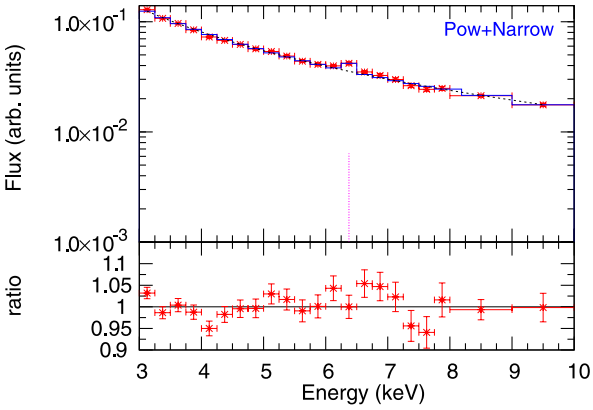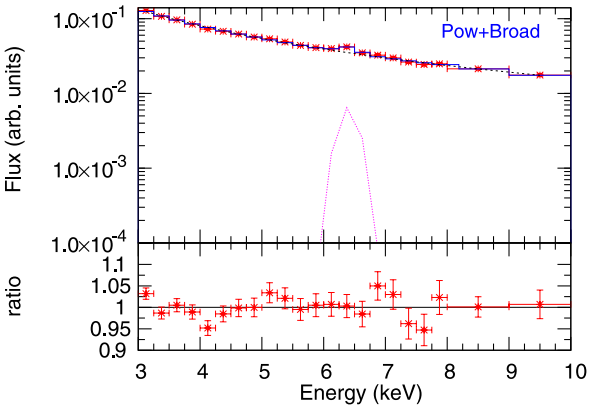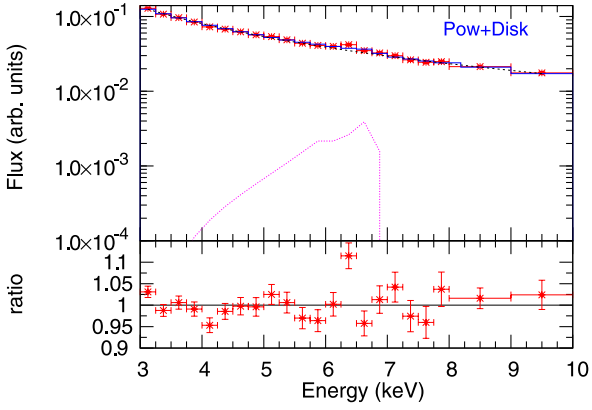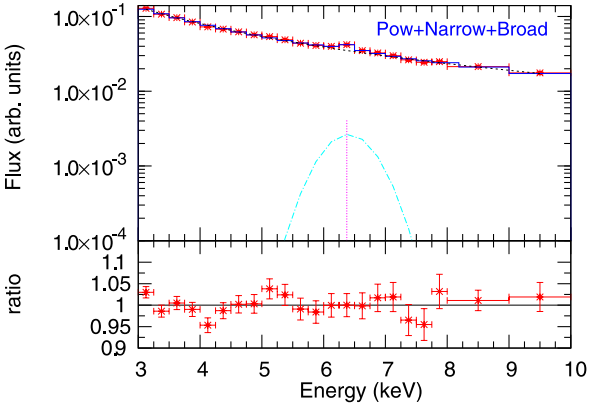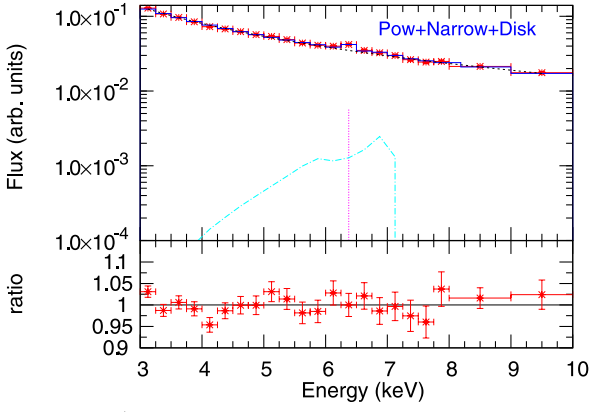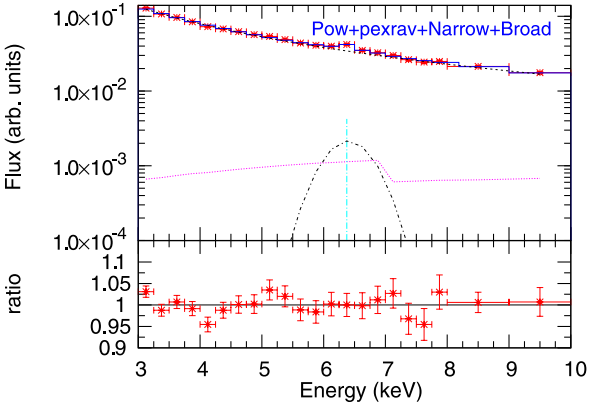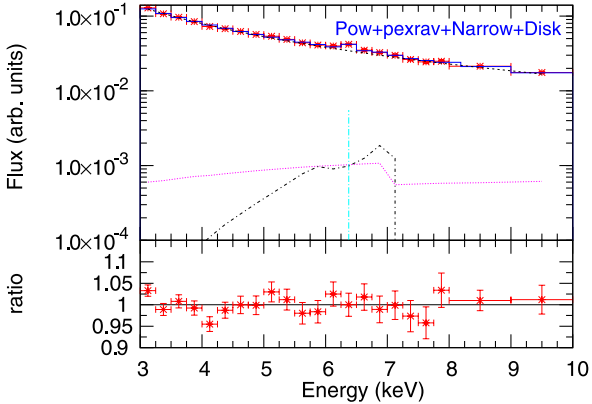1. Spectral fits