

Status and perspectives of the Mini-MegaTORTORA wide-field monitoring system with high temporal resolution

Karpov S., Beskin G., Bondar S., Perkov A., Ivanov E., Guarnieri A., Bartolini C., Greco G., Shearer A., Sasyuk V.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Here we briefly summarize our long-term experience of constructing and operating wide-field monitoring cameras with sub-second temporal resolution to look for optical components of GRBs, fast-moving satellites and meteors. The general hardware requirements for these systems are discussed, along with algorithms for real-time detection and classification of various kinds of short optical transients. We also give a status report on the next generation, the MegaTORTORA multi-objective and transforming monitoring system, whose 6-channel (Mini-MegaTORTORA-Spain) and 9-channel prototypes (Mini-MegaTORTORA-Kazan) we have been building at SAO RAS. This system combines a wide field of view with subsecond temporal resolution in monitoring regime, and is able, within fractions of a second, to reconfigure itself to follow-up mode, which has better sensitivity and simultaneously provides multi-color and polarimetric information on detected transients. © Czech Technical University in Prague, 2013.

Keywords

Gamma-ray bursts, High time resolution, Wide field photometry