

Search for optical flashes of astronomical origin with "Pi of the Sky" prototype.

"Pi of the Sky" is a robotic telescope project aiming for continuous observation of a large part of the sky with high temporal and optical resolution using wide field-of-view CCD cameras. Its primary goal is to look for optical afterglows associated with the gamma ray bursts (GRB), but it is also well suited to study any kind of short timescale astrophysical phenomena. Due to on-line data analysis in the real time, it has self-triggering capability and can react to external triggers with negative time delay. The prototype apparatus with two cameras has been installed at Las Campanas Observatory in Chile and is in operation since July 2004. We report on observation of the extraordinarily bright prompt optical emission of GRB 080319B. Combined with the prompt gamma-ray detection and with the following broadband observations of the afterglow, our measurement allowed for a new insight into the nature of GRBs. Other observations of the "Pi of the Sky" prototype, including flare star outbursts and identification of variable stars are also discussed.

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