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The Star Cluster Population of the Collisional Ring Galaxy NGC 922

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We present a detailed study of the star cluster population detected in the galaxy NGC922, one of the closest collisional ring galaxies known to date, using HST/WFPC2 UBV_I photometry, population synthesis models, and N-body/SPH simulations. We find that 69% of the clusters are younger than 7Myr, and that most of them are located in the ring or along the bar, consistent with the strong H α emission. The cluster luminosity function slope of 2.1-2.3 for NGC922 is in agreement with those of young clusters in nearby galaxies. Models of the cluster age distribution match the observations best when cluster disruption is considered. We also find clusters with ages (>50Myr) and masses (>10⁵ Msun) that are excellent progenitors for faint fuzzy clusters. The images also show a tidal plume pointing toward the companion. Its stellar age from our analysis is consistent with pre-existing stars that were stripped off during the passage of the companion. Finally, a comparison of the star-forming complexes observed in NGC922 with those of a distant ring galaxy from the GOODS field indicates very similar masses and sizes, suggesting similar origins.

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