

Daniel Pieńkowski - Characterization of evolved giants in symbiotic binaries

Wednesday, 12 June 2019 09:50 (20 minutes)

Symbiotic stars are binary systems composed of a red giant, and a hot, compact companion, usually white dwarf or neutron star, surrounded by ionized nebula. Despite of their long periods, which reach up to dozens of years they strongly interact via wind or Roche-lobe overflow, which places symbiotic stars among the most variable stars. Moreover, in the past, when the present compact object was going through AGB phase mass flowed in opposite direction which left a mark in the chemical composition of its companion –the present red giant. Study of chemical composition of symbiotic giants are essential to fully understand their evolution as well as many others related objects involving red giant stars at any phase of their life.

To study chemical properties of the symbiotic giants, we collected many low-resolution near infrared spectra for objects from northern and southern hemisphere. By measuring equivalent widths of Na, Ca and CO features in K-band region of spectra and by comparing them with synthetic ones, we tried to find the effective temperatures, metallicities and chemical composition of these giants.

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