

Национална конференција
астронома Србије

National Conference of
Astronomers of Serbia

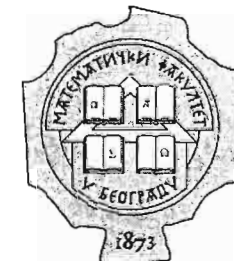
XVI NATIONAL CONFERENCE OF ASTRONOMERS OF SERBIA
Belgrade, 10-12 October 2011

BOOK OF ABSTRACTS

Edited by Milan Stojanović



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Talk

ASTROMETRIC POSITIONS OF ICRF2 RADIO SOURCES WITH DIFFERENT REFERENCE CATALOGUES

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The fundamental celestial reference frame (the International Celestial Reference Frame - ICRF) was adopted by the IAU in 1997, with its original list of radio objects and two extensions (ICRF-ext1 and ICRF-ext2). All in all, there were 717 sources: 212 defining ones, 109 new ones, 294 candidate ones, and 102 additional sources. The second realization of the ICRF (the ICRF2 with 3414 compact radio astronomical sources) was presented at the 27th General Assembly of IAU in 2009 by using nearly 30 years of Very Long Baseline Interferometry (VLBI) observations. We made the observations of some extragalactic radio sources (from the ICRF2 list) by using the 2m RCC telescope (with the focal length of 16m) of Rozhen National Astronomical Observatory (Bulgarian Academy of Sciences). About 30 frames were observed by using CCD camera VersArray 1300B (1340x1300 pixels, the pixel size is 20x20 micrometers, one pixel is 0.258 arcsec) at the end of March 2011. The goal is to make comparison between the measured optical positions and the radio positions of sources from the current ICRF2 list. Some results are presented here.

Talk

SOME HEURISTICS IN DETERMINATION OF PROXIMITIES OF CONFOCAL ELLIPTICAL ORBITS

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We describe several methods for determination of proximities of confocal elliptical orbits and their application on analysis of proximities between orbits in asteroid belt. Also, we apply these methods on simulated pairs of orbits in order to emphasize advantages and disadvantages of each method and to determine the magnitude and type of influence of different orbital elements on the distant function and number of proximities between these orbits.

Talk

FAMILIES AMONG HIGH-INCLINATION ASTEROIDS

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We present a new classification of families identified among the population of high-inclination asteroids. We computed synthetic proper elements for a sample of 18,560 numbered and multi-opposition objects having sine of proper inclination greater than 0.295. We considered three zones at different heliocentric distances (inner, intermediate and outer region) and used the standard approach based on the Hierarchical Clustering Method (HCM) to identify families in each zone. In doing so, we used slightly different approach with respect to previously published methodologies, to achieve a more reliable and robust classification. We also used available SDSS color data to improve membership and identify likely family interlopers. We found a total of 38 families, as well as a significant number of clumps and clusters deserving further investigation.

Talk

REALISATION OF ETRF2000 AS A NEW TERRESTRIAL REFERENCE FRAME IN REPUBLIC OF SERBIA

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The International Earth Rotation and Reference Systems Service (IERS) is a joint service of the International Association of Geodesy (IAG) and the International Astronomical Union (IAU), which provides the scientific community with the means for computing the transformation from the International Celestial Reference System (ICRS) to the International Terrestrial Reference System (ITRS). It further maintains the realization of these systems by appropriate coordinate sets called "frames". The densification of terrestrial frame usually serves as official frame for positioning and navigation tasks within the territory of particular country. One of these densifications was recently performed in order to establish new reference frame for Republic of Serbia. The paper describes related activities resulting in ETRF2000 as a new Serbian terrestrial reference frame.