

## THE LINKAGE BETWEEN RADIO AND OPTICAL COORDINATE SYSTEMS: PROGRAM CONFOR

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ABSTRACT. The present status and prospects of program CONFOR—Connection of Frames in Optic and Radio, are described. It is supposed that positions of extragalactic objects and intermediate stars in 200 areas will be obtained in FK5 system.

Program CONFOR - Connection of Frames in Optic and Radio intends for the link of optical counterparts of compact extragalactic radio sources with fundamental coordinate system. It was described [1] at IAU Symp. No 141 'Inertial coordinate system on the sky' at 1989 in Leningrad. It is planned that optical coordinates of about 200 radio sources will be determined in FK5. The radio sources are extracted from the list of Argue et al. [2], which considered now as a basis for construction of radio coordinate system.

One part of the program is a determination of reference stars coordinates in neighborhoods of radio sources by meridian observations. This part is considered in more detail in the paper by Tel'njuk-Adamchuk et al., presented to this Colloquium. Up to date meridian observations are carried out for 1600 stars, about two thirds specified in the program. The observatories of State Kiev University, State Odessa University, State Kazan University and also observatories in Belgrade, Bucharest and Bordo take part in this observations.

According to program CONFOR it is necessary to determine the coordinates of intermediate reference stars of 12 - 14 stellar magnitude for areas around radio sources, which is faint in optics. For a few dozen sources, fainter than 19 stellar magnitude the secondary systems of intermediate reference stars of 16 - 18 stellar magnitude are introduced. For this purpose the photographic observations are carrying out at observatories in the Abastumani (R. Ya. Inasaridze) and Kitab (L. I. Bashtova) with Zeiss - 400 astrographs. The photographic observations of the intermediate stars also are carrying out in Astronomical observatory of State Kiev University with 20 - cm astrograph (S. V. Pasechnick). Up to date it is obtained the plates for more than 170 areas. The measurements of images and data processing are executing.

Photographic observations of compact extragalactic radio sources are performing by means of 1-m RCC telescope of Institute of Astrophysics of Tajik AS ( B. N. Irkaev) and Iautenburg Schmidt telescope of Central Institute of Astrophysics (W. R. Dick). Astrometric investigations of these instruments, with mostly used for astrophysics observations have been fulfilled. It was shown [3] that accuracy of obtained positions is satisfactory for the task of the program namely for 1 - m RCC VMS is 0."04 and for Schmidt Telescope better then 0."15. For each area two or more plates are taken. At present it is obtained more than 270 plates for 100 objects.

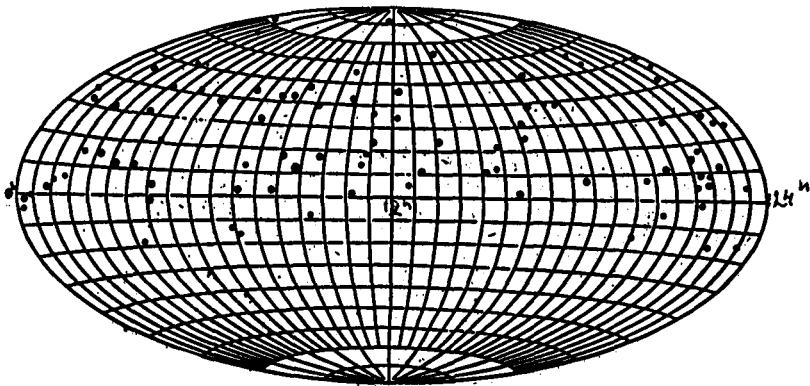


Fig. 1

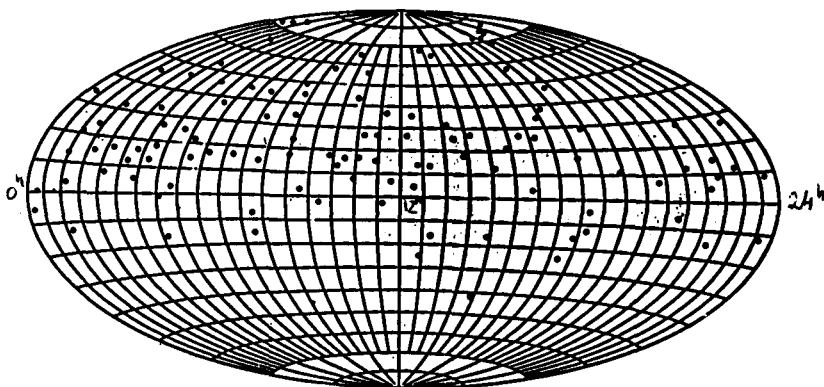


Fig. 2

Distribution of obtained plates with intermediate reference stars in celestial sphere is presented at Fig. 1, and with extragalactic objects at Fig. 2.

The program CONFOR also is carrying out in Main Astronomical observatory of Ukrainian Academy of Sciences and in State Sternberg Astronomical Institute.

The main results of CONFOR is supposed to be the catalogues of positions of extragalactic objects in FK5 - system and coordinates of intermediate reference stars. It is supposed to determine the systematic differences between radio and optical coordinate systems and their relative orientation. We are intend to use the methods developed in previous works [4] specially for this program. These results of the program CONFOR are expected to the end of 1991 year.

#### References

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