ONLINE BIBLIOGRAPHIC RESOURCES IN ASTRONOMY AND ASTROPHYSICS

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Online searches may be performed in astronomy and astrophysics either by OBJECT or by SUBJECT. Until recently, although object searches could be performed on a variety of databases in the physical sciences, results were poor and incomplete. Only if an object were mentioned by name in the title or abstract could one hope for any hits at all. The greatest blessing to befall the astronomical community was the advent of SIMBAD (Sets of Identifications, Measurements and Bibliography for Astronomical Data), a database in which searches are conducted by OBJECT only. It is produced and accessible from the Centre de Donnees de Strasbourg (CDS), Observatoire Astronomique, and is the result of many years of arduous work by a few dedicated astronomers and computer scientists. It is comprised of the merging of two earlier databases, the Catalog of Stellar Identifications (CSI) and the Bibliographical Star Index (BSI).

SIMBAD now contains more than 700,000 objects, of which 600,000 are stars and 100,000 nonstellar objects, for which 2,500,000 identifications and 1,000,000 measurements exist, plus more than 750,000 references from papers in the "top 90" astronomical journals and conference proceedings. Unlike the subject databases, entire articles are scanned, and all objects to which reference is made in the text are included.

SIMBAD has no printed equivalent. Online access is available to the CDS computer at Paris-Sud, and objects can be searched by a wide variety of catalog identifications. Some objects are known by thirty or more "aliases," and input of any one of them will generate a list of the others. Basic data are given, followed by measurements and bibliography, for stars from 1950, and from 1983 for nonstellar objects. SIMBAD can also be searched by coordinates, which generate a list of all objects within a defined radius which can then be examined individually. There is also the capability of performing highly sophisticated range searches when required.

The following databases carry the best coverage of astronomy and astrophysics for SUBJECT searching, and most are available from commercial vendors. Results from subject searches can be very good indeed, and the advent of SIMBAD augments, rather than detracts from, their usefulness.

PHYS.

Based on PHYSIKALISCHE BERICHTE (PHYSICS BRIEFS). This is available from 1979 via STN International, Columbus, OH, from Fachsinformationzentrum (FIZ), Karlsruhe, FDR. This service will incorporate material from ASTRONOMY AND ASTROPHYSICS ABSTRACTS, published by the Astronomisches Rechen-Institut, Heidelberg, FDR, early in 1989. This long- and eagerly-awaited event should make PHYS the database-of-choice for astronomical subject searches, covering as it does a wide variety of international publications. Abstracts are available.

INSPEC.

Based on SCIENCE ABSTRACTS, including SCIENCE ABSTRACTS, SECTION A: PHYSICS ABSTRACTS, published by the Institution of Electrical Engineers, Ltd., London, England, is distributed internationally by Information Services in Physics, Electrotechnology, Computers and Control, Inc. All areas of physics, including astrophysics, are covered from 1969 to date. The capability of searching by numerical values, e.g., wavelength and frequency, have recently been added, making this a powerful tool.

NASA/RECON and AEROSPACE DATABASE.

Based on NASA/SCIENTIFIC AND TECHNICAL AEROSPACE ABSTRACTS (STAR) and INTERNATIONAL AEROSPACE ABSTRACTS (IAA), this is available commercially as THE AEROSPACE DATABASE in the United States. This is the oldest and most comprehensive of sources, starting in 1962, and covers not only astronomy, but all aspects of space science. Abstracts are available.

SCISEARCH.

This is based on the printed SCIENCE CITATION INDEX, published by the Institute for Scientific Information, Inc. (ISI) of Philadelphia, PA. It is available online from 1974. Although SCISEARCH covers all areas of science, the coverage of astronomical publications is good. The unique feature here is that, in addition to regular bibliographic coverage, citations are also indexed, allowing the course of research to be tracked by listing citations to an original paper, which may have been published well before 1974. There are no abstracts.

CURRENT CONTENTS: PHYSICAL, CHEMICAL AND EARTH SCIENCES.

Published by ISI as above. Based on the weekly publication of the same name, this consists of tables of contents of scientific journals, including core astronomical journals, which are often indexed in advance of publication.

ASTRONOMY AND ASTROPHYSICS MONTHLY INDEX.

This is published by Olivetree Associates, Sierra Madre, CA, both in text and machine-readable form. This bridges the six-month gap between the publication of volumes of ASTRONOMY AND ASTROPHYSICS ABSTRACTS, and is issued monthly (no abstracts). For more information, call (818) 356-4008, or SPAN DEIMOS::LIB.

DISSERTATION ABSTRACTS ONLINE.

Based on DISSERTATION ABSTRACTS INTERNATIONAL, and published by University Microfilms International, Inc., of Ann Arbor, MI. Covers U.S. theses back to 1861, on all subjects, with extensive abstracts.

Various other valuable, though general, databases include NTIS (National Technical Information Service) and SPIN (Searchable Physics Information Notes), produced by the American Institute of Physics.

There are also a number of databases that can be accessed without charge through their parent organizations, for example (and there are many others):

LUNAR AND PLANETARY BIBLIOGRAPHY is compiled by the Lunar and Planetary Institute, Library Information Center, Houston, TX. The online search service gives access to 24,000 references relating to lunar science, the Moon, planets and their satellites, comets, asteroids, meteorites, and space utilization and colonization. The database can be accessed by a number of networks, including NASA SPAN and OMNET. For more information, contact (713) 486-2191, or LPI::STEPHEN on SPAN.

APJLETT and APJAJ are files held at the Harvard-Smithsonian Center for Astrophysics, which can be accessed online by anyone with a modem, or with access to SPAN. APJLETT lists papers accepted for publication in ASTROPHYSICAL JOURNAL, PART 2, LETTERS, complete with abstracts. APJAJ lists titles and authors from the tables of contents of all papers appearing in the ASTROPHYSICAL JOURNAL, PARTS 1 AND 2, the SUPPLEMENT series, and the ASTRONOMICAL JOURNAL published since January 1, 1987. Instructions for access to this database are printed at the end of each issue of the ASTROPHYSICAL JOURNAL.