

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.

RESULTS OF MODERN PROCESSING OF THE PHOTOGRAPHIC OBSERVATION OF URANUS AND NEPTUNE FROM ARCHIVES OF UKRVO

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We continue work, started in 2014, to use accumulated resources of UkrVO digital archive, containing images of Uranus and Neptune. Main part of used archives are from Research Institute - Nikolaev Astronomical Observatory (NAO) and Main Astronomical Observatory of National Academy of Science (MAO). Also some plates from Ulugh Beg Astronomical Institute of the Uzbek Academy of Sciences (AI UAS) were used. Numbers of plates containing images of Uranus and Neptune are, respectively, the following: 220 and 218 plates in NAO, 64 and 35 plates in MAO, 15 and 3 plates in AI UAS. Most of plates have 3 exposures per plate. The epoch of observation for most plates is 1960 to 1998.

All plates were scanned with the resolution not less than 1200 dpi. Each plate of NAO was scanned 5 to 6 times. Plates containing images of Uranus and Neptune were, respectively, scanned more than 1200 and 1100 times in NAO. All plates of other observatories were scanned only once. Raw image processing was conducted for all scans obtained in observatories.

Star identification for scans was conducted for more than 2300 scans in NAO and for 75 scans in MAO and 18 scans in AI UAS. Coordinates of all objects were obtained. Positional accuracy of reference stars has value of 0.04"-0.20". Standart deviation of planet's position is in ranges 0.10-0.12 pixel in main part of archive, that corresponds depending on the scale from 0."08 to 0."26. The comparison of the new topocentric positions of planets with Horizons ephemeris was made for calculation (O - C) residuals and their RMS.