

TRANSACTIONS
OF THE
INTERNATIONAL
ASTRONOMICAL UNION
VOL. XVII (REPORTS 1976)
PART 3

REPORTS ON ASTRONOMY

**TRANSACTIONS
OF THE
INTERNATIONAL
ASTRONOMICAL UNION
VOLUME XVIIIA – PART 3
REPORTS**

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS
INTERNATIONAL ASTRONOMICAL UNION
UNION ASTRONOMIQUE INTERNATIONALE

TRANSACTIONS
OF THE
INTERNATIONAL ASTRONOMICAL UNION
VOLUME XVII A - PART 3

REPORTS
ON
ASTRONOMY

Edited by

G. CONTOPOULOS

General Secretary of the Union



D. REIDEL PUBLISHING COMPANY

DORDRECHT-HOLLAND / BOSTON-U.S.A.

1976

ISBN 90-277-0741-3

*Published on behalf of
the International Astronomical Union
by
D. Reidel Publishing Company, P.O. Box 17, Dordrecht, Holland*

*All Rights Reserved
Copyright © 1976 by the International Astronomical Union*

*Sold and distributed in the U.S.A., Canada, and Mexico
by D. Reidel Publishing Company, Inc.
Lincoln Building, 160 Old Derby Street, Hingham,
Mass. 02043, U.S.A.*

*No part of this book may be reproduced in any form, by print, photoprint, microfilm,
or any other means, without written permission from the publisher*

Printed in The Netherlands

INTRODUCTION

The reports on Astronomy, 1976, have been arranged into three Volumes of moderate size and as much as possible homogeneous contents. The Commission Reports have been divided as follows:

VOL. XVIA-1

Commissions

4	Ephemerides
7	Celestial Mechanics
9	Instruments and Techniques
14	Fundamental Spectroscopic Data
15	Physical Study of Comets, Minor Planets and Meteorites
16	Physical Study of Planets and Satellites
17	The Moon
19	Rotation of the Earth
20	Positions and Motions of Minor Planets, Comets and Satellites
21	Light of the Night-Sky
22	Meteors and Interplanetary Dust
31	Time
49	The Interplanetary Plasma and the Heliosphere
5	Documentation
6	Astronomical Telegrams
38	Exchange of Astronomers
41	History of Astronomy
46	Teaching of Astronomy
50	Identification and Protection of Existing and Potential Observatory Sites

VOL. XVIA-2

Commissions

8	Positional Astronomy
10	Solar Activity
12	Radiation and Structure of the Solar Atmosphere
24	Photographic Astrometry
25	Stellar Photometry and Polarimetry
26	Double Stars
27	Variable Stars
29	Stellar Spectra
30	Radial Velocities
35	Stellar Constitution
36	Theory of Stellar Atmospheres
42	Close Binary Stars
45	Spectral Classifications and Multi-band Colour Indices

See the Contents for this volume, p. VII.

It is hoped that the present system will allow a wider circulation of the separate Volumes to Members of the IAU and other scientists interested in particular topics of astronomical research.

Still it was necessary to adopt the utmost conciseness in the Reports. Otherwise, in view of the considerable increase of the astronomical activity (including the work of physicists, chemists and other non professional astronomers) each of the three volumes could well be more than double its present size.

In view of this restriction the various Presidents of Commissions reacted in different ways. Some have reviewed the recent research in the area of their Commissions, giving only a few general references, others have provided extensive references but little description of the published work. However, in most Commissions' Reports I found a wealth of useful and exciting information that would be valuable for research workers in any field of Astronomy.

I want to thank all Presidents of Commissions and their Colleagues who took part in preparing the various Commissions' Reports.

G. CONTOPOULOS
General Secretary

Athens
January 31, 1976

CONTENTS

28. Galaxies	1
33. Structure and Dynamics of the Galactic System (Structure et Dynamique du Système Galactique)	37
34. Interstellar Matter and Planetary Nebulae (Matière Interstellaire et Nébuleuses Planétaires)	73
37. Star Clusters and Associations (Amas Stellaires et Associations)	117
47. Cosmology (Cosmologie)	137
40. Radio Astronomy (Radio Astronomie)	159
44. Astronomical Observations from Outside the Terrestrial Atmosphere (Observations Astronomique au-dehors de l'Atmosphère Terrestre)	195
48. High Energy Astrophysics (L'Astrophysique de Grande Énergie)	221