

IAU WORKING GROUP ON WIDE-FIELD IMAGING

Report to Commission 9 (1993)

The IAU Working Group on Wide-field Imaging (WG WFI) was established at the 1991 General Assembly in Buenos Aires. It is the successor to the WG on Astronomical Photography, but covers more areas, including *Sky Surveys and Patrols*, *Wide-field Detectors* (e.g. *Photographic Techniques and CCD Mosaics*), *Digitisation Techniques*, *Archival and Retrieval of Wide-field Data*. By the end of June 1993, it had about 200 members and consultants. The Organising Committee (OC) consists of: J. Guibert (Paris, France), R.M. Humphreys (Minneapolis, U.S.A.), K. Ishida (Tokyo, Japan), R. Kron (Chicago, U.S.A.), B.M. Lasker (Baltimore, U.S.A.), H. Lorenz (Potsdam, Germany), H.T. MacGillivray (Edinburgh, U.K.: Secretary), D. Malin (Epping, Australia), N. Reid (Pasadena, U.S.A.), M. Tsvetkov (Sofia, Bulgaria), and R.M. West (Garching, Germany: Chairman). The WG WFI issues a semi-annual Newsletter (Editor: H.T. MacGillivray).

Wide-field Imaging is characterised by the rapid and efficient acquisition of very large data sets. This leads to considerable handling problems, concerning both the initial extraction of relevant information for scientific interpretation, as well as the time-robust data storage and easy retrieval at a later date. It is a major goal of the WG to bring together all available expertise on the related, rapidly progressing technology (e.g. panoramic detectors and storage media) and those major research projects which are dependent on large-scale observations (e.g. cataloguing and structural studies). The WG is particularly concerned with:

- 1) *integration* of techniques and science;
- 2) *coordination* (e.g. of the photography and CCD groups);
- 3) *standardisation* (procedures, formats, etc.); and
- 4) *dissemination and sharing of information* to the larger community.

The WG activities have included the organisation of IAU Symposium 161 on 'Astronomy from Wide-field Imaging' (Potsdam, Germany; 23-27 August 1993) with about 200 participants. A major WG project (WFPA) is the registration in a computer-readable form of the plate-catalogue data for all photographic plates extant in observatory archives all over the world (in charge: M. Tsvetkov); about $3 \cdot 10^5$, out of an estimated $\sim 2 \cdot 10^6$ plates in storage, are now on-file. The possibility of large-scale digitisation of (a subset of) these plates is being studied.

The recent decision by KODAK to discontinue the production of several important astronomical emulsions, notably IIa and 103a, has led to severe problems for various current large-scale projects. The WG now attempts to ensure the continued availability of at least the IIIa and IV-N emulsions, and also to further the development of a blue-sensitive Tech-Pan film, similar to the 4415 red-sensitive emulsion, which has recently been shown to reach DQE $\sim 10\%$. It is expected, however, that for most astronomical uses, large CCD mosaics (up to 20-30 2000 x 2000 pix now planned) will replace the photographic emulsion within the next decade. The construction of a new generation of wide-field CCD-mosaic telescopes (e.g. Sloan, LITE and others) implies that much improved observational capabilities in terms of limiting magnitude and hence depth over a large field will soon become available. This will also provide important support for the work with the future 8-metre class telescopes.

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