The Tarija-Pulkovo Astrographic Catalogue of the Southern Sky: First
Results and Perspectives

N.F. Bystrov, D.D. Polozhentsev, Kh.I. Potter, L.I. Yagudin
(Pulkovo, USSR), J.A. Zelaya, R.F. Zalles (Tarija, Bolivia)

A project of a new photographic catalogue of southern stars was
proposed in 1977 by Polozhentsev and Potter (1978). The observations
for this catalogue were begun in 1982 with an astrograph (field 5°x 5°)
placed at the Bolivian-Soviet observatory near Tarija, Bolivia. The
astrograph has an aperture and focal length of 23 and 230 cm,
respectively. A total of 6420 plates must be photographed to realize
the fourfold coverage of the Southern Hemisphere with a 2^{O} overlap in
both coordinates and of these 6405 plates have been taken as of January
1, 1987. V.V. Avramchuk, S.P. Pulyaev, Kh.I. Potter (USSR) and R.F.
Zalle, V. Yamaguchi, and E. Espinoza took part in the observations.

The "Ascorecord" semiautomatic measuring machine is used for
measuring the rectilinear coordinates of stars on astronegatives. All
reductions of the measurements are carried out at the Pulkovo
Observatory with an ES-1033 computer. A method involving eight plate
constants is used. The preliminary Pulkovo SRS catalogue is used as
the reference.

In 1985 part of the data had been used for a compilation of a
preliminary astrographic catalogue of 205827 stars. Of these stars,
66% were observed once, 8% observed twice, 7% have 3 observations, 19%
have 4 observations and 1% have 5 observations. The standard deviation
of one observation is given in the table as a function of declination.

TABLE 1

Standard deviation of one observation of a star

Dec. Zone		Std. Dev.
0°	-20°	$\pm$0.31"
-20	-40	0.34
-40	-60	0.27
-60	-80	0.28
-80	-90	0.36
mean		0.29"

The mean standard deviation of a star position in the preliminary catalogue is $\pm 0\overset{''}{.}25$ for the mean epoch of observations, 1984.0.

At present the photographic catalogue of the Southern Sky is in progress. The final version is planned to be complete by 1989 to honor the 150th anniversary of the Pulkovo Observatory. The expected mean error is about $\pm 0\overset{''}{.}14$.

REFERENCE:

Polozhentsev, D.D., and Potter, Kh.I. (1978) IAU Colloquium No. 48 "Modern Astromety" ed. F.V. Prochazka and R.H. Tucker, Vienna Observatory, p. 523.