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## **Investigating the nature of cosmic gamma-ray bursts with MXT aboard SVOM**

*jeudi 29 février 2024 15:15 (15 minutes)*

Gamma-Ray Bursts (GRB) are the most luminous explosions in the Universe. These intense flashes of gamma rays are either created by the collapse of very massive stars, or the merging of two compact objects - namely two neutron stars. The event of the 17th August 2017, as the first joint observation of a gamma-ray burst electromagnetic signal along with its gravitational wave counterpart, opened the way to multi-messenger astrophysics, and offered astrophysicists solid evidences to hone models involving the merging of two neutron stars. However, some aspects of those models remain open questions. In particular, the nature of the object arising from such mergers is still widely discussed. SVOM (Space based Variable astronomical Object Monitor) is a Sino-French mission, dedicated to the study of these cosmic explosions. It is planned for launch early 2024 for a nominal mission lifetime of three years. It will carry on-board four instruments, among which the Micro-channel X-ray Telescope (MXT), a focusing X-ray telescope with a field of view of about  $1^\circ \times 1^\circ$ , sensitive in the 0.2-10 keV energy range. In this talk, I will present the SVOM mission in the context of the multi-messenger era, review MXT performances, and discuss how this mission, and in particular MXT, could enable us to better understand GRBs progenitors.

### **Astrophysics Field**

Compact objects (supernovae, black holes, neutron stars)

### **Day constraints**

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