



Polish Academy of Sciences

NICOLAUS COPERNICUS ASTRONOMICAL CENTER

Bartycka 18, 00-716 Warsaw, Poland
tel: +(4822) 651 05 00, +(4822) 841 00 41
fax: +(4822) 841 00 46
email: camk@camk.edu.pl
<http://www.camk.edu.pl/>

Observational Asteroseismology

Prof. Gerald Handler

Nicolaus Copernicus Astronomical Center

A monograph lecture course in the fall term of 2015/2016

Asteroseismology is the study of the interior structure of pulsating stars by using their oscillations as seismic waves. We are currently in a golden age for asteroseismology, in particular thanks to high-precision measurements from space telescopes such as CoRoT and Kepler. We are now in a position to study the interior of stars in unprecedented detail, giving constraints on interior rotation and angular momentum transport, interior mixing processes, chemical composition, opacities, and stellar evolution in general. This can go as far as constraining the age and chemical evolution of galaxies, and by implication, of the Universe.

The present lecture will start with an introduction on variable and in particular pulsating stars, and their "classical" applications, e.g. as distance indicators. This will be followed by explanations of asteroseismic techniques and their utilization, before current results and their implications will be explained. It is encouraged that participants of the course propose additional suitable topics to be discussed. There will be some practical exercises involved, such as grant or telescope proposal writing.

The lectures will be given on Mondays, at 2:00pm in the large lecture hall at the Nicolaus Copernicus Astronomical Center, Bartycka 18, Warsaw.