

TUESDAY

JANUARY 26

12:30 P.M.

RM 184 NSH

## Catching a Supernova in the Act of Exploding: Early Light Curves from Kepler and K2

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The first hours of a supernova explosion can provide valuable information on the size of the progenitor stars, the temperature of a shock breakout and even the existence of a companion star. But most supernova searches return to the same fields after several days, meaning the critical early observations are often missed. Over four years we monitored 500 galaxies in the original Kepler field using an unprecedented 30 minute cadence. While Kepler is a small telescope it was designed for precise photometry to detect planet transits. This precision allows us to study transients with magnitudes as faint as 21 in the Kepler system. In our galaxy sample we discovered 3 supernovae with light curves consistent with type Ia events, 2 supernovae that appear to be type II-P events and one type II<sub>n</sub> supernova. We are continuing to monitor galaxies with K2, the extended Kepler mission.