Eighth NDAC Report from Lund Observatory

1. WP6200: PRS Solution, Algorithm Development

A final report (034) has been distributed on the small-scale simulations including global parameters (basic angle variations, general relativity, aberration). This concludes WP6220 (simulation). The next task will be to define, and possibly code, certain subroutines specific to Step 2/3 or of a more general nature (e.g. astrometric transformations?). Further discussion will be needed as to the precise content of this task.

2. WP8200: Double Stars, Algorithm Development

Söderhjelm has studied the frequency of astrometric and resolved binaries and the distribution of their apparent parameters from simple statistical models. The results will be presented at the Bessel Conference on Astrometric Binaries in Bamberg (June 13-15).

This study is an important input to WP8210 (simulation of abscissa residuals), which is now scheduled for this autumn. WP8220-8240 are no longer relevant with the kind of analysis envisaged in the process definition (030); the detection is really an integral part of the ML analysis (WP 8250), which is expected to last through 1985.

3. General

A precise definition of the nominal scanning law was proposed and apparently accepted by all parties. It will be used in subsequent NDAC simulations e.g. for WP8210.

The large-scale distortion of an idealised instrument has been investigated analytically.

The NDAC definition of field angles has been clarified as well as certain intermediary results (e.g. grid coordinates) which may be of interest for FAST/NDAC intercomparisons.

A program (accest) was written for estimating the accuracy of the main mission with any given distribution of magnitudes, colours and observing times.

4. Working papers

84-03-30 (Söderhjelm)  Small-scale experiments in Step 2/3 with elimination of astrometric parameters. II. Solutions including global parameters (NDAC/LO/034)

84-05-18 (Lindegren)  Intermediary quantities for FAST/NDAC intercomparison (NDAC/LO/035)

84-04-09 (Lindegren)  Light-time effects and the modelling of stellar proper motion

84-04-17 (Lindegren)  The Nominal HIPPARCOS Scanning Law

84-04-30 (Lindegren)  Definition of field angles

84-05-06 (Lindegren)  Field-to-grid coordinate transformation for an idealised Schmidt telescope with tilted and displaced grid

84-05-18 (Lindegren)  In-flight test of basic angle stability at the 6th harmonic of the spin

84-05-21 (Lindegren)  Accuracy Estimation Program - accest