

Workshop on Faint and Fast Transients

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Summary. In the past five years systematic searches, serendipitous discoveries and archival searches have yielded over a dozen transients that are brighter than novæ but fainter than supernovæ. The observed properties of these “gap” transients tend to place them in distinct classes, some being about 100 times brighter than novæ and durations of nearly 100 days (e.g., M85 OT, PTF10fqs), while others (such as SN2002bj and PTF10bhp) nearly reach supernovæ-luminosities but fade in five days. The state of theoretical understanding varies substantially across the class of objects, and is ripe for progress.

The workshop commenced with a brief summary of the observational discoveries and theoretical models of transients in the gap. Most of the workshop was devoted to a round-table discussion of the observed objects, possible theoretical models for them, and ways forward (both observationally and theoretically) for developing a coherent understanding of these particular explosions and their place in stellar evolution.

The round-table session considered in turn (a) calcium-rich Halo transients, (b) Type .Ia explosions, (c) NS-NS and NS-WD binaries, (d) low-velocity transients, and (e) intermediate-luminosity red transients. It then concluded with a general discussion.