

A monitor of the Cosmic X-ray Background

Friday 16 July 2021 19:18 (12 minutes)

We propose a monitor that attempts to measure the Cosmic X-ray Background (CXB) in the 10-100 keV energy band with unprecedented precision, so as to: 1). help to understand the source population of CXB, most of which are proposed to be Active Galactic Nuclei (AGNs); 2). study the anisotropy of CXB intensity over the sky, which helps to understand the large-scale structure of the Universe. An obstacle of the above studies is the difficulty of measuring the absolute intensity of the CXB. Detectors working at X-ray bands suffer from time-dependent backgrounds which are hard to be subtracted. Our design is similar to the projected MVN (Monitor Vsego Neba) Russian experiment, which mainly consist of four collimated spectrometers with a rotating aperture shutter on top. In this paper, we will show its detailed performance simulations and some preliminary tests of the prototype, we will also discuss some launch opportunities.

Keywords

Cosmic X-ray Background (CXB); Active Galactic Nuclei (AGNs); absolute intensity; anisotropy; spectrometer

Collaboration

other Collaboration

Subcategory

Experimental Methods & Instrumentation

Primary author: LI, Hancheng (University of Geneva)

Co-authors: Dr PRODUIT, Nicolas (University of Geneva); Dr WALTER, Roland (University of Geneva)

Presenter: LI, Hancheng (University of Geneva)

Session Classification: Discussion

Track Classification: Scientific Field: GAD | Gamma Ray Direct