

A CoRoT View of the ζ Aur binary HR 6902

POSTER ON-LINE

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Abstract. HR 6902 was the first target of a systematic study by Griffin (1986, *JApA*, 7, 195) of binaries showing composite spectra. It is also a well-studied member of the ζ Aur class. ζ Aur systems are long-period eclipsing binaries that are comprised of an evolved giant primary and a hot dwarf companion. Although those component stars have very different effective temperatures they have similar luminosities in the blue and near-UV regions, and hence display a composite spectrum at those wavelengths. In principle the ζ Aur systems are excellent tests of evolutionary and structural stellar models. In recent years the somewhat fragmentary eclipse photometry of HR 6902 has been out-classed by the high-precision continuous monitoring by the space mission CoRoT. HR 6902 was selected as a primary target of its seismology field, because the possible detection of solar-like pulsations in a giant component of a double-lined eclipsing binary could help to calibrate the scaling relation of giant pulsators. Our poster reported the results of a new analysis based on the CoRoT observations and follow-up spectroscopy with HARPS at the ESO 3.6-m telescope at La Silla.

The unprecedented accuracy of the CoRoT photometry enabled us to:

- improve drastically the accuracy of the binary orbit and stellar parameters (by a factor ~ 10 for the radii)
- extend the test of validity/calibration of the scaling relations to high stellar mass and radius, and put constraints on the evolutionary state (particularly since this binary is certainly free from tidal effects).

Keywords. Binaries: eclipsing, binaries: spectroscopic, stars: oscillations, stars: fundamental parameters

For the full poster, see <http://dx.doi.org/10.1017/S1743921318002910>