Contribution ID: **6** Type: **not specified**

The tormented quiescence of the transient neutron star low mass X-ray binary Centaurus X-4

Thursday, 27 March 2014 14:50 (20 minutes)

In low mass X-ray binaries a compact object, a black hole or a neutron star, is coupled with a late-type companion star, with mass lower than that of the Sun. Many low mass X-ray binaries are transient and they spend the bulk of their time in the so-called quiescent state, where their X-ray emission is low, just a tiny fraction of the Eddington luminosity. But, the physical mechanisms involved during quiescence are still debated. Several models have been proposed, but so far, a unifying scenario which can make a clear prediction, systematically matching the spectral energy distribution from Radio up to the X-ray emission of both NS and BH quiescent low-mass X-ray binaries, is still missing. Moreover, an increasing number of low mass X-ray binaries display evidence of variability in quiescence, the origin of which is still unclear. Residual accretion at very low Eddington luminosity rates could play an important role, however its physics is poorly understood. With the main goal of unveiling the real nature of the quiescent variability in low mass X-ray binaries containing a neutron star I planned a unique study of the best quiescent target: the neutron star Cen X-4. I conducted a multi wavelength (optical, ultraviolet, and X-ray) long-term monitoring (months) of the source on a daily basis. This allowed for the very first time to accurately characterize the variability properties of Cen X-4, and to show that it is still accreting also in quiescence. I will discuss the implication of the results on the physical status of the inner accretion flow.

Primary author: BERNARDINI, Federico (w)

Presenter: BERNARDINI, Federico (w)

Session Classification: Afternoon session - Parallel B