XMM and Chandra observations of NGC4258

Basic Steps:

1. How many times was the AGN NGC4258 observed by Chandra and XMM?
2. What configuration was Chandra observing in?
3. What was the XMM observing mode for the various instruments?

Pick the 2001 Dec 17 XMM observation:

1. Was the observation affected by high background flares?
2. Is the lightcurve variable? On what timescales?
3. What is the average count rate during the observation?
4. Extract the spectrum of the source using the especget routine in SAS

Pick the 2001 May 28 Chandra observation

1. Was the observation affected by high background flares?
2. Extract the spectrum and generate responses taking into account the fact that the source is affected by pileup

Advanced Topics:

1. What fraction of the time was the XMM observation affected by background flares?
2. Is the RGS observation providing useful data? Why?
3. Run a simultaneous fit using the XMM PN and MOS data
4. Run a fit of the Chandra data including a pileup model. What was the percentage pileup?
5. Calculate the upper limit to the equivalent width of an Fe K line at 6.4 keV both in the XMM and Chandra data
6. Calculate the 2-10kev absorbed flux and absorption-corrected luminosity from XMM and Chandra data

Suggested reading: "X-ray Luminosity and Absorption Column Fluctuations in the H2O Maser Galaxy NGC4258 from Weeks to Years", Fruscione et al., 2005, ApJ, 624, 103