FLARE STARS IN EVOLVED CLUSTERS

E.S. Parsamian
Byurakan Astrophysical Observatory
Armenia, USSR

DETERMINATION OF THE AGE OF AGGREGATES: A new method of determination of the ages of aggregates based on flare star observations is proposed. The method is specially useful in the case of young clusters and associations, for which the usual method involving their H-R diagrams encounters difficulties. The method can be used also for particular flare stars.

For the aggregates the following equations were obtained (Parsamian 1976, 1978):

$$\Delta M_u = K(M_u - M_{ou});$$

$$K = 1.31 - \log T;$$

$$K = 1.08 - 0.05\, M_{ou}\ .$$

These equations allow the ages and distances of aggregates to be determined from observational quantities (ΔM_u, K). For the association in NGC 7000 such estimates give $T = 2 \times 10^6$ y, m-M=9 mag. The ages of the flare stars in the solar vicinity are also determined. For calibration purposes we used ages of the aggregates in Orion, Pleiades and Praesepe.

DETERMINATION OF THE FUNCTION OF FLARE FREQUENCY DISTRIBUTION IN THE AGGREGATES: V.A. Ambartsumian's (1978) method for the determination of the flare frequency distribution function was used for the Orion association. It is shown that the flare frequency distribution function for the Orion association has the same form as determined for the Pleiades aggregate, $f(\nu) = Ce^{-\nu S}\nu^{-4/3}$ with different values of C and S.

It is shown that beyond a certain frequency the number of flare stars in the Orion association exceeds that in the Pleiades cluster.

James E. Hesser (ed.), Star Clusters, 249–250.

REFERENCES

Parsamian, E.S.: 1976, *Astrofis.* 12, 235.
Parsamian, E.S.: 1978, in B.A. Balázs (ed.) Star Cluster Symposium, Eötvös University Press, Budapest, p. 119.
Ambartsumian, V.A.: 1978, *Astrofis.* 14, 367.

https://doi.org/10.1017/S0074180900091981 Published online by Cambridge University Press