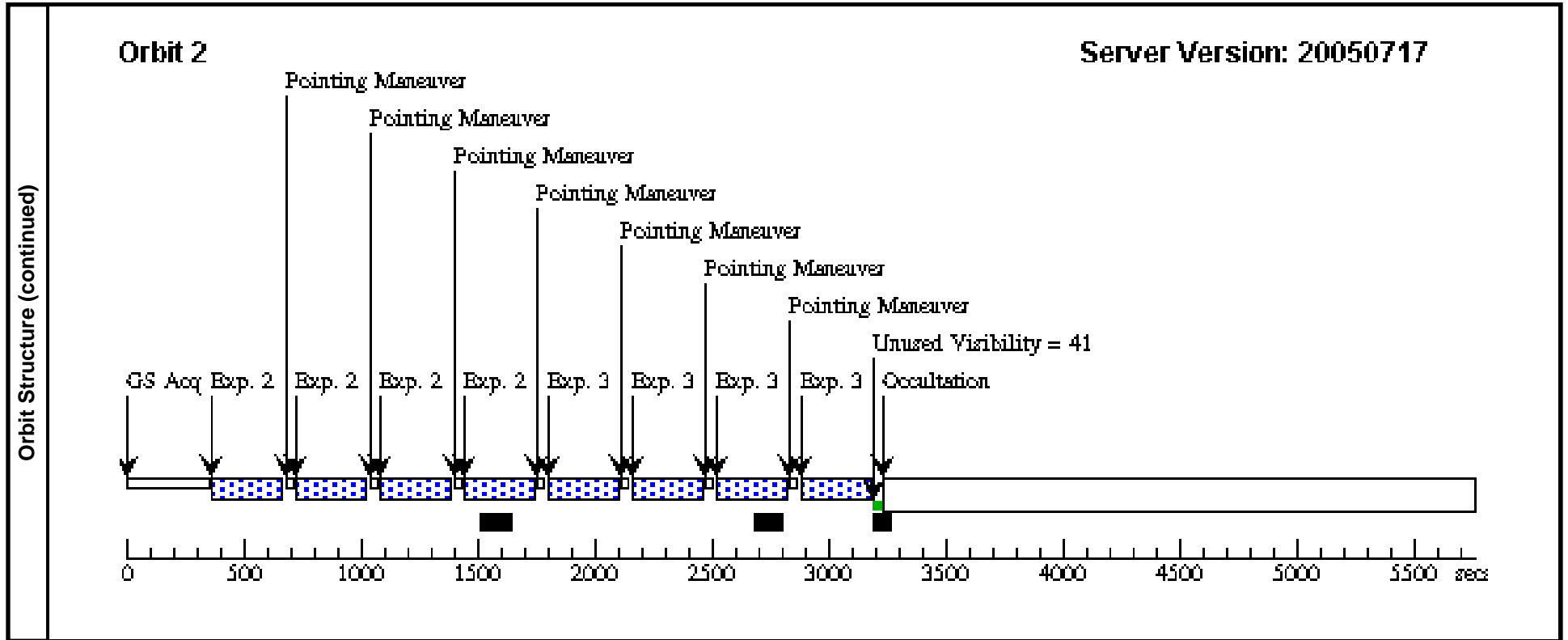
We will observe two starburst galaxies: NGC 7541 and NGC 4194. Each galaxy is observed in one visit. Each visit consists of two orbits. One orbit is used to make two mosaics of the central part of the galaxy using NICMOS in the filters F160W and F110W. Each mosaic consists of 4 exposures of 300 seconds. The second orbit is used to image the full galaxy with the ACS/WFC in the F814W filter.

Proposal 10769 - Visit 01 - X-Ray Sources in Starburst Galaxies

Thu Oct 06 01:09:32 GMT 2005

| Visit         | <b>Proposal 10769, Visit 01</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: ACS/WFC, NIC3<br>Special Requirements: (none) |  |   |   |                                  |                                  |                 |  |  |       |
|---------------|--|--|---|---|----------------------------------|----------------------------------|-----------------|--|--|-------|
|               | Patterns   | #  | Primary Pattern   | Secondary Pattern   | Exposures                        |                                  |                 |  |  |       |
|               |  | (1)  | Pattern Type=NIC-SPIRAL-DITH<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=45<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=0<br>Angle Between Sides=<br>Center Pattern=true |                                  | (2), (3)                         |                 |  |  |       |
|               | (2)  | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=3.011<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.3<br>Angle Between Sides=<br>Center Pattern=true      |   | (1)                              |                                  |                 |  |  |       |
| Fixed Targets | #  | Name   | Target Coordinates  | Targ. Coord. Corrections  | Fluxes                           | Miscellaneous                    |                 |  |  |       |
|               | (1)  | NGC7541  | RA: 23 14 43.9100 (348.6829583d)<br>Dec: +04 32 2.90 (4.53414d)<br>Equinox: J2000<br>Plate Id: (?)        |   | V=12.7+/-0.1                     | Coordinate Source: Simbad        |                 |  |  |       |
| Exposures     | #  | Label  | Target  | Config,Mode,Aperture  | Spectral Els.                    | Opt. Params.                     | Special Reqs.   | Groups   | Exp. Time/[Actual Dur.]  | Orbit |
|               | 1  |  | (1) NGC7541   | ACS/WFC, ACCUM, WFC   | F814W                            | CR-SPLIT=NO                      |                 | Pattern 1-1 (2)  | 540.0 Secs<br>[==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [1]   |
|               | 2  |  | (1) NGC7541   | NIC3, MULTIACCUM, NIC3-FIX  | F160W                            | SAMP-SEQ=STEP1<br>6;<br>NSAMP=24 |                 | Pattern 2-2 (1)  | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)]               | [2]   |
| 3             |  | (1) NGC7541  | NIC3, MULTIACCUM, NIC3-FIX  | F110W   | SAMP-SEQ=STEP1<br>6;<br>NSAMP=24 |                                  | Pattern 3-3 (1) | [==>(Pattern 1)]<br>[==>(Pattern 2)]<br>[==>(Pattern 3)]<br>[==>(Pattern 4)] | [2]  |       |





Proposal 10769 - Visit 02 - X-Ray Sources in Starburst Galaxies

Thu Oct 06 01:09:33 GMT 2005

| Visit         | <b>Proposal 10769, Visit 02</b><br><b>Diagnostic Status: No Diagnostics</b><br>Scientific Instruments: ACS/WFC, NIC3<br>Special Requirements: (none) |  |   |   |               |                                  |               |                 |  |       |
|---------------|--|--|---|---|---------------|----------------------------------|---------------|-----------------|--|-------|
|               | Patterns   | #  | Primary Pattern   |   |               | Secondary Pattern                |               |                 | Exposures  |       |
|               |  | (1)  | Pattern Type=NIC-SPIRAL-DITH<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=45<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=0<br>Angle Between Sides=<br>Center Pattern=true |               |                                  |               | (2), (3)        |  |       |
|               | (2)  | Pattern Type=ACS-WFC-DITHER-LINE<br>Purpose=DITHER<br>Number Of Points=4<br>Point Spacing=3.011<br>Line Spacing= | Coordinate Frame=POS-TARG<br>Pattern Orientation=85.3<br>Angle Between Sides=<br>Center Pattern=true      |   |               |                                  | (1)           |                 |  |       |
| Fixed Targets | #  | Name   | Target Coordinates  | Targ. Coord. Corrections  | Fluxes        | Miscellaneous                    |               |                 |  |       |
|               | (2)  | NGC4194  | RA: 12 14 9.6600 (183.5402500d)<br>Dec: +54 31 35.20 (54.52644d)<br>Equinox: J2000<br>Plate Id: (?)       |   | V=13.0        | Coordinate Source: Simbad        |               |                 |  |       |
| Exposures     | #  | Label  | Target  | Config,Mode,Aperture  | Spectral Els. | Opt. Params.                     | Special Reqs. | Groups          | Exp. Time/[Actual Dur.]  | Orbit |
|               | 1  |  | (2) NGC4194   | ACS/WFC, ACCUM, WFC   | F814W         | CR-SPLIT=NO                      |               | Pattern 1-1 (2) | 580.0 Secs<br>[=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)]<br>[=>(Pattern 4)] | [1]   |
|               | 2  |  | (2) NGC4194   | NIC3, MULTIACCUM, NIC3-FIX  | F160W         | SAMP-SEQ=STEP1<br>6;<br>NSAMP=25 |               | Pattern 2-2 (1) | [=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)]<br>[=>(Pattern 4)]               | [2]   |
|               | 3  |  | (2) NGC4194   | NIC3, MULTIACCUM, NIC3-FIX  | F110W         | SAMP-SEQ=STEP1<br>6;<br>NSAMP=25 |               | Pattern 3-3 (1) | [=>(Pattern 1)]<br>[=>(Pattern 2)]<br>[=>(Pattern 3)]<br>[=>(Pattern 4)]               | [2]   |

