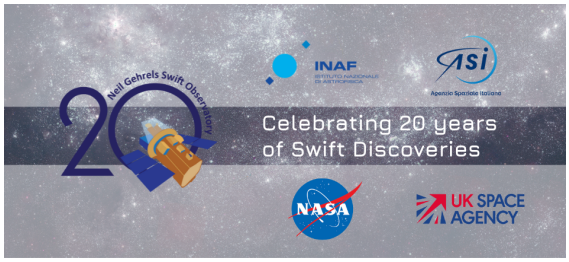

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The Catalog of Extragalactic Fast X-ray Transients Discovered by Einstein Probe during its Commissioning Phase

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Extragalactic Fast X-ray Transients (eFXTs) are defined as short flares in X ray with cosmological origins. But the nature of eFXT is still uncertain due to the lack of timely follow up observations. The possible physical mechanisms include the shock breakout of a supernova, the fireball phase of a nova, the magnetar powered X-ray emission after the mergers of binary neutron stars, off-axis GRBs and other unexplored objects. Benefiting from its unprecedentedly large field of view and high sensitivity in the soft X-ray band, the Wide field X-ray Telescope (WXT) on board Einstein Probe (EP) satellite has detected a few dozens of eFXTs during its commissioning phase. The near real time alert and quick autonomous follow up observations of Follow up X ray (FXT) enable the timely multi wavelength detection in some cases (e.g. EP240315a and EP240414a). These eFXTs show diverse temporal shapes and multi wavelength associations. A significant fraction of these eFXTs have no corresponding gamma ray counterparts indicating potential distinct origins from classical GRBs. In this talk, I will introduce the statistical studies of these eFXTs'properties, aiming to obtain a comprehensive understanding of their possible physical origins.

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