

CHAPTER IV

REPORT OF THE EXECUTIVE COMMITTEE

1988-1991

1. Composition of the Executive Committee

<i>President:</i>	Y. Kozai	Japan
<i>General Secretary:</i>	D. McNally	UK
<i>Assistant General Secretary:</i>	J. Bergeron	France
<i>President-Elect:</i>	A.A. Boyarchuk	USSR
<i>Vice-Presidents:</i>	A.H. Batten	Canada
	R. Kippenhahn	Germany
	P.O. Lindblad	Sweden
	V. Radhakrishnan	India
	M.S. Roberts	USA
	Shu Hua Ye	China PR
<i>Advisers:</i>	J. Sahade	Argentina
	J.-P. Swings	Belgium

2. Administration

Executive Committee Meetings

Four Meetings of the Executive Committee were held:

57th Meeting:	31.07-01.08.88	Baltimore, USA J. Sahade in the Chair
58th Meeting:	11.08.88	Baltimore, USA Y. Kozai in the Chair
59th Meeting:	01-04.09.90	Stockholm, Sweden Y. Kozai in the Chair
60th Meeting:	07-10.09.90	Munich, Germany Y. Kozai in the Chair

The activities of the Executive Committee are recorded in the Minutes of the Executive Committee and summaries of these Minutes are published in the Information Bulletins (EC 57, 58 are summarised in IB 61 (pp. 10 & 11), 59 in IB 63 (pp. 10 & 11), 60 in IB 65 (pp. 6 & 7). The activities directed towards improving the Union's service to astronomy include the following:

- i. A proposal to extend the Executive Committee, by the addition of a President-Elect, was put to the Extraordinary General Assembly which preceded the XXth General Assembly and carried. The object of this extension is to give greater continuity in the affairs of the Union for the holder of the office of President. The holder of the Office serves the Union for nine years -three as President-Elect, three as President and three as Advisor to the President.

- ii. A proposal to institute a new class of National Member -Associate Member- was put to the Extraordinary General Assembly preceding the XXth General Assembly and carried. The object of this proposal was to allow closer integration to the Union of countries currently embarking on the development of a commitment to astronomical science. Two countries -Malaysia, Peru- were admitted to the Union as Associate Members by the XXth General Assembly of the Union.
- iii. The 57th Executive Committee established the Working Group for the Worldwide Development of Astronomy under the Chairmanship of Vice-President A.H. Batten with a wide-ranging mandate to review, consider and encourage ways and means whereby the Union could further enhance and extend participation in astronomical science.
- iv. The 58th Executive Committee established a subcommittee under the Chairmanship of J. Sahade (with members -F. Drake, A. Massevich, M. McCarthy & F.G. Smith) to discuss the important issues raised by a Resolution submitted to the XXth General Assembly by the Swedish National Committee for Astronomy and subsequently withdrawn. The subcommittee after consultation by post and a meeting at the Union Secretariat reported:
 - . that the IAU should approach ICSU, COSPAR and other scientific unions concerning the on-going and planned civilian and military activities in space that would pollute the space environment and would be harmful to the free pursuit of scientific research and convene, at the earliest possible time, an IAU/ICSU conference to discuss these problems and suggest appropriate activities;
 - . that the IAU set up a Standing Advisory Committee to examine activities proposed on the ground and in space which might damage Astronomy;
 - . that the IAU take a strong stand, with ICSU and before the relevant bodies calling for free exchanges of information and urging that all astronomically useful technological developments be made available for application in the progress of astronomy;
 - . that the IAU urge the National Committees for Astronomy to take the necessary steps that their own countries would act individually and internationally in support of the aims of the subcommittee;
 - . that the Executive Committee report on the result of their endeavours in respect of the conclusions of the subcommittee at the next IAU General Assembly.

The EC accepted the report of the subcommittee at their 60th Meeting (Munich, 1990). The Executive Committee have

- . begun the organisation of an Expository Meeting with ICSU and UNESCO support to be held 1992 June 30, July 01, 02 at UNESCO Headquarters, Paris;

- . had IAU resolutions on Adverse Environmental Impacts on Astronomy (in the widest terms) accepted by the General Committee of ICSU (1989) and the General Assembly of ICSU (1990) (in association with URSI);
 - . with IUPAC and several other ICSU Unions asked ICSU to examine the impact of all weapons of mass destruction;
 - . begun to consider the possibility of making a submission to the UN Committee on the Peaceful Uses of Outer Space;
 - . proposed that Commission 50 considers the extension of its mandate to include all forms of Adverse Environmental Impact on Astronomy as a more appropriate alternative to a Standing Committee;
- v. A continuing concern for the Executive Committee has been the financing of the Union. As national financial constraints bite deeper, an increasing number of countries are finding difficulty in maintaining their subventions to the Union. Currently the arrears of subvention are at a level of 75% of the annual expenditure of the Union on Symposia and Colloquia. The EC is aware that the financial contributions it can make to the scientific work of the Union can only be a small (and decreasing) fraction of their total cost. There is no money to support new and much needed ventures since the Union cannot increase its subvention unrealistically at a time when Adhering Bodies are under severe pressure to reduce their budgets.
- vi. The Union has been considering fund-raising activities over a number of triennia and the EC will be putting a proposal to the XXIst General Assembly designed to measure support for the establishment of an IAU Trust Fund based on individual subscription by members, donations and bequests. The primary object of such a Trust Fund would be the accumulation of capital and income to finance new Union projects.
- vii. The EC has reviewed the publication policy of the Union. It has put out the contract for the Union publications to tender and the contract has been retained by the Union's present publisher, Kluwer Academic Publishers for a further period of six years 1992-1997 against a tightly contested field. The Union will continue to benefit from the royalties generated by its publications. The EC has also looked at the continued publications of Transactions. Transactions B will be continued as the public record of the Union and a review of Transactions A is in progress. During the triennium it was decided to publish General Assembly information in the Information Bulletin in order to cut down on proliferation of documents and to keep a single source of information on Union activities.

viii. Following concern expressed during the XXth General Assembly (in particular the levelling of the participation rate at General Assemblies at about 2000 individuals despite a doubling of Union membership every 14 years) the Executive Committee has devoted considerable attention to this problem. EC 58 set up a subcommittee to examine the matter under the Chairmanship of the President (members: J. Lequeux, D. McNally, E. Roemer, J.-P. Swings). A proposal, from the subcommittee to shorten the General Assembly has been made and the EC has referred the debate both to the Presidents of Commission and the membership to seek a consensus. Some recommendations from the subcommittee for improving the presentation of science at the General Assembly will be implemented with effect from the XXIst General Assembly viz:

- . Vice-Presidents and President-Elect serving ex officio on the Scientific Organising Committees of Joint Discussions.
- . reduction in the number of Symposia/Colloquia associated with the General Assembly
- . encouraging the greater use of Joint commission meetings
- . the introduction of a limited display of posters.

Officers Meetings

The Officers -President, General Secretary, Assistant General Secretary- met 7 times:

30.07.88	Baltimore, USA
10.08.88	Baltimore, USA
23-24.02.89	Paris, France
31.08.89	Stockholm, Sweden
13-14.02.90	Paris, France
06.09.90	Munich, Germany
07-02.91	Paris, France

IAU Secretariat

The Secretariat is now established in its new premises and hosted by INSU. The postal address, telephone, fax, telex and e-mail for the Secretariat are as follows:

Address: Room 318/319, 98bis, Boulevard Arago,
75014 Paris, France
Telephone: (33) 1-43-25-83-58
Telefax: (33) 1-40-51-21-00
Telex: 205671 IAU F
e-mail: IAPOBS::IAU or IAU@FRIAP51

Following the failure of the Union's IBM PC in the summer of 1989, a new computer system was installed to replace both the failed PC and the Xerox Word Processing System. The new system comprises 3 x Compaq 386s PCs supporting 2 dot matrix printers, a laser printer and a tape streamer back up drive. The new system with Word V, Lotus 1,2,3 and DBase III+ provides an excellent service. The computers are linked using Mainlan software.

In the spring of 1991 the Secretariat's computers were linked to the central computer of the Institut d'Astrophysique to provide an e-mail service.

IAU Staff

Mrs. H. Gigan resigned as part-time bilingual secretary with effect from 1990 January 31 and was replaced, with effect from 1990 July 09, by Mrs. J. Crook as full-time secretary/typist.

Following changes in French law, the position of Monique Léger-Orine, Administrative Assistant was regularised by CNRS. Monique Léger-Orine remains an employee of CNRS while seconded to the IAU.

Adhering Countries

Algeria, Iceland, Morocco & Saudi Arabia were admitted as Members of the Union at the XXth General Assembly. Malaysia & Peru were admitted as the first Associate Members of the Union at the XXth General Assembly.

Individual Membership

792 new individual Members were admitted to the Union at the XXth General Assembly, bringing the total membership to 6711 as of 1988 November 30. As of 1991 March 31 the membership of the Union was 6624.

Consultants

The 40 Commissions of the Union and the associated Working Groups were assisted by 223 Consultants during the triennium.

3. Commissions of the IAU

Commission Reports for the period 1987 July 01-1990 June 30 have been published as IAU Transactions XXIA -Reports on Astronomy (619 pages). The triennium has been one of characteristic activity for the Commissions of the Union. Several Commissions have commented that the striking feature of the triennium was the launch of several major "observatories" into space -HIPPARCOS, the Hubble Space Telescope, ROSAT- which will do much to change the perspective of astronomical science in the current decade and beyond. Commissions offering specific services are listed below.

Commission 5: Documentation & Astronomical Data

The IAU Style Manual prepared by G.A. Wilkins was published in IAU Transactions XXB -Proceedings of the XXth General Assembly and was dedicated to the memory of D.H. Sadler, General Secretary of the Union 1958-1964. The Style Manual is available on request from the IAU Secretariat. A summary of the Recommendations contained in the Manual was published in IB 65 (pp. 8-13).

Commission 6: Astronomical Telegrams

The IAU Central Bureau for Astronomical Telegrams (Director: B.G. Marsden) issued the following number of *Circulars & Telegram Books* in 1988, 1989, 1990 respectively: 175, 35; 240, 59; 216, 43. 1989 was the first full year of e-mail dissemination of the Circulars -by the end of 1990 there were 207 subscribers to this service, together with over 700 subscribers to the printed Circulars.

Commission 19: Rotation of the Earth

The period has been marked by the start of the new International Earth Rotation Service (IERS), which benefits from a tight co-operation between astronomers, geodesists and specialists in satellite geodesy, as well as meteorologists. The scope of the IERS covers not only the Earth's rotation *per se*, but also the conventional terrestrial reference frame, of direct interest to the International Association of Geodesy, and a high accuracy (0.001") celestial reference frame based on extragalactic compact sources observed in Very Long Baseline Interferometry. The IERS conventional celestial reference frame is consistent with the FK5 within the uncertainties of the latter (0.04"). The IERS Standards (1989) which contain the current best estimates of astronomical models and constants are used in many fields of astronomy and geodesy.

Shortly after the adoption of the IAU 1980 Theory of Nutation, VLBI and LLR observations started to show evidence of inaccuracies in some of its components, at the level of 0.001" to 0.01"; in addition, these observations show that the IAU 1976 precession constant requires a correction of about -0.27"/cy. To avoid systematic errors that would result from the use of the conventional models, IERS has complemented the usual three orientation parameters (x, y which describe the motion of the rotation axis in the Earth, and universal time) by two additional parameters, the celestial pole offsets in longitude and in obliquity. These two parameters can be directly interpreted in terms of nutations in space of the rotation axis.

In parallel to the development of the observing techniques and to their efficient coordination in IERS, the high accuracy (better than 0.001") of today's Earth orientation determinations has encouraged deeper research in the contribution of the various parts of the planet to its rotation variations. Independent analyses converge to ascribe the irregular oscillations in polar motion and universal time to the atmospheric influence, for periods from a few days to several years. The corresponding atmospheric mechanisms are progressively unveiled for the rapid oscillations, but much remains to be understood for the lower frequencies (Chandler term, Southern oscillation) and for the suspected relationships with the solar emissions. The influence of the oceans and groundwater is being clarified. The study of solid Earth effects is also progressing, thanks to the parallel developments of theory and geophysical measurements.

*Commission 20: Positions & Motions of Minor Planets,
Comets & Satellites*

Minor Planet Circulars were issued, under the direction of B.G. Marsden, to a total of 1448, 1528 & 1872 pages in 1981, 1989, 1990 respectively. In 1988, 1989 & 1990, 236, 3339 & 384 minor planets were numbered.

Commission 38: Exchange of Astronomers

Since September 1988, Commission 38 assisted the travel of 5, 12 and 8 astronomers in 1988, 1989 and 1990 respectively, disbursing a total of 56,000 Sw.F. The bulk of these grants was to assist astronomers from the developing world spend a period of three months or longer at a host institution to further their astronomical research.

The list of the grantees (September 1988-December 1990) is given below:

Name	Home Institution Host Institution	Country
Bhattacharya D.	Raman Institute University of Amsterdam	India Netherlands
Beauge C.	Observatorio Astronomico Institute of Astronomy Cambridge	Argentina UK
Clocchiatti A.	Observatorio Astronomico University of Texas McDonald Observatory	Argentina USA
Das Gupta	IUC Astronomy & Astrophysics University of Wales Cardiff	India UK
Dwivadi B.N.	Banaras Hindu University Glasgow University	India UK
Ferraz-Melo S.	Sao Paulo University Observatoire de Paris-Meudon	Brazil France
Ghosh P.	Tata Institute University of Illinois	India USA
Gomez M.	Observ. Astronomico Cordoba Smithsonian Astrophys. Obs.	Argentina USA
Ibanez M.H.	University de Los Andes St Andrews	Venezuela UK
Jerzykiewicz M.	Wroclaw Univ. Observatory SAAO	Poland South Africa
Jorissen A.	Institut Astronomie Brussels University of Texas Austin	Belgium USA
Kim Ho-Il	Yonsei Univ. Observatory, Seoul Univ. Nebraska, Lincoln	Korea R USA
Kubacek D.	Astronomical Institute Harvard-Smithsonian	Czechoslovakia UK

Li Zhongyuan	University of Science & Technology MSSL	China PR UK
Mauas R.	IAFE Harvard Smithsonian	Argentina USA
Nagendra K.N.	Indian Inst. of Astrophysics Rensselaer Polyt. Inst. NY	India USA
Ryan S.	Mount Stromlo Observatories Yale University/ Institute of Astronomy Cambridge	Australia USA UK
Sagar R.	Indian Inst. of Astrophysics AAO	India Australia
Saha S.K.	Indian Inst. Astrophysics Bangalore CERGA-OCA, Grasse	India France
Sattayaprakash B.S.	IUC Astronomy & Astrophysics University of Wales Cardiff	India UK
Seimis J.	University of Athens Inst. Theoretical Astronomy Leningrad/ N. Copernicus Astron. Center	Greece USSR Poland
Singal A.K.	TIFR Inst. für Astrophysik Bonn	India Germany
Stefl S.	Ondrejov Observatory University of Tucson Arizona University of Toronto	Czechoslovakia USA Canada
Tancredi G.	University Rep. Montevideo Uppsala University	Uruguay Sweden
Wang Ruyou	Shanghai Observatory NOAO	China PR USA

The rules adopted by Commission 38 for its travel grants are published annually in the January issue of the Information Bulletin.

Commission 46: *Teaching of Astronomy*

- Visiting Lecturer Programme

Two VLP programmes -Paraguay & Peru- have been supported during the triennium.

The VLP in Peru is now in its sixth year of operation and, in principle, is due to terminate (but see later).

The VLP in Paraguay will not end until 1992 and can be extended.

These VLPs have stimulated interest in astronomical studies in the host countries. However, that very success has identified further problems not anticipated initially. Although the VLP in Peru should end in 1991, the IAU has only been able to supply four out of six lecturers specified in the contract. It is proving very difficult in the present financial climate for lecturers to obtain leave of absence with pay for the duration of a lecture course.

- International Schools for Young Astronomers (ISYA)

Three International Schools for Young Astronomers have been held during the triennium:

No. 16	Cuba (Havana),	1989 July 31-August 20.
No. 17	Malaysia (Malacca),	1990 May 28-June 15.
No. 18	Morocco (Marakesh),	1990 September 10-28.

this last one with support from UNESCO.

All 18 ISYA have been organised for the IAU by J. Kleczek. Following his retirement, he has relinquished the direction of the ISYA. The IAU is very grateful to Dr. Kleczek for his devotion to the ISYA, for his patience and hard work in organising them and for his active participation in each School. He has established a fine institution and the success of the ISYA is no more clearly demonstrated than by the fact that Dr. Kleczek's co-organiser of the 17th ISYA was herself a graduate of an earlier School. Dr. Kleczek's successor will be Prof. D. Wentzel, assisted by Dr. M. Gerbaldi.

4. Scientific meetings held

Symposia (14)

- 134 *Active Galactic Nuclei*
15-18.08.88, Santa Cruz, USA
- 137 *Flare Stars in Star Clusters, Associations
& the Solar Vicinity*
23-27.10.89, Byurakan, USSR
- 138 *Solar Photosphere: Structure, Convection
& Magnetic Fields*
15-20.05.89, Kiev, USSR
- 139 *Galactic & Extragalactic Background Radiation
-Optical, Ultraviolet & Infrared Components*
12-16.06.89, Heidelberg, Germany
- 140 *Galactic & Intergalactic Magnetic Fields*
19-25.06.89, Heidelberg, Germany
- 141 *Inertial Coordinate System on the Sky*
07-21.10.89, Leningrad, USSR
- 142 *Basic Plasma Processes on the Sun*
01-05.12.89, Bangalore, India
- 143 *Wolf-Rayet Stars & Interrelations with
other Massive Stars in Galaxies*
18-22.06.90, Denpasar, Indonesia
- 144 *The Interstellar Disk-Halo Connection in Galaxies*
18-22.06.90, Leiden, Netherlands
- 145 *Evolution of Stars:
The Photospheric Abundance Connection*
27-31.08.90, Bruzba, Bulgaria
- 146 *Dynamics of Galaxies
& their Molecular Cloud Distributions*
05-09.06.90, Paris, France

- 147 *Fragmentation of Molecular Clouds & Star Formation*
11-15.06.90, Grenoble, France
- 148 *The Magellanic Clouds & their Dynamical
Interaction with the Milky Way*
09-13.07.90, Sydney, Australia
- 152 *Chaos, Resonance & Collective Dynamical
Phenomena in the Solar System*
July 15-19, 1991, Angra dos Reis, Brazil

Colloquia (22)

- 104 *Solar & Stellar Flares*
15-19.08.88, Stanford, USA
- 107 *Algols*
15-19.08.88, Victoria, Canada
- 111 *The Use of Pulsating Stars in Fundamental Problems
of Astronomy*
15-17.08.88, Lincoln, USA
- 112 *Light Pollution, Radio Interference & Space Debris*
15-17.08.88, Washington, USA
- 113 *Physics of Luminous Blue Variables*
15-18.08.88, Quebec, Canada
- 114 *White Dwarfs*
14-19.08.88, Hanover, USA
- 115 *High Resolution X-Ray Spectroscopy of Cosmic Plasmas*
22-25.08.88, Cambridge, USA
- 116 *Comets in the post-Halley Era*
24-29.04.89, Bamberg, Germany
- 117 *Dynamics of Solar Prominences*
25-29.09.89, Hvar, Yugoslavia
- 120 *Structure & Dynamics of the Interstellar Medium*
16-19.04.89, Granada, Spain
- 121 *Inside the Sun*
22-26.05.89, Versailles, France
- 122 *Physics of Classical Novae*
27-30.06.89, Madrid, Spain
- 123 *Observations in Earth Orbit & Beyond*
24-27.04.90, Greenbelt, USA
- 124 *Paired & Interacting Galaxies*
04-07.12.89, Tuscaloosa, USA
- 125 *Radio Recombination Lines: 25 years
of Investigations*
11-16.09.89, Pushino, USSR
- 126 *Origin & Evolution of Interplanetary Dust*
27-30.08.90, Kyoto, Japan
- 127 *Reference Systems*
14-20.10.90, Virginia Beach, USA

- 128 *Magnetospheric Structure
& Emission Mechanisms of Radio Pulsars*
17-23.06.90, Lagow, Poland
- 129 *Structure & Emission Properties
of Accretion Disks*
02-06.07.90, Paris, France
- 130 *The Sun & Cool Stars: Activity, Magnetism, Dynamics*
17-21.06.90, Helsinki, Finland
- 131 *Radio Interferometry
-Theory, Techniques & Applications*
8-12.10.90, Socorro, USA
- 132 *Instability, Chaos & Predictability
in Celestial Mechanics & Stellar Dynamics*
10-13.10.90, Delhi, India

Regional Meetings (4)

- 11th European Regional Astronomy Meeting
03-07.07.89, Tenerife, Spain
- 6th Latin-American Regional Meeting
16-20.10.89, Gramado, Brazil
- 5th Asian-Pacific Regional Meeting
16-20.07.90, Sydney, Australia
- 12th European Regional Meeting
European Astronomers look to the Future
8-11.10.90, Davos, Switzerland

Co-Sponsored Meetings (11)

- Radio Astronomy Seeing -Tropospheric
& Ionospheric Effects*
15-19.05.89, Beijing, China PR, with URSI
- Physics of the Outer Heliosphere*
19-22.09.89, Warsaw, Poland
with COSPAR & the Polish Academy of Sciences
- 7th Quadriennial Solar Terrestrial Physics Symposium
25-30.06.90, the Hague, Netherlands
Co-sponsored by SCOSTEP, COSPAR, IAGA, IAMAP, URSI & IUPAP.
- COSPAR XXVIII: the Hague, Netherlands:
Plenary Meeting, 25.06-06.07.90
- Magnetospheres of the Outer Planets, 25-27.06.90*
- The Infrared Submillimeter Universe at high Redshifts*
25-29.06.90
- Astrometry from Space, 27-28.06.90*
- Space Observations of the Solar Corona
& the Origin of the Solar Wind*
27-29.06.90
- Latest Results on Mars & Phobos Studies*
28-30.06.90
- Neptune after Voyager, 02-04.07.90*

General Assembly

The XXth General Assembly was held from 02 through 11.08.88 in Baltimore, USA. IAU Transactions XXB (1990) contain the Report of the Proceedings of the Extraordinary General Assembly, the General Assembly of the Union, the Resolutions adopted by the General Assembly and the report of the business and scientific sessions of the Union's 40 Commissions during the General Assembly.

5. Publications

Publisher

The tender for the IAU Publishing Contract was issued in late 1989 and a choice was made between four highly competitive tenders. Kluwer Academic Publishers -the current IAU publisher- offered the most advantageous terms and a new contract was signed in 1991 March. The new contract will run for six years from 1992 January 01-1997 December 31.

Sales

Number of copies sold (hard, soft) by Kluwer Academic Publishers in the period 1988-1990:

Transactions

XIIIA (1), XIVA (1), XVA (1), XVIIA Part 2 (5),
XVIIA Part 2 (3), XVIIIB (4), XVIIIA (6), XIXA (11),
XIXB (29), XXA (326), XXB (244).

Highlights

1 (2), 2 (2), 3 (4), 4 Part 1 (2,1), 4 Part 2 (11,2), 5 (4),
6 (10), 7 (35,25), 8 (210,157).

Symposia Proceedings

32 (7), 35 (4), 37 (2), 38 (3), 39 (5), 40 (3), 43 (4),
44 (7), 45 (5), 46 (3), 47 (8), 48 (6), 49 (1), 50 (7),
51 (2,1), 52 (5), 53 (2), 54 (2,1), 55 (3,1), 56 (3),
57 (4,1), 58 (3), 59 (2,1), 60 (2), 61 (7,1), 62 (3,1),
63 (1), 64 (3,3), 65 (4), 66 (3), 67 (5,4), 68 (3,2),
69 (4,3), 70 (3,2), 71 (4,3), 72 (3,2), 73 (6,2), 74 (6,3),
75 (3,5), 76 (4,2), 77 (2,1), 78 (4,1), 79 (7,3), 80 (3,2),
81 (5,3), 82 (18,4), 83 (2,1), 84 (4), 85 (21), 86 (7,1),
87 (6), 88 (6,3), 89 (6,1), 90 (4,4), 91 (5,3), 92 (4),
93 (4,2), 94 (2,1), 95 (10), 96 (6), 97 (8), 98 (2,9),
99 (2), 100 (3,4), 101 (5,1), 102 (9,4), 103 (8,4),
104 (9,10), 105 (11,7), 106 (11,13), 107 (7,11), 108 (6,8),
109 (11,10), 110 (11,14), 111 (11,14), 112 (28,34),
113 (18,19), 114 (12,44), 115 (17,39), 116 (5,17),
117 (34,76), 118 (33,37), 119 (46), 120 (12,34), 121 (30,64),
122 (49,112), 123 (47,81), 124 (79,135), 125 (119,126),
126 (294,176), 127 (54,177), 128 (345,132), 129 (326,176),
130 (318,206), 131 (280,182), 132 (286,151), 133 (309,157),
134 (297,267), 135 (289,182), 136 (297,222), 137 (236,115),
138 (297,150), 139 (263,109), 140 (309,165), 141 (261,144),
142 (258,110).

Information Bulletin

Six issues of the Information Bulletin (Nos. 61-66) were published during the triennium. Members of the Union, its Consultants, Adhering Organisations, sister Unions and selected Scientific Institutions receive the Information Bulletin free of charge. The print run is now 7700 copies.

6. Relations with other organisations

International Council of Scientific Unions (ICSU)

The IAU was represented by the General Secretary at the following meetings of (ICSU):

General Assemblies:

XXIInd (Beijing, 1989) & XXIIIrd (Sofia, 1990)

Meetings of the General Committee:

24th, 25th (Beijing, 1988), 26th (Lisbon, 1989), 27th & 28th (Sofia, 1990)

ICSU, with immediate effect, moves to a three year cycle of General Assemblies, the 24th will be held in 1993, though the General Committee will continue to meet annually between General Assemblies.

ICSU's flagship project -The International Geosphere Biosphere Programme- moves from its planning to implementation phase in 1991; the Committee on Ethical Problems of Science has been subsumed as a function of ICSU's Executive Board; the Executive Board is to carry out a study into the Freedom of Access to Information.

ICSU has given strong support to the IAU, URSI, IUCAF in their endeavours to minimise Adverse Environmental Impacts on Astronomy and is cosponsoring, together with UNESCO, an Expository IAU Meeting on this topic in mid-1992.

The IAU was represented at the XXVIIth Plenary Meeting (The Hague, 1990) of COSPAR (The ICSU inter-Union Committee on Space Research) by the General Secretary & L. Perek.

IAU representatives to other ICSU & International Institutions

The following representatives were active during the period 1988-1991:

<i>Acronyms</i>	<i>Organisation</i>	<i>Representative</i>
ICSU	International Council of Scientific Unions General Committee	<i>D. McNally</i>
BIPM/ CCDS	Bureau International des poids et mesures Working Group on the Temps Atomique International of the Consultative Committee for the Definition of the Second	<i>G. Winkler</i>
CCIR	International Radio Consultative Committee Study Group 2	<i>J. Whiteoak/ A.R. Thompson</i>
	Study Group 7	<i>S. Leschiutta</i>
CIE	Compagnie internationale de l'éclairage	<i>D. Crawford</i>

CODATA	Committee on Data for Science & Technology	G. Westerhout
COSPAR	Committee on Space Research	D. McNally
	COSPAR ISC B	J. Rahe
	COSPAR ISC D	S. Grzedzielski
	COSPAR ISC E	Y. Kondo
	COSPAR Sub. Committee E1	R. Sunyaev
	COSPAR Sub. Committee E2	M. Pick
COSTED	Committee on Science & Technology in Developing Countries	D. McNally
CTS	Committee on the Teaching of Science	L. Gouguenheim
EPS	European Physical Society Conference Committee	J. Bergeron
FAGS	Federation of Astronomical & Geophysical Services	E. Tandberg-Hanssen
IAF	International Astronautical Federation	Y. Kondo
IERS	International Earth Rotation Service	Ya. Yatskiv
IGBP	International Geosphere-Ionosphere Programme	J. Eddy
ISY	International Space Year	L. Gouguenheim
IUCAF	Inter-Union Commission on Frequency Allocation for Radio Astronomy & Space Science	B.A. Doubinsky N. Kaifu V.L. Pankonin G. Swarup
IUPAP	International Union of Pure & Applied Physics	V. Trimble
IUWDS	International Ursigram & World Day Service	H. Coffey
QBSA	Quarterly Bulletin on Solar Activity	E. Hieft
SCOPE	Scientific Committee on Problems of Environment	R. Cayrel
SCOSTEP	Scientific Committee on Solar-Terrestrial Physics	S.T. Wu
URSI	Union Radio-Scientifique Internationale	J. Baldwin

7. Financial matters

The triennial accounts for 1988, 1989 & 1990 are summarised below. The information is extracted from the "Vérification des Comptes" for 1988, 1989 & 1990 as certified by the IAU Auditors, P. Meyssonier EC (1988) & J.-M. Malaize (1989 & 1990).

The accounts are presented in terms of Sw.F.

The ICSU mean annual conversion rates for Swiss francs for 1988-1990 are:

	US \$	DFl.	FF	£
1988	1.4492	0.7397	0.2463	2.5883
1989	1.6267	0.7679	0.2560	2.6773
1990	1.4008	0.7630	0.2562	2.4618

The audited accounts are given to two decimal places. The summary accounts are rounded to the nearest Sw.F.

The unit of subscription for 1988, 1989 & 1990 was 1975, 2145 & 2220 Sw.F respectively.

SUMMARY ACCOUNTS 1988-1990

INCOME

	BUDGET	1988	1989	1990	TOTAL
1. CONTRIBUTIONS					
1.1. Adh. Organisations	1457490	461105	476858	493041	1431004
1.2. ICSU Allocation	87000	25122	25089	28333	78544
TOTAL 1.	1544490	486227	501947	521374	1509548
2. PUBLICATIONS					
2.1 Royalties)	165000	55478	57593	60482	173553
2.2. Others)	-	73	0	3268	3341
TOTAL 2	165000	55551	57593	63750	176894
3. INTEREST AND OTHER RECEIPTS					
3.1. Current accounts)		6394	457	797	7648
3.2. Saving accounts)	85000	15621	42794	53694	112109
3.3. Gains on Exchange)		45	0	634	679
TOTAL 3	85000	22060	43251	55125	120436
4. OTHER RECEIPTS					
4.1. Sp. contributions)		4926	0	0	4926
4.2. Grants)		0	0	0	0
4.3. Refunds)		14444	3070	2604	20118
4.4. Other)		0	2859	0	2859
TOTAL 4.	0	19370	5929	2604	27903
TOTAL INCOME	1794490	583208	608720	642853	1834781

Notes on Income:

1. Shortfall on contributions from Adhering Organisations and from ICSU. With increasing levels of default by Adhering Organisations and despite an expected rise from ICSU in the early part of the next triennium, the increase ICSU subvention due in 1993 will lead to further erosion in the value of the ICSU contribution.
2. Royalty income was moderately in increase of budget.
3. The apparent good result in interest obtained must be offset against losses on exchange.
4. Income from refunds etc was in excess of expectation.

Total income was in excess of budget expectation though losses on exchange made an income in line with the budget expectation.

EXPENDITURE

	BUDGET	1988	1989	1990	TOTAL
1. EXECUTIVE COMMITTEE					
1.1. EC mtgs	80000	623	39431	31116	71170
1.2. Officer's mtgs	24000	2549	2346	4689	9584
1.3. SNC expenses	5000		0		0
1.4. Others	0		0		0
TOTAL 1	109000	3172	41777	35805	80754
2. PUBLICATIONS					
2.1. Information Bulletin	56000	15662	21246	13144	50052
2.2. Other Publications	0	1035	0	0	1035
2.3. Devel. Countries)		1667	10159	3974	15800
2.4. Exec. Committee)	32000	0	8217	5027	13244
2.5. Post/Handling)		0	2056	947	3003
TOTAL 2	88000	18364	41678	23092	83134
3. SCIENTIFIC ACTIVITIES					
3.1. MEETINGS					
3.1.1. General Assembly	240000	337500	13337	104	350941
3.1.2. Symposia & Colloquia	365000	105228	121824	109458	336510
3.1.3. Reg. Astr. Meetings	65000	0	27000	19252	46252
3.1.4. ISYA	50000	0	11669	19373	31042
3.1.5. VLP	72000	2894	4261	11182	18337
3.1.6. Others	0	0	6020	3000	9020
Sub-total 3.1.	792000	445622	184111	162369	792102
3.2. COMMISSION ACTIVITIES					
3.2.1. Commission Expenses	10000	2702	2000	2009	6711
3.2.2. Commission Projects					
Exch. Astronomers	70000	15078	30665	15902	61645
Telegram Bureau)			3253		3253
Minor Planet Ctr)			3253		3253
Variable Star Cat)	51500	2595	9235		11830
Meteor Data Ctr)		0	0	1000	1000
Others		0	0	0	0
Sub-total 3.2.	131500	20375	48406	18911	87692
3.3. RELATIONS WITH OTHER ORGANISATIONS					
3.3.1. Subvention to ICSU	36000	6521	651	0	7172
3.3.2. Inter-Union Commissions	21000	6159	11214	769	18142
3.3.3. Repr. to other Organis.	24000	4028	2432	3405	9865
Sub-total 3.3.	81000	16708	14297	4174	35179

3.4.	OTHER ACTIVITIES					
3.4.1.	EC projects	15000	0	3452	601	4053
3.4.2.	Other projects	0	0	0	0	0
	Sub-total 3.4.	15000	0	3452	601	4053
	TOTAL 3.	1019500	482705	250266	186055	919026
4.	ADMINISTRATION					
4.1.	SECRETARIAT					
4.1.1.	Salaries/Charges)		105689	115722	102473	323884
4.1.2.	Office Expenses)		45811	114756	44570	205137
4.1.3.	GI Secr. Expenses)	592500	16181	16012	17674	49867
4.1.4.	Pdt's Expenses)		7117	0	0	7117
4.1.5.	AG Secr. Expenses)		0	0	649	649
	Sub-total 4.1.	592500	174798	246490	165366	586654
4.2.	OTHERS					
4.2.1.	Bank charges)		2438	3581	4464	10483
4.2.2.	Audit fees)		2921	1586	2431	6938
4.2.3.	Loss on exchange)	6000	10652	41004	4349	56005
4.2.4.	Miscellaneous)		0	2019	793	2812
	Sub-total 4.2.	6000	16011	48190	12037	76238
	TOTAL 4.	598500	190809	294680	177403	662892
	Additional Expenditure					
	Symposium 130		740			740
	TOTAL EXPENDITURE	1815000	695790	628401	422355	1746546

Notes on Expenditure

- Executive Committee Meetings within the budget (one meeting only just). Officers Meetings within budget -one Officer on site and another carefully scheduled other travels.
- Information Bulletin appears within budget but cost of distribution of one issue is not included in 1990. Cost of Distribution to Developing countries and EC is variable depending on what is published in the year.
- There was considerable overspend on the XXth General Assembly -however the figure does improperly include subventions to both Telegrammes & Minor Planet Centers.
The VLP spend has been very much less than anticipated.
Telegrammes & Minor Planets Circulars were fully paid in early 1991.
Subvention to ICSU was brought up to date in early 1991 after changes in payment structure. The basis of payment to ICSU will increase in 1993 from 2.5% to 3.5% of receipts from Adhering Organisations.

4. Salaries remain within budget as do Office Expenses. The increase in Office Expenses in 1989 reflected the move of the Secretariat and the acquisition of new Computer facilities.

Bank charges and commission is increasing.

Audit charges dropped over the triennium.

There was a 5 month saving on salary for one member of the staff.

BALANCE 1988-1990

The Balance for the years 1988-1990 is set out below:

	1988	1989	1990
Balance at 31 December of preceding year	+781963	+661997	+658873
Revaluation of balance {+ = gain} {- = loss}	-7388	+16558	-19531
Income	+583208	+608719	+642853
Expenditure	-695791	-628401	-422355
Balance at end of year	+661997	+658873	+859840
Excess of Income over Expenses	-112582	-19682	+220498
Budget excess of Income over Expenditure	-106170	+46350	+44710

Notes on Balance 1988-199

- The balance at the end of 1990 is large but should be diminished by about 50,000 Sw.F. due in 1990 but unpaid until early 1991. The balance remaining is satisfactory.
- The average cost of running the Union in the triennium is budgeted to rise to an average of 730,000 Sw.F. annually. The Union Balance is therefore only 80,000 in excess of 1 year of operation in the next triennium.

PRELIMINARY ACCOUNTS 1991 01 - JUNE 30

The preliminary accounts are set out below and follow the format of the Summary Accounts 1988-1990. The Executive Committee Budget for 1991 is given, together with the sums remaining to be collected or disbursed. The figures represent the provisional state of the Union's Income and Expenditure as of 1991 June 20; the figures are unaudited and do not include gain/loss on exchange.

The unit of contribution for 1991 was 2220 Sw.F.

INCOME

	INCOME	EC BUDGET	DIFFERENCE
1. CONTRIBUTIONS *	451783	554360	102577
* Expected ICSU grant not yet received			
2. PUBLICATIONS	0	55000	55000
3. INTEREST	26206	25000	1206
4. OTHER RECEIPTS	1588	0	1588
TOTAL INCOME	479577	634360	154783

EXPENDITURE

	EXPENDITURE	EC BUDGET	DIFFERENCE
1. EXECUTIVE COMMITTEE	7201	8000	799
2. PUBLICATIONS			
2.1. Information Bulletin	18622	22000	3378
2.2. Publications	11473	10000	-1473
Devel. Countries			
Exec. Committee			
TOTAL 2	30095	32000	1905
3. SCIENTIFIC ACTIVITIES			
3.1. MEETINGS			
3.1.1. General Assembly	67083	240000	1972917
3.1.2/3 Symposia & Colloquia	6454	125000	118546
3.1.4. Reg. Astr. Meetings	0	0	0
3.1.5. ISYA 457	0	-457	
3.1.6. VLP 0	24000	24000	
Sub-total 3.1.	73997	389000	315006
3.2. COMMISSION ACTIVITIES			
3.2.1. Commission Expenses	0	5000	5000
3.2.2. Exch. Astronomers	1786	24000	22214
Other Projects	2375	13500	11125
Sub-total 3.2.	4161	42500	38339

3.3.	RELATIONS WITH OTHER ORGANISATIONS			
3.3.1.	Dues to ICSU *	31671	13200	-18471
3.3.2.	Other dues	18879	14000	-4879
	* 2 years of subvention to ICSU			
	Sub-total 3.3.	50550	27200	-23350
3.4.	OTHER ACTIVITIES	3710	5000	1290
	TOTAL 3.	132415	463700	331285
4.	ADMINISTRATION			
4.1.	Salaries/Training	39797	130000	90203
4.2.	Office Expenses	20532	60000	39468
4.3.	Officers' Expenses	10697	31000	20303
4.4.	Miscellaneous	5833	2500	-3333
	TOTAL 4.	76859	223500	331285
	TOTAL EXPENDITURE	246570	727200	480630
	Excess of Income over Expenditure			

PROPOSED IAU BUDGET 1992-1994

This budget, expressed in Sw.F., is planned on the basis of 248 units of contribution and an allowance of 5%/annum has been made for inflation (i.e. about 20% over 3 years) + an additional 10 Sw.F./annum/unit of contribution to compensate the loss of the DDR subvention.

The unit of contribution will be:

1992: 2335 + 10 = 2345
 1993: 2450 + 10 = 2460
 1994: 2570 + 10 = 2580

INCOME

	1992-94	1992	1993	1994	1989-91
1. CONTRIBUTIONS					
1.1. Adh. Organisations	1831480	581560	610080	639840	1532720
1.2. ICSU Allocation	93200	34000	28900	30300	78000
1.3. Grants UNESCO	13000	13000	-	-	-
TOTAL 1.	1937680	628560	638980	670140	1610720
2. PUBLICATIONS					
Royalties	186000	62000	62000	62000	165000
TOTAL 2	186000	62000	62000	62000	165000
3. INTEREST AND OTHER RECEIPTS					
3.1. Bank interest	75000	25000	25000	25000	75000
3.2. Other income *	-	-	-	-	-
* May be some additional income in 1994 on sale of IAU History					
TOTAL 3.	75000	25000	25000	25000	75000
Up 19% TOTAL INCOME	2198680	715560	725980	757140	18507

EXPENDITURE

An effort has been made to increase scientific expenditure

	1992-1994	1992	1993	1994	1989-1991
1. EXECUTIVE COMMITTEE					
1.1 EC mtgs	95000	45000	50000	-	80000
1.2 Officer's mtgs	24000	8000	8000	8000	24000
1.3 SNC expenses	5000	-	5000	-	5000
Up 14% TOTAL 1	124000	53000	63000	8000	109000

2.	PUBLICATIONS					
2.1	Information Bulletin	66000	20000	22000	24000	63000
2.2.	Other Publications *	25000	-	-	25000	-
2.3	Developing Countries	36000	12000	12000	12000	30000
2.4.	Executive Committee	15000	5000	5000	5000	-
	* Allowance for IAU History in 1994					
Up 53%	TOTAL 2	142000	37000	39000	66000	93000
3.	SCIENTIFIC ACTIVITIES					
3.1	MEETINGS					
3.1.1.	General Assembly	275000	-	-	275000	240000
3.1.2.	Symposia/Colloquia	414000	133000	138000	143000	365000
3.1.3	Regional Astr. Mtgs *	45000	26000	19000	-	65000
3.1.4.	ISYA	60000	30000	30000	-	50000
3.1.5.	VLP	84000	28000	28000	28000	72000
3.1.6.	AEI Meeting	44500	44500	-	-	-
	* Only Latin America/Asia Pacific to fund					
Up 14%	Sub-total 3.1.	922500	261000	215000	446000	792000
3.2.	COMMISSION ACTIVITIES					
3.2.1.	Commission expenses	15000	5000	5000	5000	15000
3.2.2.	Commission projects					
	Exch. of Astronomers	76000	25000	25000	26000	70000
	Telegram Bureau	11000	3650	3650	3700	10500
	Minor Planet Ctr	11000	3650	3650	3700	10500
	Variable Star Cat	11000	3650	3650	3700	10500
	Meteor Data Ctr	3200	1050	1050	1100	3000
	Others	6000	2000	2000	2000	6000
Up 6%	Sub-total 3.2.	133200	44000	44000	45200	125500
3.3.	RELATIONS WITH OTHER ORGANISATIONS					
3.3.1.	Subvention to ICSU	58400	14600	21400	22400	38500
3.3.2.	Inter-Union Commiss.					
	FAGS	19500	6000	6500	7000	13000
	IUCAF	21500	8000	6000	7500	-
	CTS	1800	600	600	600	-
	GLOBMET	2800	500	800	1500	-
3.3.3.	Repr. to other Organisations	25500	8000	8500	9000	24000
Up 71%	Sub-total 3.3.	129500	37700	43800	48000	75500
3.4.	OTHER ACTIVITIES					
3.4.1.	EC projects	15000	5000	5000	5000	15000
3.4.2.	Other projects	6250	2000	2750	1500	-
	Sub-total 3.4.	21250	7000	7750	6500	15000
Up 10%	TOTAL 3	1206450	350200	310550	545700	1008000

4.	ADMINISTRATION					
4.1.	SECRETARIAT					
4.1.1.	Salaries/Charges	426000	135000	142000	149000	375000
4.1.2.	Training courses	9000	3000	3000	3000	-
4.1.3.	Office supplies	191000	61000	64000	66000	165000
4.1.4.	GI Secr. Expenses	39000	12500	13000	13500	57000
4.1.5.	Pdt's expenses	21000	7000	7000	7000	18000
4.1.6.	AG Secr. Expenses	12750	4250	4250	4250	12000
4.1.7.	Local help to AG Secretary	3750	1250	1250	1250	3000
Up 13%	Sub-total 4.1.	706500	224000	234500	244000	630000
4.2.	OTHER EXPENSES					
4.2.1.	Bank charges	4050	1250	1350	1450	3000
4.2.2.	Audit fees	9750	3000	3250	3500	4500
4.2.3.	Loss on exchange	-	-	-	-	-
4.2.4.	Miscellaneous	7500	2500	2500	2500	-
Up 182%	Sub-total 4.2.	21300	6750	7100	7450	7500
Up 18%	TOTAL 4.	723800	230750	244600	251450	637500
Up 18%	TOTAL EXPENDITURES	2196250	670950	654150	871150	1852500
Up 18%	TOTAL INCOME	2198680	715560	725980	757140	1850720
	SURPLUS/LOSS	2430	47110	67830	-114010	-1780

Surplus is less than 1% of income and is too small a balance and is easily worked out by currency fluctuations and default in payment of subventions.

8. List of Adhering Organisations

<i>Country</i>	<i>Category</i>	<i>Unit(s)</i>
Algeria	I	1
Argentina	III	4
Australia	III	4
Austria	I	1
Belgium	IV	6
Brazil	II	2
Bulgaria	I	1
Canada	VI	14
Chile	I	1
China Pr	V	10
China R	I	1
Colombia	I	1
Cuba	I	1
Czechoslovakia	III	4
Denmark	II	2
Egypt Ar	III	4
Finland	I	1
France	VII	20
Germany	VII	20
Greece	II	2
Hungary	II	2
Iceland	I	1
India	III	4

Indonesia	I	1
Iran	I	1
Iraq	I	1
Ireland	I	1
Israel	II	2
Italy	V	10
Japan	VII	20
Korea Dpr	I	1
Korea Rp	I	1
Malaysia (Associate Member)	I	1
Mexico	II	2
Morocco	I	1
Netherlands	IV	6
New Zealand	I	1
Nigeria	I	1
Norway	I	1
Peru (Associate Member)	I	1
Poland	III	4
Portugal	II	2
Rumania	II	2
Saudi Arabia	I	1
South Africa	III	4
Spain	II	2
Sweden	III	4
Switwerland	III	4
Turkey	I	1
UK	VII	20
Uruguay	I	1
USA	VIII	30
USSR	V	10
Vatican City State	I	1
Venezuela	I	1
Yugoslavia	II	2

9. List of Members deceased

Alania I. F.	USSR	17/05/91
Ahnert Paul	Germany	27/02/89
Alvarez Luis	USA	
Atkinson Robert D'E.	USA	
Barker Bruce M.	USA	91
Barkhatova Klaudia	USSR	09/01/90
Bates Richard Heaton T.	New Zealand	03/11/90
Beardsley Wallace R.	USA	16/03/91
Bennett John Caister	South Africa	11/04/90
Bielicki Maciej	Poland	27/11/88
Boyer Charles	France	09/89
Charvin Pierre	France	24/01/90
Christophe-Glaume J.	France	08902/01
Clauzet L. B. Ferreira	Brazil	23/12/90
Collinson Edward H.	UK	26/09/90
Costain Carman H.	Canada	21/12/89
Cowling Thomas G.	UK	16/06/90
Cunningham Leland	USA	31/05/89
Davies John G.	UK	
De Brito E Abreu J. C.	Portugal	20/01/89
Dobrovolsky Oleg V.	Ussr	12/12/89
Douglas A. V.	Canada	27/07/88
Engelhard E. J. G.	Germany	10/11/84

Fireman Edward L.	USA	29/03/90
Freiesleben H. C.	Germany	14/11/87
Fuchs Josef	Austria	09/04/89
Giese Richard H.	Germany	88
Gledhill J. A.	South Africa	19/06/88
Hardie R.	USA	19/12/89
Hardorp Johanes	USA	11/12/88
Haupt Ralph F.	USA	
Huruhata Masaaki	Japan	88
Jackson D.	South Africa	19/02/88
Järnefelt Gustaf J.	Finland	09/08/89
Javet P.	Switzerland	21/07/89
Jeffreys Harold Sir	UK	18/03/89
Ledoux Paul	Belgium	06/10/88
Levin Boris	USSR	10/04/89
Lud Lauri	USSR	12/05/89
Martel Marie-Therese	France	
Martynov D. Ya	USSR	22/10/89
Masursky Harold	USA	24/08/90
Millman Peter M.	Canada	10/12/87
Müller Helmut O.	Switzerland	17/05/90
Okii Tosio	Japan	28/07/90
Oskanyan V.	USSR	10/01/89
Pearce J. A.	Canada	07/09/89
Pearse R. W. B.	UK	13/04/89
Penston Michael V.	UK	24/12/90
Plakidis Stavros	Greece	30/01/91
Ramberg Jöran M.	Sweden	13/02/91
Roberts Walter Orr	USA	03/90
Rybka Eugeniuze	Poland	08/12/88
Sagitov Marat	USSR	14/11/88
Salomonovich A. E.	USSR	09/03/89
Sanduleak Nicholas	USA	07/05/90
Stodolkiewicz Jerzy S.	Poland	26/07/88
Tanaka Katsuo	Japan	02/01/90
Terrazas L. Rivera	Mexico	04/04/89
Thoren Victor E.	USA	09/03/91
Tuominen J.	Finland	31/01/89
Van Hoof Armand	Belgium	07/02/89
Vasilevskis Stanislas	USA	01/07/88
Vinti John P.	USA	09/90
Von Soher Herman	Austria	
Wagner C. U.	Germany	24/06/89
Warzee J.	Belgium	25/07/86
Webster B. Louise	Australia	
Wilson Raymond H.	USA	21/12/89
Zhou Xing-Hai	China PR	

10. List of IAU publications

Transactions and Highlights

Highlights of Astronomy
Vol. 8
Ed. D. McNally

Transactions of the International Astronomical Union
Vol. XXB, Proceedings of the General Assembly,
Baltimore 1988

Transactions of the International Astronomical Union
 Vol. XXIA, Reports on Astronomy
 Ed. D. McNally

IAU Symposia Volumes (Kluwer Academic Publishers)

- 132 *The Impact on Very High S/N Spectroscopy on Physics*
 Eds. G. Cayrel de Strobel & M. Spite
- 133 *Mapping the Sky -Past Heritage & Future Directions*
 Eds. S. Debarbat, J.A. Eddy, H.K. Eichhorn & A.R. Uggren
- 134 *Active Galactic Nuclei*
 Eds. D.E. Osterbrock & J.S. Miller
- 135 *Interstellar Dust*
 Eds. L.J. Allamandola & A.G.G.M. Tielens
- 136 *The Center of the Galaxy*
 Ed. M. Morris
- 137 *Flare Stars in Star Clusters, Associations
 and the Solar Vicinity*
 Eds. B.R. Pettersen, L.V. Mirzoyan & M.K. Tsvetkov
- 138 *Solar Photosphere Structure, Convection
 and Magnetic Fields*
 Ed. J.O. Stenflo
- 139 *Galactic and Extragalactic Background Radiation
 -Optical, Ultraviolet and Infrared Components*
 Eds. S.A. Bowyer & Ch. Leinert
- 140 *Galactic and Extragalactic Magnetic Fields*
 Eds. R. Beck, P.P. Kronberg & R. Wielebnski
- 141 *Inertial Coordinate System on the Sky*
 Eds. J.H. Lieske & V.K. Alabakin
- 142 *Basic Plasma Processes on The Sun*
 Eds. E.R. Priest & V. Krishan
- 143 *Wolf-Rayet Stars & Interrelations with
 other Massive Stars in Galaxies*
 Eds. K. van der Hucht & B. Hidayat
- 145 *Evolution of Stars: the Photospheric Abundance Connection*
 Eds. G. Michaud & A. Tutukov
- 146 *Dynamics of Galaxies &
 their Molecular Cloud Distributions*
 Eds. F. Combes & F. Casoli
- 148 *The Magellanic Clouds*
 Eds. R. Haynes & D. Milne

IAU Colloquia

- 104 *Solar & Stellar Flares*
 Eds. B.M. Haisch & M. Rodono
 Kluwer Academic Publishers
- 104 *Solar & Stellar Flares Poster Papers*
 Eds. B.M. Haisch & M. Rodono
 Special publication-1989, Città Universitaria,
 95125 Catania, Italy
 Catania Astrophysical Observatory Series

- 105 *The Teaching of Astronomy*
Eds. J.M. Pasachoff & J. Percy
Cambridge University Press
- 106 *Evolution of Peculiar Red Giant Stars*
Eds. H.R. Johnson & B. Zuckerman
- 107 *Algols*
Ed. A.H. Batten
Kluwer Academic Publishers
- 110 *Library & Information Services in Astronomy*
Eds. G.A. Wilkins & S. Stevens-Rayburn
US Naval Observatory
- 111 *The Use of Pulsating Stars in Fundamental Problems
of Astronomy*
Ed. E.G. Smith
Cambridge University Press
- 113 *Physics of Luminous Blue Variables*
Eds. K. Davidson, A.F.J. Moffat & H.J.G.L.M. Lamers
Kluwer Academic Publishers
- 114 *White Dwarfs*
Ed. G. Wegner
Springer-Verlag, Lecture Notes in Physics
- 115 *High Resolution X-ray Spectroscopy of Cosmic Plasmas*
Eds. P. Gorenstein & M. Zombeck
Cambridge University Press
- 118)
) Abandoned
- 119)
- 120 *Structure and Dynamis of the Interstellar Medium*
Eds. G. Tenorio-Table, M. Moles & J. Melnick
Springer-Verlag, Lecture Notes in Physics, 350
- 121 *Inside the Sun*
Eds. G. Berthomieu & M. Cribier
Kluwer Academic Publishers

Other Publications

*The Abundance Spread within Globular Clusters:
Spectroscopy of Individual Stars*

Eds. G. Cayrel de Strobel, M. Spite & T. Lloyd Evans
Report of JCM5 & CM 37/3, 20th General Assembly, IAU
Observatoire de Paris, Publ.

Commission Publications list

Commission 05: *Documentation & Astronomical Data*

IAU Style Manual

Commission 10: *Solar Activity*

Quarterly Bulletin on Solar Activity.
Published at the Tokyo Astronomical Observatory,
F. Moriyama, Mitaka, Tokyo 181, Japan

Commission 20: *Positions & Motions of Minor Planets, Comets & Satellites*

Minor Planet Circulars.

Issued by the Minor Planet Center, B.G. Marsden
Centr for Astrophysics, 60 Garden Street,
Cambridge MA 02138, USA

Commission 27: *Variable Stars*

Information Bulletin on Variable Stars
Prepared and distributed by the Konkoly Observatory
of the Hungarian Academy of Sciences
1525 Budapest XII, Box 67, Hungary

Catalogue of Variable Stars
Catalogue of Suspected Bariable Stars
Name-lists of Variable Stars
Distributed by Publishing House Nauka, Moscow, USSR

Commission 46: *Teaching of Astronomy*

Newsletter on the Teaching of Astronomy
Astronomy Educational Material