

Chile in 1965–1966 and the differential catalogue—compiled on the basis of observations of 507 latitude stars in the FK4 system at Pulkovo in 1977–80. Since 1987 PVC has been engaged in absolute observations of 2050 FK5 stars, including 600 stars with a long observational history.

During 30 years the PVC was considerably modernized. The circle reading photographic system was replaced by the photoelectric one using automatic circle reading registration on punch-tape, the instrument solidity was improved, its deformations due to temperature were compensated.

We also plan to replace the bubble level with an electronic one and to replace the teletype with a personal computer.

The intensive investigations of the system of PVC permit to discover the existence of significant chromatic refraction.

The latest researches are considered in detail: the bubble and electronic levels, the scale, flexure, the circle reading system and the instrument system stability depending on time and other parameters.

It is possible to observe stars up to 10^m with PVC at the rate of 1 star every 3 minutes. The random error of one PVC observation depending on the zenith distance is

$$\epsilon(1) = \pm 0.18'' \sec(Z)^{0.9}.$$

SLOW IMAGE MOVEMENT

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Two years of observations with the Bordeaux fully automatic transit circle, comprising 36 573 transits of 4956 stars, are analysed to characterize possible slow components of image movement. It is shown that the autocorrelation function of the residuals in both coordinates depends only weakly on the declination separation and may be considered as a function of the time lag only. The data is well fitted by a model with two spectral components: a low frequency power law and white noise. The resulting power spectra are $S(\nu) = 20 \times 10^{-6} \nu^{-1.37} + 1.3$, for the right ascension residuals, and $S\nu = 89 \times 10^{-6} \nu^{-1.37} + 2.0$, for the declination residuals, where the spectra are expressed in $\text{arcsec}^2 \text{Hz}^{-1}$ and the frequency in Hz.

The spectra agree well with previous results, particularly in the low frequency range. The declination residuals display a much larger slow motion amplitude than the right ascension residuals. This fact is interpreted in terms of anomalous refraction inside the dome, resulting from the narrow slit along the meridian.

It is shown that a significant fraction of the low frequency spectra can be removed by numerical

filtering. Such a process is limited by the errors in the adopted stars positions but the availability of the virtually error free HIPPARCOS data in the near future will allow efficient filtering of the spectrum below 0.001 Hz.

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CATALOGO PRELIMINAR DE RADIO-ESTRELLAS. I. J2000.0

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Se presentan las posiciones en ascensión recta y declinación de 112 radio-estrellas, observadas durante el año 1987 con el círculo meridiano Repsold de 190 mm, instalado en el Observatorio Astronómico "Félix Aguilar", San Juan, Argentina.

OPTICAL ASTROMETRY OF COMPACT EXTRAGALACTIC RADIOSOURCES

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Optical positions, relative to either the Perth70 or AGK3R catalogues, have been obtained for the optical counterparts of 29 extragalactic radio sources south of $\delta \sim +12^\circ$. Most of these sources have been selected by IAU Commission 24 to be used as benchmark objects for the establishment of a high-precision radio/optical reference frame. Precision levels better than $0.2''$ in both coordinates were achieved. Comparisons with independent optical surveys and with the radio positions available for these sources are presented. The positions are currently being re-determined relative to the newly available International Reference System (IRS) and, since most of the IRS stars are targets of the HIPPARCOS satellite, our optical positions could be eventually linked to the HIPPARCOS frame.

This contribution is one of the results of a decade-old program to determine homogeneous optical data of compact extragalactic radiosources and galactic radiostars, being carried out with the Maksutov Astrograph at the Estación Astronómica de Cerro El Roble. New observations are being carried out and will be published in a near future.