PHOTOMETRIC EVIDENCE OF SMALL "S DOR TYPE ERUPTIONS" IN S DOR TYPE STARS IN OR NEAR MINIMUM

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ABSTRACT. It is shown that a number of S Dor type stars in or near minimum brightness show small S Dor eruptions: $\Delta V_J < 0^m5$

1. The observations

With the aid of VBLUW photometry van Genderen et al. (1990) have shown that the S Dor type stars AG Car and HR Car (in or close to minimum) show small S Dor type eruptions, causing light variations of $\Delta V_J \sim 0^m3$. They are accompanied by small colour vairations: if the brightness goes up the colour becomes redder and vice versa. This is a typical "S Dor effect". The time scale is of the order of 1/2 yr.

UBV data of the three LMC S Dor type objects: R84, R85 and R99, scattered over a time interval of 25 yr, and collected by Stahl et al. (1984) clearly show this S Dor effect.

De Groot's (1989) light curve in V of P Cyg strongly suggests that small intrinsic micro oscillations ($P \sim 18^d$) are superimposed on two waves of long term variations of ~ 4 months: $\Delta V_J \sim 0^m2$. Probably they are small S Dor eruptions also.

2. Conclusions

Obviously these S Dor type stars in or near minimum, are still subject to mass loss eruptions. It is possible that they are identical with the shell ejections detected in the spectra of P Cyg with a time scale of ~ 1/2 yr. (van Gent and Lamers, 1986; Markova, 1986).

References

van Genderen, A.M., Thé, P.S., Heemskerk, M., Heynderickx, D., van Kampen, E., Kraakman, H., Larsen, I., Remijn, L., Wanders, I., van Weeren, N.: 1990, Astron. Astrophys. Suppl. 82, 189
van Gent, R.H., Lamers, H.J.G.L.M.: 1986, Astron. Astrophys. 158, 335
de Groot, M.: 1989, Armagh Obs. Repr. No. 96
Markova, N.: 1986, Astron. Astrophys. 162, L3
Stahl, O., Wolf, B., Leitherer, C., Zickgraf, F.-J., Krautter, J., de Groot, M.: 1984, Astron. Astrophys. 140, 459

K. A. van der Hucht and B. Hidayat (eds.),
Wolf-Rayet Stars and Interrelations with Other Massive Stars in Galaxies, 563.