

QUIESCENT GALAXIES OBSERVED WITH KEPLER

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We propose to monitor a set of the brightest galaxies located within the Kepler field of view, the Kepler Galaxy Survey. Our primary objective is to explore the photometric stability of galactic systems with Kepler's unique blend of high precision and continuous monitoring. With important exceptions, galaxies provide a population of quiescent, non-variable sources, which can be used to quantify the photometric stability and noise characteristics of the Kepler photometer. The proposed survey will be sensitive to both continuous variability, especially low-level variations from embedded active nuclei, and random episodic events, such as supernovae. Using a J-band flux limit, we propose to monitor 200 bright galaxies encompassing a range of morphologies located across the field-of-view. Given the Survey's source brightness and spatial distribution, these data will form the temporal baseline for extragalactic investigations with Kepler.