

The Deep and Transient Universe in the SVOM Era: New Challenges and Opportunities.



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Active Galactic Nuclei

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Active Galactic Nuclei (AGN) appear as bright, persistent and variable, hard X-ray emitters. They are important for our understanding of the evolution of structures in the Universe and to study the accretion history of the cosmos.

ECLAIRs will observe ~50% of the sky, far away from the Galactic Plane

0.5 mCrab flux limit at 4-150 keV after one year, 100-200 AGN expected (~400 AGN after 5 years, 0.2 mCrab flux limit). This will be the first all (half)-sky survey in the 10-20 keV domain, important for continuum studies and Cosmic X-ray Background modeling. The 4-150 keV band ideal to study effects of Compton reflection on the AGN continuum, with little influence by absorption in the line of sight. In terms of beamed AGN, sources like Mrk 501, Mrk 421, 3C 454.3 and potentially new flaring blazars will be prominent SVOM targets, providing rich X-ray and optical data. MXT and VT will be important for AGN target of opportunity studies, allowing to further constrain the spectral energy distribution.

Important synergy with simultaneous LSST and Euclid large scale surveys, i.e. to follow-up on AGN in outburst, and the hunt for electromagnetic counter parts of gravitational wave sources and neutrino emitters will present another important domain of research.

Finally, MXT and VT can observe infall of matter onto AGN cores in the case of tidal disruption events, e.g. triggered by flux increase observed in ECLAIRs.

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Classification de Session: SVOM advances on observatory science