Seventh NDAC Report from Lund Observatory

1. WP6200: PRS Solution, Algorithm Development (Söderhjelm)

Results of the first Step 2/3 simulations with elimination of the astrometric parameters were described in (032). The experiments involved up to 365 set zero points and 25,000 stars with three astrometric parameters each, but no global parameters. They confirm the feasibility of the accumulation/preadjustment and pseudosolution algorithms.

Global parameters have now been included, viz. 12 harmonics of the star abscissa relative to the sun, 15 coefficients from Cowling's expression for a more general metric, and two aberration coefficients corresponding to the first two powers of v/c. Preliminary results show that the inclusion of globals in general has negligible influence on the determination of set zero points, but strong correlations are observed between some global parameters.

The PRS simulations should be completed by the end of March, although certain technical problems with the computer system may cause some further delay.

2. WP8200: Double Stars, Algorithm Development (Lindegren)

No activity can be reported in this area.

3. Other activities

At the IAU Symposium "Astrometric Techniques" in Gainesville, Florida, Lindegren gave a review paper on the Hipparcos data reductions. Apart from this, a detailed description of the NDAC reductions is now in progress.

4. Working papers

84-01-20 (Söderhjelm) NDAC/LO/032 Small-scale experiments in Step 2/3 with elimination of the astrometric parameters. I. Solutions without global parameters.

84-02-08 (Lindegren) Hipparcos data reductions (presented at IAU Symposium No. 109, "Astrometric Techniques")