Young Stellar Clusters in the ULIRG IRAS 17208-0014

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Abstract. High resolution studies reveal that luminous young stellar clusters and their associations are ubiquitous within 1 kpc of ULIRGs, and could be the precursors to globular clusters. We have undertaken a study of the ages, masses, extinction, and dust properties of the clusters found in the brightest ULIRG in the extended IRAS BGS Sample, IRAS 17208−0014, using it as a unique system in which to study the formation and evolution of clusters in gas-rich mergers. Using NICMOS JHK and WFPC2 I−band images, we have compared the near-IR colors of the clusters with those expected from a Bruzual & Charlot model. There are a few clusters whose colors can be explained by moderate values of extinction $(1 - 3 \text{ mag})$, but others require some contribution from hot $(400 - 1000 \text{ K})$ dust. We derive ages of a few tens of Myr and masses from 10^6 to 10^7 $M_\odot$. These clusters may be supermassive compared to globular clusters, or could be unresolved associations of clusters.
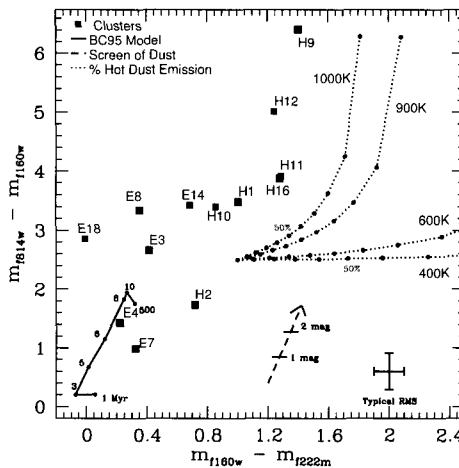

Figure 1. Color-color diagram showing the cluster colors, those which can be ascribed to extinction alone (prefixed by E), and those which may require a contribution from hot dust (prefixed by H). Also shown are curves corresponding to various dust temperatures, a reddening vector, and the Bruzual & Charlot model colors for a stellar population evolving from an instantaneous burst of star formation.