

**Annual Report, 2001**  
**Working Group on Astronomical Software**

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The primary role of the AAS Working Group on Astronomical Software is to function as the body which formulates, reviews, and endorses modifications to the FITS data format standard. The WGAS FITS Committee, chaired by Dr. Peter Teuben (University of Maryland) is composed of representatives from major data providers and major astronomical software systems in North America. This WGAS Committee deliberates (primarily by email) whenever proposals arise for additions to or codification of the FITS standard.

The highlight of 2001 was the publication of the formal FITS standard, as codified and reviewed in the previous two years, in *Astronomy and Astrophysics* (R. J. Hanisch, A. Farris, E. W. Greisen, W. D. Pence, B. M. Schlesinger, P. J. Teuben, R. W. Thompson, and A. Warnock III, "Definition of the Flexible Image Transport System (FITS)," A&A 376, 359–380).

In 2001, work continued on the development of standards for the representation of world coordinate systems (WCS) in FITS, culminating in a general accord on how to complete this work at the October ADASS Conference (Victoria, BC). However, since that time further deliberations have ensued. At the time of this writing, the status is as follows:

- Paper I (Greisen & Calabretta) presents the general WCS formalism. In nearly final form and should be ready for publication shortly.
- Paper II (Calabretta & Greisen) describes celestial coordinate systems. This is also in nearly final form.
- Paper III (Greisen & Valdes) describes spectral coordinate systems. This paper has undergone substantial revision and improvement in the past few months and will require further discussion in the community following its release.
- Paper IV (Calabretta et al.) describes distortion correction functions and how to handle coordinate systems that deviate from ideal projections. Owing to the complexity of this topic, it is likely that work on Paper IV will continue for several months yet.

The WGAS Chair has taken an active role in facilitating communication among the various FITS WCS parties.

The WGAS FITS Committee is now preparing to review a number of proposals that have been awaiting action. These include a check-sum proposal, a proposal for expressing relationships among FITS files, and, of course, the forthcoming WCS proposals.