

Working Group on Astronomical Software
Annual Report
Submitted by R. J. Hanisch, Chair
15 April 1992
Revised, 23 June 1992

This report covers the period from June 1991 (after the Seattle AAS Meeting) through June 1992 (including the Columbus meeting).

Contributed Papers. The WGAS heard four contributed papers at its June 1992 meeting in Columbus, Ohio. Bill Pence (GSFC/HEASARC) described the FTOOLS library of routines available for accessing and manipulating FITS tables (both ASCII and binary). Frank Valdes (NOAO) gave an overview of new software available in IRAF to read catalog data from the NASA ADC CDROM. Immanuel Freedman (COBE project) discussed the data compression techniques being used for COBE data. Cynthia Cheung (GSFC/NSSDC) reported on the NSSDC NDADS archive project.

FITS. WGAS members participated in the NASA/OSSA Office of Standards and Technology FITS committee, whose charter was to codify the existing FITS standards in a manner acceptable as a formal NASA standard. The committee was chaired by R. J. Hanisch. A final draft of the proposed standard was completed in the fall of 1991, and the formal review and approval process is now underway. It is expected that the WGAS, European FITS Committee, and ultimately the IAU Commission 5 FITS Working Group will approve the NASA document as the official FITS standard.

Interest continues to grow in the area of a standard for compressed data within FITS. Discussion followed from Freedman's talk at the Columbus meeting, with several people expressing an interest in working on methods for data compression within FITS.

Communications amongst astronomers and programmers interested in FITS has improved greatly with the creation of a Usenet newsgroup called sci.astro.fits. The newsgroup was created following the standard voting procedures for the Usenet, and over 300 yes-votes were received. Traffic on the newsgroup has been reasonably active.

Don Wells (NRAO) chaired the WGAS session on FITS at the Columbus meeting. The first item of business was to establish a formal FITS Committee under the WGAS. The committee will be chaired by Wells and contain representatives from the major data producing and data archiving centers, as well as several members of the user community at large. The committee is now being formed.

Barry Schlesinger gave a status report on the activities of the NASA FITS Support Office at GSFC. In addition to the work on the NASA FITS document, Barry's office is developing a FITS verification program and FITS User's Guide. Initial copies of both are available from the FITS Support Office (fits@nssdc.gsfc.nasa.gov).

In general discussion of FITS issues, the WGAS gave voice approval to the proposals recently reviewed by the European FITS Committee. These include the blocking agreement for fixed-length block media, the binary tables extension, and the IMAGE extension. Copies of these proposals are available on the system fits.cx.nrao.edu via anonymous FTP. The FITS Committee's first task will be to review and approve these proposals, at which point they will be forwarded to the IAU FITS Committee for final approval.

Interest has been renewed in establishing conventions for handling world coordinate systems (WCS) within FITS. Several similar methods are in use (as implemented within the AIPS and IRAF/STSDAS software systems), and interchange of data sets with WCS information has been done successfully. A draft document on WCS was written in 1989, and this is available to interested persons (contact Bob Hanisch, hanisch@stsci.edu). The FITS Committee will be asked to appoint a subcommittee to finalize the draft proposal and present it to the user community, hopefully within the next year.

Electronic Mail Exploder and Usenet News. The WGAS e-mail exploder has been moved to a new host computer at Goddard Space Flight Center. Lee Brotzman continues to support this facility. The exploder address is now wgas@hypatia.gsfc.nasa.gov. The membership discussed the possibility of establishing a Usenet newsgroup, sci.astro.wgas, to replace the e-mail exploder. Brotzman agreed to establish an 'alt' newsgroup of this name for experimental use. Given that a newsgroup for FITS now exists, there may not be sufficient traffic to justify creation of a devoted WGAS newsgroup.

Electronic Publishing. Great strides have been made in electronic publishing, and WGAS efforts have played a substantial role. Chris Biemesderfer is now working as a consultant to the Society in support of the AAST_{TEX} macro package. It is now possible to submit abstracts for AAS meetings electronically using a La_{TEX}-based macro package that Chris developed jointly with the Executive Office. Peter Boyce and Heather Dalterio reported that approximately 2/3 of the abstracts for the Columbus meeting were submitted electronically. Hanisch participates in the REV_{TEX} Working Group, which is coordinating the use of La_{TEX}-based macro packages for publishing for various AIP member societies.

WGAS members have also continued their participation in NASA's project STELAR. Hanisch continues to serve on the AIP Subcommittee on Information Technology, and in this position is keeping AIP apprised of developments within the astronomical community.

First Annual Conference on Astronomical Data Analysis Software and Systems. The WGAS is very pleased to see the initiation of an annual conference series devoted to astronomical software and systems. The first conference was held in Tucson in November. Sponsors include NOAO, ST ScI, SAO, and NASA. Over 300 people attended the meeting, indicating the great need for a conference devoted to this topic. Proceedings are being published by the A.S.P. The second conference will be held in Boston in November 1992. SAO is the local host.

Other WGAS Activities. There continues to be interest in establishing a directory of astronomical software. Use of WAIS (Wide Area Information Systems) technology was discussed as a means of implementing such a directory service.

Two e-mail exploders are of possible interest to WGAS members. A discussion group on the design and implementation of graphical user interfaces has been set up at IPAC (gui@ipac.caltech.edu). The WGAS mailing list is included in this list. There is also a series of e-mail discussion groups concerning the use of Fortran on high performance (vector and massively parallel) computers (hpff@cs.rice.edu).

The meeting schedule of the WGAS will remain once per year, coincident with the summer AAS meeting.