

## **First Announcement**

### **The RR Lyrae 2017 Conference. Revival of the Classical Pulsators: from Galactic Structure to Stellar Interior Diagnostics**

17-21 September 2017

Venue: Niepołomice Castle, Niepołomice, Poland

[www.rrl2017.pl](http://www.rrl2017.pl)

e-mail: [rrl2017@camk.edu.pl](mailto:rrl2017@camk.edu.pl)

#### **Scientific rationale:**

Classical pulsators, Cepheids and RR Lyrae stars, continue to play a crucial role in astrophysics. They are invaluable tools for studying stellar populations and the history of star formation, for tracing galactic structure and kinematics, for measuring galactic and extragalactic distances and for testing stellar evolution and pulsation theory.

With the advent of ultra-precise space photometry and with data stemming from big ground-based surveys, our knowledge of classical pulsators is now growing at an increasingly fast rate. This progress is also aided by impressive improvements in interferometric techniques and in analysis of pulsators in binary systems. The release of the Gaia astrometric catalogue is the next big step in this process. With recent findings, the classical pulsators turn out to have properties that do not fit the simple classical picture. (Ir)regularity of the lightcurves and presence of additional modes beyond the radial ones, show that the nature of their pulsations is more complex and may provide more diagnostics regarding their inner structure, than previously assumed.

In this meeting we want to focus on these new developments in our understanding of the pulsations of RR Lyrae stars and Cepheids. We want to bring together both observers and theorists, to discuss dynamical properties of classical pulsators (radial double-mode pulsation, Blazhko modulation, period doubling, low-dimensional chaos, non-radial modes), recent improvements in their modeling and observations (including spectroscopy and interferometry), their potential for diagnostics of stellar interiors, as well as their applications in other fields of astrophysics (distance scale, galactic structure, population studies). The main focus of the meeting will be on the RR Lyrae stars, but discussion of important recent results on Cepheids, both classical and Type II, will be essential to provide the bigger picture for our improved understanding of stellar structure and evolution and their cosmological implications.

## Topics of the conference:

- Space photometry of classical pulsators
- Classical pulsators in large scale photometric surveys
- Spectroscopy and interferometry of classical pulsators
- Nonradial modes in Cepheids and RR Lyrae stars
- The Blazhko effect
- Classical pulsators in binary systems
- Period-Luminosity-Color relation
- RR Lyrae stars and Cepheids in stellar systems
- Classical pulsators in the era of Gaia
- Pulsations and evolution
- Numerical modeling

## Scientific Organizing Committee:

|                                     |  |
|-------------------------------------|--|
| <b>Marcio Catelan</b>               | Pontificia Universidad Católica de Chile & Millennium Institute of Astrophysics, Santiago, Chile |
| <b>Wojciech Dziembowski</b>         | Copernicus Astronomical Center, Warsaw, Poland   |
| <b>Nancy Evans</b>                  | Harvard-Smithsonian Center for Astrophysics, Cambridge, USA                                      |
| <b>Johanna Jurcsik</b>              | Konkoly Observatory, Budapest, Hungary   |
| <b>Karen Kinemuchi</b>              | Apache Point Observatory, USA  |
| <b>Katrien Kolenberg</b> , co-chair | University of Antwerp & KU Leuven, Belgium   |
| <b>Paweł Moskalik</b> , co-chair    | Copernicus Astronomical Center, Warsaw, Poland   |
| <b>Nicolas Nardetto</b>             | Université de Nice Sophia-Antipolis, Nice, France  |
| <b>Radosław Smolec</b>              | Copernicus Astronomical Center, Warsaw, Poland   |
| <b>Robert Szabó</b>                 | Konkoly Observatory, Budapest, Hungary   |
| <b>Andrzej Udalski</b>              | Warsaw University Observatory, Warsaw, Poland  |

## Local Organizing Committee:

**Henryka Netzel**  
**Radosław Smolec**, chair  
**Anna Zuchora**

**Registration and abstract submission will open early April, 2017.**

We invite everyone to participate in the conference and discuss recent progress in classical pulsators research.

Kind regards,  
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Paweł Moskalik ([pam@camk.edu.pl](mailto:pam@camk.edu.pl))  
SOC co-chairs