

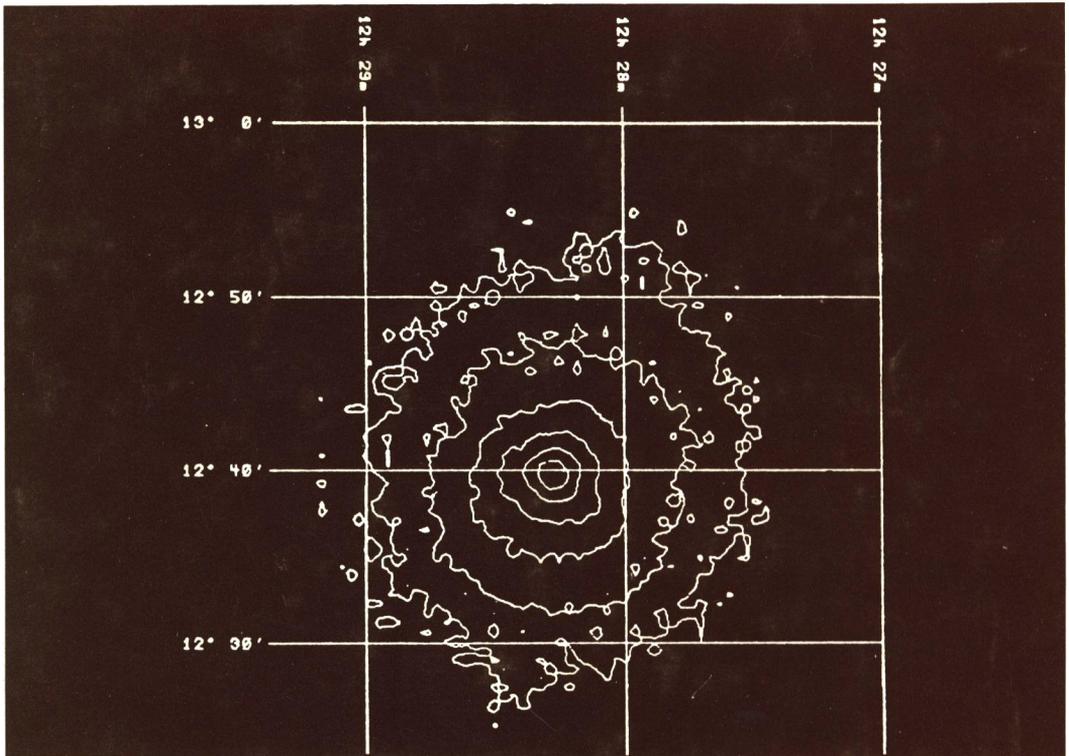
INTERNATIONAL ASTRONOMICAL UNION

HIGHLIGHTS OF ASTRONOMY

VOLUME 5

*As presented at the XVIIth General Assembly
of the IAU, 1979*

Edited by P. A. WAYMAN



INTERNATIONAL ASTRONOMICAL UNION

D. REIDEL PUBLISHING COMPANY / DORDRECHT : HOLLAND

BOSTON : U.S.A. / LONDON : ENGLAND



HIGHLIGHTS OF ASTRONOMY

VOLUME 5

*As Presented at the XVIIth General Assembly
of the IAU, 1979*

In 1979, the IAU held its XVIIth General Assembly in Montreal, Canada. The Assembly included Commission Meetings and Joint Discussions arranged by Commissions. The Commissions also organised the Invited Discourses and these are presented in this volume. The Discourses were delivered by three eminent Union members - G. Herzberg, B. Paczynski, S. Chandrasekhar. The latter's contribution marked the birth of Albert Einstein a hundred years ago. The Proceedings of seven of the eight Joint Discussions covering a wide variety of interest are also included. A small selection of papers from the many Joint Meetings of the IAU Commissions are included as well.

*(Cover picture: "X-ray Observations of M87's Halo",
from Joint Discussion No. 8 by D. Fabricant, M.
Lecar, and P. Gorenstein.)*

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

HIGHLIGHTS OF ASTRONOMY

INTERNATIONAL ASTRONOMICAL UNION
UNION ASTRONOMIQUE INTERNATIONALE

HIGHLIGHTS OF ASTRONOMY

VOLUME 5

AS PRESENTED AT THE XVIIth GENERAL ASSEMBLY OF THE IAU, 1979

EDITED BY

PATRICK A. WAYMAN
(General Secretary of the Union)



D. REIDEL PUBLISHING COMPANY

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



The Library of Congress Cataloged This Serial Publication as Follows:



International Astronomical Union.

Highlights of Astronomy as presented at the General Assembly of the IAU v. 1
1967

Dordrecht, D. Reidel.

v. illus. 25 cm.

Editors: 1967, L. Perek; 1970, C. de Jager; 1973, G. Contopoulos; 1977,
E. Müller; 1980, P. Wayman.

1. Astronomy—Congresses. I. Perek, Lubos, ed. II. Jager, Cornelis
de, ed. III. Title.

QB51.I57 520 71-159657

ISBN 90-277-1146-1

*Published on behalf of
the International Astronomical Union
by*

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

All Rights Reserved

Copyright © 1980 by the International Astronomical Union

*Sold and distributed in the U.S.A. and Canada
by Kluwer Boston Inc., Lincoln Building,
160 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.

*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 publisher*

Printed in The Netherlands

TABLE OF CONTENTS

PREFACE by P. A. Wayman vii

INVITED DISCOURSES & A SELECTED PAPER

G. HERZBERG / The Interplay of Molecular Spectroscopy and Astronomy	3
B. PACZYNSKI / Stellar Evolution and Close Binaries	27
S. CHANDRASEKHAR / The Role of General Relativity in Astronomy : Retrospect and Prospect	45
L. GOLDBERG / Scientific Need for Space Astronomy (presented to Commission 44)	63

JOINT DISCUSSIONS

1. LARGE-SCALE VELOCITY FIELDS ON THE SUN (Chairman M. Stix)	71
3. NUCLEI OF NORMAL GALAXIES (Chairman W. B. Burton)	129
4. ULTRAVIOLET ASTRONOMY - NEW RESULTS FROM RECENT SPACE EXPERIMENTS (Chairman A. K. Dupree)	227
5. VERY HOT PLASMAS IN CIRCUMSTELLAR, INTERSTELLAR, AND INTERGALACTIC SPACE (Chairman W. I. Axford)	331
6. STELLAR INSTABILITIES (Chairman A. N. Cox)	429
7. PHYSICS OF THE CHROMOSPHERE - CORONA-WIND COMPLEX AND MASS LOSS IN STELLAR ATMOSPHERES (Chairman D. H. Mihalas)	521

8. EXTRAGALACTIC HIGH ENERGY ASTROPHYSICS (Chairman H. van der Laan)	615
---	-----

JOINT COMMISSION MEETINGS

1. SPACE ASTROMETRY (Chairman G. Westerhout)	777
2. STELLAR ABUNDANCES AND STELLAR ROTATION (Chairman M. Hack)	809
3. CLOSE BINARIES AND STELLAR ACTIVITY (Chairman G. Larsson-Leander)	839
AUTHOR INDEX	867