

COMMISSION 5: DOCUMENTATION AND ASTRONOMICAL DATA
DOCUMENTATION ET DONNEES ASTRONOMIQUES

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REPORT BY THE PRESIDENT FOR THE PERIOD 1985 DECEMBER 1 TO 1987 OCTOBER 30

The aims of this report are, firstly, to review the activities of Commission 5 during the period since the IAU General Assembly in Delhi in November 1985 and, secondly, to draw attention to other relevant activities. It is based mainly on contributions from the Chairmen of the working groups and other members of the Commission, but it also includes some items of general interest that have been taken from the Commission's Newsletter. The Working Groups and their Chairmen are as follows:

Astronomical Data	G. Westerhout
Designations	C. O. Jaschek
Classification	P. Lantos
Abstracting Guidelines	L. D. Schmadel

The Newsletter, which was issued in March 1986 and July 1987, was primarily intended to provide a means of communication between the members and consultants of the Commission. It was hoped, however, that other astronomers would find items of interest in it and so it was reproduced in the information bulletin of the astronomical data centre at Strasbourg. Requests to be included in the distribution were received from librarians and others not previously associated with Commission 5. The frequency of issue will be increased if more items of information or comment are sent to the Editor.

The announcement of a Workshop on "Library and Information Services in Astronomy" to be held in Washington, D.C., just prior to the 1988 General Assembly attracted much interest and the IAU Executive Committee agreed that it shall be IAU Colloquium No. 110. A complementary Joint Discussion on "Documentation, Data Services and Astronomy" will be held early in the Assembly to bring together the users and providers of information services in considering the problems and opportunities presented by the availability of new techniques.

ASTRONOMICAL DATA

Much information about activities in data compilation and data handling is published bi-annually in the Bulletin d'Information du Centre de Données Stellaires (CDS) in Strasbourg, France. Issue No. 31 contains the papers presented at meetings organized by the CDS on "Archiving Astronomical Observations" and on "Astronomical Data Networks". The proceedings of the Tblisi Colloquium on "Stellar Catalogs: Data Compilation, Analysis, Scientific Results" were published in Bulletin 59, Abastumani Astrophysical Observatory, Tblisi, 1985. A large symposium (over 110 participants) organized by the ESA/ESO Space Telescope European Coordinating Facility, was held in Garching, FRG, on 12-14 October 1987 on "Astronomy from Large Data Bases: Scientific Objectives and Methodological Approaches." The Working Group on Astronomical Data held an ad hoc meeting during this symposium.

The IAU Executive Committee has requested that the Commission give particular attention to the problems of data archiving and refreshing, and so this topic will be discussed during the ordinary meetings of the Commission at Baltimore as well as at Colloquium No. 110 and at the Joint Discussion.

CODATA activities

The 10th International CODATA Conference which was held in July 1986 in Ottawa, Canada, on the topic of "Computer Handling and Dissemination of Data", was attended by only four astronomers even though it is an excellent forum for interdisciplinary scientific exchange. It was attended by 270 people and among other things contained excellent discussions on data dissemination (CD-ROMS, etc) and expert systems. CODATA Bulletin No. 64 contains selected papers. Bulletin No. 63 contains the "Adjustment of the Fundamental Physical Constants". The 11th CODATA Conference will be held in Karlsruhe, FRG, 26-29 September 1988, with the theme "Scientific and Technical Data in a New Era". Among the topics to be covered is "Geo- and space sciences", with three invited papers on astronomical data. The IAU representative on CODATA is G. Westerhout.

Centre de Données Stellaires: Strasbourg

The most important development concerning the SIMBAD database of the Stellar Data Centre (CDS) at the University of Strasbourg is its enhanced accessibility through networks. In October 1987 it can be accessed from 122 astronomical institutes in 21 countries, and the number of users keeps growing rapidly. The transfer of data to users has been improved, so that samples may be easily copied for further treatment. Projects are underway to incorporate the whole Durchmusterungen into SIMBAD, as well as the IRAS Point Source Catalogue and the brightest stars of the Guide Star Catalogue. Finally, the number of catalogues available has also increased through exchange with other data centres, and is now of the order of 500.

Directories of astronomical associations, societies and professional institutions have been issued as special publications by CDS (Heck and Manfroid, 1985 and 1986); new editions are in preparation. A new survey of astronomical data sources has been made by Jaschek (1987).

Astronomical Data Center: NASA/GSFC

During this period the Astronomical Data Center (ADC) at the Goddard Space Flight Center completed 1460 requests for data and/or information, with 1465 machine-readable catalogues disseminated. The archive of astronomical data now contains more than 500 catalogues. A machine-readable version of the Bonner Durchmusterung (zones +89 to -23) was completed through an international collaborative effort, while a new catalogue of WDS-DM-HD-ADS cross identifications was prepared. The Infrared Source Cross Index (Schmitz et. al., 1987) and a second edition of the Catalog of Infrared Observations (CIO; Gezari et. al., 1987) were prepared and published; the latter now contains all IRAS data for sources in the CIO database. An updated version of the Bibliographical Index of Objects Observed by IUE (Mead et. al., 1987) was completed and the first and second versions of the machine-readable Data Inventory of Space-based Celestial Observations (DISCO; Brotzman et. al., 1987) were prepared. An electronic network distribution service for data was begun using BITNET and the Space Physics Analysis Network (SPAN). An ADC Online Information System was also developed and implemented to provide a search capability by keywords and an interactive ordering service.

Central Institute of Astrophysics: Potsdam

The cooperation between the CDS at Strasbourg and the Central Institute for Astrophysics (CIAP) at Potsdam was continued, and CIAP now holds 364 catalogues that have been obtained from the CDS in order to make them available to scientists of the GDR and other socialist countries. The Bibliographical Catalogue of Variable Stars was extended so that it now contains nearly 323000 records for about 30000 stars. A bibliographical catalogue of suspected variable stars is in preparation. New data on variable stars and equivalent widths (Friedemann, 1987) were sent to the CDS. Three thematical databases (STAR, containing basic information on stars; CAL, on non-stellar objects; and TPK, the Tautenburg plate catalogue) were developed on the basis of the Swedish database system MIMER and are now available on-line.

FITS Task Force

The FITS Task Force was created by the Working Group on Astronomical Data during the IAU General Assembly in 1982 when the FITS tape format was recommended for the interchange of image data between observatories. The two main functions of the Task Force are: (1) to channel comments and suggestions on the usage of FITS for the interchange of data, and (2) to investigate the extension of FITS for use in the exchange of catalogues. The FITS Task Force consists at present of: P. Grosbol (ESO, Chairman), F. Ochsenbein (ESO), W. H. Warren, (NASA), and D. Wells (NRAO).

A European FITS Committee was created with members from major institutes in most European countries to act as a local forum for discussions of FITS matters. After extensive tests, a proposal for a Generalized Extension of FITS including a Table Extension was finalized and presented to the AAS-WGAS FITS Group and to the European FITS Committee; both groups accepted the proposal. The final text of the proposal was accepted for publication in *Astronomy and Astrophysics Supplement Series*. The Task Force also made a proposal for the physical blocking of FITS data files to improve efficiency, while maintaining the logical blocksize of 2880 bytes; it allows a blocking factor of 1 to 10 on nine-track magnetic tapes. This proposal was also accepted, and both came into use from 1 January 1987.

An electronic mailbox for FITS was set up at NRAO by D Wells. It is accessible from all major computer networks and will distribute mail messages to all major institutes using FITS. It enables a faster and more general discussion of the FITS standard in the community.

DESIGNATIONS

The general resolution (C3) on astronomical designations that was adopted by the Commission at Delhi was published in IAU Information Bulletin No. 55 (February 1986, pp. 19-21), as were the resolutions of Commission 28 on the designation of supernovae (C10, pp. 22-23) and Commission 40 on radio-source nomenclature (C12, pp. 23-24); they were also published in the *Transactions of the IAU* (19B, 40-44, 48, 49-51, 1986). It is too early to assess their influence on authors and editors, but the "clearing house" of Dickel, Jaschek, Lortet, Mead and Warren has operated successfully in several cases. The Working Group on Nomenclature of Commission 34 (Interstellar Matter) has subsequently published its recommendations (Dickel et. al., 1987). Further valuable dictionaries of designations have been published by Lortet (1986a, b) and Lortet and Spite (1986).

The astronomical community at large is only gradually becoming aware of the importance of the use of proper practices for the designation of astronomical objects, but the rapidly growing use of data centres may help to enforce them. The attention of authors, editors and referees will also be drawn to them in the new IAU Style Book.

CLASSIFICATION AND KEYWORDS

There has been no progress of note in the revision of the Universal Decimal Classification for Astronomy (UDC 52). A revised draft list of keywords has been prepared by P. Lantos. The preparation of a thesaurus is now in hand by a group led by R. M. Shobbrook (Librarian of the Anglo-Australian Observatory). Questionnaires were distributed to 96 librarians to seek assistance and information about current lists of subject headings. It is hoped that a draft listing will be available for comment during IAU Colloquium No. 110.

The American Institute of Physics has published (AIP, 1987) a physics and astronomy classification scheme for use in its publications; it is based on the 1977 ICSU/AB system, which is now under revision by the Physics Working Group of ICSTI (see below).

ABSTRACTING

The Astronomisches Rechen-Institut (ARI) at Heidelberg, which produces Astronomy and Astrophysics Abstracts (AAA), will cooperate with the Fachinformationszentrum (FIZ) at Karlsruhe in the fields of astronomy and astrophysics; FIZ is responsible for abstracting and other information services for physics and many other areas. FIZ has cancelled its "Monthly Service" of astronomical abstracts and ARI will not distribute the AAA abstracts on magnetic tape, but instead these abstracts will be included in the FIZ database "Physics Briefs" and so will be accessible on-line prior to publication in AAA.

The second report on "Guidelines for Abstracts" (Schmadel, 1985) is being used in the preparation of the new IAU Style Book (see below), while the appended list of keywords serves as a basis for the production of the IAU thesaurus (see above). The increasing use of on-line searching of abstracts makes it all the more important that all authors use unambiguous designations for the astronomical objects referred to in astronomical papers and catalogues. Studies are being made to ensure that the systems used by AAA, FIZ and CDS (Strasbourg) are compatible with each other and consistent with the IAU recommendations. Already a high degree of correspondence has been demonstrated.

IAU STYLE BOOK

A first draft of the new IAU Style Book was distributed for comment on April 1986 to about 30 persons who were believed to have an active interest in its recommendations; some of the copies were circulated to other astronomers and editorial staff. The large number of comments that were returned represented the views of a good cross-section of those concerned in the preparation, publication and use of the astronomical literature. The draft, which had the subtitle "A Manual for use on the Preparation of Astronomical Reports and Papers" was intended primarily for use in the preparation of typewritten camera-ready copy for IAU publications, especially for the Transactions and the proceedings of symposia and colloquia. The General Secretary of the IAU suggested that an attempt should be made to seek the agreement of the editors of the principal astronomical journals in order to reduce as far as practicable the differences between the requirements of these publications. This increased the difficulty of the task by an order of magnitude and made it impossible to issue the manual in 1986 as had been intended. It has also become clear that the

manual must contain recommendations for use with desk-top systems capable of producing copy of type-set quality. It is hoped that a second draft will be discussed at a meeting of editors early in 1988 and that an agreed version will be available at the General Assembly.

ICSTI

The Officers of the IAU have decided that the IAU should, for the time being, no longer participate in the activities of the International Council for Scientific and Technical Information (ICSTI) with effect from 1 January 1988. ICSTI was established in June 1984 as the successor to the Abstracting Board of the International Council of Scientific Unions (ICSU AB). Its activities are of general interest to astronomy and include the revision of the international classification system for physics and the preparation of a directory of numerical databases, but at present the value to the IAU of membership does not match the costs for dues and attendance at the annual meeting. Astronomy and Astrophysics Abstracts is a member of ICSTI.

UNION LISTS AND OTHER PUBLICATIONS

A compilation of the serial holdings of 14 astronomy collections in the USA was prepared by J. A. Lola (Yerkes Observatory) and a list for the United Kingdom was prepared by A. R. Macdonald (Royal Observatory, Edinburgh). The guide to information services in astronomy by Rey (1983) is under revision. Various lists of observatories were published by Howse (1986) and Vercoutter (1986). An English-Chinese Dictionary of Astronomy containing 16000 terms and seven lists of specialised terms was published in China in 1986, and the multilingual dictionary that is being prepared by J. Kleczek is in press.

OTHER MATTERS

The problems caused by the increases in the costs of journals and books have been exacerbated for many libraries by reductions in budgets and by the extra costs of providing new on-line services. As a consequence, subscriptions to many journals, particularly the less heavily used smaller journals, including translations from other languages into English, are liable to be cancelled, and hence the viability of such journals is in doubt. The Commission may wish to consider whether it could take any action that might alleviate these problems. The Commission also needs to follow up the meeting that was held in Delhi (Trans. IAU 19B, 100) to consider the problems of "developing astronomical institutions". These need access to past and current literature and to the new information-retrieval services if they are to carry out their programmes effectively. It is hoped that it will be possible for such institutions to be represented at IAU Colloquium No. 110 and that better cooperative arrangements may be established as a consequence of the discussions at the meeting.

The programme of the meetings of the Commission at Baltimore will need to be very extensive in order to cover adequately all of the many topics discussed in this report as well as others that for various reasons have not been mentioned. It is clear that the increased activity in astronomical-data topics that has taken place in recent years is about to be matched by a corresponding increase in activity in the other fields of concern to the Commission. It is of interest to note that some of these topics, such as designation and information retrieval techniques, are not only of concern to all of the members of the Commission but that their importance is being recognized by a much higher proportion of the astronomical community. I would like to conclude my report by thanking all those who have contributed to this report and to the activities of the Commission during this period.

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