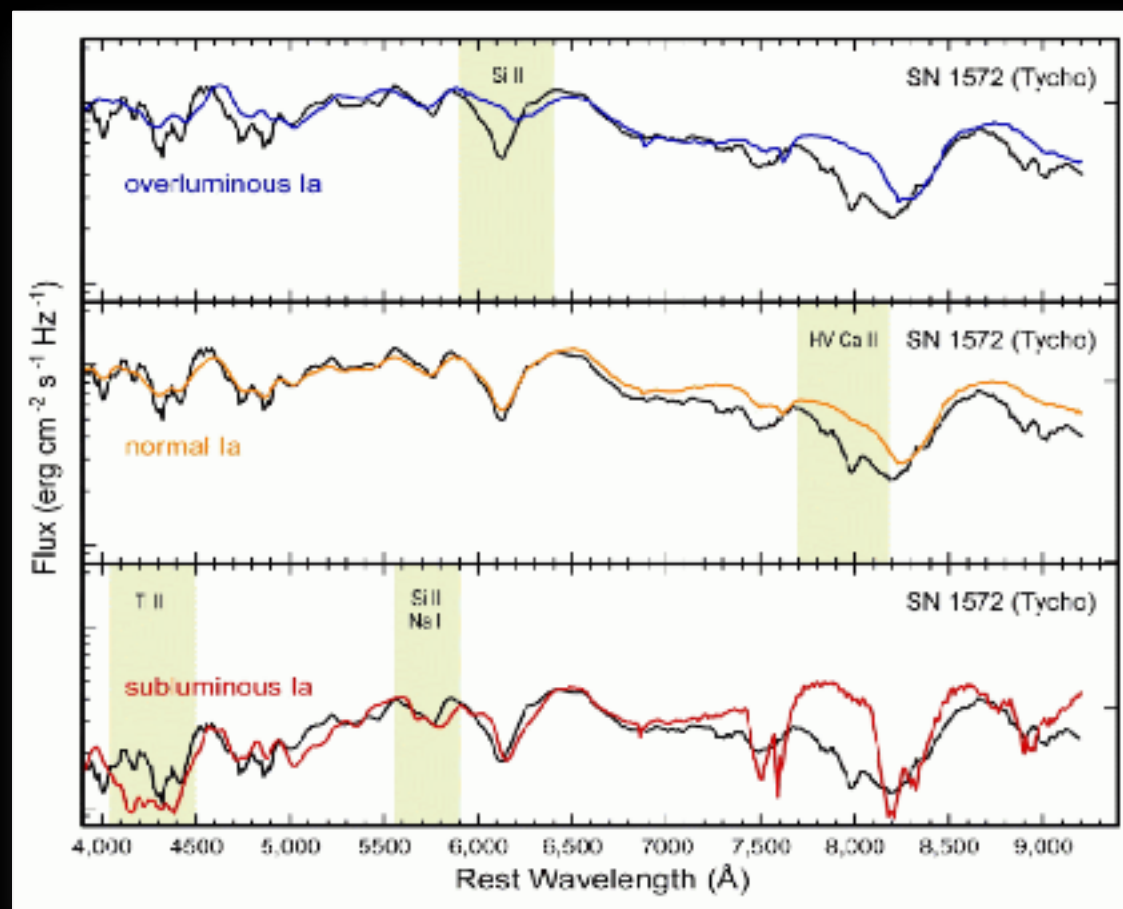


## why study light echoes?

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

### Tycho SN (1572)



Rest+ 2011

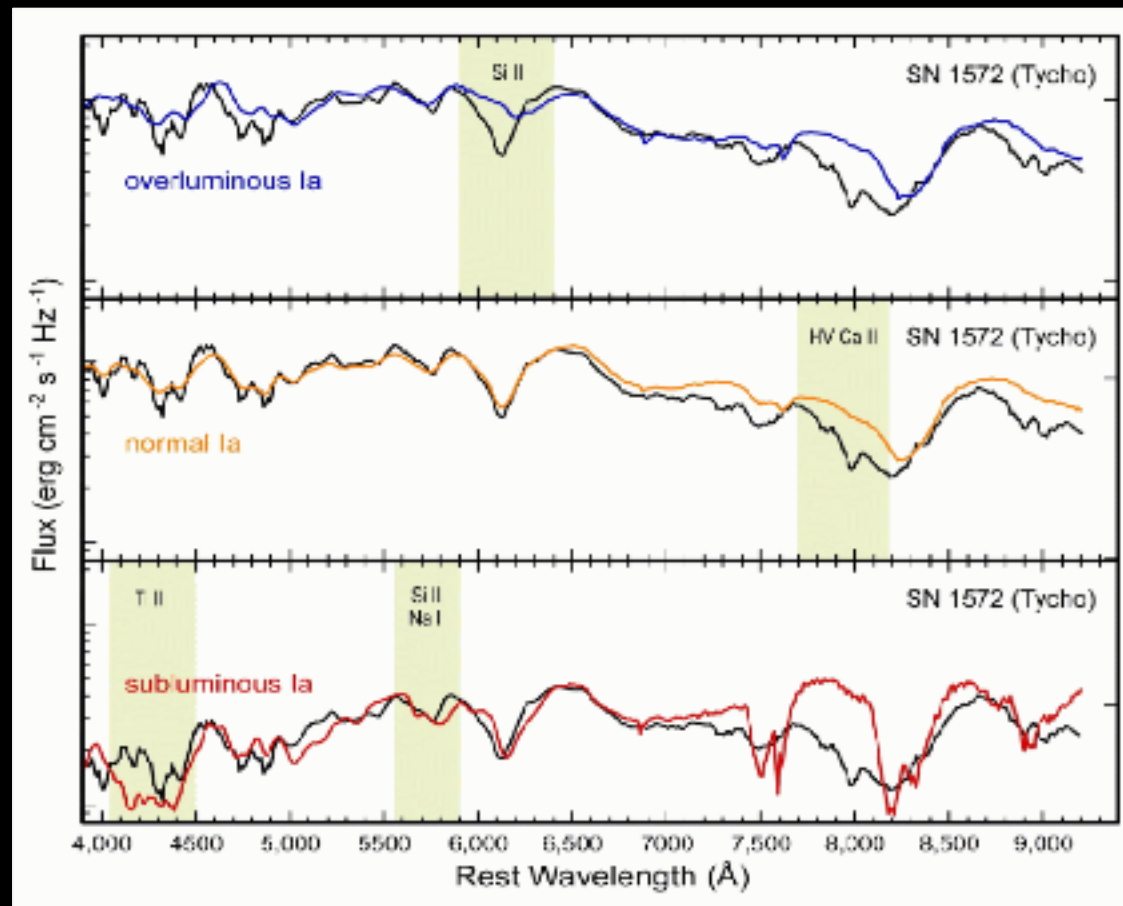
light echoes of  $\eta$ -Carinae

Krause+ 2008

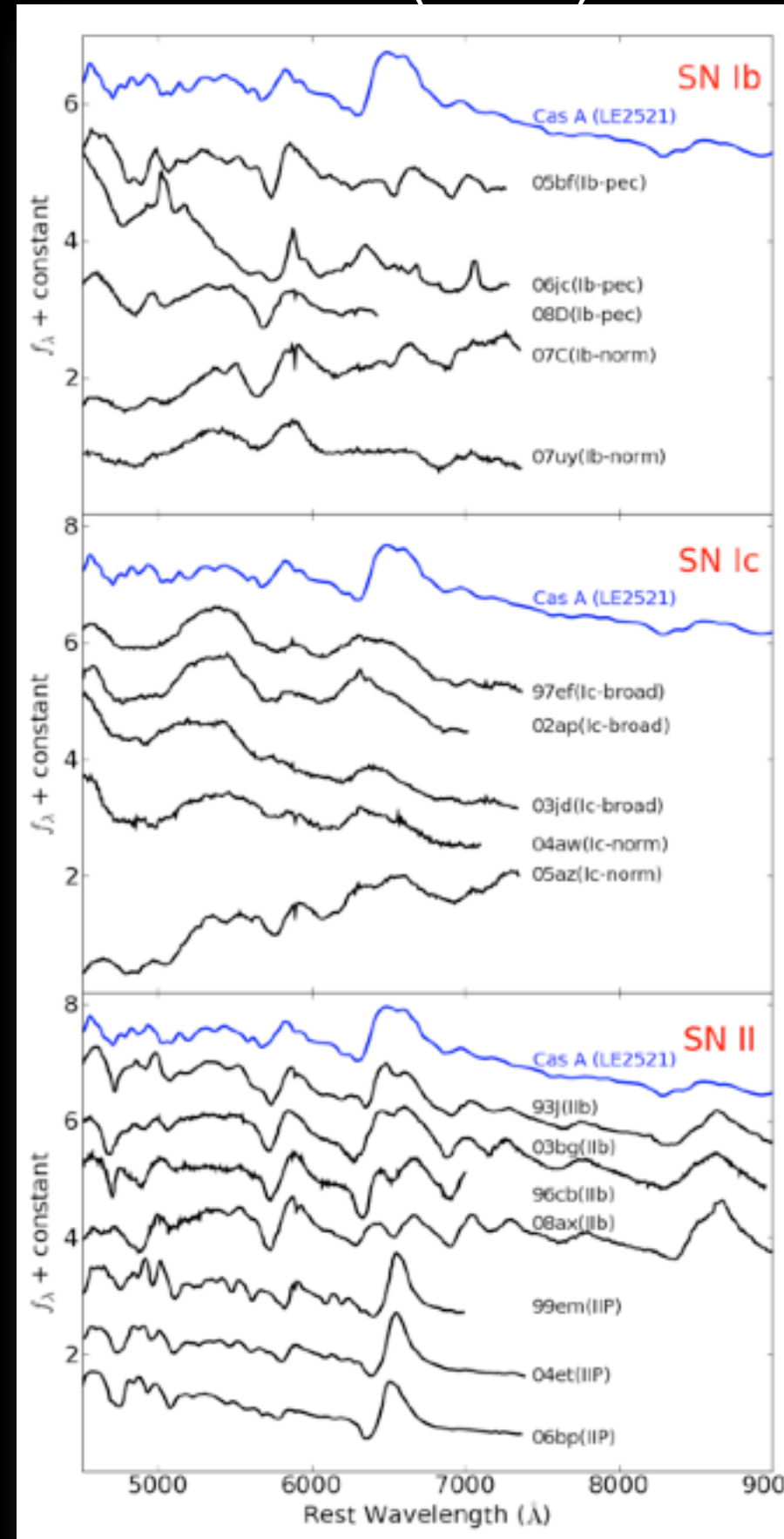
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### Cas A (1680)



Rest+ 2011

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