

Z202r XRISM Observations of Galactic Compact and Stellar Objects in Performance Verification Phase

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The X-ray Imaging and Spectroscopic Mission (XRISM) is revolutionizing the studies of compact and stellar objects. Its cutting-edge instrument, the X-ray micro-calorimeter Resolve, with an unprecedented energy resolution (a full width at half maximum of 5 eV at 6 keV), assisted by the higher X-ray collecting power and the sensitivity in the lower energy band of the X-ray CCD Xtend, allows us to precisely determine the important parameters of hot ionized plasmas, including velocity, ionization degree, and density, and thereby enables us to understand the physics of various important phenomena caused by stellar objects, such as accretion and outflows of stellar-mass black holes, neutron stars, and white dwarfs, winds from high-mass stars and flares from active stars. Resolve is also capable of observing the motion of the stellar objects themselves. Radial velocity measurements of binary systems are now possible in X-rays with a precision of a few ten km/sec, which provide information of system parameters.

During the performance verification phase, XRISM has observed about 10 stellar objects in our galaxy: high-mass and low-mass X-ray binaries, cataclysmic variables and active stars. Thanks to their proximity, many of the targets are bright and high quality X-ray spectra were successfully obtained with relatively short exposures. In this talk, I will overview these observations, highlighting some of the important initial results obtained from them.