Asteroseismology of Low Frequency Red Giants: Non-Radial Modes and the Breakdown of the Asymptotic Relation

Compton Doug*[1]

[1]Sydney Institute for Astronomy (SIfA) – 44 Rosehill Street, Redfern, NSW 2016 Australia, Australia

Abstract

As the Kepler time series grew so did the interest in the asteroseismology of low frequency solar-like stellar oscillators. With the complete Kepler time series it is possible to accurately resolve modes for stars near the tip of the Red Giant Branch. The analysis shows that both radial and non-radial modes are well defined in the spectra where they form a clear triple structure pattern. This allows each mode to be classified with an explicit degree and radial order, as low as the fundamental. By comparing observations and stellar models we have confirmed that the frequencies of these oscillating modes fail to follow the well known asymptotic relation for these evolved stars.

*Speaker