A sample of High Redshift Quasars

Basic Steps:

1. In the archive find Chandra Observation of a sample of quasars described in the paper.
   Lists the available obsids.

2. What detectors and mode was used in these observation?

3. Does data need to be reprocessed? Why or why not?

4. Is this sample complete? Why?

5. How would you search for all $z > 4$ quasars data available to date in the Chandra archive? How many are there?

6. Is there any XMM-Newton data available for these source? Is there any other X-ray data for this sample available?

Advanced Topics:

1. Download a subset of 4 quasar data sets from the archive.

2. What would be a good choice of the source and background regions? why?

3. Using the CIAO tool `psextract` extract the X-ray spectra of these quasars with the backgrounds and response files. What calibration files were used?

4. How many counts are in each spectrum? What is the count rate?

5. Are there more soft (0.2-5 keV) or hard (2-10 keV) counts? How would you explain this difference?

6. Fit the data in XSPEC or Sherpa. What model and fit statistics would you use and why? What are the best-fit parameters? Errors?

7. Calculate the flux with errors and the intrinsic quasar luminosity?

Suggested reading: "Chandra Survey of Radio-quiet, High-Redshift Quasars", Bechtold et al 2003, Ap.J 588, 119