BOOK OF ABSTRACTS

Actual Questions of Ground-based Observational Astronomy

MAO - 195

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.

OBSERVATIONS OF CEPHEIDS WITH SALT FOR THE ANALYSIS OF METALLICITY GRADIENT AND LOCAL CHEMICAL COMPOSITION HETEROGENEITY IN THE MILKY WAY DISK

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The problem of radial abundance gradients in spiral galaxies is central in the field of galaxies evolution. For the Galaxy, abundance gradients as observational characteristics of the galactic disk are among the most important input parameters in any theory of galactic chemical evolution. In recent years, great progress has been made on the distribution of abundances across the disk of the Galaxy, but many questions concerning the present-day abundance distribution in the galactic disk, its spatial properties, and evolution with time, remain to be answered.

We started to use the High Resolution Spectrograph (HRS) of the Southern African Large Telescope (SALT) to obtain the high-resolution spectroscopic observations of a sample of Cepheids which we are going to use:

(1) To derive the shape of the abundance gradients in the inner parts of the Milky Way,

(2) To strongly constraint the galactic chemo-dynamical models,

(3) To extract the possible objects belonging to the Population II. We will present first observations, data reduction procedure and results.

POLARIS: HISTORY OF PULSATIONAL ACTIVITY SINCE DISCOVERY

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We have analyzed the pulsation activity of small-amplitude Cepheid Alpha UMi (Polaris) during the period of its radial velocity

observations. As know during XX century Polaris demonstrated the decreasing of the radial velocity amplitude to the minima at 80th . After that amplitude have increased.

Our observations during September-December 2015 (21 spectra) obtained by 81cm telescope TCO with Spectrograph show the radial velocity amplitude comes to 4.16 km/, and it pproximately twice the one found in 2007, and the pulsation period increase up to 8.6 min.

LOW-FREQUENCY RADIO RECOMBINATION LINES: OBSERVATIONS AND DATA PROCESSING

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Investigations of radio recombination lines at extremely low frequencies provide new opportunities for the interstellar medium studying. However, the low intensities of the lines and high level of interferences makes such investigations very difficult and impose high requirements to both the equipment and observational methods, and to the data processing procedure. In this report observations of radio recombination lines, which are carried out with radio telescope UTR-2 using a 4096-channel autocorelometer and 16-bit digital spectral analyzer are described. The correct processing and interpretation of observational results provide new information about the basic parameters of the interstellar medium – electron temperature, density, element abundances, distribution of ionized gas. Radio recombination lines provide new opportunities non only for astrophysics but also for physical science as a whole.

KINEMATIC PARAMETERS OF THE GALAXY USING THE XPMC CATALOGUE DATA

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We present our results of kinematic investigations of our Galaxy using the XPMc catalogue data. XPMc is the corrected version of the high-density XPM catalogue covering the whole celestial sphere in the range of magnitudes from 10 to 20.

We derived kinematic parameters of the Galaxy using two different methods.