Abstract

The detection and characterization of heavily obscured, Compton thick (i.e., having column density NH>1E24 cm-2) active galactic nuclei (AGN) is a hot topic in high energy astrophysics. At the present day only half of the Compton thick population has been discovered, and even a smaller fraction has been properly analyzed. The recent launch of the Nuclear Spectroscopic Telescope Array (NuSTAR), the first telescope with focusing optics at >10 keV, represented a major breakthrough in the study of obscured AGN, providing an improvement on sensitivity of about two orders of magnitude with respect to previous facilities at these energies. In this talk, I first present the results of a new selection technique to find CT-AGN combining optical and X-ray information. I will then focus on the outcome of the 0.3-150 keV spectral analysis of 29 CT-AGN detected in the BAT 100-month survey. Particularly, I will focus on how adding NuSTAR data to the 0.3-10 keV information helps to characterize the CT-AGN population, significantly improving, and possibly systematically changing, the measurements of important X-ray spectral parameters such as the photon index, the column density and the Iron K alpha line at 6.4 keV.