

A Search for Core-Collapse Supernova Progenitors In *Hubble Space Telescope* Images

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Identifying the massive progenitor stars that give rise to core-collapse supernovae (SNe) is one of the main pursuits of supernova and stellar evolution studies. Using ground-based images of recent, nearby SNe obtained primarily with the Katzman Automatic Imaging Telescope, astrometry from 2MASS, and archival images from the *Hubble Space Telescope*, we have attempted the direct identification of the progenitors of 16 Type II and Type Ib/c SNe. We may have identified the progenitors of the Type II SNe 1999br, 1999ev, and 2001du, the Type Ib SNe 2001B and 2001is, and the Type Ic SN 1999bu, more than doubling the number of known SN progenitors. Additionally, we have recovered at late times SNe 1999dn, 2000C, and 2000ew, although none of these had detectable progenitors on pre-SN images. In fact, for the remaining SNe only limits can be placed on the absolute magnitude and color (when available) of the progenitor. The detected Type II SN progenitors and limits are consistent with red supergiants as progenitor stars, although possibly not as red as we had expected. Our results for the Type Ib/c SNe do not strongly constrain either Wolf-Rayet stars or massive interacting binary systems as progenitors.

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