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The Energetics of Cosmic Explosions: Gamma-Ray Bursts and Type Ibc Supernovae EDO BERGER, Carnegie Observatories — The death of massive stars remains an open chapter in astronomy. Observationally, the problem may be addressed by studying different classes of cosmic explosions and their energy sources. Here we discuss recent results on the energetics of gamma-ray bursts (GRBs) and type Ibc core-collapse supernovae (SNe Ibc). In particular, we show that the energy output of most GRBs is nearly standard, but that the ultra-relativistic output varies considerably. On the other hand SNe Ibc exhibit a wide dispersion in the energy coupled to fast ejecta but none of those observed to date (with the exception of SN1998bw) produced relativistic ejecta. This allows us to place a firm limit of a few percent on the fraction of SNe Ibc that give rise to GRBs.

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