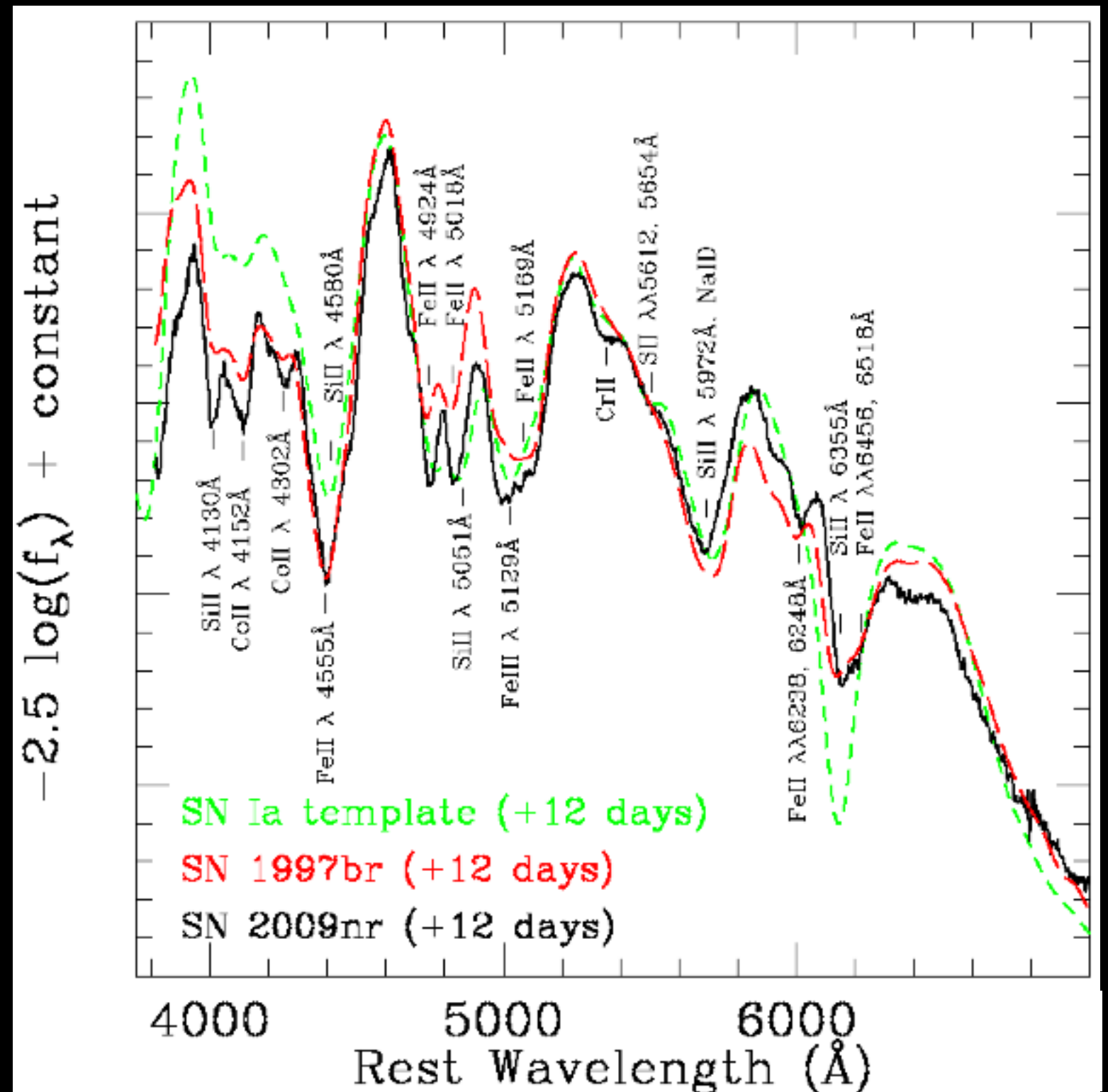


why study light echoes?  
spectral classification LEs



spectra are the finger  
print of astronomical  
transient classification  
from light echoes.



Khan+ 2011

light echoes of  $\eta$ -Carinae

why study light echoes?

LEs give us the chance to take spectra of events occurred before spectra were invented and classify ancient astronomical transients

Tycho SN (1572)



Krause+ 2008



light echoes of  $\eta$ -Carinae