

Cyg X-3

Observation plan

A single 40 ks observation, as nearly contiguous as possible in order to observe the spectrum around 2.3 orbits. The observation may need to use offset pointing if the source is in a historically bright state.

Immediate objectives

- [1] We want to observe the emission and absorption spectrum at high resolution in order to characterize the gas. Under the assumption that the fluorescent Fe K α line is associated with the compact object, we hope to refine the measurement of the Doppler shift due to the orbital motion. This will then allow a more accurate measurement of the mass of the compact object.
- [2] We want to use the spectrum to infer what is the dominant ionization parameter, temperature, elemental composition (assumed to be constant) around the orbit. Of particular interest is the iron line, which shows absorption near ~ 6.5 keV, suggesting the presence of a disk wind or possibly a jet. If so, the line profiles of the trough may give some clues as to the origin.
- [3] Depending on the spectral state of the source it may be possible to search for X-ray evidence for the jets seen in the radio band.