

CCD PARALLAXES FOR FAINT SOUTHERN HIGH PROPER MOTION STARS

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ABSTRACT. In April 1985, we started a program to measure trigonometric parallaxes for faint southern high proper motion stars, using a CCD at the Cassegrain focus of the Cerro Tololo Interamerican Observatory (CTIO) 1.5-m telescope. The program stars ($m_r > 16$; $\mu \geq 1$ arcsec/year) were selected from the LHS Catalogue and the University of Chile proper motion program.

The X and Y positions of the stellar image centroids were obtained using the algorithms of DAOPHOT program packages. The precision of the measurement of one stellar image is about 6 milliarcseconds (0.02 pix). For stars with $16 < m_r < 19.5$ a precision of 2 milliarcseconds in the parallax determination can be obtained in a one year period. Trigonometric parallaxes for some stars common to other parallax programs are given, showing an agreement with those results within the quoted mean errors.

Several technical aspects of the present program are also discussed.

Discussion

VAN ALTENA: Is there a difference between the short term repeatability and the long term precision of the CCD observations?

ANGUITA: No, we have found no significant differences in short term and long term precision of our observations. I can say this, since we have studied our CCD results very carefully in relation to these "could-be" differences because during the four years of this ongoing project we have used three different CCD chips from RCA.

SHAKHT: It is known that the proper motions of VB8 and VB10 might have perturbations due to suspected invisible companions. Could you say something about these perturbations?

ANGUITA: The time-bases of our VB8 and VB10 CCD observations are not large enough to say anything reliable concerning perturbations due to invisible companions. In the future—some years from now—certainly we will be able to say if there are or are not such perturbations. If I recall correctly, the perturbation period is about 5 years for VB10 and a little longer for VB8.

CHEREPASHCHUK: What value of seeing do you have during your observations?

ANGUITA: Better than 1.6 arcsec at the 50% intensity level.