

RED SUPERGIANTS IN NGC 300

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Red supergiant stars that are members of the nearby Sc galaxy NGC 300 have been isolated by spectrophotometry and infrared photometry from a blink comparator survey of red stars in the general field of this highly resolved stellar system. Our spectroscopic criterion is the strength of the CaII triplet near $\lambda 8500$ which is more than twice as strong in red supergiants as in red dwarfs. Red supergiants and dwarf stars also occupy distinct regions in a two-color (J-H) vs (H-K) diagram. Both methods clearly segregate the supergiants which, with visual magnitudes close to 19, must be members of NGC 300. Of the 18 red stars we examined, only 6 are probable members of NGC 300. The other 12 are likely foreground stars belonging to the Galaxy. A principal finding is that, unless special care is taken, contamination by foreground stars can be an important factor when the red stars of an external galaxy are selected only on the basis of their colors in the visual and near infrared spectral region.

Photometry of 4 M supergiants indicates absorption corrections in V averaging 0^m7 . Adopting a true distance modulus of 26^m1 for NGC 300 (Graham, A. J. 89, 1332), a mean absolute visual magnitude of -7^m9 is found for these stars. The IR photometry leads to a mean absolute magnitude at K of -11^m1 and a mean bolometric absolute magnitude of -8^m5 .

Detailed results will be published in a paper now in preparation.