

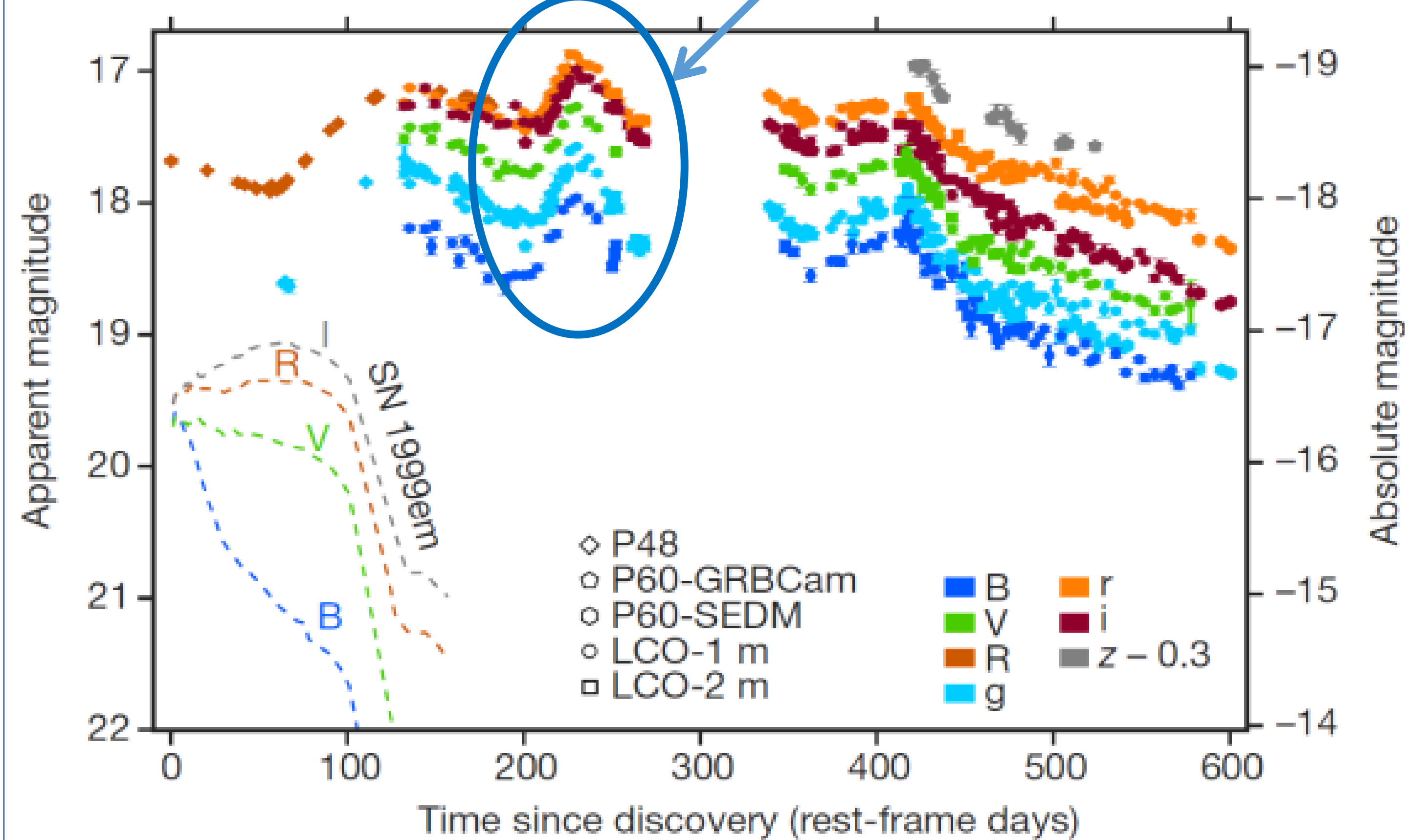
# The Influence of Jets on the Light Curve of Supernovae

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**Abstract** We build a toy model and show that jets that the central object launches at late times might account for peaks in the light curve of some peculiar core collapse supernovae.

**Motivation** Peaks in the light curve of some peculiar supernovae that show the need for a late energy source.

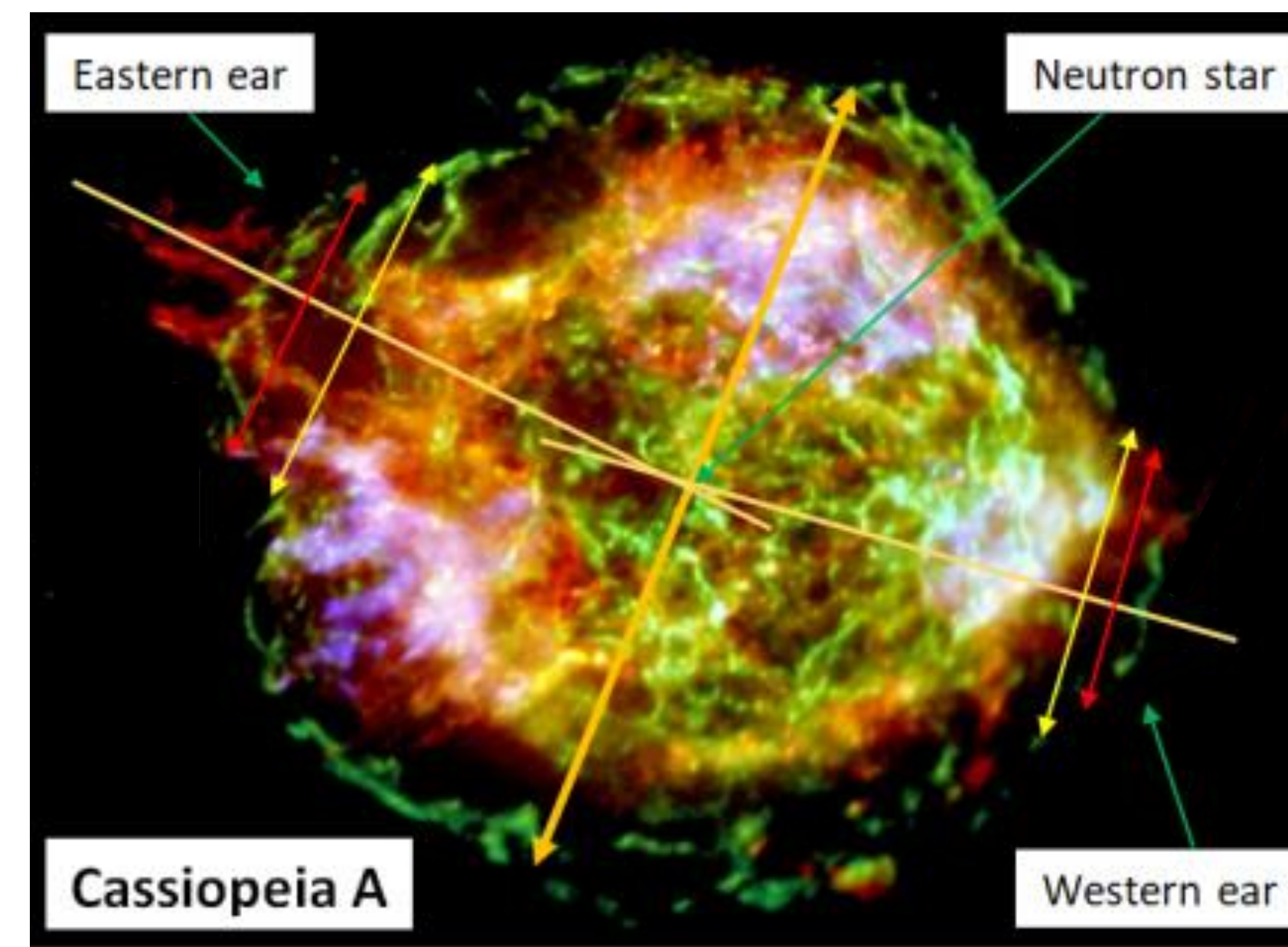
Additional Peak.  
We suggest such peaks might be powered by jets.



**iPTF14hls.** Taken from Arcavi et al. (2017)

**Hints for jets:**  
ears in supernova Remnants.

Image: Grichener, & Soker (2017), based on Hwang et al. (2004)



**Our Toy Model** Assumption: jet deposits its energy in the supernova ejecta, by a 'mini explosion'.

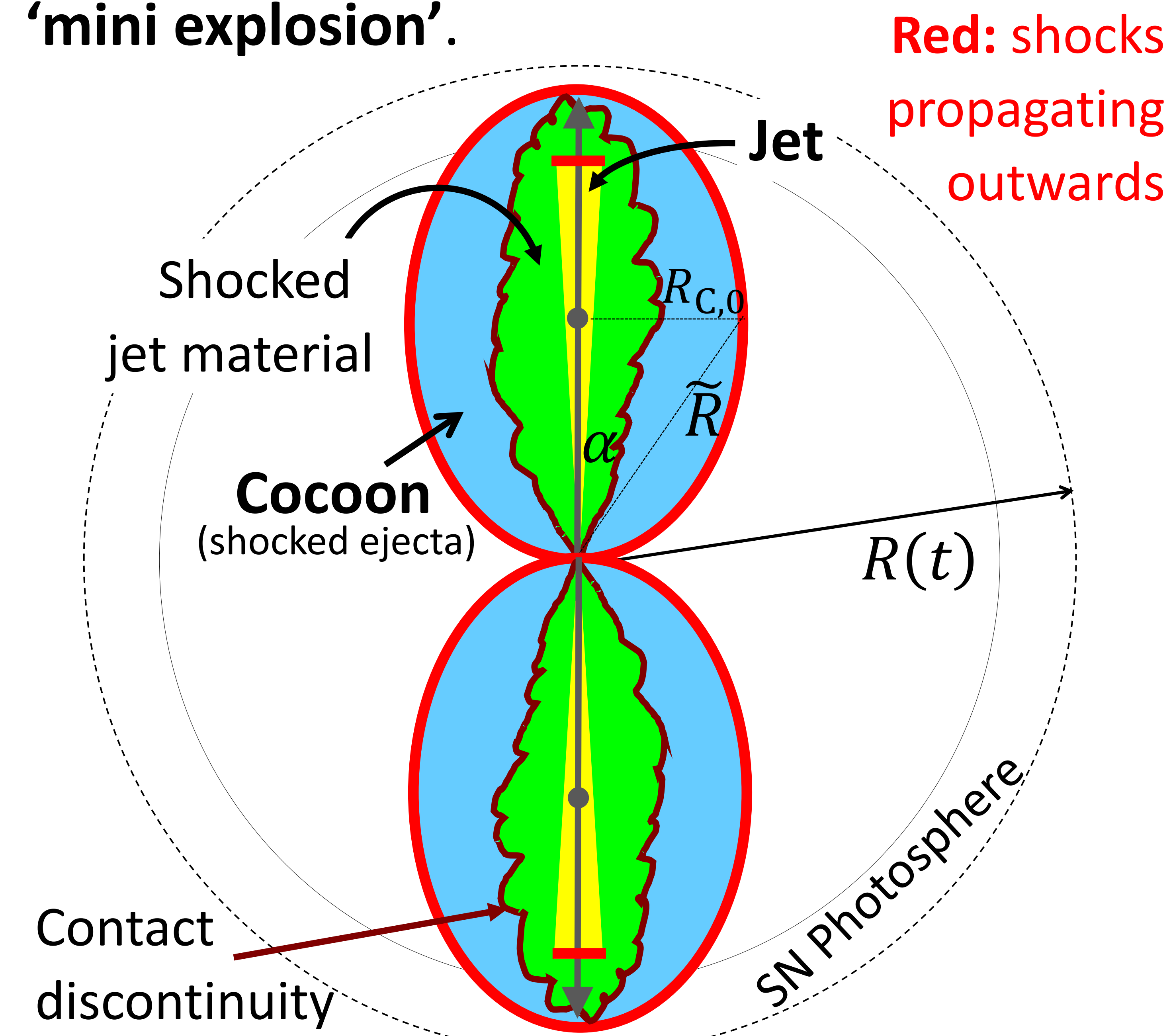
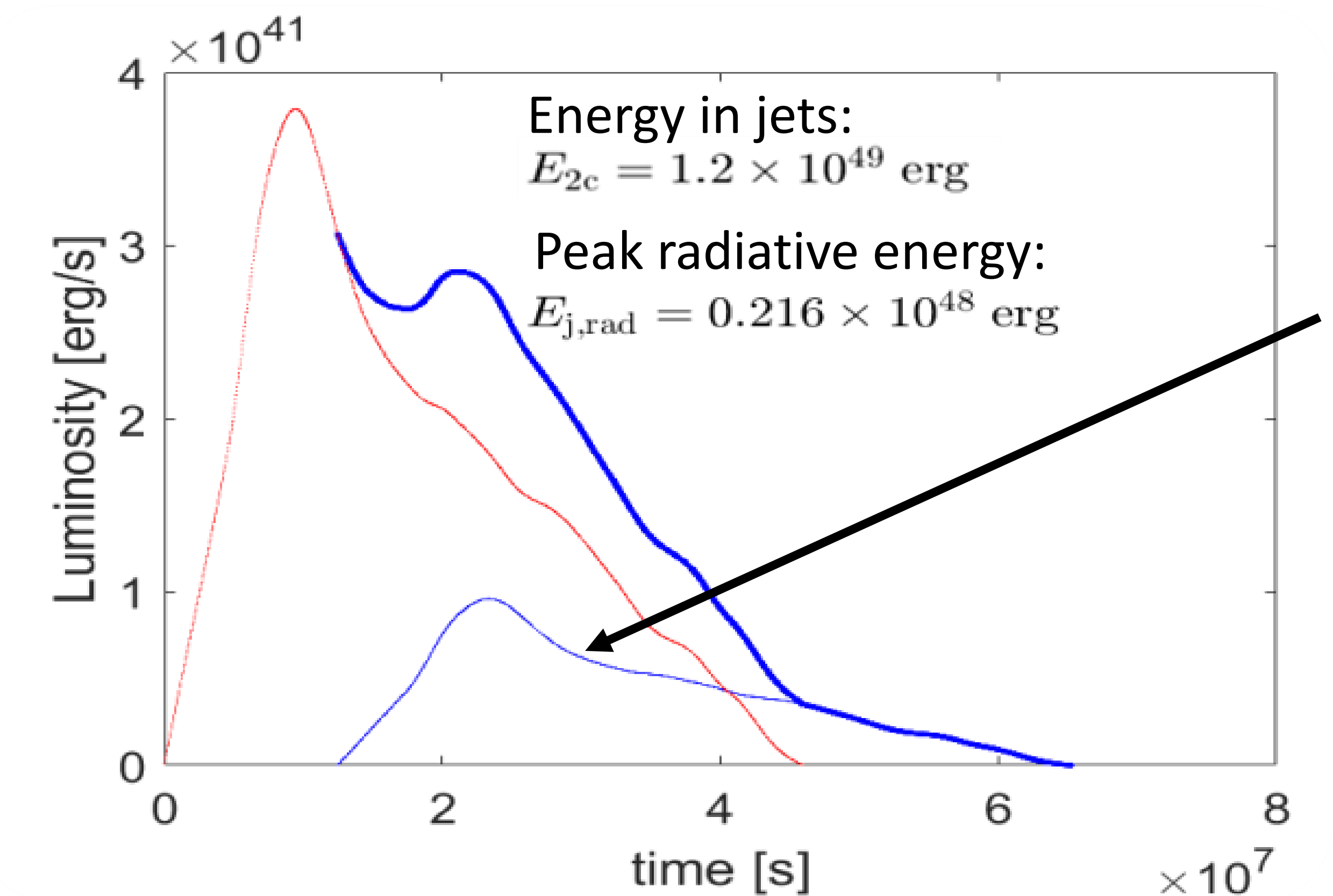
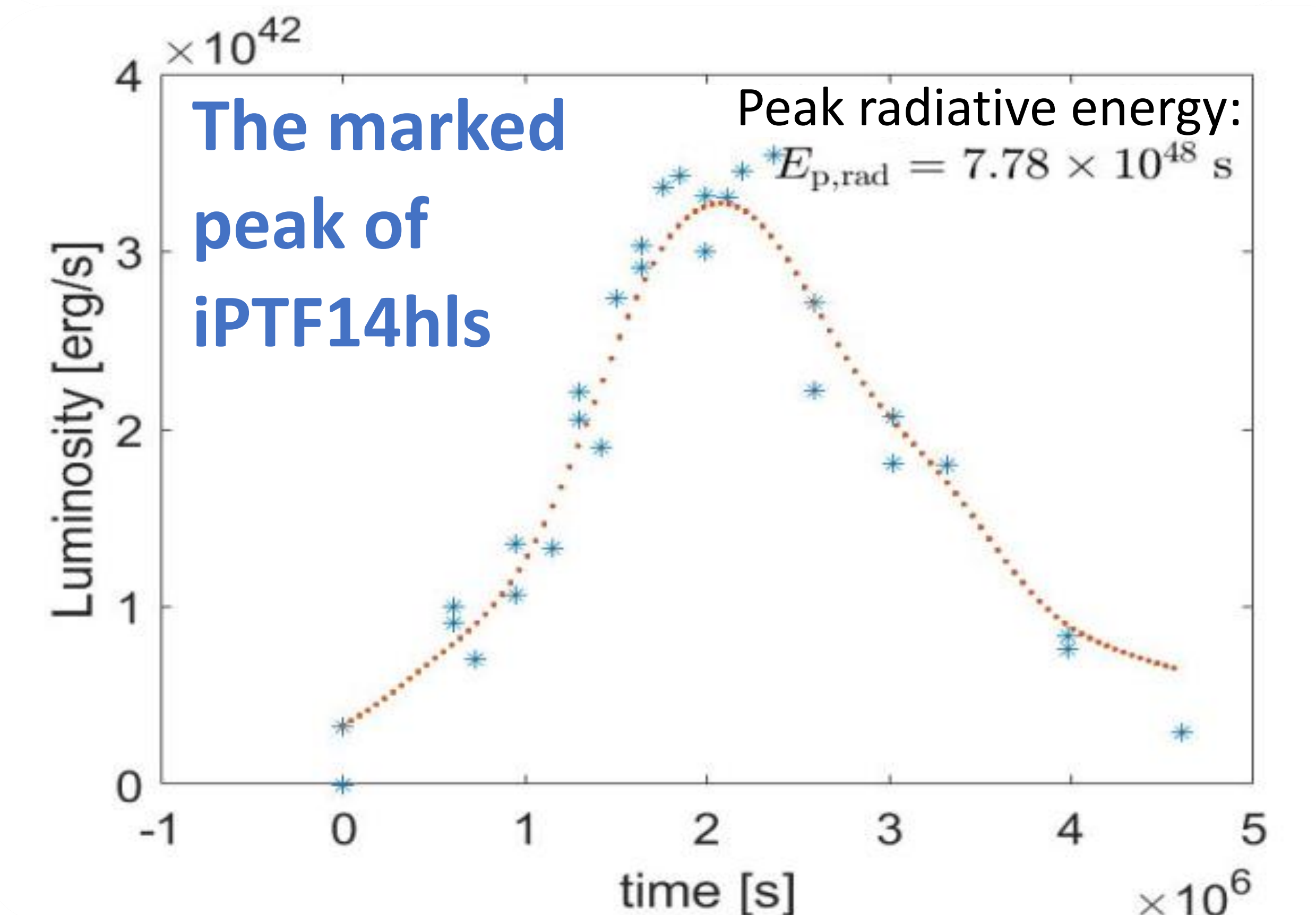


Illustration inspired by Bromberg et al. (2014)

**Results** Jets energy: **0.006** of the supernova. Relative radiative energy between peak and supernova: **0.03** (same as in iPTF14hls).



Peak from our model



See poster by Roni Gofman

**Conclusion: Two opposite late jets with less than 0.01 times the supernova energy can explain this peak of iPTF14hls.**