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ON PERIOD-SPECTRUM RELATION FOR DELTA SCUTI STARS
 AND DWARF CEPHEIDS

To investigate the question on possible differences between Delta Scuti variables and Dwarf Cepheids we show below (Fig.1) the period-mean spectral type (hydrogen lines) diagram for these stars. The data are taken from different sources. Crosses and circled crosses denote Delta Scuti stars in galactic field and in open clusters, respectively (BS 1611, maybe, has $P > 0.2^d$); open circles denote Dwarf Cepheids, for which extremal limits of spectral type variations are designed by vertical lines and their short GCVS-names are given, too (SX Phe, CY Aqr, ZZ Mic, DY Peg, EH Lib, AI Vel, V 703 Sco, AD CMi, RS Gru, DY Her, V 567 Oph, VZ Cnc, and BS Aqr in order of their period lengths). On this diagram only those stars are shown for which two-dimensional MK-types are available. Two stars in NGC 2264 are ignored.

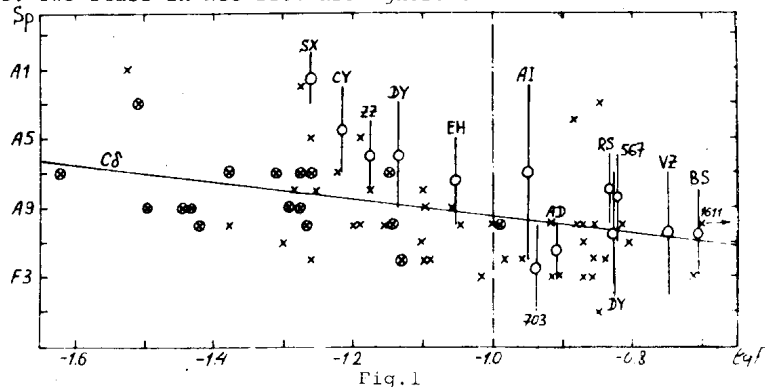


Fig.1

There exists a real difference between Delta Scuti stars (either in galactic field or in clusters) and Dwarf Cepheids with periods shorter than 0.1^d : Dwarf Cepheids have systematically earlier spectral types or lie just on the high border line of Delta

Scuti-region. One can hardly confirm the same for stars with longer periods. A similar picture can be seen on $\beta_1 - P$ diagram, as well (Jones, 1973, Fig. 7, p. 500).

Only the Delta Scuti stars having periods shorter than 0.1^d agree with extrapolated P-Sp relation for Cepheids (straight line on Fig 1). This confirms the idea that Delta Scuti stars (but only with $K < 0.1$) are shortperiodic analogues of Cepheids.

Different "spectral pictures" for Delta Scuti stars and Dwarf Cepheids with different periods are in accordance with their other features (Frolov, 1974), in particular with ΔV versus $\log P$ diagram (Fig. 2) for all ultrashortperiodic A-F stars without any splitting on types of variability (crosses denote photoelectric measurements). Fig. 2 was already discussed earlier by the author (Frolov, 1974).

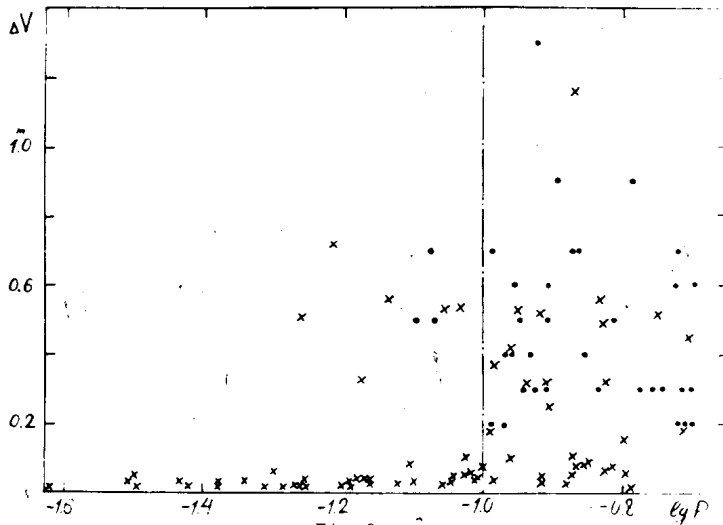


Fig.2.

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Jones, D.H.P., 1973, Astrophys. J. Suppl. 25, 487.