**High-Cadence, Early-Time Observations of Core-Collapse Supernovae From the TESS Prime Mission**

Early time light curves of supernovae can allow for constraints on the nature and geometry of progenitors and supernovae explosion energies. This is especially true for core-collapse supernovae, whose first expected signature is the result of the shock created by core collapse reaching the surface of the progenitor. This shock rapidly heats the photosphere and produces a short outburst of high-energy radiation. However, core-collapse supernovae tend to have lower intrinsic luminosities and faster rise times than SNe Ia, making them difficult to observe at early times. Further, the short duration of shock breakout makes it difficult to observe for even the highest cadence ground-based surveys. We propose to use our state-of-the-art All-Sky Automated Survey for Supernovae (ASAS-SN) image subtraction pipeline, which has been optimized for TESS observations, to analyze 20 core-collapse supernovae with peak TESS-band magnitudes ≲18 mag, which occurred over the course of the TESS mission. Due to the large survey area and continuous monitoring, TESS is ideal for observing the full rise and shock breakout signatures of core-collapse supernovae within the TESS field. The light curves of these 20 core-collapse supernovae will be vital to understanding the physics of core-collapse, the nature of supernovae progenitors, and ultimately how supernovae have shaped the elemental makeup of our universe.

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