

You are welcome to nominate speakers to colloquium@nao.cas.cn. The video and slide of previous colloquia and more information can be found at <http://colloquium.bao.ac.cn/>.

国台学术报告 NAOC COLLOQUIUM

2014年 第22次 / Number 22 2014

Time: Wednesday 2:30PM, May 21 Location: A601 NAOC

Asteroseismology for Galactic Archaeology: bridging two fields

Luca Casagrande (Australian National University)



Dr. Luca Casagrande is currently holding a Stromlo Fellowship at the Research School of Astronomy & Astrophysics of the Australian National University. He earned his PhD at the University of Turku in 2008, and he was previously a postdoc at the Max Planck Institute for Astrophysics (Garching). He works primarily on the determination of stellar parameters for cool stars, with particular applications to stellar physics, asteroseismology and Galactic Archaeology. He is now leading the SAGA survey, which first explores the powerful combination of classical and seismic parameters for Galactic studies.

Abstract

Homogeneous and accurate stellar parameters are vital for a number of purposes in stellar and Galactic astronomy. While different photometric and spectroscopic methods exist to translate stellar observables into physical parameters, each one of those comes with its pros and cons. Photometry provides a relatively cheap -yet powerful- way to gauge into those uncertainties. I briefly review different photometric methods and highlight the importance of correctly translate magnitudes into physical fluxes. Further, when photometric stellar parameters are coupled with asteroseismology, new and interesting twists become possible. I present results from the ongoing SAGA survey (Strömgren for Asteroseismology and Galactic Archaeology), which currently includes photometry for over 20000 stars in the Kepler field, 1000 of which are red giants with seismic information. Coupling Strömgren metallicities with the Infrared Flux Method, and the unique asteroseismic determination of stellar masses and radii, powerful new diagnostics for Galactic studies are obtained. Using this sample I discuss the age and metallicity gradients in the Galactic disc and the impact of our results for understanding some of the processes relevant in its formation.



All are welcome! Tea, coffee, biscuits will be served at 2:15 P.M.