

[구ID-09] Design and Construction of Detector Module for UFFO Burst Alert & Trigger Telescope

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One of the key aspects of the upcoming Ultra-Fast Observatory (UFFO) Pathfinder for Gamma-Ray Bursts (GRBs) identification will be the UFFO Burst Alert & Trigger Telescope (UBAT), based on a novel space telescope technique. The UBAT consists of coded mask, hopper, and detector module (DM). The UBAT DM consists of YSO crystal arrays, multi-anode photo multipliers, and readout electronics. We will present the design and construction of the UBAT DM, and the response of the UBAT DM to X-ray sources.

[구ID-10] The Electronics system of the Ultra Fast Flash Observatory Pathfinder

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The Ultra Fast Flash Observatory (UFFO) pathfinder consists of the UFFO Burst Alert X-ray Trigger telescope (UBAT) and the Slewing Mirror Telescope (SMT). They are controlled by the UFFO Data Acquisition system (UDAQ). The UBAT triggers Gamma-Ray Bursts (GRBs) and sends the position information to the SMT. The SMT slews the motorized mirror rapidly to the GRB position to take the UV/Optical data within a second after trigger. The UDAQ controls each instrument, communicates with the satellite, collects the data from UBAT and SMT, and transfers them to the satellite. Each instrument uses its own field programmable gates arrays (FPGA) for low power consumption and fast processing, and all functions are implemented in FPGAs without using microprocessors. The entire electronics system of the UFFO pathfinder including architecture, control, and data flow will be presented.