Cosmic ray effect on the X-ray Trigger Telescope of UFFO/Lomonosov using YSO scintillation crystal array in space - DTU Orbit (16/05/2019)

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UFFO Burst Alert and Trigger telescope (UBAT) is the X-ray trigger telescope of UFFO/Lomonosov to localize X-ray source with coded mask method and X-ray detector. Its X-ray detector is made up of 36 8×8 pixels Yttrium OxyorthoSilicate (YSiO5:Ce, YSO) scintillation crystal arrays and 36 64-channel Multi-Anode PhotoMultiplier Tubes (MAPMTs) for space mission. Its effective detection area is 161cm² and energy range is several keV to 150 keV. It was successfully launched in April 28, 2016. In several calibration run, we got several X-ray background data. We already knew X-ray background flux is 2-3 counts/cm²/sec in space. However our X-ray background data shows approximately 7-8 times higher than what we know. There are many candidates to explain high X-ray background count in space. One of candidates is cosmic ray. We will report cosmic ray effect on the X-ray detector using YSO scintillation crystal arrays in space.

General information
Publication status: Published
Organisations: National Space Institute, Astrophysics and Atmospheric Physics, Sungkyunkwan University, Lomonosov Moscow State University, University of Valencia, National United University Taiwan, National Taiwan University, Instituto de Astrofísica de Andalucía, University of Valencia
Number of pages: 8
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: PoS - Proceedings of Science
Article number: 218
ISSN (Print): 1824-8039
Scopus rating (2017): CiteScore 0.05 SJR 0.115 SNIP 0.023
Original language: English
Electronic versions:
ICRC2017_218.pdf

Bibliographical note
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Source: PublicationPreSubmission
Source-ID: 138914059
Research output: Contribution to journal › Conference article – Annual report year: 2017 › Research › peer-review