Status of the ST ScI Scan-Distribution Program

1 Introduction

Our preliminary work on the compression of full plate scans and on its effects on astrometry and photometry is reported by White, Postman, and Lattanzi in the proceedings of the 1991 Edinburgh conference on Digitized Optical Sky Surveys. Also, a CD ROM, 'Guide Star Survey Sampler', containing compressed scans of eight plates has been prepared to demonstrate the properties of these techniques. This CD is being sent to all respondents to our 1991 questionnaire, and while the supply lasts, others requesting it.

Following these precepts and responding to expressions of community interest, we are currently embarking on a three year program to distribute the all-sky set of scans which have been made at the ST ScI. The southern fields are from the SERC J Survey and from an advance copy of the SERC Equatorial EJ Sky Atlas, and the northern fields are from the original NGS-POSS Sky survey. A pixel size of 25 microns with a 50 micron apodized aperture was used for all these scans.

The planned distribution will involve about 100 CD-ROMs if the survey is compressed, on average, by a factor of 10. The tentative schedule is to distribute the southern hemisphere at the end of the first year, the northern at the end of the second, and a calibration data base at the end of the third.

2 Status of the Second ST ScI Photometric Survey

A photometric survey is being conducted to extend the BV photoelectric calibrators in the Guide Star Photometric catalog (GSPC-I) to a fainter V band limit and to provide new data in the R band. The program is described in detail in the 1991 proceedings of the Edinburgh conference on Digitized Optical Sky Surveys, and the current status of the work is as follows:

- For each field, two (V and R) short and two long exposures are being acquired. The short exposures (2 minutes) will reach to V = 18 mag and the long exposures (30 minutes), to V = 21 mag. We are using the Kron-Cousins system. The short exposure survey is 95% complete (618 out of 651 fields observed) for fields north of the celestial equator. The long exposure survey is about 40% complete in the north. Of the fields that have been observed, about 65% have been reduced and calibrated.

- The southern hemisphere observations began last year when we obtained long-term status at CTIO and ESO. To date, the southern short exposure survey is about 20% complete and the southern long exposure survey is about 10% complete.

3 ST ScI Scanning Programs

Routine scanning of second generation plates (the southern SES and the POSS-II) in the configuration described in the Digital Optical Sky Surveys Workshop

(Edinburgh, 1991) will commence early in 1992. Briefly, the plan calls for full-plate scans with 15 micron pixels and for archiving of the raw images.

Scanning of the POSS-I E Survey also continues, with about half of the -18 degree zone and all zones north thereof completed.

Current production rates (per machine) are about five 25 micron scans or three 15 micron scans per week. A hardware enhancement program to increase these rates by a factor of 2–4 is currently in progress. The first step is to replace the PDS servo systems which, although a fair representation of technology from the mid 1970s, are obsolete, have become a maintenance problem, and require significant tuning efforts to approach optimum speed. The new servos will be driven more directly from the positional lasers with a HP 5527 laser transducer system, which replaces both the old laser receivers and the 'DCRS' system. At the same time, the M6800 control microprocessor is being upgraded to a VAXstation, with interfacing by IEEE-488 and CAMAC. Later steps in this development will involve upgrading the photometric amplifier and implementing a multi-channel capability.

Technical correspondence about the ST ScI programs should be directed as follows: photometric references and scan compression, Marc Postman (username postman); requests for the Sampler CD ROM, the GCS DIStribution Officer (username GSCdist); and the scanning programs, Barry Lasker (username Lasker). E-mail addresses for the ST ScI are of the form scivax::username (SPAN), username@stsci.edu (InterNet), or username@stsci (Bitnet/EARN).

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