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# FLYEYE 2.0 TELESCOPE

**Abstract**

The Flyeye Telescope was first developed in the frame of the Space Safety programme of the European Space Agency (ESA). The Flyeye 2.0 (FET2.0) is conceived to be an upgraded new telescope based on the same optical architecture of the first Flyeye prototype (NEOSTED). This new telescope will be able to detect asteroids down to V magnitude of 21.0 with a minimum peak SNR of 5.0 over at least the 95% of the entire Field of View (FoV). Based on the heritage of the NEOSTED Telescope, newer upgrades and modifications are introduced: the primary mirror diameter is increased, the central obstructon is reduced, the number of optical channels is halved, the focal length of the instrument and the design of the Secondary Optical Tubes is reviewed. As a consequence, a larger fraction of the total FoV is conveyed on each single optical channel, leading to a 50% increase in the dimension of the single sub-FoV side. The astronomical cameras ot the FET2.0 Telescope will be larger and will mount a 6k x 6k CCD sensor with the same 15um pixel size of the NEOSTED. The details of the new implementation are described, and the performance analysis is presented.