

ASTROPHYSICS AND SPACE SCIENCE LIBRARY

AUTOMATED DATA RETRIEVAL IN ASTRONOMY

Edited by C. Jaschek and W. Heintz

VOLUME 97

PROCEEDINGS



D. REIDEL PUBLISHING COMPANY

DORDRECHT, HOLLAND / BOSTON, U.S.A. / LONDON, ENGLAND

AUTOMATED DATA RETRIEVAL IN ASTRONOMY

ASTROPHYSICS AND SPACE SCIENCE LIBRARY

A SERIES OF BOOKS ON THE RECENT DEVELOPMENTS
OF SPACE SCIENCE AND OF GENERAL GEOPHYSICS AND ASTROPHYSICS
PUBLISHED IN CONNECTION WITH THE JOURNAL
SPACE SCIENCE REVIEWS

Editorial Board

J. E. BLAMONT, *Laboratoire d'Aéronomie, Verrières, France*

R. L. F. BOYD, *University College, London, England*

L. GOLDBERG, *Kitt Peak National Observatory, Tucson, Ariz., U.S.A.*

C. DE JAGER, *University of Utrecht, The Netherlands*

Z. KOPAL, *University of Manchester, England*

G. H. LUDWIG, *NOAA, National Environmental Satellite Service, Suitland, Md., U.S.A.*

R. LÜST, *President Max-Planck-Gesellschaft zur Förderung der Wissenschaften, München, F.R.G.*

B. M. McCORMAC, *Lockheed Palo Alto Research Laboratory, Palo Alto, Calif., U.S.A.*

H. E. NEWELL, *Alexandria, Va., U.S.A.*

L. I. SEDOV, *Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.*

Z. ŠVESTKA, *University of Utrecht, The Netherlands*

VOLUME 97
PROCEEDINGS

AUTOMATED DATA RETRIEVAL IN ASTRONOMY

PROCEEDINGS OF THE 64th COLLOQUIUM
OF THE INTERNATIONAL ASTRONOMICAL UNION
HELD IN STRASBOURG, FRANCE, JULY 7–10, 1981

Edited by

C. JASCHEK

Observatoire de Strasbourg, France

and

W. HEINTZ

Swarthmore College, Swarthmore, U.S.A.



D. REIDEL PUBLISHING COMPANY
DORDRECHT : HOLLAND / BOSTON : U.S.A.
LONDON : ENGLAND

International Astronomical Union. Colloquium (64th : 1981 :
Strasbourg, France)
Automated data retrieval in astronomy.

(Astrophysics and space science library ; v. 97)
Includes index.

1. Astronomy--Data processing--Congresses. 2. Information
storage and retrieval systems--Astronomy--Congresses. 3. Astronomy--
Information services--Congresses. I. Jaschek, Carlos. II. Heintz, W.
III. Titles. IV. Series.

QB51.3.E43I57 1981 522'.028'54 82-7676
ISBN 90-277-1435-5 AACR2

Published by D. Reidel Publishing Company,
P.O. Box 17, 3300 AA Dordrecht, Holland.

Sold and distributed in the U.S.A. and Canada
by Kluwer Boston Inc.,
190 Old Derby Street, Hingham, MA 02043, U.S.A.

In all other countries, sold and distributed
by Kluwer Academic Publishers Group,
P.O. Box 322, 3300 AH Dordrecht, Holland.

D. Reidel Publishing Company is a member of the Kluwer Group.

All Rights Reserved

Copyright © 1982 by D. Reidel Publishing Company, Dordrecht, Holland
No part of the material protected by this copyright notice may be reproduced or
utilized in any form or by any means, electronic or mechanical
including photocopying, recording or by any informational storage and
retrieval system, without written permission from the copyright owner

Printed in The Netherlands

TABLE OF CONTENTS

PREFACE	xi
THE ORGANIZING COMMITTEES	xiii
LIST OF PARTICIPANTS	xv
INAUGURAL ADDRESS : W. HEINTZ	xvii
<u>A. EXISTING DATA CENTERS</u>	
1. C. JASCHEK : The Stellar Data Center	3
2. J.M. MEAD, T.A. NAGY, R.S. HILL, W.H. WARREN, Jr. : The Astronomical Data Base and Retrieval System at NASA	9
3. O.B. DLUZHNEVSKAYA : The Soviet Center of Astronomical Data	15
4. Y. TERASHITA : Management of Astronomical Data at Kanazawa Data Center	21
5. E. SCHILBACH : Activities of the Potsdam Data Center	27
6. A. HECK : IUE Data Distribution	29
7. M. SCHMITZ, D.Y. GEZARI, J.M. MEAD : Infrared Astronomi- cal Data Base and Catalog of Infrared Observations	33
8. D.D. McCARTHY, G. WESTERHOUT : Data on Time and Polar Motion : Immediate Accessibility	37
9. M.C. LOCKE : The National Space Science Data Center (NSSDC) and the World Data Center A for Rockets and Satellites (WDC-A-R&S) : Their Role in X-Ray Astronomy Data	45

10. W. BUSCOMBE : The Stellar Data File at Dearborn Observatory	49
DISCUSSION	313
 <u>B. DATA NETWORKS</u>	
11. Y. SALLE : Euronet-Diane, premier réseau européen de transfert de l'information	53
12. D.J. CARNOCHAN : The U.K. STARLINK computer network	63
13. G. SEDMAK : ASTRONET . The network of analysis and retrieval of astronomical data in Italy	67
14. P.A. SIMON : The International URSIGRAM and World Days Service	73
DISCUSSION	315
 <u>C. NEW HARDWARE</u>	
15. P.J. GROSBØL : New developments in data storage (Review paper)	79
DISCUSSION	315
 <u>D. RECENT SOFTWARE DEVELOPMENTS</u>	
16. R. ALBRECHT : System software approaches to the Analysis of Multidimensional Data Structures	87
17. A. SCHUETZ : A fast method to retrieve data from a large star catalogue file	99
18. H. EICHHORN : On Systems of Standards	103
19. A. BIJAOUI : Digital Image Processing and Data Retrieval : The Needs	109
20. M. PUCILLO, P. SANTIN, G. SEDMAK : International standards for software structures in astronomy	111
21. W.H. WARREN, Jr., D.F. ALDERMAN : Archiving and retrieval of data from the International Ultraviolet Explorer (IUE) mission	115

22. I. MISTRİK : Towards effective data processing : portable software models	119
23. W. STEIN : A process for retrieval of data from a compiled star catalogue	123
24. F. MACCHETTO : A data analysis facility for the Faint Object Camera	127
25. W.H. WARREN, Jr., J.M. MEAD, T.A. NAGY : Responsibilities and practical limitations in the operation of an astronomical data center	131
26. S. LAVROV : The system SPORA (Software package oriented to research in astronomy)	135
DISCUSSION	316
 <u>E. BIBLIOGRAPHICAL SERVICES</u>	
27. S. SCHIMINOVICH : Prospects for automated solution of the subject characterization problem in the bibliographic services (Review paper)	147
28. C. CHAGNARD-CARPUAT, A. LAGORCE, S. LALOË : The bibliographical card-catalogue of the I.A.P. Library	155
29. L.D. SCHMADEL : Astronomy and Astrophysics Abstracts : a status report	159
30. M.J. COLLINS : INSPEC activities in astronomy and astrophysics	163
31. S. NISHIMURA : Stellar bibliography retrieving system in Japan	167
32. F. OCHSENBEIN : The Bibliographical Star Index	171
DISCUSSION	317
 <u>F. COPYRIGHT</u>	
33. E. GUERASSIMOV : Copyright and use of computers for access to protected works (Review Paper)	177
DISCUSSION	318

G. EDITORIAL POLICIES AND NOMENCLATURE

34. J. LEQUEUX : Editorial policies (Review Paper)	187
35. G.A. WILKINS : Aids to the retrieval and evaluation of astronomical data	193
36. F. OCHSENBEIN, F. SPITE : A list of standard star designation.	199
37. A. FERNANDEZ, M.C. LORTET, F. SPITE : Dictionnaire de la nomenclature des objets célestes	203
38. P. POLECHOVA : On the nomenclature of diffuse fragmentary objects	207
39. F. OCHSENBEIN, M. BISCHOFF : The catalogue of stellar identifications	211
DISCUSSION	318

H. DATA IN ASTRONOMY

40. B. HAUCK : Data in Astronomy (Review Paper)	217
41. B. HAUCK : Proposal for centralization of information concerning plate vaults	227
42. S.B. TRITTON : The UK Schmidt telescope plate catalogue and problems associated with increasing numbers of plates and users	229
43. L. BENACCHIO : Retrieval of astronomical information from Padova-Asiago Observatory plates archives	233
44. K. JANES : Large scale photometric surveys using archival plates	237
DISCUSSION	321

I. DATA IN SPACE ASTRONOMY

45. J.I. VETTE : Data and Data Retrieval in Space Astronomy	243
46. D. EGRET, M. JASCHEK : The "Catalogue of Stellar Groups" : A Progress Report	253

47. CH.E. WORLEY : Current progress with the Double Star Catalogues	257
48. M. KALINKOV : Metacatalogue of galaxies and large scale structures in the Universe	259
49. M. KALINKOV, I. KUNEVA, K. STAVREV : Data retrieval in the metacatalogue of galaxies	261
50. A. FERNANDEZ, G. MATHEZ, A. MAZURE, L. NOTTALE, R. ROTHENFLUG : Le Centre de Données des Amas de Galaxies	265
51. G. PATUREL : Centralization of extragalactic data	269
52. N.G. KOGOSHVILI : The compiled catalogue of galaxies in machine-readable form and its statistical investigation	273
53. B. NICOLET : Geneva photometric boxes IV. A refined method for direct access	277
54. W. GLIESE : Data for the compilation of the "Third catalogue of nearby stars"	281
55. H. JAHREISS : Fundamental Data for FK4/FK4Sup Stars	285
56. G. LYNGBÅ : Remarks about the cataloguing of open cluster data	289
57. M. BARBIER, M. PETIT : Catalogue bibliographique de vitesses radiales stellaires	293
58. P. POLECHOVA : The new catalogue of optical HII-Regions	297
59. A. ACKER, J. MARCOUT : Catalogue of planetary nebulae and their nuclei	301
60. G. EBEL : Numerical data documentation in physics in the Federal Republic of Germany	305
DISCUSSION	321
B. HAUCK : Final comment	309
W.D. HEINTZ : Report of discussions	311
AUTHOR'S INDEX	323