# AN XMM-NEWTON MONITORING CAMPAIGN OF THE ACCRETION FLOW IN IGRJ16318-4848

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This grant is associated to a successful XMM-Newton-AO3 observational proposal to monitor the spectrum of the X-ray loud component of the recently discovered binary system IGR J16138-4848, to study the conditions of the accretion flows (and their evolution) in binary system. All four EPIC-PN and MOS observations of the target have now been performed (the last one of the 4, only 3 months ago). The four observations were logarithmically spaced, so to cover timescales from days to months.

Data from all four pointings have now been reduced, using the XMM-Newton data reduction pipeline, and spectra and lightcurves from the target have been extracted. For the first three observations we have already performed the observation-by-observation data analysis, by fitting the single EPIC spectra with spectral models that include an intrinsic continuum power law (reduced at low energy by neutral absorption), a 6.4 keV iron emission line (detected in all spectra with varying intensity) and a Compton-reflection component. A Compton reflection component is also detected in all spectra, although at lower significance. The analysis of the fourth and last observation of our monitoring campaign has just recently begun.

Next, we will (1) stack together the four observations of IGR J16138-4848, to obtain high-accuracy estimates of the average spectral parameters of this object; and then (2) proceed to the time-evolving analysis, of the three spectral parameters: (a) Gamma (the slope of the intrinsic continuum), (b) W(FeK), the equivalent width of the 6.4 keV Iron emission line, and (c) R, the relative amount of Compton reflection. Through this time-resolved spectroscopic analysis we hope to constrain (a) the physical state of the accreting matter and its relation with the X-ray output, and (b) the evolution of the accretion flow geometry, distribution and covering factor.