

V.
Report of the Executive Committee (1979-1981)

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Bangalore 560034, India

VICE-PRESIDENTS:

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Professor R. Wilson	Department of Physics & Astronomy, University College London, Gower Street, London WC1E 6BT, UK

GENERAL SECRETARY: Professor Patrick A. Wayman Dunsink Observatory,
Castleknock, Co. Dublin, Ireland

ASSISTANT GENERAL SECRETARY: Dr Richard M. West European Southern Observatory,
Karl-Schwarzschild Strasse 2,
D-8046 Garching bei München, GFR

ADVISERS TO THE EXECUTIVE COMMITTEE:

Professor A. Blaauw -former President	Asserstraat 78, 9335 TC Zuidvelde, Netherlands
Professor Edith A. Müller -former General Secretary	Observatoire de Genève, CH-1290 Sauverny, Switzerland

INTRODUCTION

The present report covers the period from 1 January 1979 to 31 December 1981. This period includes the first eight months (to 26 August) of the year 1979, which was part of the period in office of the previous Executive Committee; it does not include the first eight months of 1982, still the period of responsibility of the present Executive Committee (to 27 August 1982).

The address of the General Secretary at the XVIIIth General Assembly will include a report for the period 1 January - 16 August 1982.

This report includes a summarized financial report for the calendar years 1979, 1980 and 1981 and a budget proposal for the calendar year 1982, closing the 3-year budgetary period 1979-1982.

ADMINISTRATION

Executive Committee

The Executive Committee held the following meetings:

- 45th meeting: Montreal, Canada, 12, 13 and 21 August 1979
- 46th meeting: Montreal, Canada, 23 August 1979
- 47th meeting: Amsterdam, Netherlands, 5-8 August 1980
- 48th meeting: Abastumani, USSR, 21-25 July 1981

The chairman of the 45th meeting, held with the previous composition of the Executive Committee, was Professor A. Blaauw, President of the IAU. The meeting was attended by all members and advisers, with the exception of Mr J.G. Bolton; Professor M.K.V. Bappu, then President-elect, and Dr R.M. West, Assistant General Secretary elect, participated on 21 August 1979.

The 46th, 47th and 48th meetings were held under the chairmanship of Professor M.K.V. Bappu, President of the IAU. All members and advisers were present, except that Dr L. Kresak was prevented on medical advice from attending the 47th and 48th meetings and Professor S. van den Bergh was unable to attend the 48th meeting.

Officers' Meetings

The President of the IAU, the General Secretary and the Assistant General Secretary met as follows:

- Geneva, Switzerland, 19 May 1979
- Montreal, Canada, 10-11 August 1979
- Paris, France, 10-11 December 1979
- Leiden, Netherlands, 3-4 August 1980
- Paris, France, 12-13 January 1981
- Tbilisi, Georgia, USSR, 19-20 July 1981

IAU Secretariat

From 14 September 1979, the secretariat of the IAU occupied a permanent seat in the Pavillon Ouest of l'Observatoire de Paris. The address of the secretariat is:

IAU - UAI
61, avenue de l'Observatoire
F-75014 Paris (France)

Cable address: UNASTRINTER, Paris 014
Telephone: (01) - 325-83-58

It is appropriate to express the thanks of the Executive Committee, on behalf of the Union, to the Conseil de l'Observatoire de Paris and its President, M. Boulon, also to Professor J.-C. Pecker of the Collège de France, former General Secretary of the IAU, and to "IAU France 1976" for the work of preparing accommodation for

the IAU Secretariat in 1979, including valuable gifts of furniture and other items, ensuring thereby a smooth transition to the new premises.

IAU Staff

The retirement took place during September 1979 of the IAU Executive Secretary, Dr A. Jappel. Dr Jappel was appointed as Assistant Secretary during 1967 and for twelve years he served the Union devotedly. He used his knowledge of international law and the legal systems of different countries in paying special attention to the financial and legal standing of the Union.

For the major part of his service, Dr Jappel had the support of Mrs Jarka Dankova, Administrative Assistant. In September 1979 Mrs Dankova returned to Czechoslovakia, leaving the service of the IAU. Dr Jappel and Mrs Dankova worked in the four home countries of successive IAU General Secretaries, as follows:

L. Perek, Czechoslovakia, 1967-1970

C. de Jager, Netherlands, 1970-1973

G. Contopoulos, Greece, 1973-1976

E.A. Müller, Switzerland, 1976-1979

Mme Brigitte Manning and Ms Patricia Smiley were engaged respectively as Secretary and Typist at the Paris IAU Secretariat from September 1979.

Adhering Countries

Indonesia was admitted by the XVIIth General Assembly in 1979 as the 49th Adhering Country.

Following discussion at the time of the XVIIth General Assembly between, on one hand, the President and Executive Committee of the IAU, and on the other hand, representatives of the Chinese Astronomical Society, the adherence of China from 1 May 1980 was effected, as a temporary measure, through two adhering organisations. A resolution of the XVIIth General Assembly in 1979 calls for ratification of these arrangements at the XVIIIth General Assembly.

Members of the IAU

The number of IAU members was 3783 on 1 January 1979. 812 new members were admitted at the XVIIth General Assembly and 58 names were deleted by resignation and decease up to December 1979. Since that date there have been recorded 39 further names for deletion. The number of members at 31 December 1981 is therefore estimated to be 4498.

Consultants to IAU Commissions

The 39 IAU Commissions had a total of 227 consultants at 31 December 1981.

COMMISSIONS OF THE IAU

By resolution of the XVIIth General Assembly, Commission 16 (Physical Study of Planets and Satellites) and Commission 17 (The Moon) were merged to form a new Commission, retaining the title and number of Commission 16.

Reports of each Commission and of the Executive Committee's Working Group for Planetary System Nomenclature are being published during 1982 in IAU Transactions volume XVIII A, c. 700 pages.

The following remarks concern some of the many Commission activities not otherwise included in subsequent sections of this report:

The Working Group on Project MERIT (Commission 19), in conjunction with the International Association of Geodesy (IUGG), has produced reports on proposed new methods for measuring earth rotation.

The Minor Planet Center at the Smithsonian Institution, Cambridge, Massachusetts, under the direction of Dr B.G. Marsden, has produced Minor Planet Circulars regularly and has rendered annual reports to the Executive Committee.

The IAU Telegram Bureau at the Smithsonian Institution, Cambridge, Massachusetts, under the direction of Dr B.G. Marsden, produced 338 Circulars and despatched telegrams to subscribers over all continents.

The Quarterly Bulletin of Solar Activity continued its work with regular publication of solar activity, as a permanent record, from the Tokyo Astronomical Observatory. The valuable continuation of the Zurich Sunspot numbers has been maintained by the Sunspot Index Data Center under A. Koeckelenbergh at the Observatoire Royal, Brussels, Belgium.

Regular Bulletins on the Motion of the Earth's Pole have been produced by the International Latitude Observatory of Mizusawa, Japan, including publication of the results of the International Latitude Service in a homogeneous system for the years 1900-1979 by S. Yumi and K. Yokoyama.

Operating by agreed rules, Commission 38, under the guidance of Professor J. Delhaye, has maintained financial assistance to individual astronomers to enable them to work in countries other than their own. The demand for these allocations and the rise in air fares have fully stretched the budgetary provisions.

Commission 50, under Professor F. Graham Smith, has co-operated with the Commission Internationale de l'Eclairage to produce a substantial publication giving Guide-Lines for minimizing Urban Sky Glow near Astronomical Observatories. In this way, useful and important precautions worked out in a limited number of countries have been made widely available; financial assistance from UNESCO is acknowledged.

The fruitful discoveries in planetary details by the space vehicles VOYAGER I and II have produced problems of nomenclature, e.g. in Saturn's rings, that are actively under review by the Working Group for Planetary System Nomenclature and Commission 5.

Each important Total Eclipse of the Sun is reviewed by the Organising Committee of Commission 12 and, if appropriate, a co-ordinator has been appointed for the principal country experiencing the eclipse. Examples have been:

- 31 July 1981 V.A. Krat for USSR
- 11 June 1983 B. Hidayat for Indonesia

Some of the work of Commission Presidents has been undertaken, due to illness or other circumstances, by Vice-Presidents, as follows

- Comm. 4 T. Lederle for A.M. Sinzi
- Comm. 20 E. Roemer for G. Sitarski
- Comm. 33 R. Wielen for G.G. Kuzmin, with assistance from J. Einasto

The chief scientific work of Commissions has been in arranging Symposia, Colloquia and Co-sponsored meetings as listed below:

SYMPOSIA

IAU Symposia (held between 1 January 1979 and 31 December 1981)

- IAU Symposium No. 85 "Star Clusters", Victoria, British Columbia, Canada
27-31 August 1979
- IAU Symposium No. 86 "Radio Physics of the Sun", College Park, Maryland, USA,
7-10 August 1979
- IAU Symposium No. 87 "Interstellar Molecules", Mont Tremblant, Québec, Canada,
6-10 August 1979
- IAU Symposium No. 88 "Close Binary Stars: Observations and Interpretation",
Toronto, Ontario, Canada, 7-10 August 1979
- IAU Symposium No. 90 "Solid Particles in the Solar System", Ottawa, Ontario, Canada,
27-30 August 1979
- IAU Symposium No. 91 "Solar and Interplanetary Dynamics", Cambridge, Massachusetts,
USA, 27-31 August 1979
- IAU Symposium No. 92 "Objects of High Redshift", Los Angeles, California, USA,
28-31 August 1979
- IAU Symposium No. 93 "Fundamental Problems in the Theory of Stellar Evolution",
Kyoto, Japan, 22-25 July 1980
- IAU Symposium No. 94 "Origin of Cosmic Rays", Bologna, Italy, 11-14 June 1980
- IAU Symposium No. 95 "Pulsars", Bonn, Germany F.R., 26-29 August 1980
- IAU Symposium No. 96 "Infrared Astronomy", Kailua-Kona, Hawaii, USA,
23-27 June 1980
- IAU Symposium No. 97 "Extragalactic Radio Sources", Albuquerque, New Mexico, USA,
3-7 August 1981
- IAU Symposium No. 98 "Be Stars", Munich, Germany F.R., 6-10 April 1981
- IAU Symposium No. 99 "Wolf-Rayet Stars: Observations, Physics, and Evolution",
Cozumel, Mexico, 16-22 September 1981

SYMPOSIA with IAU Participation

- COSPAR/IAU/IUPAP Symposium "Non-Solar Gamma-Rays", Bangalore, India, 30 May -
1 June 1979
- SCOSTEP/IAU Symposium "Solar Radio Astronomy, Interplanetary Scintillations and
Their Coordination with Spacecraft Observations",
Culgoora, N.S.W., Australia, 28-30 November 1979
- COSPAR/IAU Symposium "Progress in Planetary Exploration", Budapest, Hungary,
2-4 June 1980
- COSPAR/IAU Symposium "Cosmic Rays in the Heliosphere", Budapest, Hungary,
3-4 June 1980
- COSPAR/IAU Symposium "Physics of Planetary Magnetospheres", Budapest, Hungary,
4-7 June 1980
- COSPAR/IAU Symposium "Theoretical Problems in High-Energy", Budapest, Hungary,
5-7 June 1980

COSPAR/IAMAP/IAU Symposium "Origin and Evolution of Planetary Atmospheres",
Hamburg, FRG, August 1981

IUHPS/IAU Symposium "Archaeoastronomy", Oxford, UK, 4-9 September 1981

COLLOQUIA

IAU Colloquia (held between 1 January 1979 and 31 December 1981)

- IAU Colloquium No. 51 "Convection and Turbulence in Stellar Atmospheres", London, Ontario, Canada, 27-30 August 1979
- IAU Colloquium No. 53 "White Dwarfs and Variable Degenerate Stars", Rochester, New York, USA, 30 July - 2 August 1979
- IAU Colloquium No. 54 "Scientific Research with the Space Telescope", Princeton, New Jersey, USA, 8-11 August 1979
- IAU Colloquium No. 55 "The Sixth International Colloquium on Ultraviolet and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas", Toronto, Ontario, Canada, 7-10 July 1980
- IAU Colloquium No. 56 "Second International Colloquium on Reference Coordinate Systems for Earth Dynamics", Warsaw, Poland, 8-12 September 1980
- IAU Colloquium No. 57 "The Satellites of Jupiter", Kailua-Kona, Hawaii, USA, 13-16 May 1980
- IAU Colloquium No. 58 "Stellar Hydrodynamics", Los Alamos, New Mexico, USA, 12-15 August 1980
- IAU Colloquium No. 59 "Effects of Mass-Loss on Stellar Evolution", Trieste, Italy, 15-19 September 1980
- IAU Colloquium No. 60 "Uranus and the Outer Solar System", Bath, UK, 14-16 April 1981
- IAU Colloquium No. 61 "Comets, Gases, Ices, Grains and Plasma", Tucson, Arizona, USA, 11-14 March 1981
- IAU Colloquium No. 62 "Current Techniques in Double and Multiple Star Research", Flagstaff, Arizona, USA, 19-21 May 1981
- IAU Colloquium No. 63 "High-Precision Earth Rotation and Earth-Moon Dynamics: Lunar Distances and Related Observations", Grasse, France, 22-27 May 1981
- IAU Colloquium No. 64 "Automated Data Retrieval in Astronomy", Strasbourg, France, 7-10 July 1981
- IAU Colloquium No. 65 "Evolutionary Status of Variable Stars" was cancelled
- IAU Colloquium No. 66 "Problems in Solar and Stellar Oscillations", Simferopol, USSR, 1-5 September 1981
- IAU Colloquium No. 67 "Instrumentation for Large Telescopes", Zelenchuk, USSR, 8-10 September 1981
- IAU Colloquium No. 68 "Astrophysical Parameters for Globular Clusters", Schenectady, New York, USA, 7-10 October 1981
- IAU Colloquium No. 69 "Binary and Multiple Stars as Tracers of Stellar Evolution", Bamberg, GFR, 31 August - 3 September 1981
- IAU Colloquium No. 70 "The Nature of Symbiotic Stars", Haute-Provence, France, 26-28 August 1981

REGIONAL ASTRONOMY MEETINGS held under the auspices of the IAU

Fifth European Regional Astronomy Meeting, Liège, Belgium, 28 July - 1 August 1980

Second Latin-American Regional Meeting, Mérida, Venezuela, 19-23 January 1981

Second Asian-Pacific Regional Meeting in Astronomy, Bandung, Indonesia,
24-29 August 1981

Sixth European Regional Astronomy Meeting, Dubrovnik, Yugoslavia, 19-23 October 1981

YOUNG ASTRONOMERS' SCHOOLS

IAU Commission No. 46 "Teaching of Astronomy" organized three schools (Xth, XIth and XIIth) for young astronomers in the course of 1979 to 1981.

The school at La Laguna, Tenerife, Spain, from 10-23 September 1979 was attended by 63 students from Spain, Portugal, Chile, Argentina, Mexico and Uruguay. The curriculum included Stars and their Evolution, General Astrophysics, Solar Physics, Planetary System, Spectroscopy, Instrumentation and Techniques, Interstellar Matter, and Differential Solar Rotation.

The school at Hvar, Yugoslavia, from 17 September to 8 October 1980 was attended by 35 young astronomers from the Balkan and Mediterranean countries. The curriculum included Astronomical Technics, Astronomical Electrodynamics, Spectroscopy, Stellar Physics, Interstellar Matter, Galactic Astronomy, Solar Physics, Physics of Planets, Meteors and Comets, Structure and Evolution of Stars, Astrophysics from Space, Practical Training.

The school at Cairo, Egypt, from 22 August to 9 September 1981 was attended by 28 students from Egypt, Greece, Netherlands, Hungary, Malta, Nigeria, Portugal, Sudan and China. The curriculum included general astrophysics with emphasis on solar and stellar physics.

XVIIth GENERAL ASSEMBLY, Montreal, Canada, 14-23 August 1979

Volume XVIIB of IAU Transactions, published in 1980, contains a report of the Proceedings of the XVIIth General Assembly of the Union including the resolutions passed at the Assembly. There follow, in the same volume, the reports of Commission meetings held during the period of the General Assembly and other activities in progress.

Minor revisions of IAU Statutes are included in the publication, in IAU Transactions volume XVIIB, of IAU Statutes, By-laws, Working Rules and IAU Rules for Scientific Meetings (pp. 310-329).

SALES OF IAU PUBLICATIONS

The Transactions of the IAU sold as follows in the course of the period under report:

	Number of Copies
Vol. XIII A	10

Vol. XIIIIB	6
Vol. XIVA	8
Vol. XIVB	12
Vol. XVA	12
Vol. XVB	20
Vol. XVIA	14
Vol. XVIB	40
Vol. XVIIIA part 1	682
Vol. XVIIIA part 2	685
Vol. XVIIIA part 3	702
Vol. XVIIIB	441

The volumes of Highlights of Astronomy were sold as follows over the same period:

	Number of Copies
Highlights I	18
Highlights II	22
Highlights III	26
Highlights IV part 1 (cloth)	62
(paper)	22
Highlights IV part 2 (cloth)	64
(paper)	21
Highlights V (cloth)	280
(paper)	152

The sales of Symposium volumes in 1979, 1980, 1981 were:

Symposium volume number, number of copies sold, cloth and paper *

32 - 37	46 - 16	60 - 11 - 8*	74 - 94 - 67*	90 - 381 - 184*
33 - 0	47 - 11	61 - 12 - 10*	75 - 91 - 66*	91 - 362 - 167*
34 - 19	48 - 17	62 - 12 - 9*	76 - 101 - 69*	92 - 446 - 267*
35 - 9	49 - 11 - 11*	63 - 29 - 28*	77 - 191 - 122*	93 - 399 - 166*
36 - 0	50 - 8 - 14*	64 - 27 - 20*	78 - 461 - 99*	94 - 389 - 184*
37 - 16	51 - 11 - 9*	65 - 13 - 4*	79 - 254 - 142*	95 - 366 - 204*
38 - 21	52 - 14 - 7*	66 - 18 - 17*	80 - 141 - 137*	96 - 434 - 316*
39 - 16	53 - 21 - 9*	67 - 17 - 18*	81 - 551 - 168*	98 - 140 - 18*
40 - 11	54 - 13 - 13*	68 - 14 - 12*	82 - 536 - 171*	
41 - 5	55 - 7 - 16*	69 - 14 - 22*	83 - 487 - 168*	
42 - 20	56 - 6 - 3*	70 - 17 - 26*	84 - 489 - 213*	
43 - 21	57 - 11 - 4*	71 - 30 - 22*	85 - 436 - 266*	
44 - 23	58 - 23 - 19*	72 - 10 - 13*	86 - 401 - 178*	
45 - 22	59 - 19 - 11*	73 - 35 - 32*	87 - 397 - 305*	
			88 - 432 - 217*	
			89 - 435 - 112*	

INFORMATION BULLETIN

The Information Bulletin has been prepared, edited and typed for offset reproduction by the General Secretary and the staff of the IAU Secretariat, and printed and distributed by the publisher of the Union. It has appeared twice a year and has been sent, free of charge, to IAU Members, consultants, members of the International Science Writers Association, and to selected international organisations and institutions.

RELATIONS TO OTHER ORGANISATIONS

The IAU was represented at meetings of the International Council of Scientific Unions (ICSU) as follows:

- 11 Meeting General Committee, Brussels, July 1979 - E.A. Müller
- 12/13 Meeting General Committee, Amsterdam, September 1980 - P.A. Wayman
- 18 General Assembly, Amsterdam, September 1980 - P.A. Wayman
- 14 Meeting General Committee, Dubrovnik, September 1981 - P.A. Wayman

Professor M.K.V. Bappu, President of the IAU, represents India at ICSU (from 1981) and attended the 14th General Committee Meeting as representative of National delegates to the General Assembly.

The IAU was represented at meetings of the ICSU Committee for Space Research (COSPAR) as follows:

- XXIIInd Plenary Meeting of COSPAR, Bangalore, May/June 1979 - E.A. Müller
- XXIIIrd Plenary Meeting of COSPAR, Budapest, June 1980 - P.A. Wayman

The following representatives to other international (ICSU) bodies have been active since August 1979:

- Federation of Astronomical and Geophysical Services (FAGS):
H. Enslin, V. Bumba, under which heading is comprised:
Quarterly Bulletin of Solar Activity (QBSA): F. Moriyama
Bureau International de l'Heure (BIH): A. Orte, H.M. Smith
International Polar Motion Service (IPMS): K. Yokoyama
International Ursigram and World Day Service (IUWDS): V. Bumba
- ICSU Abstracting Board (ICSU-AB): W.D. Heintz
- Scientific Committee for Solar-Terrestrial Physics (SCOSTEP): M.R. Kundu
- Committee on Science and Technology in Developing Countries (COSTED):
L. Houziaux
- Committee for Teaching of Science (CTS): L. Houziaux
- Scientific Committee for Protection of the Environment (SCOPE):
F. Graham Smith
- Coordinating Committee for the Moon and Planets (CCMP): P.M. Millman
- Committee on Data in Science and Technology (CODATA): B. Hauck

- Inter-Union Committee on Frequency Allocation for Radio Astronomy and Space Science (IUCAF): R. Schilizzi, G. Westerhout
- Inter-Union Commission on Spectroscopy (IUCS): B. Edlen, J.G. Phillips, M.J. Seaton

The IAU participates in the following international bodies:

- Comité Consultatif pour la Définition de la Seconde (CCDS): W. Markowitz
- Comité Consultatif pour la Définition du Mètre (CCDM): A.H. Cook
- Comité Consultatif International des Radio communications (CCIR):
B.J. Robinson, L.H. Doherty, H.M. Smith
- European Physical Society Conference Committee (EPS): R.M. West

An important activity by IAU during 1979-1981 was representation through IUCAF at the World Administrative Radio Conference, Geneva, 1979, where the preservation from artificial interference of bands of frequencies needed in radio astronomy was actively and successfully urged.

Following resolutions passed at the XVIIth General Assembly concerning the establishing of a Giant Equatorial Radio Telescope (GERT), some progress has been made through representation at ICSU and at UNESCO (by national bodies participating in UNESCO) in achieving this ambitious astronomy project for an equatorial country.

The work of BIH continues to be of the greatest importance for definition and maintenance of atomic and astronomical time scales by international agreement.

FINANCIAL REPORT

In accord with the policy adopted in 1961, the Executive Committee presents to the General Assembly a "Summarized Account of Receipts and Payments" for the years 1979, 1980 and 1981. The account is in Swiss Francs; the figures in the US dollar accounts, the Dutch florin (guilder) accounts and the French franc accounts have been transferred to the summarized (Swiss franc) account at the following ICSU conversion rates:

For the year 1979: US\$ = 1.6583 Swfr FF 1 = 0.3905 Swfr Dfl 1 = 0.8285 Swfr
 For the year 1980: US\$ = 1.6683 Swfr FF 1 = 0.3989 Swfr Dfl 1 = 0.8433 Swfr
 For the year 1981: US\$ = 1.9616 Swfr FF 1 = 0.3666 Swfr Dfl 1 = 0.7939 Swfr

The varying conversion rate produces a revaluation (upward) or a devaluation (downward) in the opening total balances at the beginning of a year as compared with the corresponding closing total balances at the end of the previous year. The differences for the years 1979-1981 are as follows (Swiss francs):

Current Accounts plus Savings Accounts, Total Balance				Revaluation/ Devaluation
<u>Closing Balance</u>		<u>Opening Balance</u>		
31 December 1978	648 627.09	1 January 1979	629 385.41	-19 241.68
31 December 1979	551 987.11	1 January 1980	564 655.98	+12 668.87
31 December 1980	591 957.90	1 January 1981	618 373.60	+26 415.70
1978-81 Net Revaluation				+ 19 842.89

Transfers between accounts, due to varying exchange rates not equal to those adopted in producing the summarized account in Swiss Francs, produce gains or losses on exchange that are "fictitious" in the sense that they depend upon the choice of currency used for producing the summarized account. The summarized 1979-81 account has been derived from the detailed accounts prepared for each of the bank accounts and savings accounts held by the Union and certified by the official auditors of the Union. The "Vérifications des Comptes", 1979, 1980 and 1981 produced by R. Bacle, H.E.C., Paris, for the Executive Committee will be available for examination by the Finance Committee of the XVIIth General Assembly.

It will be noticed in comparison with the Executive Committee Report 1976-78 that the above table of closing and opening balances includes both Savings Accounts and Current Accounts, whereas previous tables have referred to Current Accounts only. There are corresponding changes in the summarized account 1979-81 below:

- (i) "Receipts, Item 3" is now "Interest on Accounts", i.e. including Current Accounts and Savings Accounts; this corresponds to the Budget Provision for each triennium, where all interest received is regarded as Income for budgetary purposes.
- (ii) Corresponding to a change in the presentation of the Vérification des Comptes, Item 5 - "Other Receipts" and Item 18 - "Other Payments" refer only to miscellaneous items and do not include, as formerly, the "fictitious" sums relating to transfer between accounts; in the Vérification des Comptes these transactions are given separately.

SUMMARIZED ACCOUNT OF RECEIPTS AND PAYMENTS FOR THE 3-YEAR PERIOD 1979-1981
(Swiss Francs)

RECEIPTS

1.	<u>Contributions from Adhering Countries</u>		
	1979	332 860.85	
	1980	316 508.55	
	1981	<u>306 220.69</u>	955 590.09
2.	<u>Revenue from IAU Publications</u>		
	1979	18 489.42	
	1980	23 683.62	
	1981	<u>23 034.34</u>	65 207.38
3.	<u>Interests on Accounts</u>		
	1979	19 948.71	
	1980	24 485.69	
	1981	<u>41 676.08</u>	86 110.48
4.	<u>UNESCO Contribution through ICSU</u>		
	1979	30 237.76	
	1980	27 070.56	
	1981	<u>22 248.00</u>	79 556.32

REPORT OF THE EXECUTIVE COMMITTEE

5. <u>Other Receipts</u>			
1979		13 823.70	
1980		1 770.35	
1981		<u>-</u>	<u>15 594.05</u>
	Total Receipts		1 202 058.32
	Excess of Payments over Receipts		<u>17 254.33</u>
			<u><u>1 219 312.65</u></u>

PAYMENTS

1. <u>Administrative Office</u>			
1979		184 735.19	
1980		130 190.65	
1981		<u>134 435.12</u>	449 360.96
2. <u>Contribution to ICSU</u>			
1979		8 003.00	
1980		8 418.00	
1981		<u>7 977.00</u>	24 398.00
3. <u>Commission Expenses</u>			
1979		1 443.10	
1980		356.60	
1981		<u>14 023.16</u>	15 822.86
4. <u>Projects of Commissions</u>			
4.1 Exchange of Astronomers			
1979	7 475.48		
1980	22 268.01		
1981	<u>27 203.44</u>	56 946.93	
4.2 Teaching of Astronomy			
1979	-		
1980	-		
1981	<u>1 176.96</u>	1 176.96	
4.3 Other projects			
1979	33 047.54		
1980	6 171.02		
1981	<u>6 794.22</u>	<u>46 012.78</u>	104 136.67
5. <u>General Assembly</u>			
1979		159 192.03	
1980		50 348.35	
1981		<u>-</u>	209 540.38

6.	<u>IAU Publications</u>		
	1979	20 032.96	
	1980	19 169.08	
	1981	<u>24 316.76</u>	63 518.80
7.	<u>Distribution of IAU Publications Free and at Reduced Price</u>		
	1979	7 760.39	
	1980	9 339.98	
	1981	<u>7 689.32</u>	24 789.69
8.	<u>Executive Committee Meeting</u>		
	1979	-	
	1980	29 081.40	
	1981	<u>27 549.12</u>	56 630.52
9.	<u>Officers' Meeting</u>		
	1979	7 677.14	
	1980	710.42	
	1981	<u>5 399.62</u>	13 787.18
10.	<u>Symposia and Colloquia</u>		
	1979	39 830.53	
	1980	37 783.82	
	1981	<u>45 777.29</u>	123 391.64
11.	<u>Inter-Union Commissions</u>		
	1979	5 422.64	
	1980	14 427.67	
	1981	<u>8 120.19</u>	27 970.50
12.	<u>Projects of the Executive Committee</u>		
	1979	-	
	1980	-	
	1981	<u>-</u>	-
13.	<u>Representation</u>		
	1979	16 951.90	
	1980	5 523.09	
	1981	<u>7 466.90</u>	29 941.89
14.	<u>Bank Charges</u>		
	1979	424.99	
	1980	315.70	
	1981	<u>951.19</u>	1 691.88

REPORT OF THE EXECUTIVE COMMITTEE

15. <u>Young Astronomers' Schools</u>		
1979	11 248.90	
1980	19 586.85	
1981	<u>21 582.19</u>	52 417.94
16. <u>Regional Meetings</u>		
1979	-	
1980	12 005.88	
1981	<u>10 057.51</u>	22 063.39
17. <u>Special Nominating Committee</u>		
	nil	nil
18. <u>Other Payments</u>		
1979	152.55	
1980	100.90	
1981	<u>68.50</u>	321.95
	TOTAL	<u>1 219 784.25</u>
	less REFUNDS (1980)	- 471.60
	NET PAYMENTS	<u><u>1 219 312.65</u></u>

BANK ACCOUNTS as on 31 December 1978

	Swiss Francs
Savings Accounts	361 740.19
Current Accounts	<u>286 886.90</u>
TOTAL	648 627.09

BANK ACCOUNTS as on 31 December 1981

Savings Accounts	531 522.58	
Current Accounts	<u>132 468.56</u>	
TOTAL	<u>663 991.14</u>	-TOTAL Balance on IAU Accounts as on 31 December 1981

Note: The 3-year Summarized Account shows an Excess of Payments over Receipts of SwFr 17 254.33. The relationship between this Excess and the increase in the total balance on IAU Accounts between 31 December 1978 and 31 December 1981 is accounted as follows:

3-year Excess of Payments over Receipts	17 254.33	Bank Balances 31.12.78	648 627.09
1980 Loss on Exchange	891.03	1979 Gain on Exchange	968.30
Bank Balances 31.12.81	663 991.14	1981 Gain on Exchange	3 026.92
	<u>682 136.50</u>	¹ UBS 50 Bank Account	9 671.30
		² Net Revaluation 1978/81	<u>19 842.89</u>
			<u>682 136.50</u>

¹The UBS 50 Bank Account was entered with Swfr 10 504.27 in 1977. Some payments were made for Commission 50 in 1978; in 1979 the special account was incorporated into the IAU Accounts; since 1979 January 1 all Commission 50 payments have been included as "Commission Expenses".

²As given in Table preceding 3-year Accounts.

Auditor's Statement for the Accounts 1979-1981

Messieurs,

Conformément à la mission que vous avez bien voulu nous confier, nous vous présentons le résultat de notre examen des comptes de l'UNION ASTRONOMIQUE INTERNATIONALE pour la période du 1er Janvier 1979 au 31 Décembre 1981.

L'examen a porté notamment sur les documents suivants:

-comptes des recettes et dépenses pour les années 1979 à 1981 vérifiés par nous-mêmes.

Les comptes ont été comparés avec les cahiers de comptes et pièces comptables diverses.

-Le solde des "Refunds" qui n'ont pu être imputés sur des dépenses ou des recettes, correspond à des régularisations sur le compte UBS 50: 471.60 en 1980.

Nous certifions que ces comptes sont en accord complet avec les informations et explications que nous avons demandées pour nous permettre d'effectuer notre examen.

Nous vous donnons ci-après les recettes et dépenses résumant les comptes des années 1979 - 1980 - 1981.

à Paris, le 31 Mars 1982
(signé)
Roger BACLE
HEC
Diplômé Expert-Comptable

Explanatory Notes:

The statement of Receipts and Payments 1979-1981 is arranged under headings that correspond to the Budget approved by the General Assembly, although it is important to note that the triennia of the Budget (e.g. 1980-1982) do not coincide with the triennia of the financial reports. Hence the formation of the Residual Budget for 1982 and the Budget Proposal for 1982 that follows this section of the Report.

The following explanatory notes provide information on each item of the 1979-1981 accounts.

RECEIPTS

1. Contributions from Adhering Organisations

The XVIIth General Assembly, Montreal, Canada, 1979, kept the annual unit of contribution payable by IAU Adhering Organisations unchanged at Swfr 1 465.

The number of adhering countries changed during 1979 from 48 to 49 with the accession of Indonesia to the Union. The total number of units due in each year were:

REPORT OF THE EXECUTIVE COMMITTEE

1979	220
1980	225
1981	<u>225</u>

TOTAL 670 units, equivalent to Swfr 981 550

(See IAU Transactions vol XVIIIB, pp. 49 and 526 for the separate financial contribution from two adhering organisations in China).

The following Table shows the number of organisations adhering in the categories specified in the By-laws during 1980 and 1981.

1 unit -	19	adhering organisations
2 units -	14	" "
4 units -	7	" "
6 units -	2	" "
10 units -	2	" "
14 units -	2	" "
20 units -	3	" "
30 units -	1	adhering organisation

Total: 50 adhering organisations; 225 units contribution.

At the time of writing this report, 5 adhering organisations were in arrear with contributions up to and including 1981. At the close of the year 1981, however, as covered by the 3-year accounts, there were 36 units outstanding, of which 26 units have been paid since 1 January 1982.

2. Revenue from Publications

The continuing steady level of this item, arising from royalties provided by the Union's publishers, which was maintained through 1979-1981, reflects increased total sales with the introduction of volumes produced at lower cost per page (see earlier section on Sales).

3. Interest from Current and Savings Accounts

During the period 1979-1981 there were, in all, ten accounts holding Savings of the Union; three were closed during the period and three others were opened. At any one time four accounts have been in US\$, two in Swiss Francs and one in Guilders. In order to attract interest earnings, the ratio of the sum held in Savings Accounts to that held in Current accounts was increased from 1.26 at the close of 1978 to 4.01 at the end of 1981. Due to fluctuations in exchange rates and interest rates, a balance between interest income and capital value maintenance is not easily procured. Being spread between US\$, Swiss Francs, and Dutch florins, reserve funds are not customarily transferred out of their respective categories for speculative purposes. The Executive Committee maintains a conservative policy in respect of its financial reserves, which have been roughly equivalent to 1 1/2 years' expenditure.

Current accounts are held in the United States, Switzerland, the Netherlands and France. Payment of contributions from Adhering Organisations are mainly in Swiss Francs. Transfers of funds are necessary to maintain the various accounts, particularly the account held in Paris, France. The current accounts in Switzerland and the Netherlands bear annual interest.

The change in item 3 from the summarized accounts of the Executive Committee Report for previous triennia, namely the inclusion of interest on Savings Accounts, was explained in the introductory paragraph of this section.

4. Grant from UNESCO subvention to ICSU

The support of scientific Unions by ICSU, using, for the major part of this support, funds provided by UNESCO, has undergone modification during the period of this Report. A lower level of routine allocation of funds is coupled with

provision of funds for specific purposes under UNESCO or ICSU contracts. Detailed accounts of expenditure are submitted to ICSU, and thence to UNESCO, each year by the General Secretary.

Sums were allocated during 1979-81 as follows (in US dollars):

	UNESCO Subvention through ICSU	ICSU grant	Total (US\$)
	Bank Contract (Budget items)		
1979	12 000 4 000 (15)	3 000	19 000
1980	8 000 8 000 (4.1, 7, 15)	-	16 000
1981	9 600 1 200 (4.2)	-	10 800

The amounts received (item 4 of Receipts) are closely similar to the allocations when fluctuating exchange rates are taken into account.

5. Other receipts

As is explained in the introduction to this section, only minor receipts have been included in this item, the former inclusion of transfer sums under this heading being discontinued. Even so, the figure for 1979 includes the donation of UAI France 1976 to the IAU Secretariat,

PAYMENTS

1. Administrative Office

During 1979 the permanent Secretariat of the IAU was established in Paris; two staff were appointed to replace former staff who had retired and premises provided by l'Observatoire de Paris were adapted to the use of the Secretariat. Together with the administrative costs of establishing the secretariat, extra payments were necessary to cover commitments to retiring staff; the cost foreseen in the 1979 Budget Estimate (p.514, EC Report, IAU Transactions XVIIIB, 1980) was closely matched by expenditure. During 1980 and 1981 the administrative costs, expressed in Swiss Francs, reverted to the level of 1976-1978.

The expenses of the administrative office include salaries, social charges, health and pension schemes for the staff of the Secretariat (2 persons), audit fees, stationery, electricity (including heating), postal and telephone costs, and attendance costs for the General Secretary. The last four items were previously not a charge on the Union, being covered in other ways. The Union was still indebted in 1979 to the Observatoire de Genève and the Institut d'Astronomie de l'Université de Lausanne for assistance with office needs, removal costs and other resources for the Union. Throughout the period of the Report substantial contributions to the work of the Union have been made by the Dublin Institute for Advanced Studies (Dunsink Observatory) in Ireland and by the European Southern Observatory, Garching, Germany, F.R., (formerly at Geneva, Switzerland) where the General Secretary and Assistant General Secretary respectively have been provided with necessary services. The Executive Committee is grateful to all four institutions for their valuable and vital support, materially reducing the financial burden on the Union.

2. Subscription to ICSU

Adherence to the International Council of Scientific Unions by the IAU is met by a levy of 2.5% of the contributions from Adhering Organisations for the year preceding payment.

3. Commission Expenses

Relatively small sums are allocated from time to time to Commissions to cover non-routine expenditure. Commission 50 expenditures have, however, been included here.

4. Projects of Commissions

Budgetary Estimates were approved by the XVIth and XVIIth General Assemblies for expenditure of Union funds on projects of Commission 38 (Exchange of Astronomers), item 4.1, of Commission 46 (Teaching of Astronomy), item 4.2, and of other, long-established, projects of the IAU, item 4.3. The accompanying Table shows the budgetary allocations and expenditures under these items for the years 1979-1981. Unspent balances of IAU projects have customarily been held over for expenditure in other years. Accounts are not kept of all unspent sums for each project; such sums have simply reverted to the reserves of the Union. An example of release of these reserves during 1979 was expenditure on behalf of the Variable Star Catalogue, as provided for in the Budget Estimate of 1979 in the EC Report 1976-1978 (see p.515, IAU Transactions, vol. XVIIIB, 1980). This item contributed to the excess of payments over receipts during the triennium of this report.

5. General Assembly

The expenditure on the XVIIth General Assembly in 1979 was assisted by funds specially provided by the Franklin Mint Corporation donation which was received in 1978 and which therefore does not form part of the Receipts 1979-1981. This is a second cause of the excess of Payments over Receipts in the triennium of this Report. *In toto*, the expenditure on the 1979 General Assembly was below that foreseen in the Budget Estimate for 1979, confirmed by the XVIIth General Assembly. Details of the expenditure will be found in the Accounts of the Union for 1979.

A further cause for the 1979-81 excess of payments over receipts has been the granting by the Executive Committee in 1980 of an exceptional request by the National Organising Committee of the XVIIth General Assembly for financial support towards the Local Organising Committee's expenses for that Assembly. Funds were required early in 1981 to cover advance hotel deposits in Patras in order to secure the required accommodation. Financial support has also been allowed in respect of student residence grants and of support for IAU Symposia and Colloquia held in Greece at the time of the General Assembly. This financial support was reckoned to be necessary as an exceptional measure in respect of the 1982 General Assembly because the issuing of the invitation was only arranged, with two years' notice, during 1980, following the withdrawal in 1979 of the expected invitation for the 1982 General Assembly to be held in Bulgaria. The Executive Committee has made this exceptional allocation on the basis that no precedent for future General Assemblies is thereby created and that any depletion of IAU reserves caused by this allocation is minimized.

6. IAU Publications

The IAU Information Bulletin was distributed to all adhering bodies, to IAU members and consultants, and to many astronomy libraries, as in previous years. The total number printed was increased from 4 700 in 1979 to 5 400 in 1980 and 1981. The cost of distribution, including postage (in brackets), for the six bulletins was as follows:

		<u>pages</u>		
1979	No. 41	52	Dfl 11 763.95	
	No. 42	64	Dfl 12 428.35	
1980	No. 43	56	Dfl 13 502.16	(6 828.79)
	No. 44	36	Dfl 9 228.88	(4 976.88)
1981	No. 45	60	Dfl 19 125.50	(13 524.50)
	No. 46	48	Dfl 11 294.00	(5 320.59)
Total 1979-1981			<u>Dfl 77 342.84</u>	

ITEM 4 (Payments): SPECIFIC PROJECTS OF COMMISSIONS (rounded to Swiss Francs)

Item	Comm.	Project	Allocation* 1979	Paid 1979	Paid 1980	Paid 1981	Total Paid 1980-1981	Allocation 1980-1982	Balance
4.1	38	Exchange of Astronomers	25 000	7 475.48	22 268.01	27 203.44	49 471.45	58 000	8 528.55
4.2	46	Teaching of Astronomy	-			1 176.96	1 176.96	3 000	1 823.04
4.3		Other Projects							
	4	Ephemerides Bulletin	830	828.34	-		-	-	-
	6	IAU Telegram Bureau	1 865	1 787.70	1 944.64	2 118.53	4 063.17	5 700	1 636.83
	16	Planetary Documentation	1 765	1 763.34	1 770.50	1 770.00	3 540.50	5 310	1 769.50
	17	Lunar Documentation	1 760	1 761.34	-	-	1 761.34	5 310	3 548.66
	20	Minor Planet Center	2 070	1 987.40	2 456.38	2 675.62	5 132.00	7 200	2 068.00
	27	Catalogue of Variable Stars	<u>3 110</u>	<u>24 919.42</u>		<u>230.07</u>	<u>230.07</u>	<u>9 330</u>	<u>9 099.93</u>
		4.3 Total	11 400	33 047.54	6 171.02	6 794.22	12 965.24	32 850	19 884.76
	4	TOTAL	36 400	40 523.02	28 439.03	35 174.62	63 613.65	93 850	30 236.35

*The allocation to item 4.3 in the Budget for 1979 was inappropriate

The Preliminary Announcement of the XVIIIth General Assembly in 1982 was distributed with IAU Information Bulletin No. 45. Postage charges exceed the cost of printing in some cases.

The publication, in conjunction with D. Reidel Publishing Company, Dordrecht, Netherlands, of the Transactions of the International Astronomical Union (Volume XVIIA in three parts in 1979 and Volume XVIIIB in 1980), of Highlights of Astronomy Volume 5 in 1980 and of the Proceedings of IAU Symposia, was carried out under the financial contract with the publisher without expenditure from the IAU accounts.

7. Publications for Developing Countries and for free distribution

Volumes published by D. Reidel on behalf of the IAU are purchased by the Executive Committee for distribution at greatly reduced cost to a small number of libraries in developing countries. Copies are also distributed free of cost to EC members and to Chairmen of Scientific Organising Committees of IAU Symposia. The allocations during 1979-1981 were Swfr 24 789.69 to 9 institutions in developing countries for which payment equivalent to Swfr 4 217.94 was received from these countries.

8. Executive Committee meetings

The costs of the 47th (Amsterdam, 1980) and 48th (Abastumani, 1981) meetings of the Executive Committee comprise travel and subsistence costs under ICSU regulations for the attending members and IAU staff. The amount incurred for 1980 and 1981 was kept within the budget provision of Swfr 60 000 for 1980-82, no expense under this item being allocated during years of a General Assembly.

The Executive Committee greatly appreciates the arrangements made in the Netherlands and in Georgia, USSR, for enabling the meetings of 1980 and 1981 to be held under favorable conditions. The hospitality offered by the Astronomical Council of the Academy of Sciences of the USSR was not limited to the meeting at Abastumani but included many visits to places of scientific and cultural interest. The degree of hospitality offered reduced considerably the total cost to the IAU of the 1981 meeting.

9. Officers' meetings

The expenditure on Officers' meetings other than those held at the time of Executive Committee was kept at an economical level. The total of Swfr 6 110.04 expended in 1980 and 1981 is less than 30% of the 3-year allocation of Swfr 21 000 for 1980-1982.

10. Symposia and Colloquia

This item, which includes expenditure in cosponsored meetings, covered 40 scientific meetings in 1979, 1980 and 1981 as shown below:

	Symposia	Colloquia	Co-sponsorship
1979	7	3	2
1980	4	5	4
1981	3	10	2

Each Chairman of Scientific Organising Committee is empowered to recommend travel grants for participants, the allocation to individuals being scrutinized by the Assistant General Secretary of the Union. With substantial rises in the Swiss-franc cost of air travel, the IAU grants have become increasingly used to cover subsistence costs at the meetings. Participants from some countries can obtain travel tickets but not foreign currency for paying their hotel or hostel charges. Hence the guideline that this money be used principally for travel

is being increasingly neglected. Approximately 250 grants averaging Swfr 500 (= \$285) were allocated during 1979-1981.

11. Inter-Union Commissions

The annual allocation of the 1980-82 Budget for this item of Swfr 6 700 was exceeded during 1980 due to continually increasing requirements by scientific inter-union commissions (IUCAF, ICSU-AB, CTS, SCOSTEP and the FAGS agencies) for direct financial support from the Unions. The Executive Committee, in 1979, allocated a token amount of Swfr 2 000 p.a. to the FAGS Council out of its 1980-82 Budget, such provision not having been foreseen in the Budget Proposal of 1979.

12. Executive Committee Projects

No Projects were financed within this category during 1979-1981 but the project of Commission 5, involving many other Commissions' activity in an advisory capacity, of C. Jaschek, F. Spite, C. Lortet *et alii* to produce an index of astronomical catalogues and their abbreviated names was adopted in 1981 as an Executive Committee project for completion in 1982.

13. Representation

Part of the cost of IAU representation at bureau and commission meetings of other organisations, including FAGS, CCIR, CCDM, ICSU-AB, EPS, COSPAR, SCOSTEP, SCOPE and COSTED, have been met from these funds.

15. Young Astronomers' Schools

Three Schools were held in the triennium 1979-1981, the amounts allocated, together with the amounts expended and the support allocated through ICSU-UNESCO funds, are shown in note 16 of the Budget proposal 1982 which follows.

The IAU grant usually covers about one third of the costs of a Young Astronomers' School. Funds are used for travel of Lecturers, for transport of elementary teaching equipment, and for travel assistance to some students.

16. Regional Astronomy meetings

Four Regional meetings were supported with an allowance of Swfr 6 000 each to assist attendance of young astronomers. The amounts expended were as follows;

	SwFr
Liège, Belgium, July 1980	6 000
Mérida, Venezuela, January 1981	4 473.88
Bandung, Indonesia, August 1981	5 589.51
Dubrovnik, Yugoslavia, October 1981	6 000

17. Special Nominating Committee

The work of the Special Nominating Committee (which reports in 1982 to the General Assembly) was transacted without incurring special expenses in 1980 and 1981.

18. Other Payments

As explained in the introductory paragraphs, only minor payments are now included under this heading, substantial financial transfer between accounts being treated separately in the audited annual accounts.

Conclusion

The total balance in the Savings and Current accounts of the Union, valued at Swfr 663 991.14 on 31.12.81 is Swfr 15 364.05 higher than the corresponding figure given for 31.12.78 in the Executive Committee Report for 1976-1978. This is an increase of 2.4% as against a 32% increase for the triennium 1976-1978. The figure of 2.4% is diminished by the causes referred to under the notes on expenditure items 4.3 and 5 above.

RESIDUAL BUDGET FOR THE YEAR 1982 and BUDGET PROPOSAL 1982

1. The figures in the accounts for 1980 and 1981, added together for each Budget item, are subtracted from the figures for the respective Budget items for 1980-1982, as approved by the General Assembly in 1979. In this way a Residual Budget for 1982 is obtained. Negative figures are used to indicate that a particular item of the 1980-1982 Budget, either Receipts or Payments, has already been exceeded.

At Abastumani in July 1981, the Executive Committee approved some changed figures for the triennium, as compared with the adopted Budget 1980-1982. Two sets of figures, rounded in Swiss Francs are therefore given;

- (i) Residual Budget for 1982, using 1980-82 Budget figures approved by the XVIIth General Assembly and the income and expenditure figures for 1980 and 1981
- (ii) Proposed Budget Estimate for 1982, to be referred to the Finance Committee at the XVIIIth (Patras) General Assembly for presentation to the Assembly, as in IAU Statute 18(b).

2. Residual Budget for 1982

The figures for 1980 and 1981 subtracted from those of the budget approved for 1980-82 give the residual budget for the year 1982 as follows (numbered notes appear in Section 4 below):

Receipts (Swiss francs)

1. Contributions from Adhering Countries	344 171 ¹
2. Revenue from publications	4 282 ²
3. Interest on current accounts and savings accounts	15 838 ³
4. ICSU and ICSU-UNESCO allocations	-2 278 ⁴
5. Other receipts	-1 770
Total receipts	360 243
Total payments	429 665
Excess of payments over receipts	69 422 ⁵

Payments (Swiss francs)

1. Administrative Office	
1.1 Secretariat in Paris, including GS expenses	118 581 ⁶
1.2 Secretarial help to GS and AGS	30 000 ⁷
1.3 Furniture, office equipment, etc.	16 793 ⁸
2. Subscription to ICSU	7 805
3. Commission Expenses	620 ⁹

4. Projects of Commissions	
4.1 Exchange of Astronomers	8 529 ¹⁰
4.2 Teaching of Astronomy	1 823 ¹¹
4.3 Other projects	19 885 ¹²
5. General Assembly	89 652 ¹³
6. IAU publications	11 514
7. Publications for EC and to developing countries	31 971
8. Executive Committee meetings 1980, 1981	3 369
9. Officers' meetings 1980-82	14 890
10. Symposia and Colloquia (travel grants)	54 439
11. Inter-Union Commissions	-2 548
12. Projects of the Executive Committee	13 000 ¹⁴
13. Representation	7 010
14. Bank Charges	-267 ¹⁵
15. Young Astronomers' Schools	-4 169 ¹⁶
16. Regional Meetings 1980, 1981	1 937
17. Expenses of Special Nominating Committee	5 000 ¹⁷
18. Other payments	-169
	<hr/>
	429 665 ¹⁸
	<hr/>

3. Budget Proposal 1982

Based upon careful examination of current trends and figures actually achieved, the Executive Committee proposes the Budget Estimate for 1982 as follows (a note is given wherever an appreciable change occurs, as compared with the Residual Budget, and in many cases the same note serves section 2 and section 3):

1. Contributions from Adhering Countries	356 000 ¹
2. Revenue from publications	18 000 ²
3. Interest on current accounts and savings accounts	35 000 ³
4. ICSU and ICSU-UNESCO allocations	32 384 ⁴
	<hr/>
Total receipts	441 384
Total payments	527 470
Excess of payments over receipts	86 086 ⁵

Payments (Swiss Francs)

1. Administrative Office	
1.1 Secretariat in Paris, including GS expenses	140 000 ⁶
1.2 Secretarial help to GS and AGS	5 000 ⁷
1.3 Furniture, office equipment, etc.	20 000 ⁸
2. Subscription to ICSU	7 700
3. Commission Expenses	5 000 ⁹

REPORT OF THE EXECUTIVE COMMITTEE

4. Projects of Commissions	
4.1 Exchange of Astronomers	18 500 ¹⁰
4.2 Teaching of Astronomy	2 800 ¹¹
4.3 Other projects	15 370 ¹²
5. General Assembly	169 000 ¹⁹
6. IAU Publications	24 000 ²⁰
7. Publications for EC and to developing countries	10 000 ²¹
8. Executive Committee meetings	0 ²²
9. Officers' Meetings	8 000
10. Symposia and Colloquia (travel grants)	55 000 ²³
11. Inter-Union Commissions	7 500
12. Projects of the Executive Committee	10 000 ¹⁴
13. Representation	7 000 ²⁴
14. Bank Charges	600 ¹⁵
15. Young Astronomers' Schools	22 000 ¹⁶
16. Regional Astronomy Meetings	0 ²⁵
17. Expenses of Special Nominating Committee	0 ¹⁷
	<hr/>
Total payments	527 470 ¹⁸

4. Notes of ExplanationReceipts Notes:

1. The residual figure for contributions being greater than one third of the 1980-82 budget figure (Swfr 966 900) indicates that some countries are in arrears for their contributions up to 1981. However, several appreciable contributions were received soon after the 1981 accounts closed on 31 December 1981. The figure estimated for 1982 takes into account a slightly increased total number of units of contribution and makes an allowance for a certain (small) number of late payments.
2. Revenue from publications totalled Swfr 46 718 in 1980-81 making it possible to anticipate additional income from this item even after allowing for the lesser royalties of the new publication contract (see IB 47).
3. Interest rates are always changing, the total figure for 1981 being Swfr 41 676. Thus it is possible to anticipate a substantial increase, in 1982, over the residual budget figure.
4. It was anticipated in the adopted budget that ICSU/UNESCO contributions would substantially exceed the conservative figure provided, which was based on annual payments only without added "contract" payments. The 1982 figure corresponds to the allocation by ICSU for 1982 to the IAU (\$18 000).
5. It is to be expected that payments in a closing (General Assembly) year will exceed receipts. The "budgetted" excess for 1982 (Swfr 69 422), incorporating the excesses of receipts over payments actually obtained in 1980 and 1981, produces a net excess of receipts over payments for the triennium 1980-82, of Swfr 890. The Executive Committee has decided that in the present circumstances of steeply rising costs and for other reasons, a net deficit of Swfr 16 000 could be borne for the triennium 1980-82, recognising a substantial surplus against budget for the triennium 1977-79; hence the projected excess of payments over receipts for 1982 has been allowed to rise from 69 422 to 86 086.

Payments Notes:

6. The budgetted payment for the Paris secretariat (item 1.1) maintenance of Swfr 126 667 p.a. was exceeded slightly in 1981 (Swfr 134 435). However, we remark that payments under this item averaged Swfr 134 524 in 1976-78. Therefore, expenditure has been held constant in a period when inflation has affected the Swiss Franc by 4 to 7% p.a. Taking into account certain charges which were not levied in 1980 and 1981 but which are now due, payments under 1.1 in 1982 cannot be less than Swfr 140 000.
7. Item 1.2 has not been drawn on; a figure for 1982 of a reduced amount on a per annum basis is retained in the Budget proposal for 1982.
8. Item 1.3 has scarcely been drawn on, thanks to furniture purchased for the IAU secretariat by "IAU France-1976", which provision is gratefully acknowledged. For 1982 it is proposed to make allowance of Swfr 20 000 towards purchase of word-processing equipment for future modernisation in the Paris secretariat.
9. Items under 3 include undertakings of Commission 25 (Orion atlas) and Commission 50 (IAU/CIE report) in 1981. It is proposed to add a further Swfr 4 380 for this sub-head in 1982 to cover possible proposals of a minor nature.
10. Due to heavy fare increases, demands on funds for Exchange of Astronomers have been considerable. The Executive Committee approved a supplementary allocation of Swfr 10 000 for this item (4.1).
11. Following allocation of ICSU project support, this item (4.2) has been increased by Swfr 1 000 in the proposal for 1982.
12. Under "Other Projects" are included regular specific commitments of IAU Commissions, the allocations in the Residual Budget for 1982 and in the Budget proposal for 1982 being as follows:

		Residual	Proposal
(i) Comm. 6	Telegram Bureau	1 637	2 000
(ii) Comm. 16	Planetary Documentation, Meudon	1 770	1 770
(iii) Comm. 16	Lunar Documentation, Meudon	5 310	0
(iv) Comm. 20	Minor Planet Center	2 068	2 500
(v) Comm. 27	Variable Star Catalogue (USSR)	9 100	9 100
	Total	<u>19 885</u>	<u>15 370</u>

Item (iii) was not called upon for payment in 1980 and 1981 and notice was given by the Executive Committee in 1978 that no monies would be allocated beyond 1982 for items (ii) and (iii). The increases in (i) and (iv) are to accommodate changing dollar-Swfr ratios.

13. As announced in section 1.1(g) on p.14 of Information Bulletin No. 45 (January 1981) financial support of the Greek Local Organising Committee was approved by the Executive Committee in 1980 as an exceptional measure, the sums being utilised for specific purposes within the general provisions of the IAU Budget such as Symposia, Colloquia and travel grants to young astronomers. The imposition of this item renders it virtually impossible to balance the budget for the triennium 1980-82, although, taking into account the surplus of 1977-79, an overall balance in the six-year period 1977-82 is being achieved.
14. The multi-Commission proposal for a comprehensive index of Star Catalogues by Jaschek, Spite, Lortet, et al. is supported to an extent of Swfr 9 500 by the Executive Committee as an EC Project, but no sums have yet been drawn.

REPORT OF THE EXECUTIVE COMMITTEE

15. Due to allocation of some handling charges to this subhead, previously borne under exchange losses, a minor increase is proposed.
16. Young Astronomers' Schools have been held in each year 1979-81 as follows, with the approved allocations shown in US dollars and the payments actually made in Swfr:

	<u>Allocations(\$)</u>		<u>Total Payments</u>
	IAU	ICSU/UNESCO	1979-81 (Swfr)
X-1979			
La Laguna, Tenerife, Spain	4 000	4 000	15 123
XI-1980			
Hvar, Yugoslavia	7 000	4 000	17 904
XII-1981			
Helwan, Egypt	11 000	-	19 391

The total 1980-81 allocation of \$22 000 is already in excess of the Swfr 37 000 under item 15 of the 1980-82 Budget expenditure. The XIIIth Young Astronomers School is planned for Nairobi, Kenya, in June 1982. The Executive Committee has agreed to a contribution to this School equivalent to \$11 000, of which the ICSU Fund is contributing \$4 000. Substantial revision of this budgetary item was anticipated in the notes on the 1980-82 Budget as given in IAU Transactions XVIIIB, p.32. The revised amount for 1982 of Swfr 22 000, replacing the "negative" residual figure of Swfr 4 169, represents a remaining small payment to the XIIth (Helwan) School plus the amount required for the XIIIth (Nairobi) Young Astronomers' School. (NB: Since these decisions were made the Nairobi School is cancelled and a modification will be made to this item at the 49th EC meeting in August 1982.)

17. The business of the Special Nominating Committee of 1979-82 was completed during 1981 without drawing on item 17 of the adopted budget and that of the SNC of 1982-85 is unlikely to commence until 1983.
18. An apparent increase in planned payments in 1982 by Swfr 97 805 is matched by an expected increase in receipts of Swfr 81 141 converting the budgetted surplus of Swfr 890 to a deficit of Swfr 15 774; see also Note 5.
19. See Note 13.
20. The IAU Information Bulletin has exceeded budgetary provisions by some 5% and an increased amount is required in 1982. Postage charges are largely responsible for the excess expenditure incurred.
21. Economies in this item have been possible by restricting the distribution slightly in places where the need was less.
22. EC Meeting costs are not incurred in 1982 except under item 5 "General Assembly".
23. Financial support of Symposia and Colloquia is provided to assist travel of participants to scientific meetings on the recommendations of Chairmen of Scientific Organising Committees. A strict limit is applied for each meeting and, in spite of there being an undetermined number of meetings, expenditure was maintained very close to the budget figure.
24. Budgetary support of IAU representatives attendance at meetings of other international bodies is expended on a limited scale, mainly being used to implement IAU interests.
25. No Regional Astronomy Meeting is planned during 1982.

APPENDIX

A. List of Countries Adhering to the IAU

The following is a list of the 49 countries that adhered to the Union in December 1981, giving also the year of admission and the Adhering Organisation.

<u>Country</u>	<u>Year</u>	<u>Adhering Organisation</u>	
Arab Republic of Egypt	1935	Academy of Scientific Research, Dept. Sci. Soc. and International Unions, 101 Kasr El Eini Street, Cairo	
Argentina	1927	Comité Nacional de Astronomia Attn: Ing. J.A. López, Secretary Observatorio Astronomico "Félix Aguilar" Av. Benavidez 8175 Oeste 5407 Marquesado, San Juan	
Australia	1939	Australian Academy of Sciences PO Box 783, Canberra City, ACT 2601	
Austria	1955	Osterreichische Akademie der Wissenschaften Dr Ignaz Seipel-Platz 2, A-1010 Wien	
Belgium	1920	Académie Royale de Belgique, Palais des Académies, 1 rue Ducale, Bruxelles 1	
Brazil	1961	Dourimar Nunes de Moura, Superintendencia de Cooperacao Internacional - SCI Conselho Nacional de Desenvolvimento Científico e Tecnológico - CNPq Av. W 3 Norte, Q. 507/B, Caixa Postal 11-1142, 70740, Brasilia, DF	
Bulgaria	1957	Bulgarian Academy of Sciences, 7th November Street 1, 1000 Sofia	
Canada	1920	National Research Council of Canada Attn: Dr C. Gauvreau International Relations Ottawa, Ontario K1A 0R6	
Chile	1947	Universidad de Chile, Observatorio Astronomico Nacional, Casilla 36-D, Santiago de Chile	
China	Nanking	1935	Chinese Astronomical Society Attn: Dr Y.C. Chang, Director Purple Mountain Observatory Academia Sinica, Nanking
	Taipei	1959	The Astronomy Union located at Taipei, China, Taipei Observatory, Yuan Shan, Taipei 104, Taiwan
Colombia	1967	Universidad Nacional de Columbia Observatorio Astronomico Nacional Apartado Aereo 2584, Bogota D.E.	
Cuba	1970	Academia de Ciencias de Cuba Attn: Dr B. Sagaro-Delgado Capitolio Nacional, La Habana	

<u>Country</u>	<u>Year</u>	<u>Adhering Organisation</u>
Czechoslovakia	1922	Czechoslovak Academy of Sciences Narodní 3, Praha 1
Denmark	1922	Det Kongelige Danske Videnskabernes Selskab - The Royal Danish Academy of Sciences & Letters, H.C. Andersens Blvd 35 DK - 1553 Københavniv
Finland	1948	Académie des Sciences & Lettres Snellmaninkatu 9-11, Helsinki 17
France	1920	Académie des Sciences, Institut de France 23, quai de Conti, 75006 Paris
Germany, D.R.	1951	Akademie der Wissenschaften der DDR Der Generalsekretär, DDR-108 Berlin, Otto-Nuschke-Strasse 22/23
Germany, F.R.	1951	Rat Westdeutscher Sternwarte Attn: Prof. Dr R. Kippenhahn MPI für Physik und Astrophysik (Institut für Astrophysik) Karl-Schwarzschild-Str. 1 D-8046 Garching bei München
Greece	1920	Academy of Athens, Panepistimiou Str., Athens
Hungary	1947	Hungarian Academy of Sciences Roosevelt Tér 9, Budapest V
India	1964	Indian National Science Academy Bahadur Shah Zafar Marg, New Delhi 110002
Indonesia	1979	National Institute for Sciences Tenku Cik Dithiro 43, Jakarta
Iran	1969	Institute of Geophysics Attn: Dr M. Sobouti, Tehran University Amirabad Shomali, Tehran
Iraq	1976	Space & Astronomical Research Centre Council for Scientific Research Attn: Dr N.M. Khalil PO Box 255, Baghdad
Ireland	1947	The Royal Irish Academy, 19 Dawson Street Dublin 2
Israel	1954	The Israel Academy of Sciences & Humanities Albert Einstein Square, Talbieh Jerusalem 91 040, PO Box 4040
Italy	1921	Consiglio Nazionale delle Ricerche Piazzale delle Scienze 7, 00100 Rome
Japan	1920	Science Council of Japan 22-34 Roppongi 7 chome, Minato-Ku Tokyo 106

<u>Country</u>	<u>Year</u>	<u>Adhering Organisation</u>
Korea (DPR)	1961	Academy of Sciences, Attn: Dr Sin Mun Gyu General Secretary, Pyongyang
Korea (Republic)	1973	Korean National Astronomical Observatory Yoksam-Dong, Kangnam-ku, Seoul, 134-03
Mexico	1921	Instituto de Astronomía UNAM Apartado Postal 70-264, México D.F.
Netherlands	1922	Koninklijke Nederlandsche Akademie van Wetenschappen, Kloveniersburgwal 29 1011 JV Amsterdam
New Zealand	1964	The Royal Society of New Zealand Private Bag, Wellington
Norway	1922	Det Norske Videnskaps-Akademi i Oslo Drammensveinen 78, Oslo 2
Poland	1924	Polska Akademia Nauk, Palac Kultury i Nauki Warsaw
Portugal	1924	Seccáo Portuguesa das Uniões Internacionais Astronómica e Geodésica e Geofísica Praça da Estrela, Lisboa 2
Roumania	1928	Roumanian National Committee of Astronomy Astronomical Observatory Str. Cutitul de Argint 5 75212 Bucarest, PO 28
South Africa	1938	International Relations Division Council for Scientific & Industrial Research Services, PO Box 395, Pretoria 0001
Spain	1922	Comision Nacional de Astronomia, Instituto Geografico y Cadastral, General Ibanez 3 Madrid (3)
Sweden	1925	Kungl. Vetenskapsakademien, Attn: Prof. T. Ganelius, Permanent Secretary Box 50005, S-104 05 Stockholm
Switzerland	1923	Schweizerische Naturforschende Gesellschaft, Zentralsekretariat, Laupenstrasse 10, 3000 Bern
Turkey	1961	Türk Astronomi Derneği, University Rasathanesi, Beyazit, Istanbul
United Kingdom	1920	The Royal Society, 6, Carlton House Terrace London SW1Y 5AG
Uruguay	1970	Ministerio de Educacion y Cultura Comité Nacional de Astronomia 8 de Octubre 3255, Montevideo

<u>Country</u>	<u>Year</u>	<u>Adhering Organisation</u>
USA	1920	National Academy of Sciences Commission on International Relations 2101 Constitution Avenue N.W. Washington DC 20148
USSR	1935	Academy of Sciences of the USSR Leninskij Prospekt 14, Moscow 71
Vatican City State	1932	Pontificia Academia delle Scienze Citta del Vaticano
Venezuela	1953	Dr Francisco J. Fuenmayor, Presidente Asociacion Venezolana de Astronomia Apartado 264, Mérida 5101
Yugoslavia	1935	Savez društava matematičara, fizičara i astronoma Jugoslovlavije, Institut za matematiku i fiziku, Cetinjski put bb, 81000 Titograd

B. List of Deceased Members

The Executive Committee regrets to record the loss by death of the following 63 Members:

ASHBROOK Dr J. - 4 August 1980
 BEALS Dr Carlyle S. - 2 July 1979
 BEER Dr Arthur - 20 October 1980
 BLOCH Dr M. -
 BONEFF Prof. Nicola - May 1979
 BONNEAU Prof. M. -
 BRKIC Prof. Dr Zaharije - 24 April 1979
 BUCCHAR Prof. Dr E. - 20 September 1979
 BULLARD Sir Edward - 3 April 1980
 CARRASCO Dr Garrorena Rafael - 16 December 1981
 CECCHINI Prof. G. -
 CHIS Prof. Dr Gheorghe - 19 May 1981
 COUDER Dr André - 16 January 1979
 COUDERC Dr Paul - 5 February 1981
 DA SILVA Prof. Dr Inacio Francisco - 9 September 1977
 DJURKOVIC Prof. Petar M. - 5 January 1980
 DOUGLAS Dr Alex E. - 26 July 1981
 FICHERA Prof. E. - February 1978
 FINSEN Dr William S. -
 FLECKENSTEIN Prof. Dr J.D. - 21 February 1980
 GUNTZEL-LINGNER Dr U. - 27 August 1979
 GUTH Dr Prof. Vladimir - 25 June 1980
 HAGIHARA Prof. Y. - 29 January 1979
 HARWOOD M. - August 1979
 HERGET Dr P. - 27 August 1981
 HIROSE Dr Hideo - 27 October 1981
 HUNAERTS Dr Joseph J. - 19 March 1979
 IKEDA Dr Tetsuro - 2 October 1981
 JOHNSON Dr H.L. - 2 April 1980
 KORDYLEWSKI Dr Kazimierz - 11 March 1981

KOZHEVNIKOV Dr N.I. - 16 October 1981
 LAUTERBORN Prof. Dr D. - May 1980
 LUBECK K. - 11 March 1977
 MATSUNAMI Dr N. - 6 September 1979
 McCUSKEY Dr S.W. - 22 April 1979
 MICHEL H. -
 MOHR Prof. Dr J.M. - 16 December 1979
 MOREAU Dr F. - 12 November 1979
 MYERSCOUGH Dr Valerie P. - 8 November 1980
 NØRLUND Prof. Niels Erik - 4 July 1981
 PAJDUSAKOVA Dr Ludmila - 6 October 1979
 PAYNE-GAPOSCHKIN Dr C.H. - 6 December 1979
 PLASKETT Prof. Harry Hemley - 20 January 1980
 PLATZECK Dr R. - 4 February 1979
 PORTER Dr J.G. - 13 September 1981
 RABBEN Dr H.H. - 28 April 1979
 REINMUTH Dr K. - 6 May 1979
 RICHTER Prof. Dr N.B. - 26 November 1980
 ROMANA Dr A. - 13 October 1981
 SANDIG Prof. H.-U. - 25 May 1979
 SERKOWSKI Dr K. - 7 October 1981
 SHAPLEY M.B. - March 1981
 STRAUSS Dr Federico M. - 19 March 1981
 SMILEY Dr C.H. - 26 July 1977
 SWOPE H.H. - 24 November 1980
 SYROVATSKIJ S.I. - 26 September 1979
 TINSLEY Prof. Beatrice M. - 23 March 1981
 UREY, Prof. H.C. -
 WEMPE Prof. Dr J. - 29 May 1980
 WHELAN Dr John A.J. - 21 December 1981
 WYATT Dr S.P., Jr. - 6 December 1980

C. List of IAU Publications

Transactions of the IAU, Volume XVIIIA "Reports on Astronomy, 1979", in set of 3 volumes (Part 1: pp. vii + 223; Part 2: pp. vii + 246; Part 3: pp. vii + 228), price Dfl 168 (Dfl 56 per volume (Members at 33.33% discount). Editor: Edith A. Müller, published by D. Reidel Publishing Company, Dordrecht, Holland, 1979.

Transactions of the IAU, Volume XVIIIB: "Proceedings of the Seventeenth General Assembly of the IAU", Montreal, Canada, 1979, pp. x + 527, price Dfl 130 (Members at 33.33% discount). Edited by Patrick A. Wayman, published by D. Reidel Publishing Company, 1980

Highlights of Astronomy, Volume No. 5, as presented at the XVIIth General Assembly of the IAU, 1979, pp. viii + 868, price Dfl 160 (cloth) and Dfl 75 (paper) (Members at 33.33% discount). Edited by Patrick A. Wayman, published by D. Reidel Publishing Company, 1980.

IAU Symposium Volumes

- No. 78 "Nutation and the Earth's Rotation", pp. xvi + 266, price Dfl 65, paper Dfl 40 (Members at 33.33% discount)*. Edited by E.P. Fedorov, M.L. Smith and P.L. Bender, published by D. Reidel Publishing Company, 1980.
- No. 79 "The Large Scale Structure of the Universe", pp. 520, edited by M.S. Longair and J. Einasto, 1978, Russian version published by "MIIP", Moscow, 1981.
- No. 81 "Dynamics of the Solar System", pp. xiv + 347, price Dfl 85, paper Dfl 55 (Members at 33.33% discount)*. Edited by R.L. Duncombe, published by D. Reidel Publishing Company, 1979.
- No. 82 "Time and the Earth's Rotation", pp. xix + 332, price Dfl 80, paper Dfl 50 (Members at 33.33% discount)*. Edited by D.D. McCarthy and J.D.H. Pilkington, published by D. Reidel Publishing Company, 1979.
- No. 83 "Mass Loss and Evolution of O-Type Stars", pp. xix + 501, price Dfl 120, paper Dfl 60 (Members at 33.33% discount)*. Edited by P.S. Conti and C.W.H. de Loore, published by D. Reidel Publishing Company, 1979.
- No. 84 "The Large-Scale Characteristics of the Galaxy", pp. xvi + 606, price Dfl 140, paper Dfl 70 (Members at 33.33% discount)*. Edited by W.B. Burton, published by D. Reidel Publishing Company, 1979.
- No. 85 "Star Clusters", pp. xxi + 516, price Dfl 120, paper Dfl 60 (Members at 33.33% discount)*. Edited by J.E. Hesser, published by D. Reidel Publishing Company, 1980.
- No. 86 "Radio Physics of the Sun", pp. xx + 474, price Dfl 110, paper Dfl 55 (Members at 33.33% discount)*. Edited by M.R. Kundu and T.E. Gergely, published by D. Reidel Publishing Company, 1980.
- No. 87 "Interstellar Molecules", pp. xi + 704, price Dfl 145, paper Dfl 65 (Members at 33.33% discount)*. Edited by B.H. Andrew, published by D. Reidel Publishing Company, 1980.
- No. 88 "Close Binary Stars", pp. xviii + 598, price Dfl 130, paper Dfl 60 (Members at 33.33% discount)*. Edited by M. Plavec, D. Popper and R.K. Ulrich, published by D. Reidel Publishing Company, 1980.
- No. 89 "Refractional Influences in Astronomy and Geodesy", pp. xxiv + 403, price Dfl 95, paper Dfl 50 (Members at 33.33% discount)*. Edited by G. Teleki and K.-F.E. Tengstrom, published by D. Reidel Publishing Company, 1979.
- No. 90 "Solid Particles in the Solar System", pp. xvi + 441, price Dfl 95, paper Dfl 50 (Members at 33.33% discount)*. Edited by I. Halliday and B.A. McIntosh, published by D. Reidel Publishing Company, 1980.
- No. 91 "Solar and Interplanetary Dynamics", pp. xx + 558, price Dfl 125, paper Dfl 50 (Members 33.33% discount)*. Edited by M. Dryer and E. Tandberg-Hanssen, published by D. Reidel Publishing Company, 1980.
- No. 92 "Objects of High Redshift", pp. xiv + 334, price Dfl 80, paper Dfl 40 (Members at 33.33% discount)*. Edited by G.O. Abell and P.J.E. Peebles, published by D. Reidel Publishing Company, 1980.
- No. 93 "Fundamental Problems in the Theory of Stellar Evolution", pp. xv + 347, price Dfl 90, paper Dfl 40 (Members at 33.33% discount)*. Edited by D. Sugimoto, D.Q. Lamb and D.N. Schramm, published by D. Reidel Publishing Company, 1981.

- No. 94 "Origin of Cosmic Rays", pp. xv + 409, price Dfl 100, paper Dfl 45 (Members at 33.33% discount)*. Edited by G. Setti, G. Spada and A. Wolfendale, published by D. Reidel Publishing Company, 1981.
- No. 95 "Pulsars", pp. xv + 475, price Dfl 115, paper Dfl 55 (Members at 33.33% discount)*. Edited by W. Sieber and R. Wielebinski, published by D. Reidel Publishing Company, 1981.
- No. 96 "Infrared Astronomy", pp. xvi + 380, price Dfl 90, paper Dfl 45 (Members at 33.33% discount)*. Edited by C.G. Wynn-Williams and D.P. Cruikshank, published by D. Reidel Publishing Company, 1981.

* Members receive 50% discount on paper edition.

IAU Colloquium Volumes

- No. 44 "Physics of Solar Prominences", pp. xiv + 375, edited by E. Jensen, P. Maltby and F.Q. Orrall. Published by Institutt for Teoretisk Astrofysikk, Universitetet i Oslo,
- No. 46 "Changing Trends in Variable Star Research", pp. 527, edited by F.M. Bateson, J. Smak and I.H. Urch. Published by the University of Waikato, 1979.
- No. 47 "Spectral Classification of the Future, pp. xxii + 575, edited by M.F. McCarthy, S.J., A.G.D. Philip and G.B. Coyne, S.J. Published by the Vatican Observatory, 1979.
- No. 48 "Modern Astrometry", pp. xvi + 603, edited by F.V. Prochazka and R.H. Tucker. Published by the Vienna University Observatory, 1979.
- No. 49 "Image Formation from Coherence Functions in Astronomy", pp. xxi + 337, edited by C. van Schooneveld. Published by D. Reidel Publishing Company, 1979.
- No. 50 "High Angular Resolution Stellar Interferometry", pp. xx + 492, edited by J. Davis and W.J. Tango. Published by Chatterton Astronomy Department, 1979.
- No. 51 "Stellar Turbulence", pp. x + 308, edited by D.F. Gray and J.L. Linsky. Published by Springer-Verlag in the series "Lecture Notes in Physics", 1980.
- No. 52 "Protostars and Planets, Studies of Star Formation and of the Origin of the Solar System", pp. viii + 756, edited by T. Gehrels with the assistance of M.S. Matthews. Published by the University of Arizona Press, 1978.
- No. 53 "White Dwarfs and Variable Degenerate Stars", edited by H.M. van Horn and V. Weidemann. Published by University of Rochester, 1979
- No. 54 "Scientific Research with the Space Telescope", pp. 327, edited by M.S. Longair and J.W. Warner. Published by NASA (CP-2111), 1980.
- No. 56 "Reference Coordinate Systems for Earth Dynamics", pp. 396, edited by E.M. Gaposchkin and B. Kolaczek. Published by D. Reidel Publishing Company, in the series "Astrophysics and Space Science Library, vol 86, 1981.
- No. 57 "The Satellites of Jupiter", in ICARUS, vol. 44, No. 2, November 1980.
- No. 58 "Stellar Hydrodynamics", pp. 464, edited by A.N. Cox and D.S. King. Published by D. Reidel Publishing Company, in the series "Space Science Reviews", vol. 27, Nos. 3 and 4, 1980.

- No. 59 "Effects of Mass-loss on Stellar Evolution", pp. 566, edited by C. Chiosi and R. Stalio. Published by D. Reidel Publishing Company in the series "Astrophysics and Space Library", vol. 89, 1981.

Other Publications

Proceedings of the Fourth Regional Meeting in Astronomy, held under the auspices of the IAU, abstracts of papers presented at the meeting published by Uppsala Astronomical Observatory, Report No. 12, 1979.

Proceedings of the First Asian-South Pacific Regional Meeting in Astronomy, held under the auspices of the IAU, edited by W. Davidson and B.M. Lewis, published as a special issue of the *New Zealand Journal of Science*, vol. 22, No. 4, December 1979.

Publications by, or on behalf of, IAU Commissions and by Astronomical Services

Commission No. 6 (Telegram Bureau) circulars Nos. 3318 - 3655, issued by the IAU Central Bureau for Astronomical Telegrams.

Commission No. 10 Cartes Synoptiques de la Chromosphère Solaire, prepared by Observatoire de Meudon, Paris.

Quarterly Bulletin on Solar Activity (QBSA), published by the Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan

Commission No. 10 Sunspot Bulletin No. 1 (January 1980), published by the Sunspot Index Data Center, c/o Dr A. Koeckelenbergh, avenue Circulaire 3, B-1180 Bruxelles, Belgium.

Commission No. 19 Monthly Notes of the IPMS, Nos. 1 (1979) - 12 (1981), published by the International Polar Motion Service, International Latitude Observatory of Mizusawa, Mizusawa-shi, Iwate-ken, Japan.

Commission No. 20 Minor Planet Circulars Nos. 4583-6572 mimeographed circulars issued by the Minor Planet Center, Smithsonian Institution, 60 Garden Street, Cambridge, Mass., 02138, USA.

Commission 25 "A Photometric Atlas of the Orion Nebula Aggregate", published by A.D. Andrews, Armagh Observatory, N. Ireland, UK, 1981.

Commission 26 Circulaires d'Information, Nos. 77-86. President: P. Muller, CERGA, Grasse, France.

Commission 27 Information Bulletin on Variable Stars, prepared by Konkoly Observatory, Budapest, Hungary.

Commission 45 Circular letters, published by the President of the Commission

Commission 46 Newsletter 1 - 10, published by D.G. Wentzel, Astronomy Program,
University of Maryland, College Park MD 20742, USA.

Commission 50 "Guidelines for Minimizing Urban Sky Glow near Astronomical
Observatories", publication IAU/CIE No. 1, 1980. Can be obtained from the
Secretariat.

IAU Information Bulletin Nos. 41 - 46, prepared by the General Secretary.