K2 - Extending Kepler's Power to the Ecliptic

Martin Still*[1]

[1]NASA Ames Research Center (NASA - ARC) – NASA Ames Research Center Moffett Field, California 94035 Phone: (650) 604-5000, United States

Abstract

By repurposing Kepler as a new mission, K2 offers the opportunity to expand upon Kepler's groundbreaking discoveries in the fields of exoplanets and astrophysics through new and exciting observations. The Kepler team has created an innovative way of operating the observatory as an ecliptic plane surveyor to increase the scientific return on NASA's investment. With K2, the exoplanet and astrophysics communities will continue to benefit from Kepler's exquisite photometer for years to come. Potential scientific highlights from K2 include identifying planets around bright stars for transmission spectroscopic follow-up, identifying small planets around bright stars and M dwarfs for radial velocity determination of density, identifying hot gas giants around pre- and young main sequence stars to inform migration theory, determining the relationship between stellar structure, rotation, and activity within stellar clusters over a range of ages and metallicites, elucidating the accretion physics of active galaxies, determining the progenitors of Type Ia supernovae, and providing a pathfinder for future microlens detection mission. This talk provides a summary of K2 mission development, funding status, operations, observations, data quality, analysis tools and archiving.

*Speaker