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# Searching for Be Stars in the Open Clusters with PTF/iPTF: I. Cluster Sample and Be Star Candidates

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We conducted a search for Be stars in open clusters using Hα imaging photometry of the Palomar Transient Factory Survey, to investigate the connections between Be star phenomena and ages and environments of clusters. With carefully member identification, we discovered 96 Be star candidates in 32 clusters from 104 open clusters. These selected candidates and those known Be stars show a similar range of mid-infrared colors. The clusters with age $7.5 < \log(t(yr))$ 8.5 tend to have more Be star candidates; there is about a 40% occurrence rate within this age bin. More than 50% of the 32 clusters have Be fraction Be/(Be+B-type) < 10%, and the clusters with age $8.0 < \log(t(yr))$ 8.5 have the highest Be fraction. Regarding spatial distribution, Be stars are not centrally concentrated in the clusters and distribute uniformly.

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