



X-RAY ASTRONOMY 2019

Current Challenges and New Frontiers in the Next Decade

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Tracking the Iron $K\alpha$ line and the Ultra Fast Outflow in NGC 2992

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Variability is one of the best tools to investigate the emission mechanisms in Active Galactic Nuclei (AGN). We report on the 2010 XMM-Newton monitoring of the highly variable Seyfert 2 Galaxy NGC 2992, which was subsequently targeted by Swift and NuSTAR in 2015. XMM-Newton always caught the source in a faint state but NuSTAR observed a brightening of the source, with evidence of an Ultra Fast Outflow with velocity $v=0.21\pm 0.01c$. A re-analysis of the high flux 2003 XMM data confirmed the presence of such a highly ionized accretion disk wind, with two distinct outflowing velocities ($v_1=0.215\pm 0.005c$ and $v_2=0.305\pm 0.005c$). The UFO in NGC 2992 is consistent with being ejected at a few tens of gravitational radii only at accretion rates greater than 2% of the Eddington luminosity.

The analysis of the XMM data also allowed us to determine that the Iron $K\alpha$ emission line complex in this object is likely the sum of three distinct components: a constant, narrow one due to reflection from cold, distant material (likely the molecular torus); a narrow, but variable one which is more intense in brighter observations and a broad relativistic one emitted in the innermost regions of the accretion disk.

Topic

Active Galactic Nuclei: accretion physics and evolution across cosmic time

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