Searching for Twins of PTF11kx

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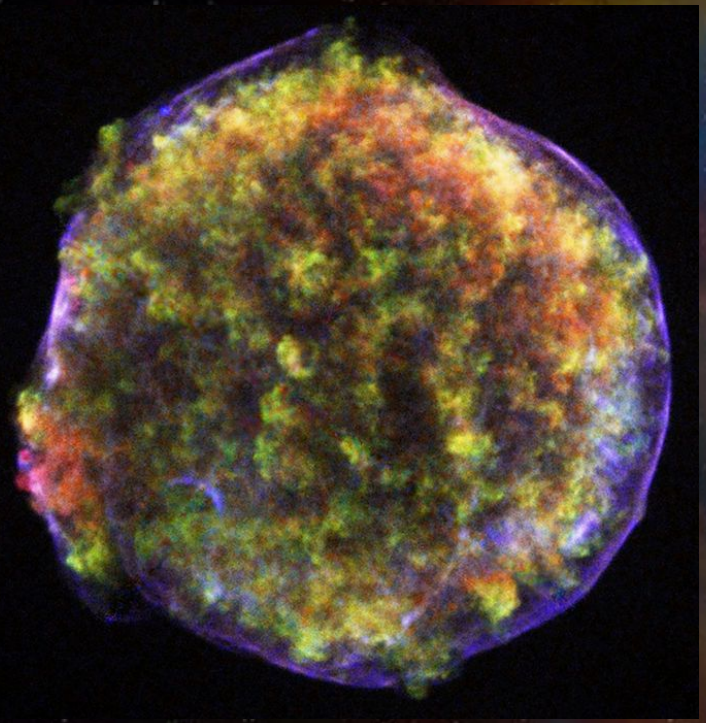
Introduction: The Supernova



IC: *Chandra* Space Telescope

- Supernovae are exploding stars.
- They occurs because the mass became too great to be stable.
- Star-stuff is thrown back into the universe.
- Supernovae can be brighter than an entire galaxy! They can be visible in the night sky for months.
- Because of their light, they can be used as a measuring tool for research.

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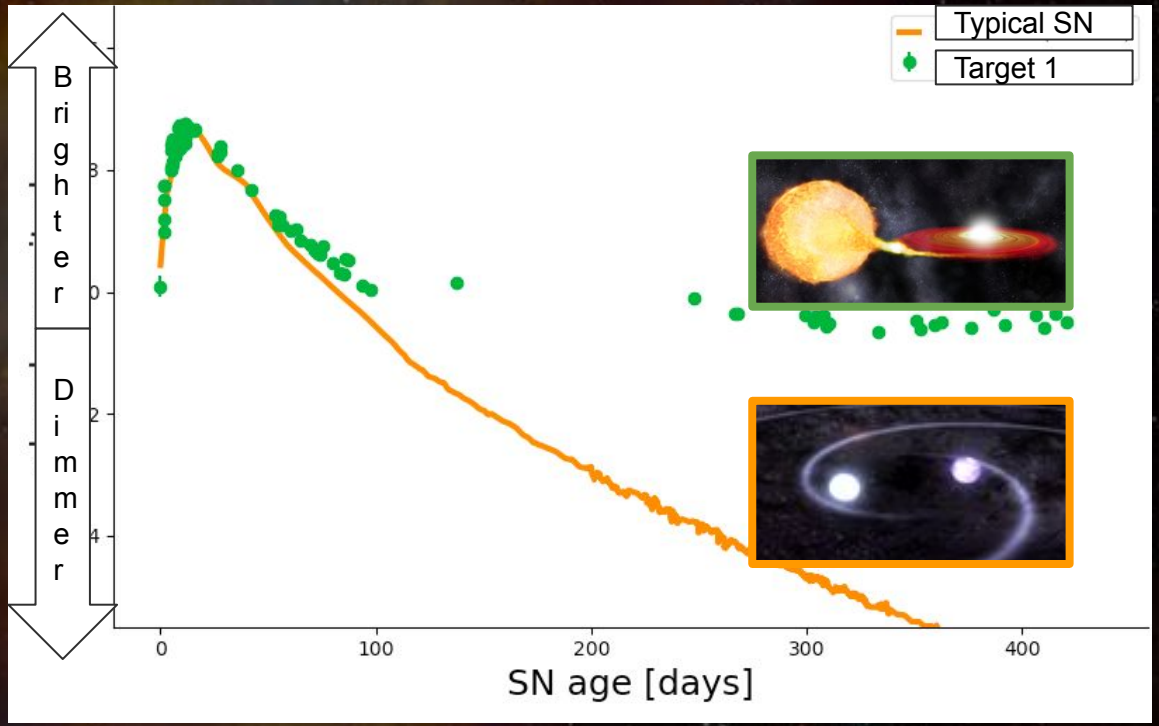
PTF11kx or Target 1

- A supernovae!
- It’s particularly unique because it stays bright for long times, compared to other typical supernovae.
- There is material surrounding Target 1.



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Light curves, light curves, and more light curves

- Used data from the Zwicky Transient Facility (ZTF) to explore a list of 120 Supernovae.
- We compared the supernovae before and after the explosion, taking the difference between the two as a flux value.
- Plot all the fluxes over time (days) to obtain a light curve.

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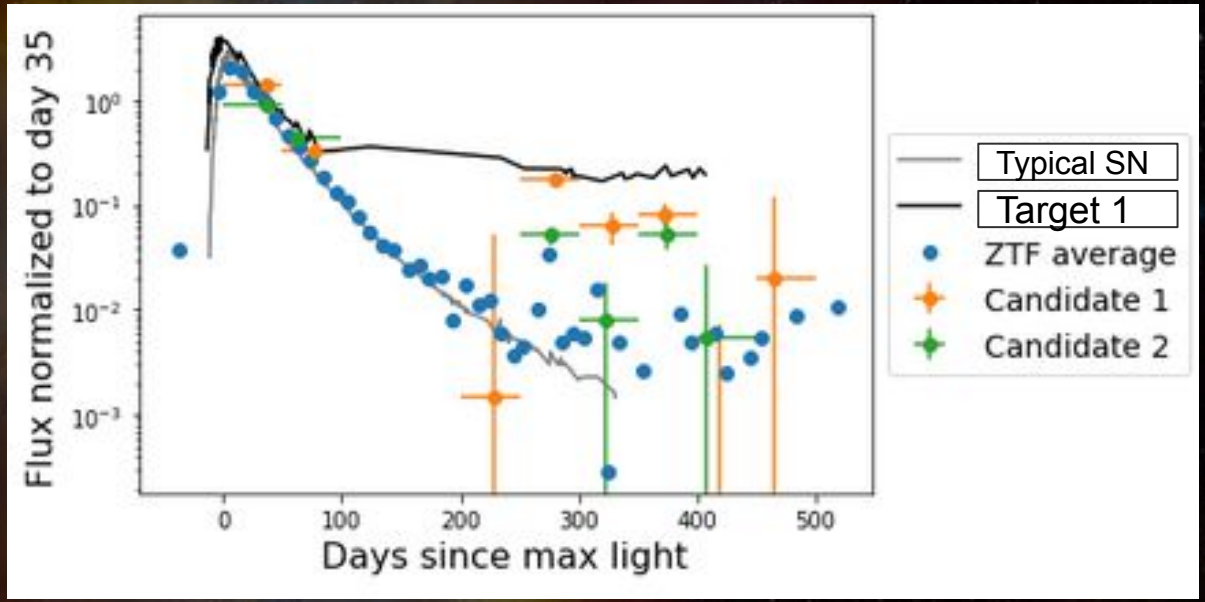
Conclusion

- Of those 120 list, two supernovae are points of interest.
- These two supernovae will guide follow up efforts.



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Conclusion and Future Work

- We were able to find two more supernovae that were similar.
- Further investigation is required to really confirm.
- Obtain light curves for a larger supernovae sample.
- Using other surveys like Legacy Survey of Space and Time (LSST) can widen our search as well.

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PTF11kx is a supernova that remains much brighter than a typical supernova. As supernovae can be used for stellar measurements, these long-lasting supernovae are incredibly important. To look for others, data from the ZTF survey was used to explore a list of 120 supernovae. We compared each supernovae from before explosion to after explosion, specifically how bright it is over time. From the list of 120 supernovae, we found two supernovae that are similar to PTF11kx.

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