SCHMIDT PLATE ASTROMETRY: SUBPLATE SOFTWARE

N. ZARATE, B. BUCCIARELLI AND L.G. TAFF.
Space Telescope Science Institute
Baltimore, MD 21218

1. Introduction

A portable computer program called SUBPLATE was developed to imple-ment the sub-plate overlap technique proposed by Taff (1989 *AJ* 358,359). The main point of the technique is to divide the plate into smaller pieces and then to overlap them, each with a minimum number of reference stars to solve for a linear solution.

2. The Sub-plate Software

Because of the number of input parameters that the user needs to feed to the SUBPLATE program, a text file that can be manipulated with any editor is a requirement. A good compromise was achieved by choosing Fortran Namelist as the text file to edit, presenting a minimum number of constrains that the user can easily follow.

There are 3 namelist files. The first has the input and output informa-tion. The second one corresponds to plate and observatory information The third is a catalogue description. A description is a set of up to 6 parameters per column stating column name, starting position, fortran format, units and, scale and offset factor. This method emphasizes flexibility in accepting any kind of input catalogue format.

The program allows as input a comparison catalogue to check for a good fitting, by calculating residuals between the computed solutions and the comparison values. The user can substitute this comparison file with a list of (x,y) positions to obtain the corresponding equatorial coordinates.

This program eventually will be part of the IRAF system to make use of the Tables facilities for a better handling of the input catalogues; also for easier interaction with the STSDAS astrometric software package.