KEGS (Kepler Extra-Galactic Survey)

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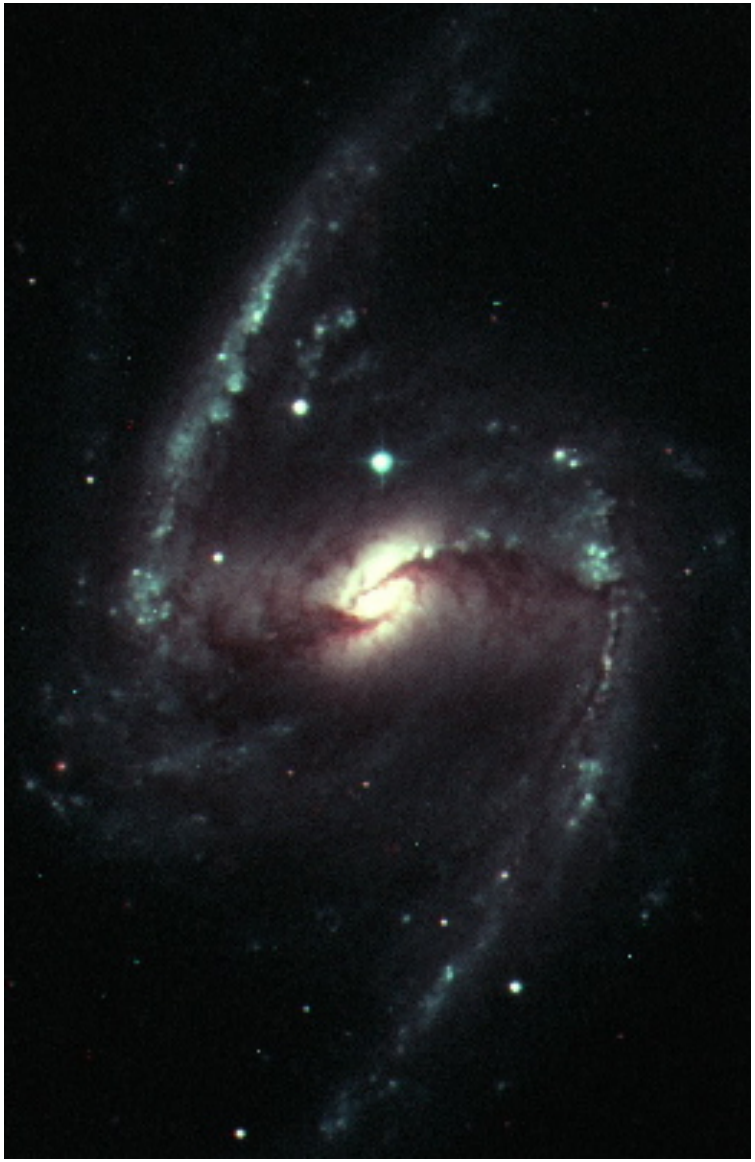
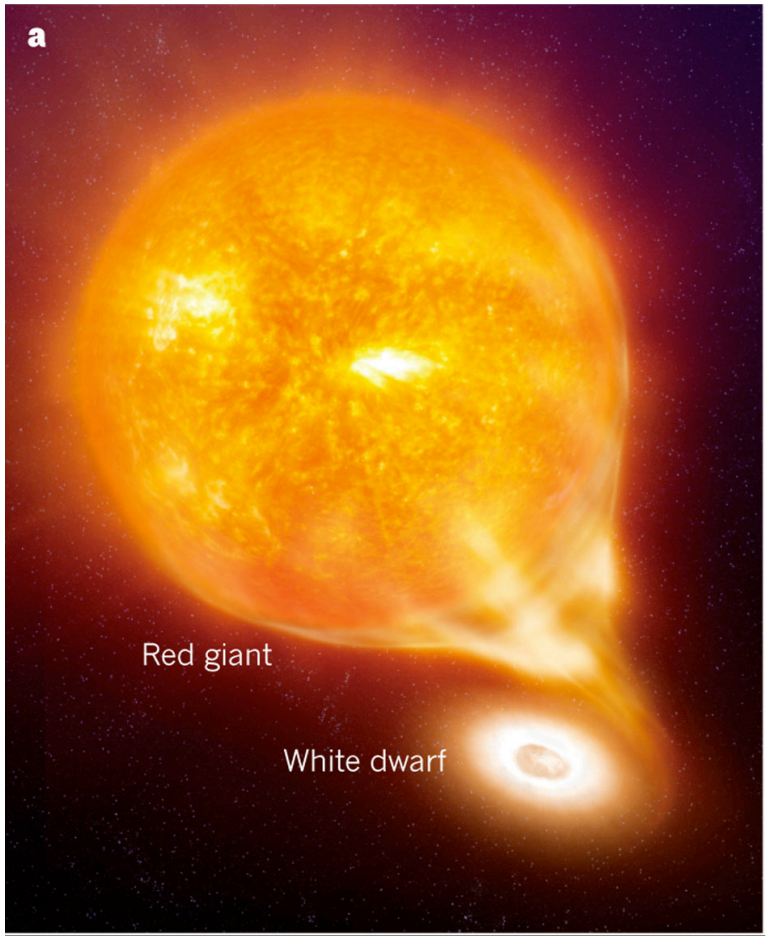
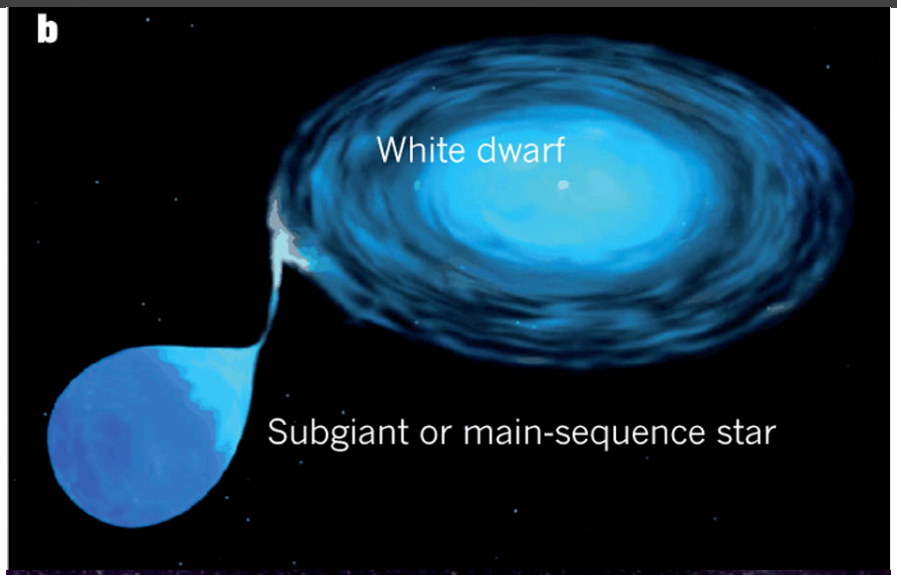
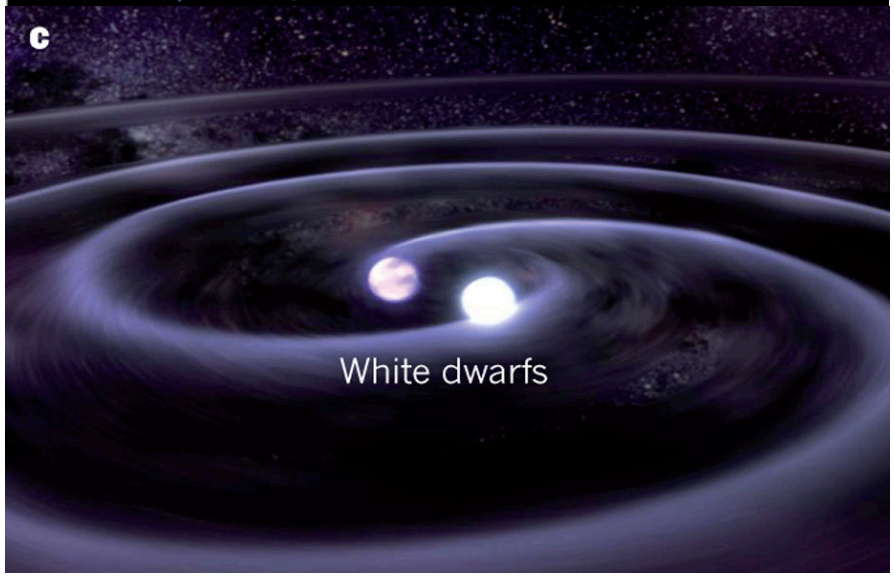


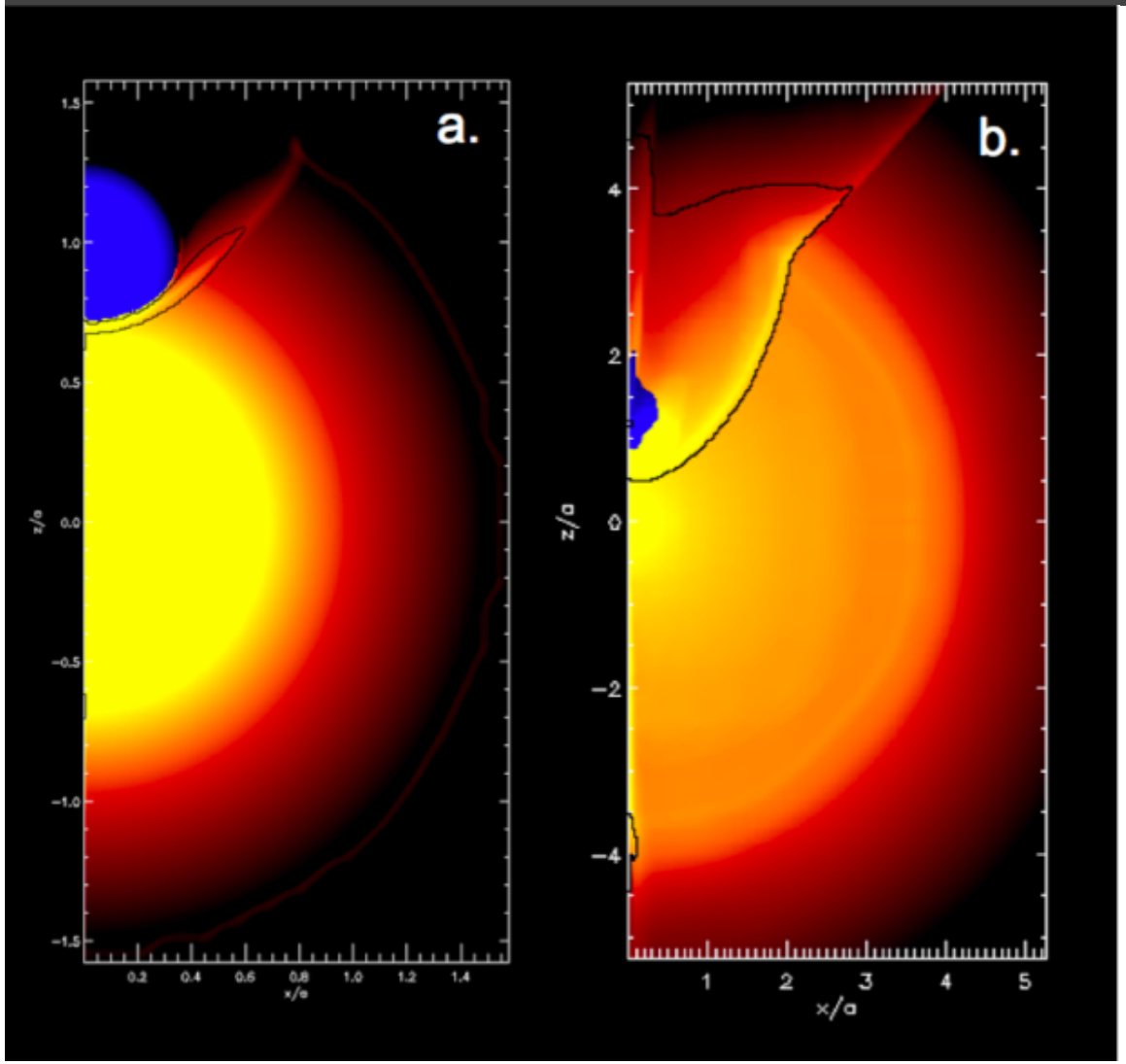
Type Ia Supernova Progenitors







Detecting the Donor Star



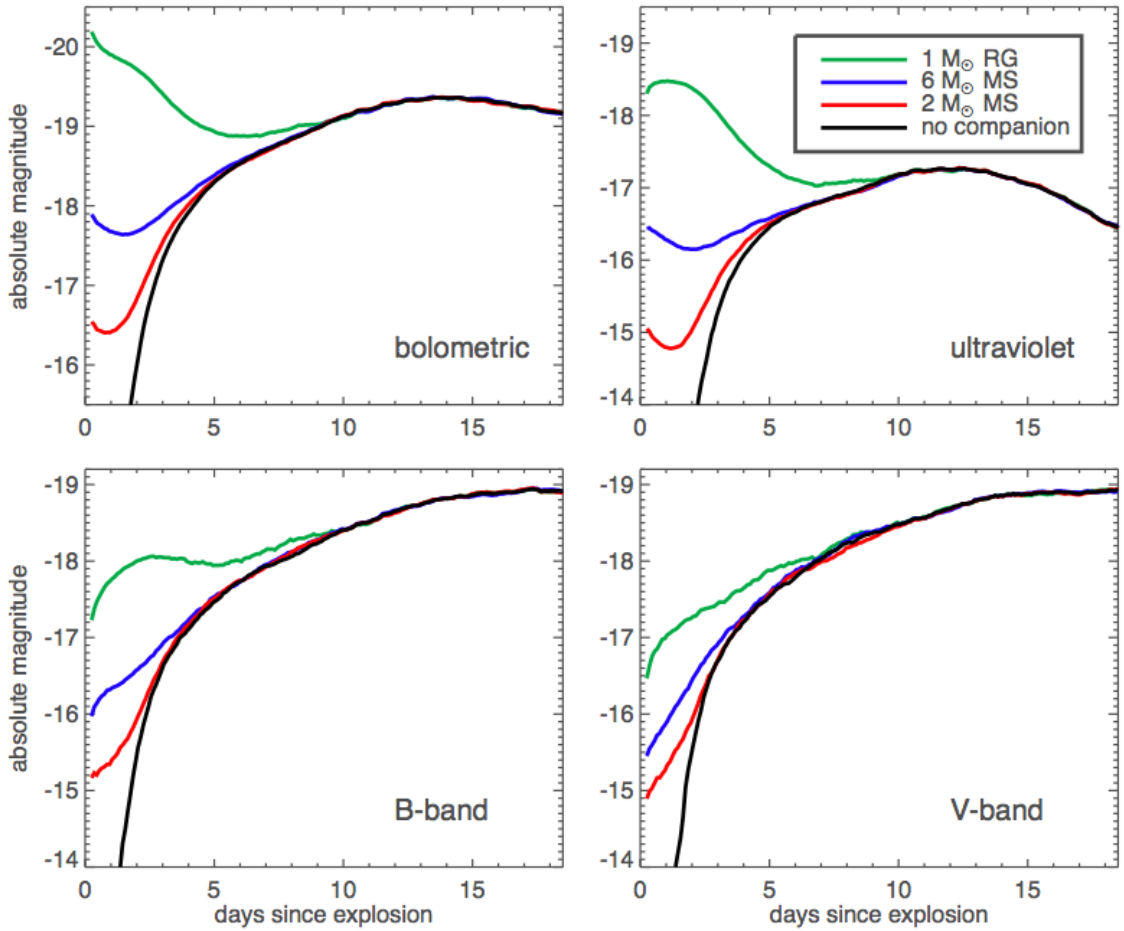
The blue object is the donor star, with the yellow shock wave and front

The donor star interferes with the ejecta from the explosion

After ~3 days the eject fills the hole creating by the donor star (b)

Kasen (2010)

Signs of the Donor Star



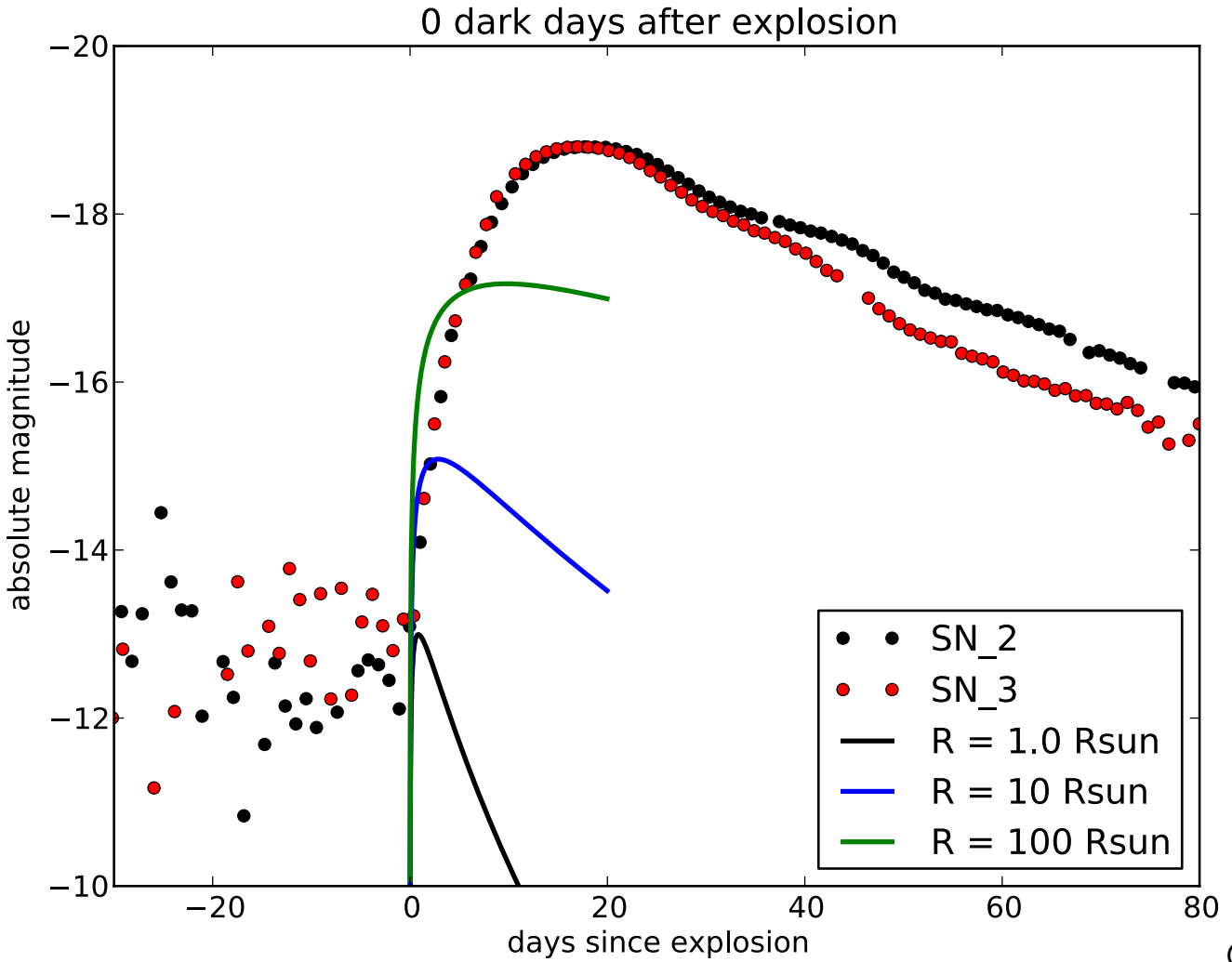
Kasen (2010)

Most of the interaction is in the ultraviolet

t < ~5 days in B band for a Red Giant shows a significant bump

Optical bands only suffer a slight modification to their light curve rise time

What's There?



Olling + 2014

Fast, Faint, and Nearby

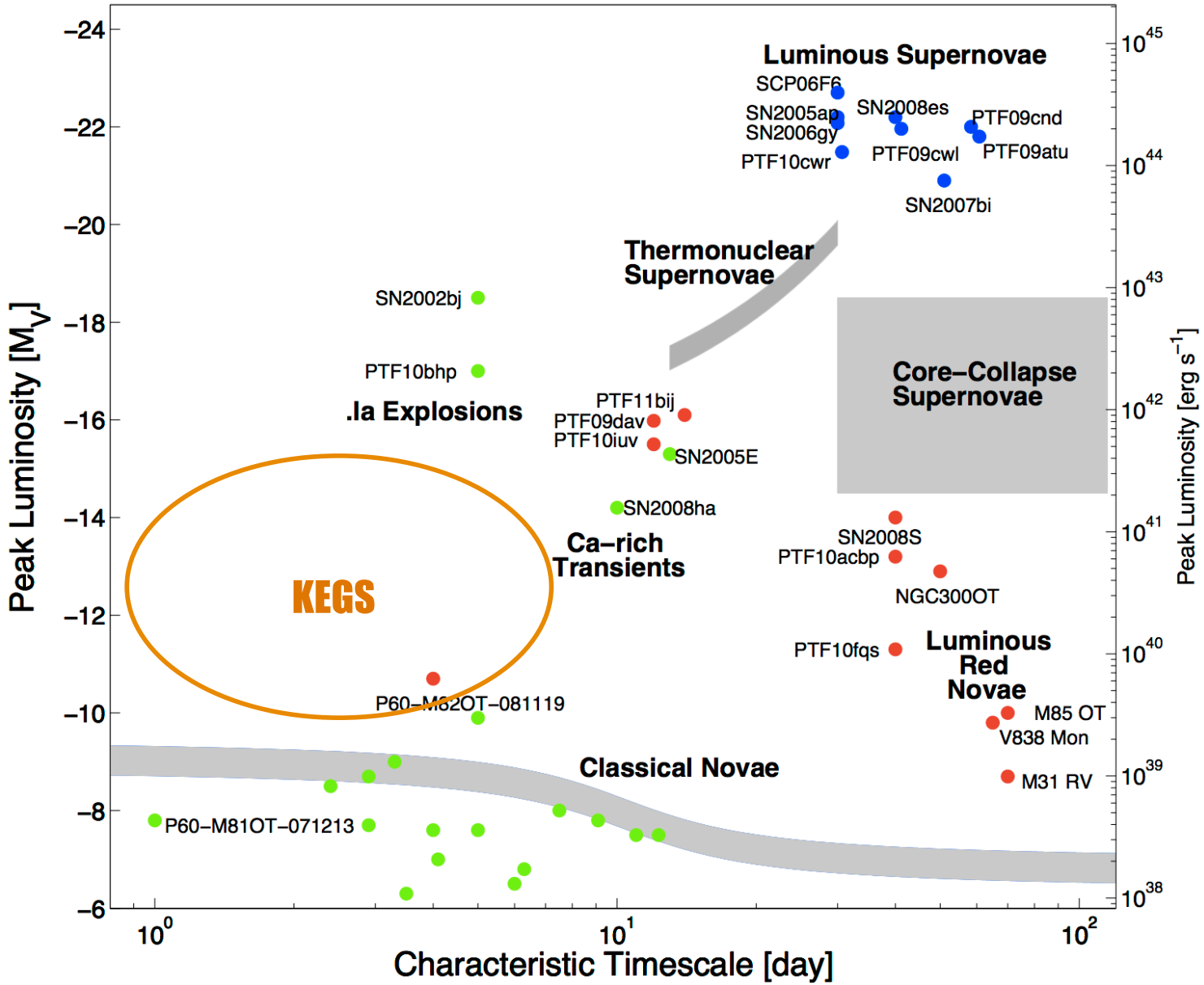
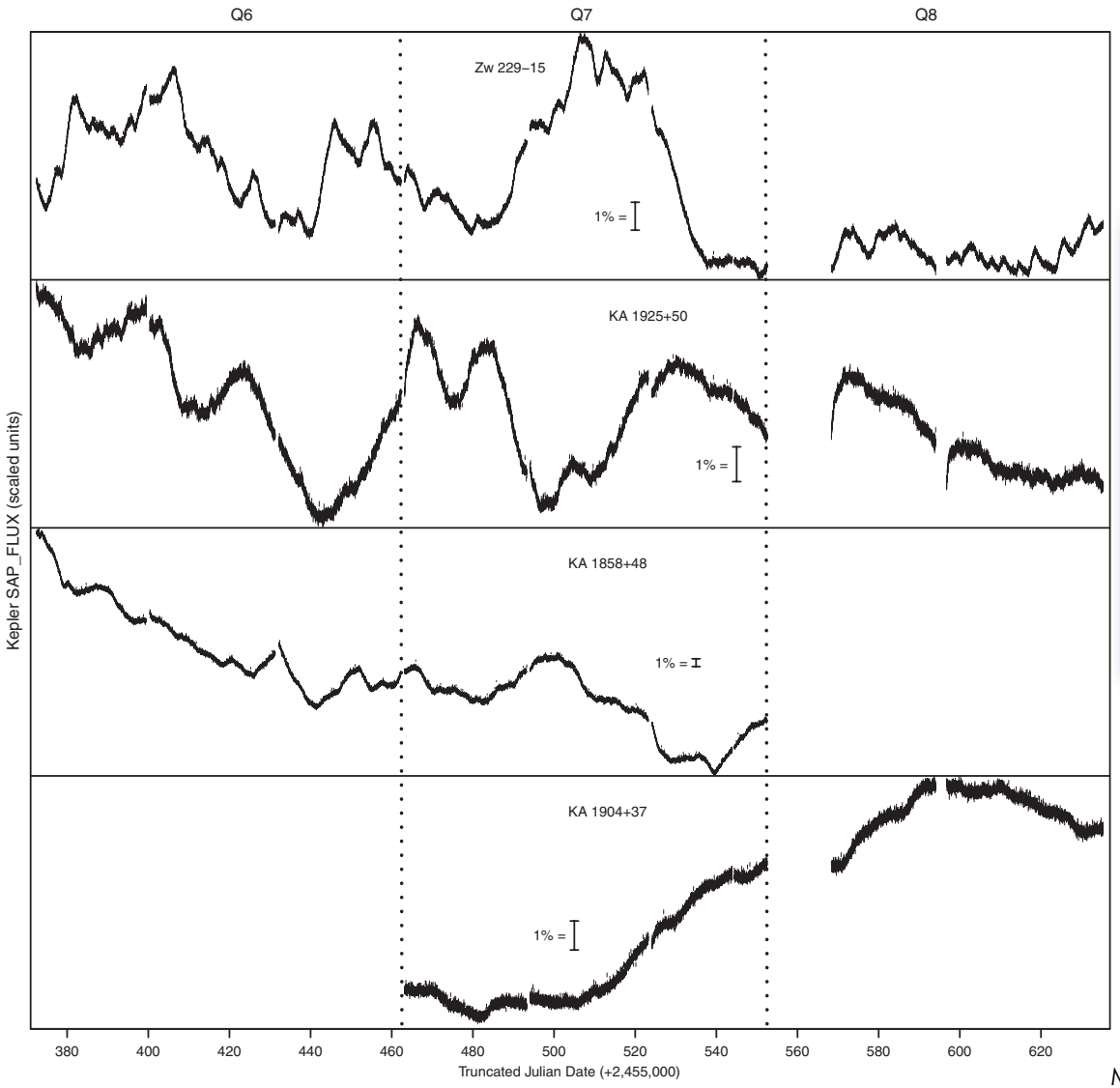


Image Credit :
Mansi Kasliwal

Active Galactic Nuclei



~3% of galaxies low level AGN

Sensitivity ~0.01%

Aiming to find 300 – 500 new AGN

Mushotzky+11

KEGS Plan + Goals

2 Fields per year (Galactic Cap Fields)

5-10K galaxies per field

10 – 25 SN per field

SN Shock break-out

Improving Cosmological Samples

Need Ground Based Follow-up to typeobjects

SkyMapper Essential!