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KIC Rumple, the binary system with eclipses and δ Scuti pulsations

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<p>Studying pulsating stars in Eclipsing binaries has the potential to be an exacting test of theoretical stellar models as a result of the large number of constraints physically that can be imposed on individual components in the binary system. In this particular example, Kpl Rumple, the measurement of the large number of frequencies in the star of precisely known mass and radius from binary modelling will enable the identification of pulsation modes. This is vital as a proper physical understanding of δ Scuti pulsations will ensue. It also holds the promise of direct detection of the spatial distribution of pulsations on stellar surfaces.

Asteroseismology is the ultimate goal: the derivation of internal rotational behaviour in stars, accurate determination of stellar aging with associated metallicities and the determination of the amount of convective core overshooting in stellar interiors.

The research involves the analysis of data obtained through membership of the Kepler Asteroseismic Consortium Working Group 9, analysing proprietary data received from the Kepler Space Telescope.

The data are de-trended, and subject to refined sophisticated analysis routines using many software platforms based on sound physical principles in the determination of the binary parameters and pulsating frequencies of the pair.

Anticipated conclusions that might be derived from the conclusion of this project are discussed.

Level (Hons, MSc,
   PhD, other)?

MSc

Consider for a student
   award (Yes / No)?

Yes

Would you like to <br> submit a short paper <br> for the Conference
 Proceedings (Yes / No)?

Yes

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