

eXTP and STROBE-X in Spain

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Abstract

The eXTP (enhanced X-ray Timing and Polarimetry) mission is a major project of the Chinese Academy of Sciences (CAS), with a large involvement of Europe, who leads two of its four instruments. eXTP offers a unique simultaneous wide-band X-ray timing and polarimetry sensitivity. One of its four instruments is the WFM, led by Spain (M. Hernanz is the PI), a Wide Field Monitor in the 2-50 keV X-ray energy range, providing an unprecedented combination of large field of view and imaging, together with a very good spectral resolution, down to 2 keV. Currently eXTP/WFM is in phase B2; its technical status in Spain together with the global eXTP programmatic status will be presented.

On the other hand, the eXTP Spanish team has participated in the STROBE-X proposal in response to the NASA call for PROBE missions; the proposal was submitted in November 2023. STROBE-X includes a WFM very similar to the one for eXTP, together with a Large Area Detector like the one led by Italy for eXTP, and the XRCA instrument, based on the successful NICER instrument onboard the ISS (International Space Station). All three instruments together encompass a very broad X-ray energy range with excellent timing capabilities and an extremely wide field-of-view.

These two missions offer a unique opportunity to the Spanish X-ray community to be in the frontline of the studies of dense matter under extreme conditions of density, gravity and magnetism - mainly through the study of compact stars like neutron stars and black holes isolated and accreting mass. They in fact address time domain astrophysics as a whole, through the survey of the dynamic X-ray sky with a large duty cycle.

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