

# ASTRONOMY AND ASTROPHYSICS ABSTRACTS: A STATUS REPORT

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## ABSTRACT

The astronomical bibliography 'Astronomy and Astrophysics Abstracts' (AAA) is the direct successor of the well-known 'Astronomischer Jahresbericht' (AJB). AAA is now going into its 13th year of existence. It is the aim of this contribution to outline the present status and the future plans of the abstracting and indexing work at the Rechen-Institut.

## INTRODUCTION

The AJB was founded in 1899 by W. F. Wislicenus, the former director of the Strasbourg Observatory. It was the very first astronomical documentation to appear on a periodical basis. Since 1911 this undertaking has been continued by the Rechen-Institut which carried this task until now without any break for 70 years. The AJB was published almost entirely in German and essential parts of the abstracts were produced by external reviewers. Finally, the conventional letter-press printing technique caused some time delay between the receipt of the original material and the record in the AJB. A review of historical aspects of astronomical documentations is given elsewhere (Schmadel, 1979). Fricke (1969) announced the suspension of the publication of the AJB and introduced AAA, for which the following objectives were set:

- a) The abstracts will preferably be given in English.
- b) Preference will be given to the authors' abstracts with editorial revisions in cases in which a change is considered necessary.
- c) The reviewer system of the AJB will be replaced by an editorial staff of the Rechen-Institut.
- d) The classification system of AAA will follow the philosophy of the AJB scheme as far as possible.
- e) Apart from the author index, an additional subject index will be established. Both indexes are to be produced by a computer in order to serve for retrieval purposes.
- f) Two volumes are scheduled to appear per year. The time interval between receipt of documents and the publication should not exceed eight months.

- g) The letter-press technique will be replaced by the offset reproduction method. The text will be written at the Rechen-Institut composers.

This fundamental concept is still valid. The most important change will be the introduction of a computer-aided text processing system.

### THE ACTUAL WORK AT AAA

From the receipt of a document until the delivery of the composer copy there are three main processes:

- a) classification and indexing,
- b) text recording and corrections,
- c) manuscript and index compilation.

Scientific treatment, classification. As a rule, we only use the original material. The bibliographic remarks and all further annotations are done by pencil. Concerning the main subject of the paper, a classification number is given. In many cases this obviously is not sufficient to describe all aspects of the paper. Then, a so-called cross reference containing the title of the paper and a reference to the main category is given. The abstract consists of either the authors' text or an abridgement or modification or a completely new version. The classification step ends with the declaration of some key words, the abbreviation of the source, and – if necessary – the transliteration of Slavic author names. A running number within each subject category will be added.

Text recording, corrections. The technical staff now records the complete bibliography consisting of the title, the author names, the source of information, the number of the main category, the running number, and an abstract. This is actually done by means of IBM 72 composers that have the capacity to type some 800 different characters. Two corrections are made with the aid of a jointly produced duplicate of the abstract strip. The index informations are recorded on punched cards followed by two correction and culling steps as well.

Manuscript and index compilation. The editorial closing date lies some two months after the end of the preceding half-year period. After this date all abstract and cross reference strips are sorted, compiled into complete pages, and are corrected once more. Chapters with cumulative informations can be compiled only at this stage. The index informations are treated by our computer. The line printer output is the direct copy for the offset reproduction. The compilation process of the whole manuscript takes another two months of work.

Statistics. We examine each item of our volumes at least five times. The achieved error rate per printed character is of the order of a few ppm. The AAA staff actually consists of only five scientists, one translator for the Russian publications, and four secretaries. We are supported part-time by three assistants. The amount of material is rather large in relation to these numbers. Each volume contains some 8,500 references to documents of almost 10,000 authors. The list of periodicals scanned consists of some 700 titles, and this will be enlarged by some 100 publications of observatories and institutes. Since 1969, we have recorded more than 170,000 documents of all kinds. The total number of fully retrievable punched card informations amounts to some 540,000 items. It is due to these numbers that we are forced to produce general index volumes of accumulated key words and author names after the publication of every ten ordinary volumes.

## FURTHER ACTIVITIES AND FUTURE PLANS

Actually, we use more than 20,000 different key word combinations. These so-called free descriptors will provide a possibility to perform retrospective literature searches. At present we work on a condensed version of this vocabulary of astronomical terms. This collection could serve as a first step towards the construction of an astronomical thesaurus.

In the preparation process of the manuscript there are many steps which could be avoided by using a computer. The text recording should be done by intelligent terminals. The procedure will yield a complete pattern ready for photocopy printing. As a by-product, all index informations are available immediately. We hope that a large amount of technical work could be drastically reduced. The use of electronic means also gives the possibility to form a data base. We do not intend to publish a magnetic tape service of AAA, but we plan to incorporate our material within the INKA-PHYS data base of the Karlsruhe 'Fach-informationszentrum' which already provides literature searches from all fields of physics. First considerations concerning the necessary software developments have shown that the overall organization of our service has to be changed only slightly. This somewhat revolutionary adaption within the documentation history of the Rechen-Institut should be attainable in the next few years.

## REFERENCES

- Fricke, W. 1969, *Mitt. Astron. Ges.*, No. 27, pp. 125 - 126.  
Schmadel, L. D. 1979, *Bull. Inform. CDS*, No. 17, pp. 2 - 11.