

# BOOK OF ABSTRACTS

## Actual Questions of Ground-based Observational Astronomy



**Mykolaiv, September 26-29, 2016**

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE  
RESEARCH INSTITUTE “MYKOLAIV ASTRONOMICAL OBSERVATORY”

**ACTUAL QUESTIONS OF GROUND-BASED  
OBSERVATIONAL ASTRONOMY**

International Conference

**ABSTRACT BOOK**

September 26-29, 2016,  
Mykolaiv, Ukraine

**Organizers:**

Ministry of Education and Science of Ukraine  
Research Institute “Mykolaiv Astronomical Observatory”  
Ukrainian Astronomical Association

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The Book of Abstracts contains abstracts of presentations to the International Conference “Actual Questions of Ground-based Observational Astronomy” to be held in Mykolaiv, Ukraine, on September 26-29, 2016. Methods and technical means of ground-based observations, IVOA role in modern research and actual problems of ground-based astronomy are presented.

## GENERAL INFORMATION

The International Conference “Actual Questions of Ground-based Observational Astronomy” (MAO195) will be held in Research Institute “Mykolaiv Astronomical Observatory”, Mykolaiv, Ukraine on September 26-29, 2016.

The conference is organized to discuss methods and technical means of ground-based observations, IVOA role in modern research, actual problems of ground-based astronomy as well as history of astronomical research. Working languages are English, Ukrainian and Russian.

### **Main Topics of the Workshop:**

- Methods, technical means and software for ground-based observations and data processing.
- Use of IVOA technologies for solution of modern astronomical problems.
- Results of data processing for ground-based observations.
- History of astronomical research.

### **Information about Participants:**

- General number of registered participants – 48;
- General number of represented organizations – 22;
- Number of submitted papers – 38;
- Number of authors of submitted papers – 84.

These radio telescopes enabled obtaining of a great number of top priority astrophysical results recognized by the international radio astronomical community. In the recent years, this is stimulated by the integrated research program of NAS of Ukraine "Modernization of the UTR-2 radio telescope and prospective development of decameter radio astronomy in Ukraine", which besides modernization of existing instruments take place a creation of additional new-generation radio telescope GURT.

In 2013-2015, a new software and hardware controlling complexes developed and installed on the UTR-2 and GURT radio telescopes. They designed for planning observations of discrete cosmic radio sources and areas of the celestial sphere, for programming control of directional patterns of radio telescopes, for control and monitoring of other systems.

Automation of observations made on the basis of distributed means, operating in the local network of the observatory. Local computer network also received further development. We created Grid cluster to store large volumes of radio astronomy data. The structure of automation and their basic functionality are shown in the report. It significantly automates the process of radio astronomy observations.

## **STAGES OF DEVELOPMENT OF THE MYKOLAIV ASTRONOMICAL OBSERVATORY**

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Mykolaiv Astronomical Observatory, one of the oldest observatories in the south-east of Europe, was founded in 1821 by Admiral Greig. Our observatory passed three main stages in her history: 1821 - 1912, Naval Observatory (Russian Empire); 1913 - 1991, Nikolaev branch of Pulkovo Observatory (Russian Empire and USSR); 1992 - Present, Mykolaiv Astronomical Observatory (Ukraine). The observatory received the status of Research Institute in 2002. On March 2007, MAO was included into the tentative list of UNESCO of the World Heritage Sites from Ukraine under the number 5116. 5 full doctors and 28 PhD were prepared in the observatory since 1913. Mykolaiv astronomers used 16 telescopes for observations of the celestial bodies, one of which was inscribed in a list of scientific objects that represents the National Heritage of Ukraine.