Chandra X-ray Center

3rd Chandra/CIAO Workshop Hands−on Session

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Practical Information:

- There are 15 workstations available –– DEMO1, DEMO2, ... DEMO15. With 19 people registered for the workshop, some people will need to work in pairs.
- Users should log–in as cxcguestx, where x is the machine you are on; i.e. the user on DEMO1 is cxcguest1 ... DEMO15 is cxcguest15. The passwords will be revealed Monday afternoon.
- All the accounts are already setup to run CIAO2.2. On every window where you expect to run CIAO, you should simply type "ciao". For example:

```
unix% ciao
Warning: Not fully tested version of Solaris
CIAO configuration is complete...
 CIAO version      :  CIAO 2.2 Saturday, October 13, 2001
 Proposal Toolkit version :  NRA 4.0 Saturday, October 13, 2001
 bin dir           :  /soft/ciao/bin
```

  The warning is issued because CIAO 2.2 has not been fully tested in Solaris v2.8, which this machine is running.
- Some useful checks:

```
unix% ciao -v
 The current environment is already configured for:
 CIAO version      :  CIAO 2.2 Saturday, October 13, 2001
 Proposal Toolkit version :  NRA 4.0 Saturday, October 13, 2001
 bin dir           :  /soft/ciao/bin

unix% echo $PFILES
/home/cxcguest1/cxcds_param;/soft/ciao/param

unix% echo $CALDB
/soft/ciao/CALDB
```

- The workspace is in */data/ciao_demo/*. 15 subdirectories have been created called cxcguest1 through cxcguest15; please work in the one relative to your machine. A link to this location has been set up in the home directory of each account:

```
unix% pwd
/home/cxcguest1
unix% cd workshop/
unix% pwd
/data/ciao_demo/cxcguest1
```

- Chandra data used in the analysis threads can be found in */data/ciao_demo/threads*. A link to this location has been set up from the workspace:

```
unix% pwd
/data/ciao_demo/cxcguest1
unix% ls -l
total 0
lrwxrwxrwx   1 cxcguest1      11 Nov  2 14:21 data -> ../threads/
unix% ls data/
ChIPS          acis-i         acisletg        hrciletg
GUIDE          acis-s         hrc-i           hrcsletg
```

```
Sherpa          acishetg        hrc-s
```

The CIAO tools accept paths as part of the input file names, so it is not necessary to copy all the data to your working directory. You may also set up symbolic links to access the data.

- Beginning with CIAO 2.2, the scripts are included in the baseline software distribution. This means that they can be called from the command line in the same manner as the CIAO tools:

```
unix% which ciaover
/soft/ciao/contrib/ciaover

unix% ciaover

CIAO version: CIAO 2.2
CIAO series: CIAO2
Current directory is writeable
DM tools found in /soft/ciao/bin
DM library found in /soft/ciao/lib
```

Any script that has not yet been added to this directory may be downloaded from *cxc.harvard.edu/ciao/download_scripts.html*

Suggested Analysis Sessions:

All the threads listed below can be found from the CIAO 2.2 Threads page.

- Beginners:
  Introduction to the Data Model
  Introduction to *Firstlook*
  Introduction to *Prism*
  Data Filtering
  Create True Color Image
  Extract ACIS Spectra and Make RMFs and ARFs
  Getting Started With Sherpa
  Introducing Sherpa: ASCII Data & Errors and Single–Component Source Models
  Fitting Spectral Data: FITS Data & Responses and Multi–Component Source Models
- Grating Analysis:
  Examining PHA2 Files
  Obtain Grating Spectra
  Compute Grating ARFs
  Create Grating RMFs
  Extract Coadded and Grouped Nth–Order Source & Background Spectra and ARFs
  Fitting Grating Data
  GUIDE: Fitting and Identifying Spectral Lines
  Extended Source Analysis:
- Extended Source Analysis:
  Weighting ARFs and RMFs
  Create an Image of Diffuse Emission
  Create True Color Image
  Obtain and Fit a Radial Profile
  Compute an Exposure Map
  Create a PSF
- Source Detection:
  Compute an Exposure Map
  Detecting Sources in Imaging Observations
  Estimating Source Counts in Imaging Observations
  Obtain and Fit a Radial Profile

URL:
http://cxc.harvard.edu/ciao3.4/workshop/nov01/hands_on.html
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Suggested Analysis Sessions: