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# Extension and Connection of Reference Frames using CCD ground-based Technique



## ***ABSTRACTS***

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than in the observatories on the small heights where the stars in the winter period of the year under the sun are practically invisible.

2. The high transparency of the air and the enough amount of the supporting stars allowed to diminish the mistakes of the observations in 2 times in the comparence with the moderate heights.
3. During the night time one can see here the stars of 2 magnitude weaker than in Mykolaiv, which gives a possibility to penetrate the area of the weaker stars.

## ✓ **KARL KNORRE - FIRST ASTRONOM OF THE NIKOLAEV OBSERVATORY**

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Karl Friedrich Knorre was born 28<sup>th</sup> March 1801 in family of the professor of astronomy of Dorpat university Ernst Knorre. During education in the Dorpat university he got acquaintance with the future director of Pulkovo observatory Wilhelm Struve. According passion of K. Knorre for astronomy W. Struve recommended him to the director position of planned naval observatory in Nikolaev. From the foundation of Nikolaev naval and later astronomical observatory in 1821 K. Knorre was a first director. He made star position observations with the meridian circle, worked as a teacher of astronomy for sea navigators, compiled the fifth page of star map of the Berlin Academy of sciences and headed by all hydrographic determinations on the sea of Asov and Black sea. After 50 years K. Knorre retired 1871 from the Directorship of the Nikolaev observatory and moved to Berlin. Nikolaev astronomical observatory arranges the international scientific conference devoted to the 180 anniversary of NAO and 200's birthday of Karl Friedrich Knorre in 2001.

## **THE NEW PROPER MOTIONS OF THE BRIGHT STARS FROM COMBINATION DATA GROUND-BASED CATALOGUES AND DATA HIPPARCOS CATALOGUE.**

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The possibility of determining new proper motions of the bright stars from combination ground-based catalogues (GC, NewBS) and HIPPARCOS catalogue are analyses. The new proper motions for 4803 single-stars candidates are received. The mean square errors of the new proper motions are  $\pm 0.62$  mas/year at the average, if they were received from combination GC and HIPPARCOS catalogues, and  $\pm 0.49$  mas/year, if proper motions were received from combination NewBS and HIPPARCOS catalogues. The estimation of new proper motions accuracy from the external convergence with FK6 catalogue (759 common stars) at epoch 2000.0 is  $\pm 0.51$  mas/year.

## **THE FIRST RESULTS OF WORKING UP THE PULKOVO PHOTOGRAPHIC PLATES WITH GALAXIES WITH A VIEW TO OBTAIN COORDINATES OF THE FAINT STARS IN THE ICRS SYSTEM.**

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The Pul-3 catalogue of positions and proper motions is creating at Pulkovo observatory. The x,y data from photographic plates of the Deutsch's plan has been used as observational material. There are 59600 stars, mainly 11-16.5 magnitude, in the declination zone from  $+90$  degree to  $-5$  degree. The Tycho-2 catalogue has been used as reference catalogue. The first epoch of the photographic plates was obtained in fifties years, the second epoch one was obtained in the seventies years. The coma equation has been determined. The magnitude equation and color equation have been analyzed for different zones of declination. At present the equatorial coordinates of 6722 stars from 21 plates along main meridional section of Galaxy are obtained. The internal positional accuracy is  $\pm 0.08$  arcsec. The accuracy from the external convergence with Tycho-2 catalogue at epoch pulkovo plates is  $\pm 0.25$  arcsec. The coordinates and new proper motions will be obtain for 59600 stars.