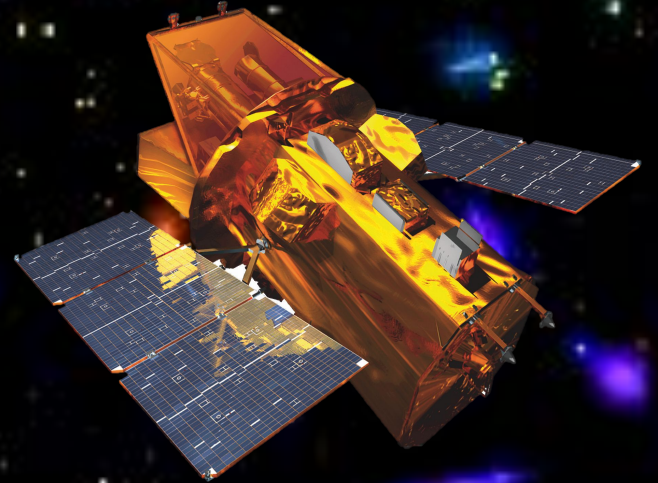
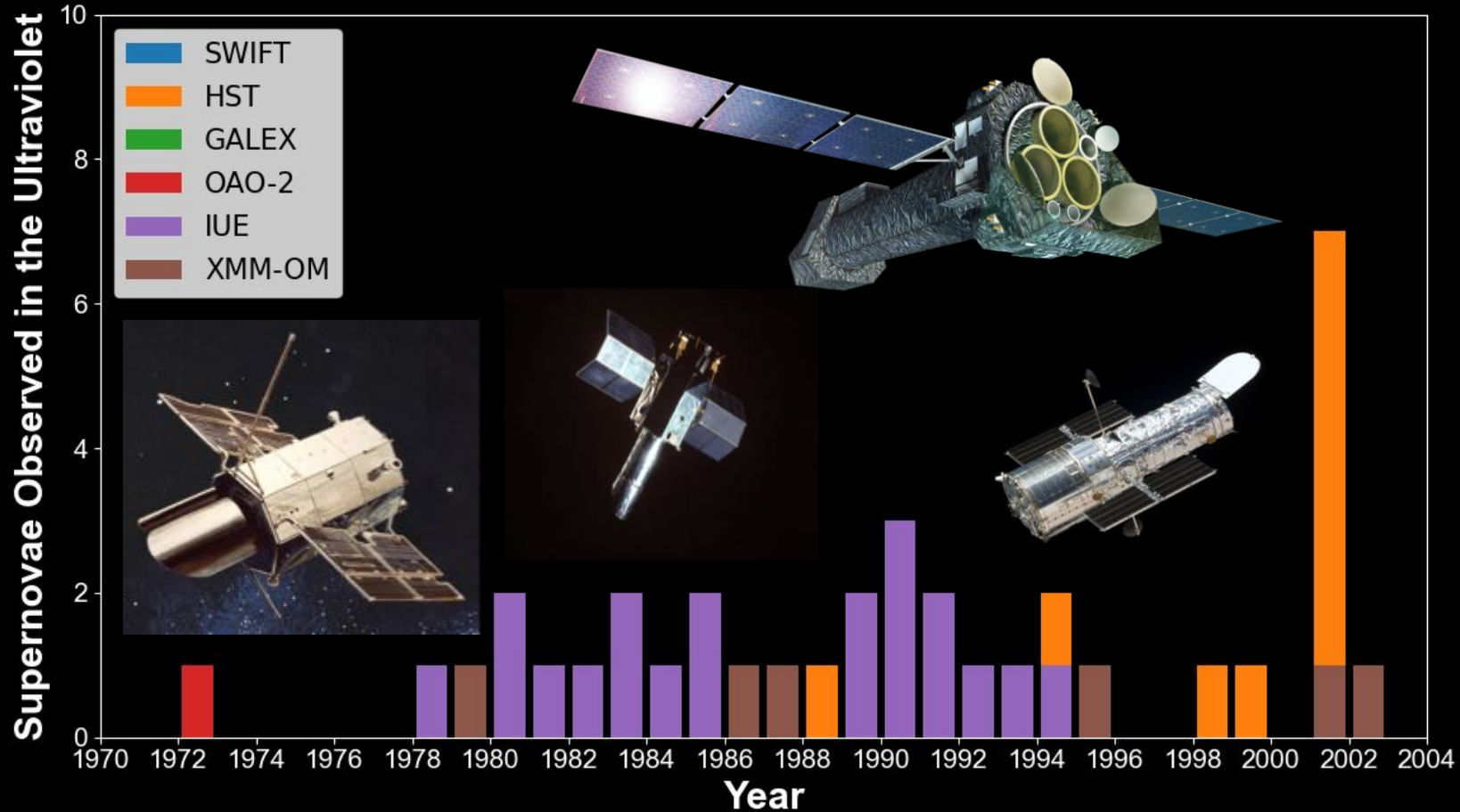


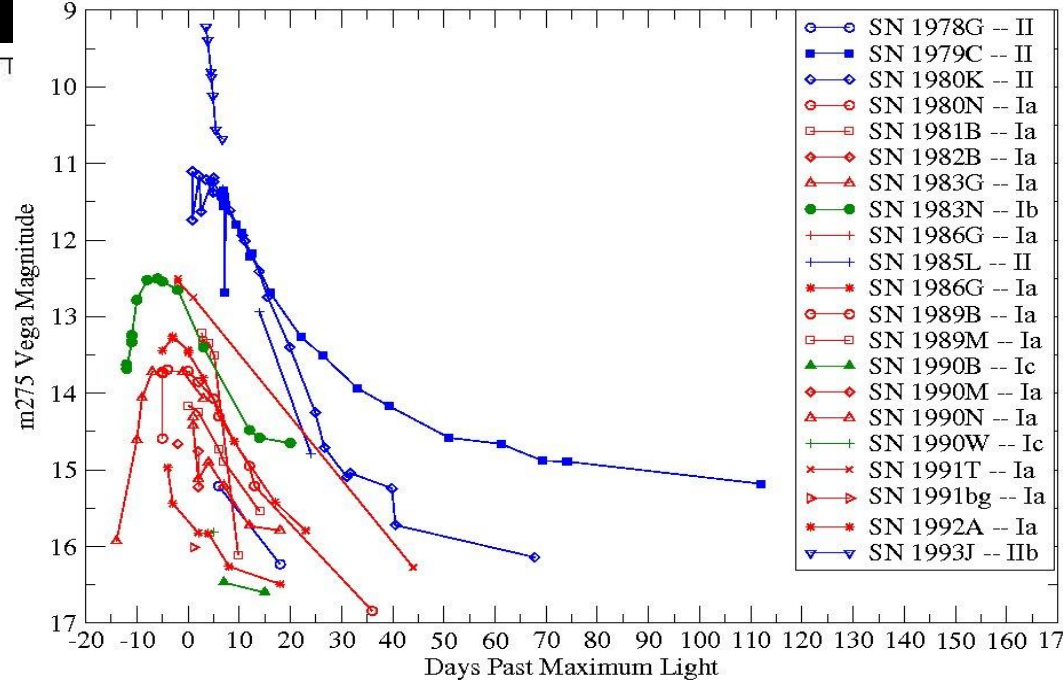
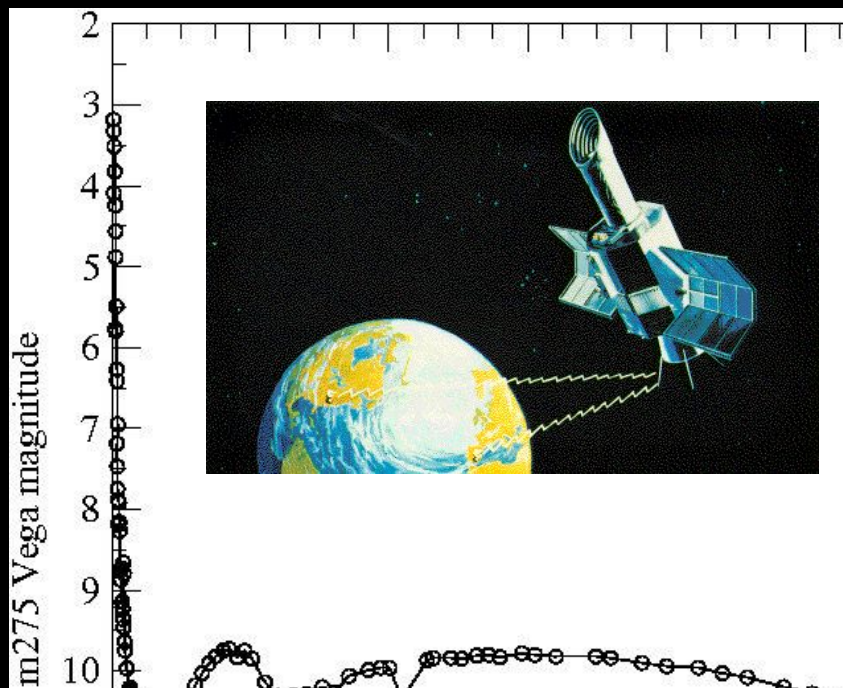
An Ultraviolet View of the Supernova Zoo

Peter Brown
Texas A&M University



Pre-Swift Ultraviolet Supernovae





IUE prototyping

— UV-blue = II

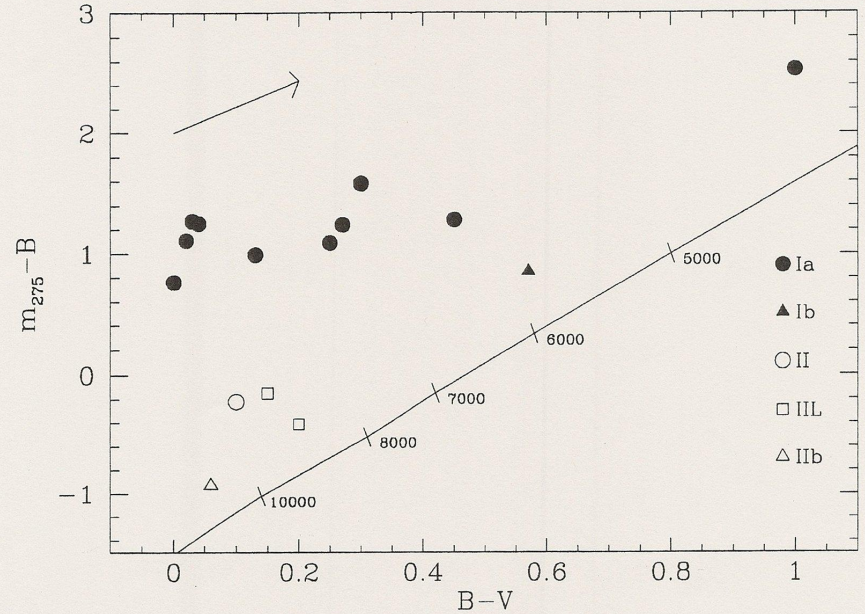
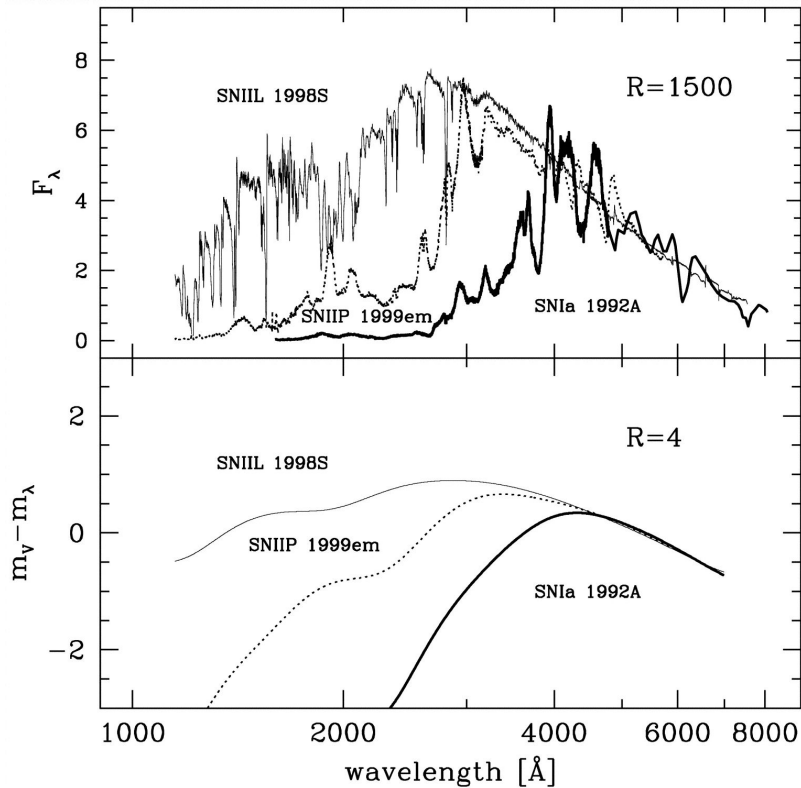


Figure 2: Two colors, $m_{275}-B$ vs. $B-V$, diagram for SNe near maximum. The line gives the colors of the black body at different temperatures whereas the arrow on the top-left of the figure indicates the reddening line.

HST Spectroscopy

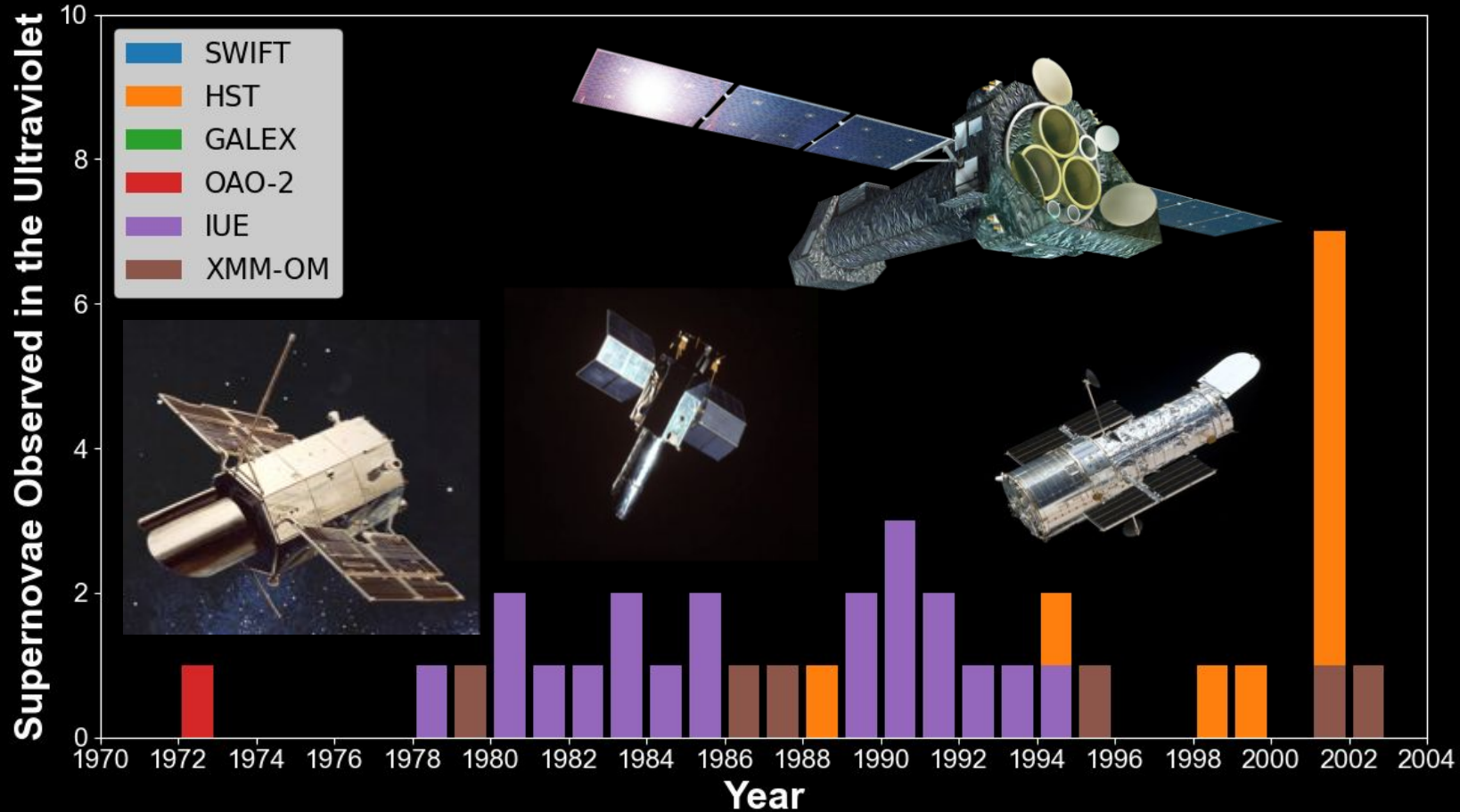
1 of each type



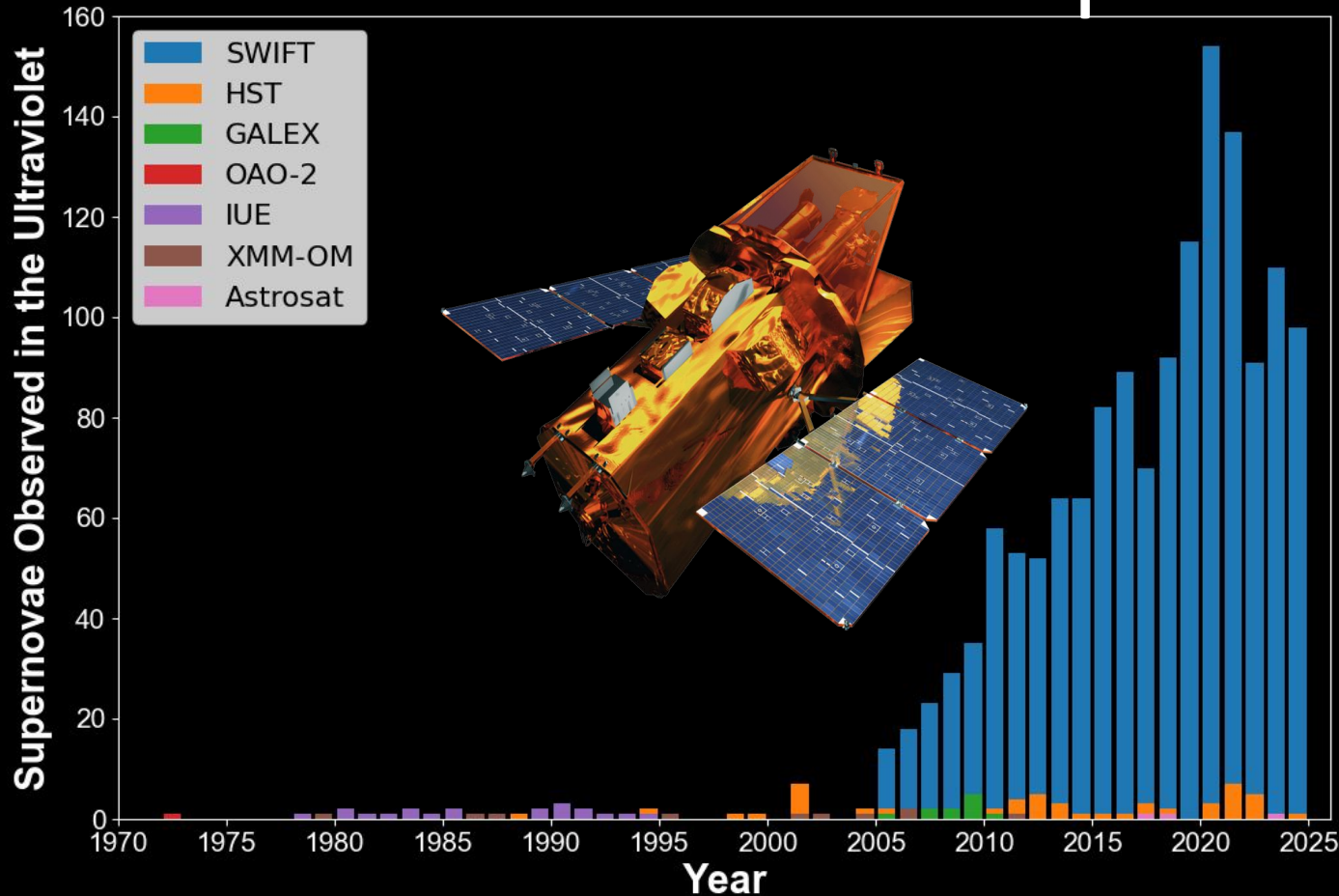
Phototyping for identifying
higher redshift SNe Ia for
cosmology in Riess+ 2004:

If you see rest-frame UV, it is
not a Ia

Pre-Swift Ultraviolet Supernovae



Ultraviolet Supernovae



>1400
SNe



Stefan Salacies
Thomas Masha
Hazem Salem
Kelli Templeton

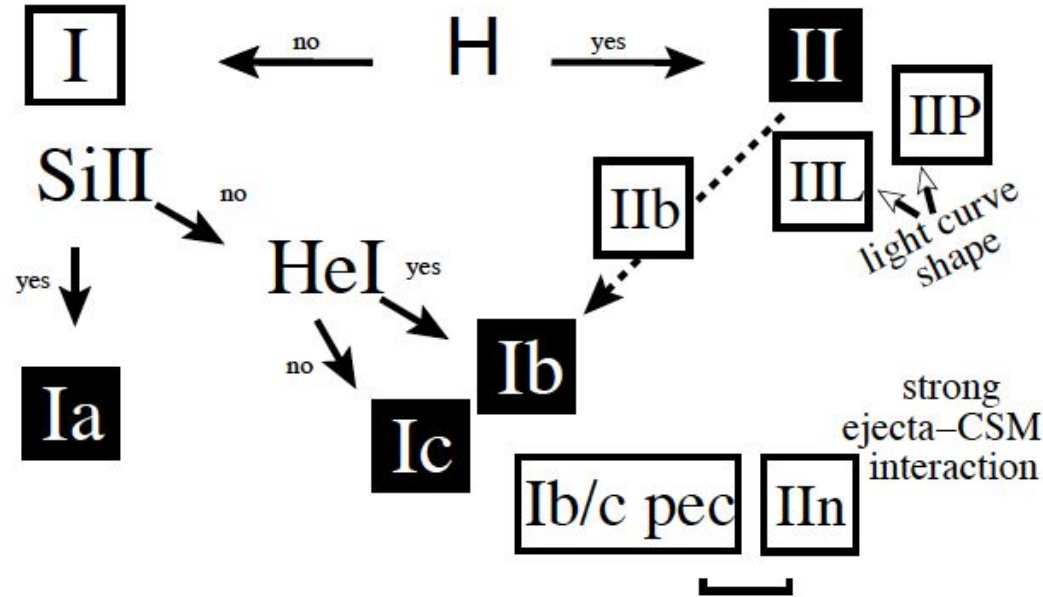
“Pick the best 1 or 2 Supernovae
each year”



Supernova Taxonomy 2003

thermonuclear

core collapse

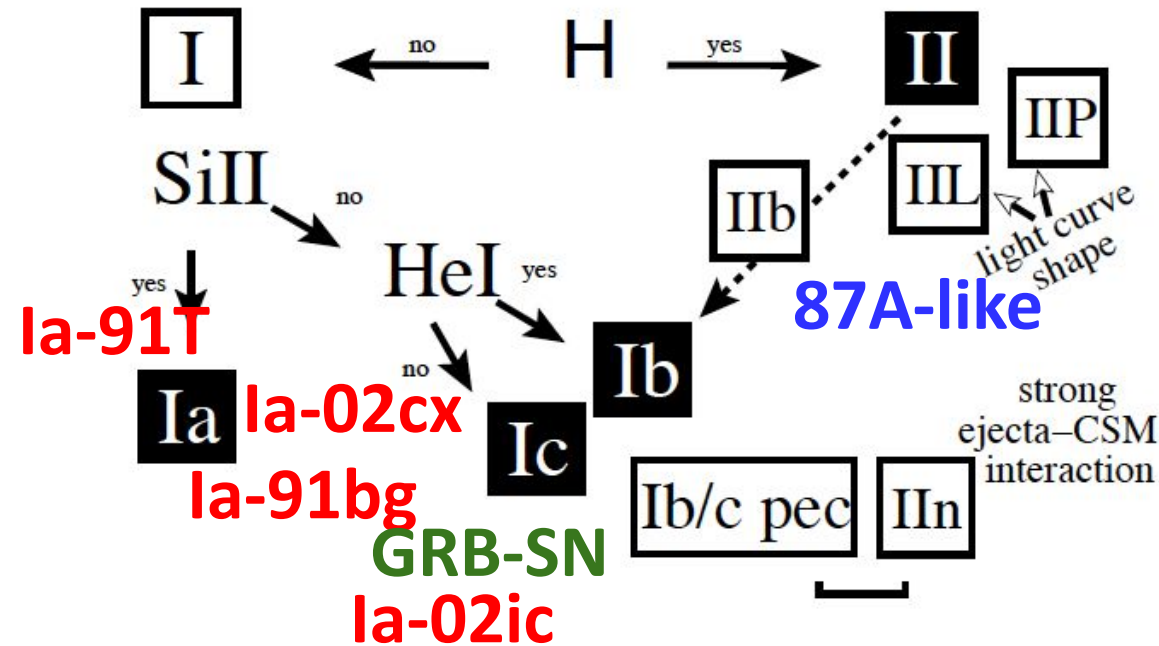


Turatto 2003

Supernova Taxonomy 2003

thermonuclear

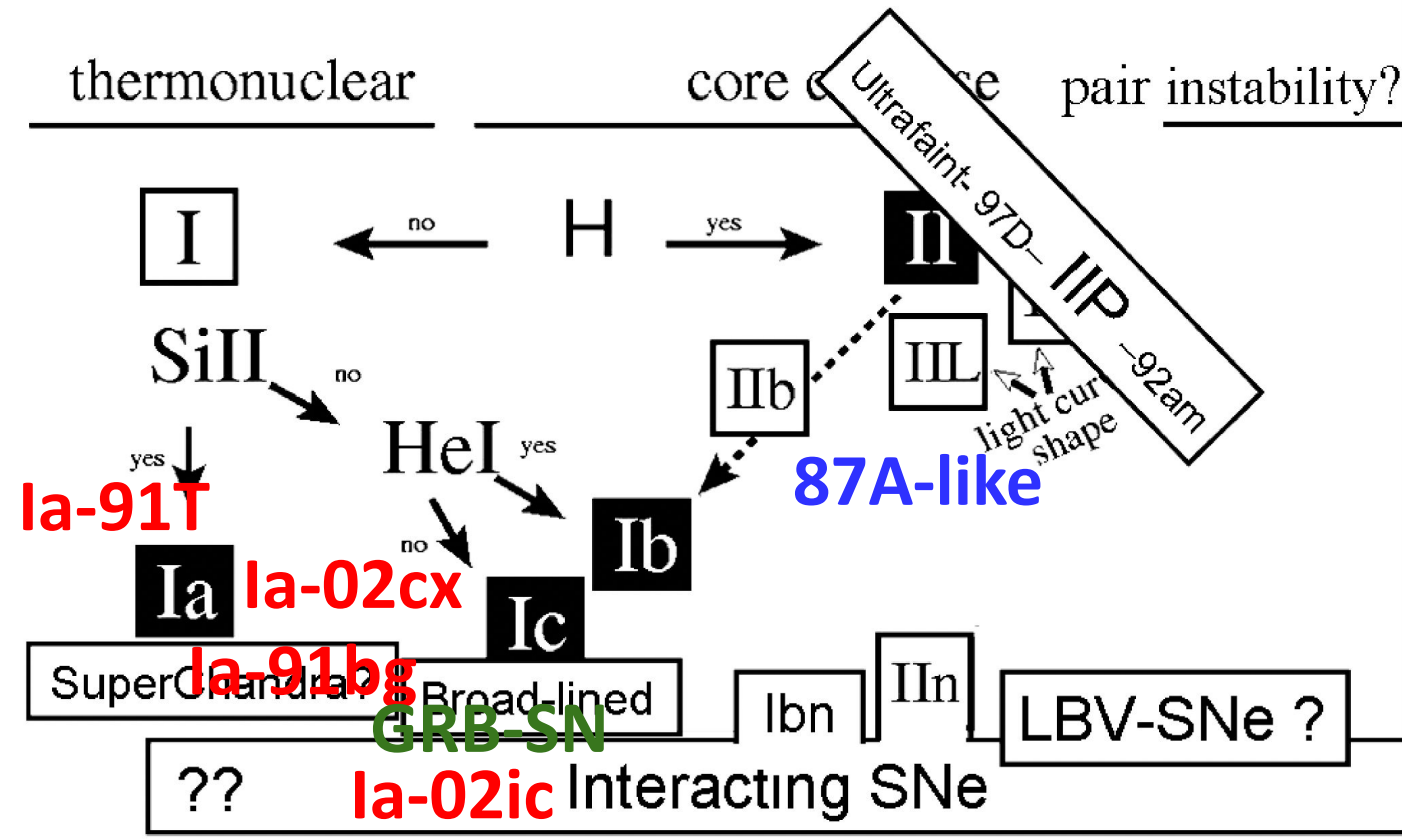
core collapse



Turatto 2003

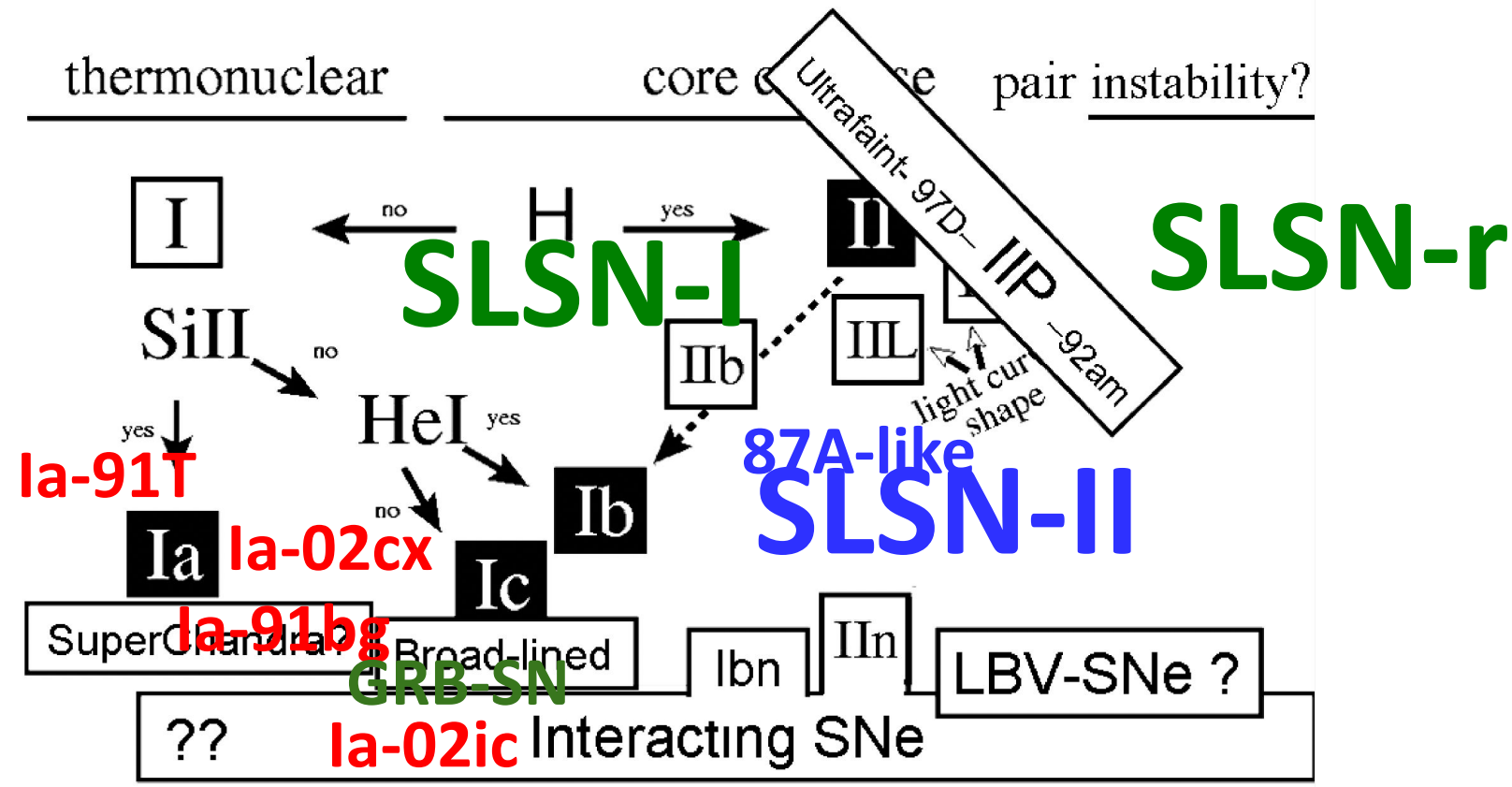
Filippenko+1992, Leibungut+1992, Filippenko+1992, Phillips+1992, Li+2003, Jha+2006, Hamuy+2003, Mazzali+2002, Suntzeff+1990, Pun+1995

Supernova Taxonomy 2007



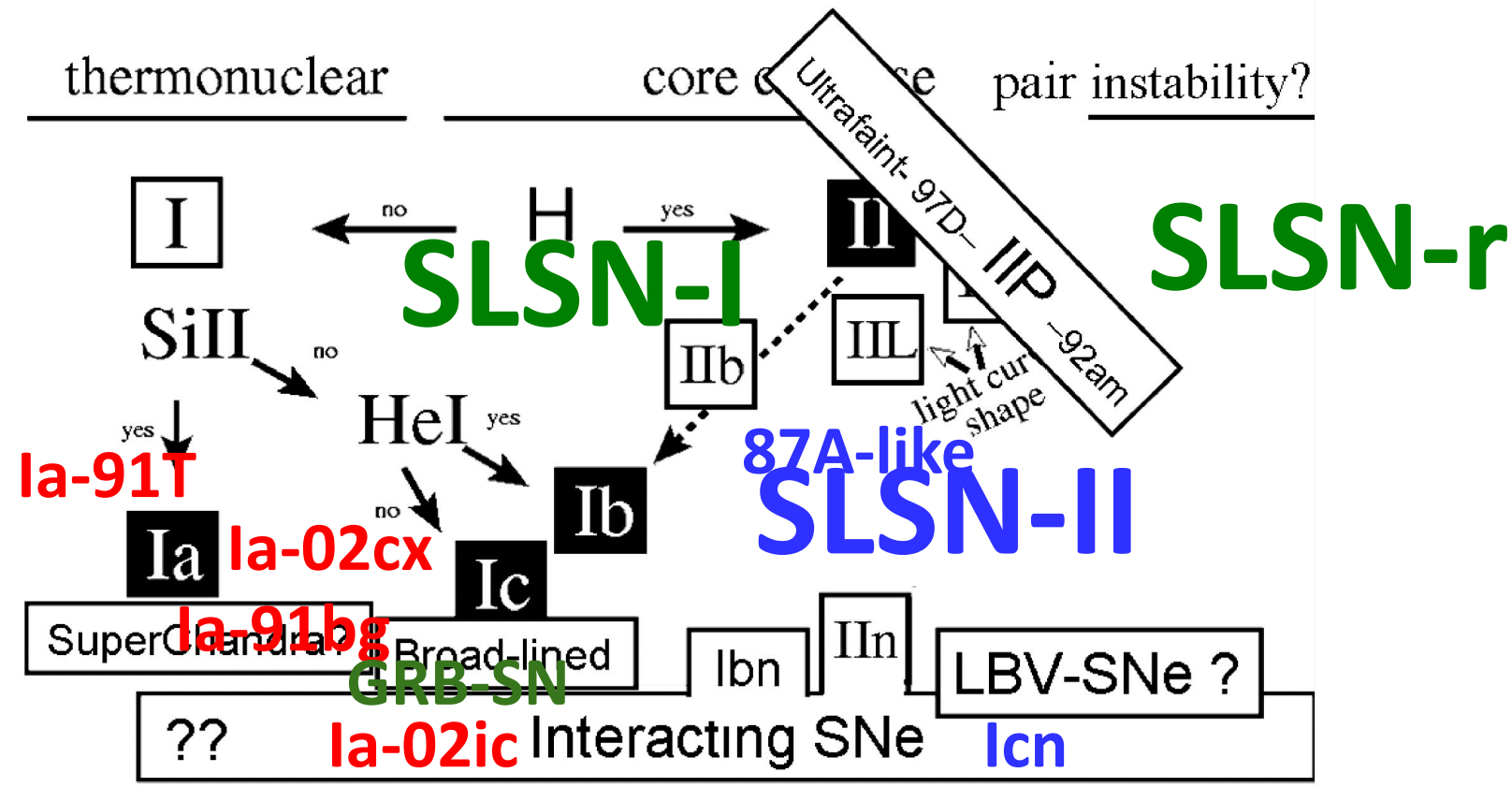
Turatto, Benetti, & Pastorello 2007

Supernova Taxonomy 2014

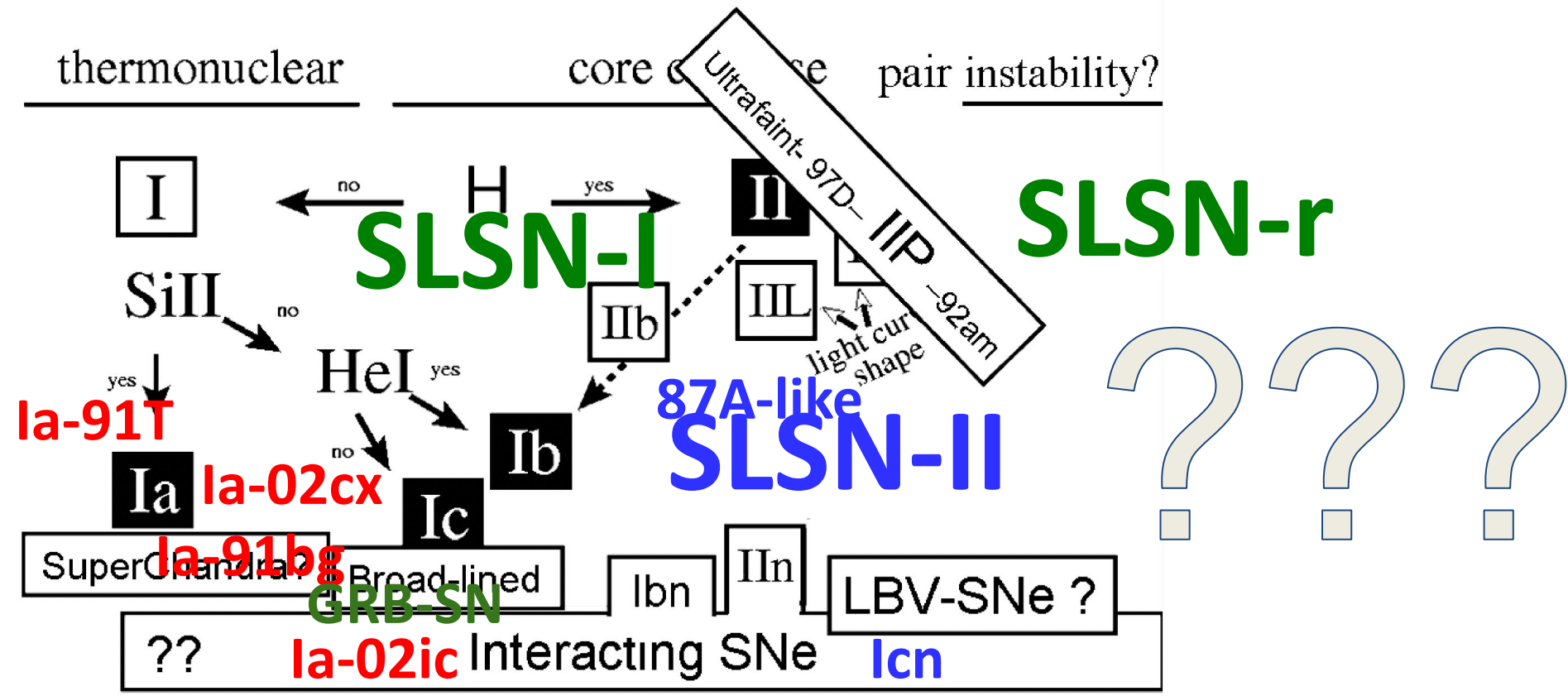


Turatto, Cappellaro, & Pastorello 2007 + Gal-Yam 2012

Supernova Taxonomy 2021

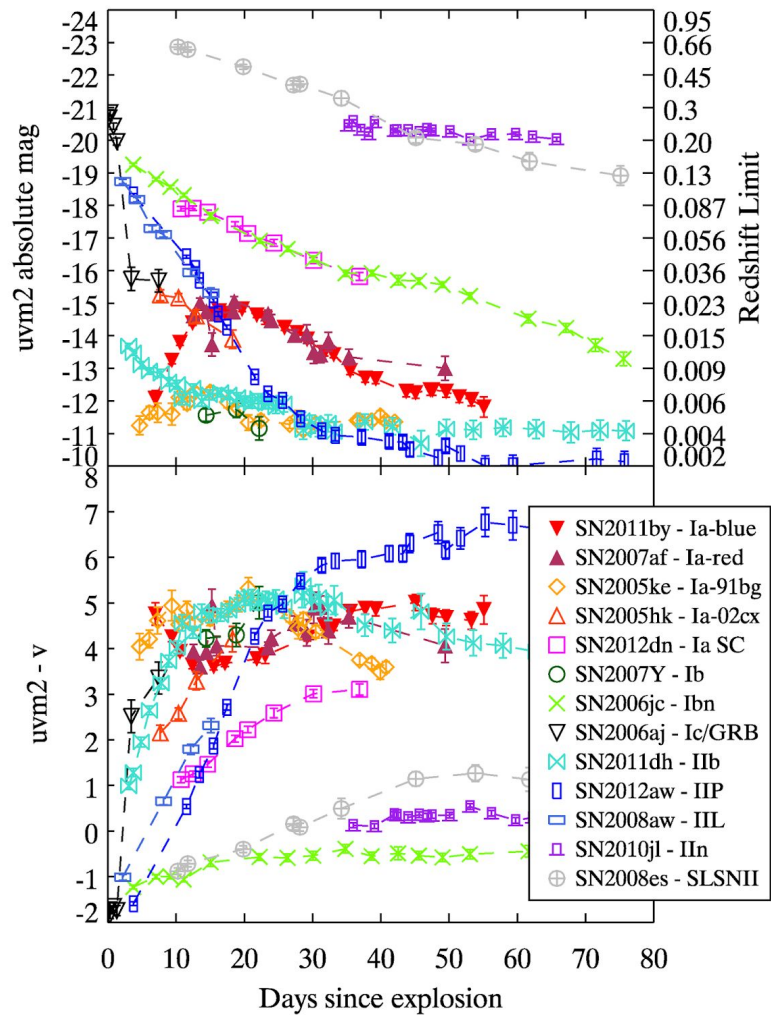


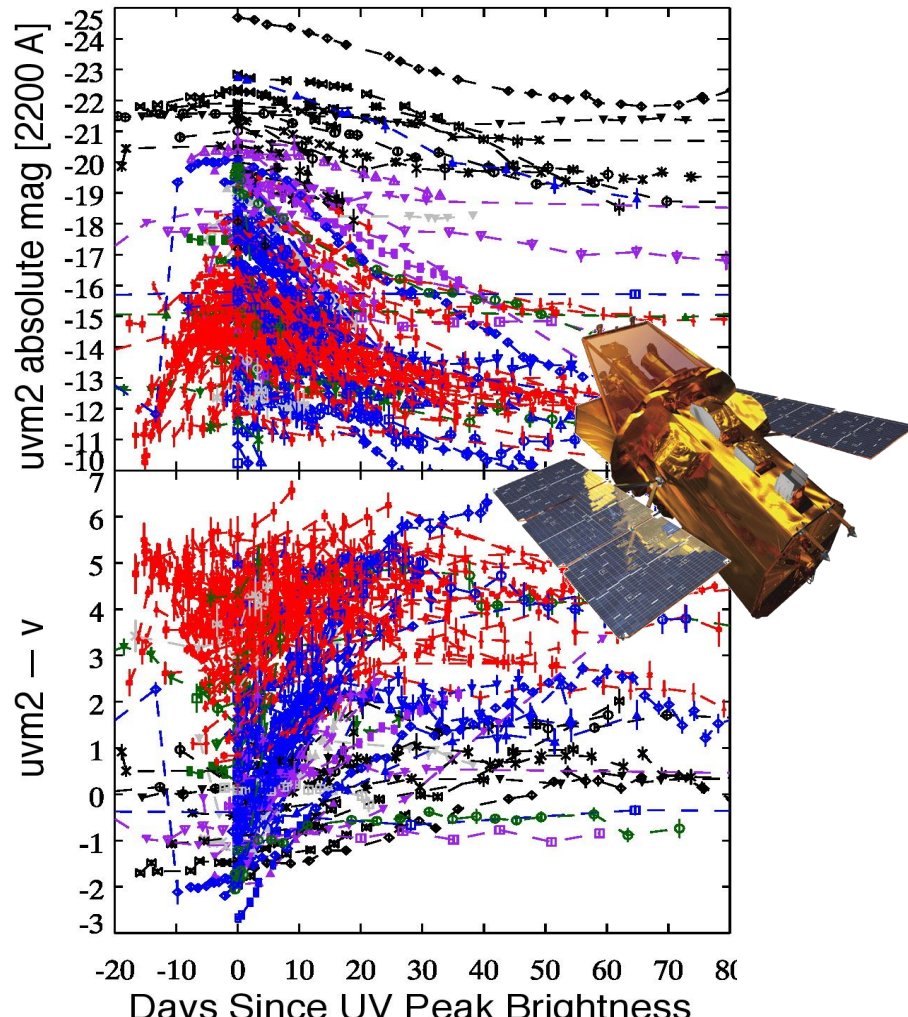
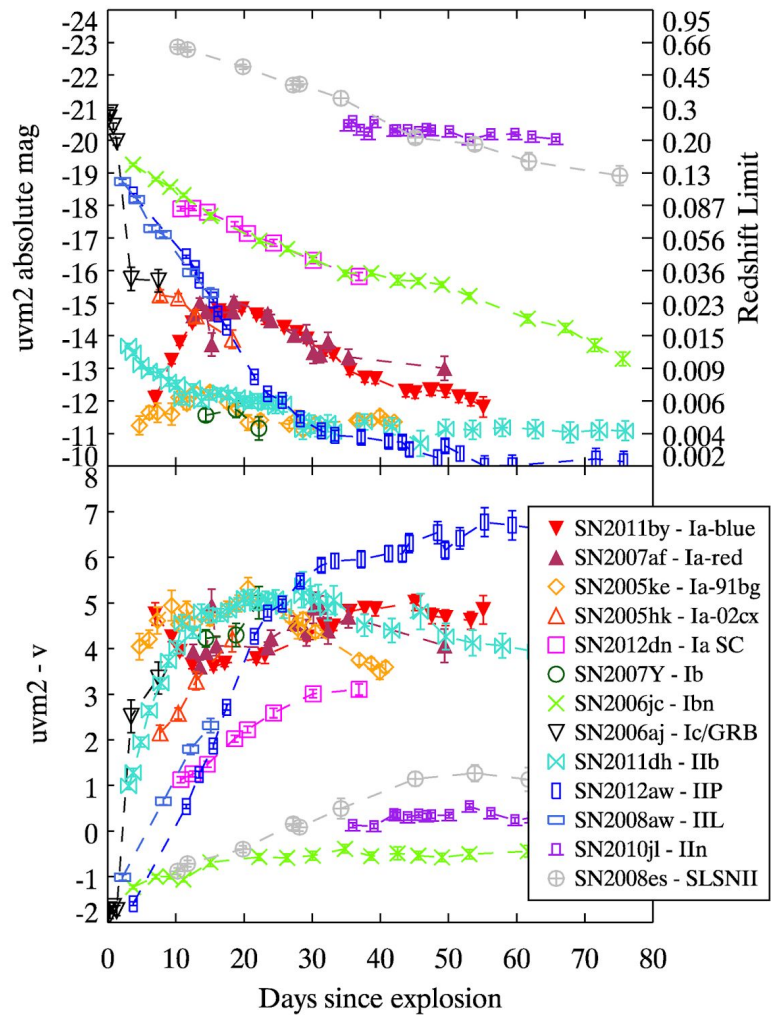
Supernova Taxonomy 2025



Turatto, Cappellaro, & Pastorello 2007

+ ?????





SOUZA

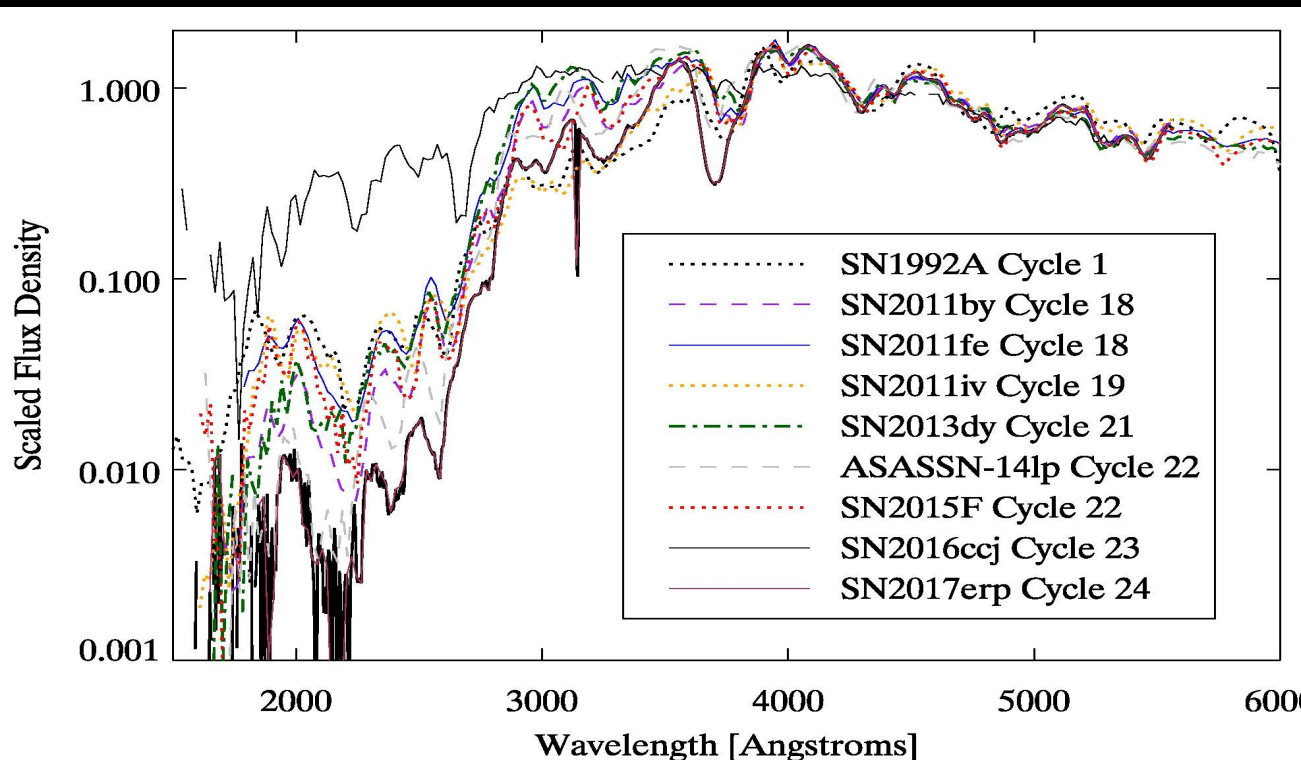
Swift Optical/Ultraviolet Supernova Archive

NASA Astrophysics and Data Analysis
Program – funded project to create a
database of the UV images and
photometry for the ~~300~~ ⁸⁰⁰ Swift SNe
1400



Brown et al. 2014a kicked off at 2013 NUVA meeting in Garching

HST Ultraviolet Spectroscopy

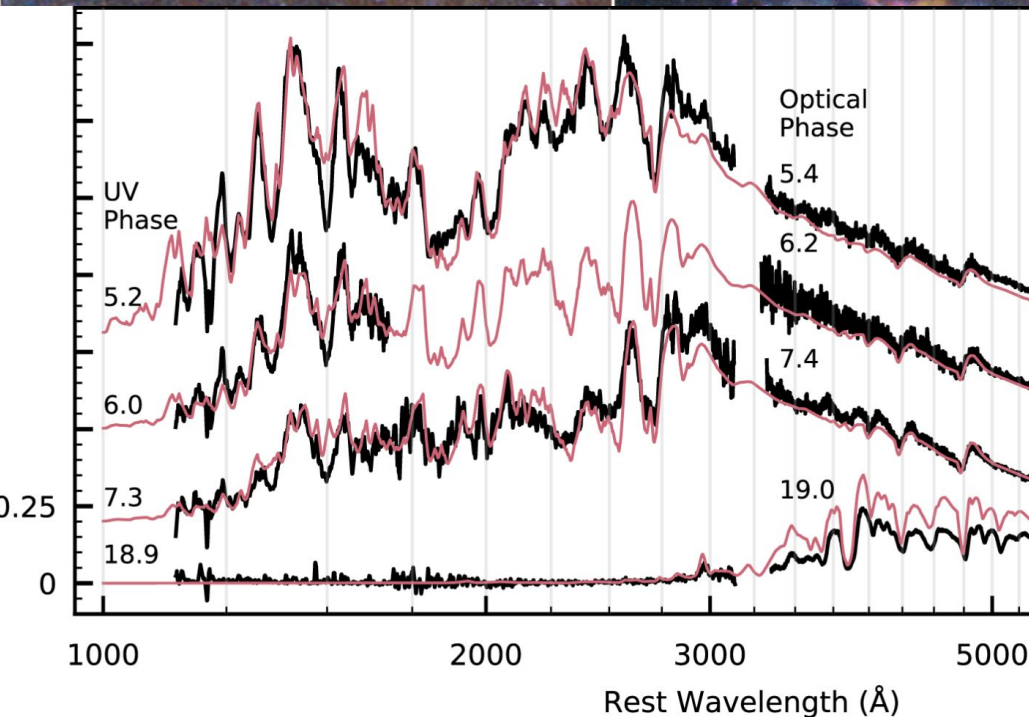


See e.g. Kirshner+1993, Foley+2016,
Brown+2019, DerKacy+2023

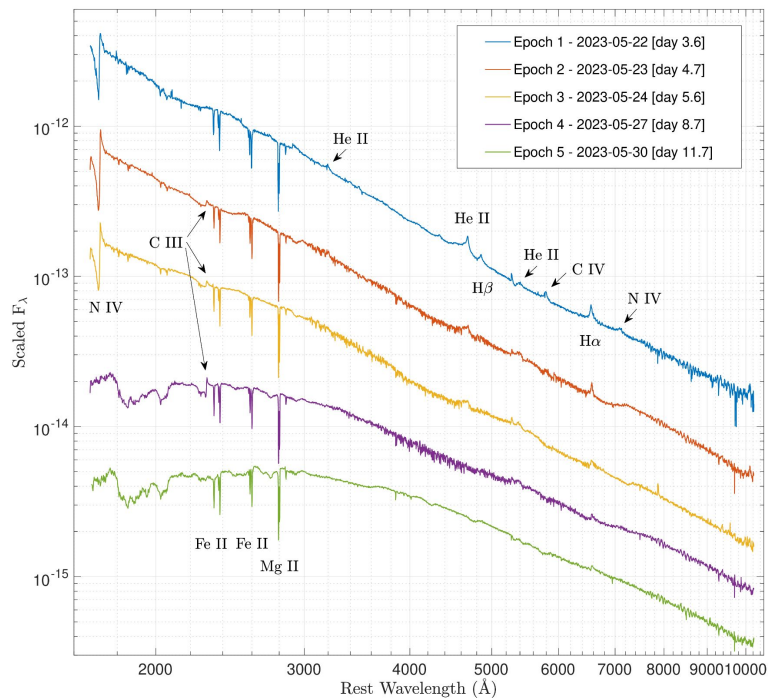
SN 2022acko

UV spectral series of a Type II

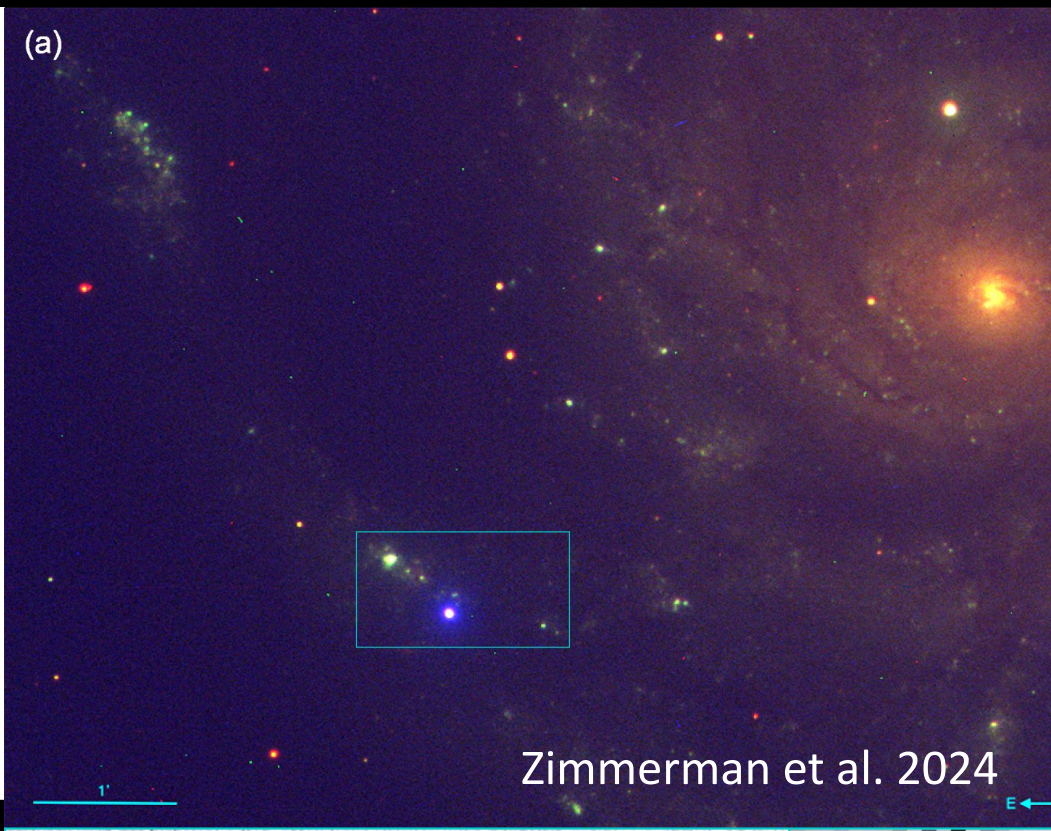
Boestrom et al. 2023



SN2023ixf in M101



(a)



Zimmerman et al. 2024

AGGIENOVA TEMPLATES

Combine HST or model spectra with light curves to make time-series spectrophotometric templates

