

## VARIABILITY OF MAGELLANIC CLOUD SUPERGIANTS

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**ABSTRACT.** Statistics on the variability of 127 high-luminosity, intermediate spectral-type supergiants in the Magellanic Clouds are presented.

From a new photoelectric survey of intermediate-type supergiants in the Magellanic Clouds (Grieve and Madore 1986) thirty-eight stars in the LMC and twenty-three stars in the SMC have been judged to be variable by more than 0.05 mag. This sample represents about fifty percent of the stars monitored for variability.

For most stars, the magnitude variation detected fell in the range from 0.05 to about 0.20 mag. There are a few examples of larger variations, but these tend to be special cases (e.g., K supergiants). None of the stars studied show extreme brightness variations (of several magnitudes) as seen in the *Hubble-Sandage* variables.

The distribution of variables (filled circles) and the constant stars (open circles) are compared in Figures 1 and 2 for the LMC and SMC, respectively. Also shown are the positions of the brightest long-period Cepheids (crosses) bounded by the approximate edges of the cepheid instability strip. In general the more luminous supergiants are more likely to be variable than the fainter stars. This statement is quantified in Table 1 and gives support to the findings of Maeder (1980), who concludes that for galactic supergiants the amplitude of variation is an increasing function of luminosity.

### References:

- Grieve, G. R., and Madore, B. F. 1986, *Ap. J. Suppl.*, (in preparation).  
Madore, B. F. 1985, in *I.A.U. Colloquium No. 82, Cepheids: Theory and Observations*, ed. B. F. Madore, (Cambridge: Cambridge University Press), p. 166.  
Maeder, A. 1980, *Astron. Astrophys.*, 90, 311.

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