

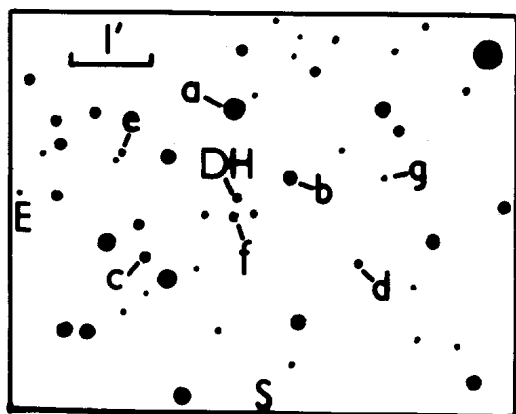
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DH CARINAE

The first known flare star, DH Carinae, was discovered by E. Hertzsprung in 1924 (1), when a flare of $1^{m.8}$ was observed. Further flares of this star have not been observed. The spectral type of the star is undetermined. At the suggestion of A.H. Joy, a direct red plate of the star was taken by M. Bester at the ADH telescope of the Boyden Observatory using 103a-E emulsion and W25A filter, in order to estimate its colour. Identification from Hertzsprung's chart is difficult owing to the presence of a nearby companion which is not indicated by him and which is photographically brighter. The Boysen red plate shows, however, that the more northerly star of the pair is much redder, and undoubtedly this is Hertzsprung's star since all confirmed flare stars are red dwarfs earlier than about KO. Blue and ultraviolet plates were also taken at Boyden and an approximate B and U sequence was transferred to the region of DH Carinae from H. Schmidt and G. Diaz Santanilla's sequences in NGC 3590 and Tr 18 (2). See Fig. 1.



	B	U
a	$13^{m.15}$	$14^{m.85}$
b	14.95	15.55
c	15.05	15.25
d	15.30	15.55
e	15.50	15.60
f	15.55	15.55
g	16.20	16.15
DH	16.00	16.10

The observed redness is in accordance with the colour index ($2.^m7$) from Joy's visual magnitude for the star of 12.2 (3) and the photographic magnitude of 14.9 in the Kukarkin-Parenago Catalogue of Variable Stars. Judging from all the plates the southerly companion (star f) is approximately of type A ($U-B \sim 0.^m0$), whilst DH Carinae itself appears to show a large ultraviolet excess for such a red star ($U-B \sim 0.^m1$). This conforms, however, with observations of several flare stars by E. Mendoza in the Orion I Association (4), and not with those in the solar neighbourhood. It will be noticed that DH Carinae appears one magnitude fainter in the standard B system than the photographic magnitude, and this is probably partly accounted for by the strong ultraviolet excess of the star and the ultraviolet cut-off of the B filter. Accurate multicolour photometry and proper motion studies would be interesting for this star.

Armagh Observatory,
January 4, 1963

A. D. ANDREWS

References

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- 3) A. H. Joy, Stars and Stellar Systems Vol. 6, 667 (Univ. Chicago Press, 1960).
- 4) E. Mendoza, Astroph. Journ. Vol. 143, 1010 (1966).