

## S SGE: A CEPHEID TRIPLE SYSTEM

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Abstract. IUE spectra have been used to investigate the companion of the classical Cepheid S Sge. At the phase of the IUE observations, 45 Dra (F7Ib) is a good match to S Sge, both in  $(B-V)_0$  and from 2200 to 3200 Å. However, from 1700 to 1900 Å, the S Sge spectrum has excess flux, as compared to 45 Dra. The flux remaining after subtracting 45 Dra from S Sge is a good match to an A5V to A7V star. The magnitude difference between the Cepheid and the companion is consistent with the absolute magnitude and colors of an A5V star. This corresponds to a mass of 1.9 solar masses (Popper, 1981, *Ann. Rev. Astr. Ap.*, 18, 115). A spectral type range from A3V to A7V corresponds to an uncertainty in the mass of  $\pm 0.2$  solar masses. However, the mass function from the orbit and an evolutionary mass for the Cepheid require a companion mass of 2.7 solar masses or greater. We infer that the companion is itself a binary.

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