

[Home](#) | [News](#) | [FAQ](#) | [Organization](#) | [Activities](#) | [Contact](#)

# IAU Information Bulletin No. 78

October 1996

## SPECIAL ISSUE

**Preliminary Programme of the XXIIIrd General Assembly, August 18-30, 1997,  
Kyoto International Conference Hall (KICH), Takaraga-ike, Sakyo-ku, Kyoto  
606, Japan**

## HOST ORGANIZATIONS

Science Council of Japan & Astronomical Society of Japan

### ADVISORY BOARD

Yoshio Fujita, Chairperson (President of the Japan Academy)

Kenji Akabane (Prof. Emeritus, NAO)

Shinya Obi (President, University of  
the Air)

Chushiro Hayashi (Prof. Emeritus,  
Kyoto University)

Minoru Oda (Prof. Emeritus, ISAS)

Yasuo Tanaka (Prof. Emeritus, ISAS)

Yoshihide Kozai (Prof. Emeritus, NAO)

### NATIONAL ORGANIZING COMMITTEE (NOC)

Daiichiro Sugimoto, Chairperson (University of Tokyo)

Satoru Ikeuchi (Osaka University)

Toshio Matsumoto (ISAS)

Masato Ishiguro (NAO-NRO)	Yoji Osaki (University of Tokyo)
Norio Kaifu (NAO)	Katsuhiko Sato (University of Tokyo)
Keiichi Kodaira (NAO)	Humitaka Sato (Kyoto University)
Yoshihide Kozai (NAO)	Mine Takeuti (Tohoku University)
Fumiyoshi Makino (ISAS)	Yutaka Uchida (Science University of Tokyo)

## LOCAL ORGANIZING COMMITTEE (LOC)

Toshio Fukushima, Chairperson (NAO)

Nobuo Arimoto (University of Tokyo)	Ryusuke Ogasawara (NAO)
Toshihiro Handa (University of Tokyo)	Kouji Ohta (Kyoto University)
Tetsuo Hasegawa (University of Tokyo)	Sadanori Okamura (University of Tokyo)
Shogo Inagaki (Kyoto University)	Kozo Sadakane (Osaka Kyoiku University)
Junji Inatani (NAO-NRO)	Yoshinori Suematsu (NAO)
Hajime Inoue (ISAS)	Tomoharu Suzuki (University of Tokyo)
Jun Jugaku (Tokai University)	Yoshiaki Taniguchi (Tohoku University)
Takeo Kosugi (NAO-NRO)	Hiroshi Tsunemi (Osaka University)
Hideyo Kunieda (Nagoya University)	Munetaka Ueno (University of Tokyo)
Ken'ichi Nomoto (University of Tokyo)	Jun-ichi Watanabe (NAO)

NAO:	National Astronomical Observatory
NAO-NRO:	Nobeyama Radio Observatory of National Astronomical Observatory
ISAS:	Institute of Space and Astronautical Science

**CONTENTS**

INTRODUCTION BY THE IAU GENERAL SECRETARY

MESSAGE FROM THE LOCAL ORGANIZING COMMITTEE

IMPORTANT DATES & ADDRESSES

SCIENTIFIC PROGRAMME - OVERVIEW

Calendar of Events: Symposia, Joint Discussions & Special Sessions

Calendar of Events: Division, Commission & Working Group Meetings

Individual programmes

Symposia

Joint Discussions

Special Sessions

PRACTICAL INFORMATION

Information on the General Assembly

WWW

E-Mail Information Service

Travel

Important Advice

Visas

Getting to Kyoto

Transportation in Japan

Transportation in Kyoto City

Weather & Clothing

Electricity

Registration

Participation

Financial support to attend the General Assembly

How to Register

Reservations for Hotel Accommodation, Social & Cultural Events, & Tours

Japan Travel Bureau

List of Hotels & Hotel Accommodation

Social & Cultural Events

Programme for Accompanying Persons & Optional Tours

General Information on Facilities

Venue of the General Assembly

Registration desk & general information

Travel Desk

Banking Facilities

Mail Boxes

Mail, Phone, Facsimile, & Electronic Mail

Photocopy

Daily Newspaper

Coffee & Tea Breaks

Lunch Facilities

Medical Aid

Child Care

Exhibitions

Scientific Presentations

Facilities for Oral Presentations

Video Presentations

Posters

## Special Pages:

- [Figure 1 \(Connection Map to/from Airports\)](#)
- [Figure 2 \(Connection Map to/from Seaports\)](#)
- [Figure 3 \(Guide Map of Kyoto City and Hotel Location\)](#)

[Registration Form](#)

[Accommodation & Tour Reservation Form](#)

[Grant Application Form](#)

\*\*\*\*\*

## INTRODUCTION

In 1997 the IAU will for the first time organise a General Assembly (GA) in Japan. The venue of this meeting will be the old imperial city of Kyoto. With its exceptional concentration of cultural treasures Kyoto will provide a particularly attractive and pleasant environment for the IAU's XXIIIrd General Assembly.

This Special Issue of the Information Bulletin presents the Preliminary Programme of the XXIIIrd IAU GA, practical information for participants, a form for registration to the meeting, a form for reserving accommodation in Kyoto, and an application form for an IAU travel grant. A limited number of travel grants to attend the XXIIIrd GA will be available for participants who cannot obtain necessary funds from national sources. Those who plan to contribute actively to one of the Symposia should send their grant application to the corresponding Symposium Scientific Organising Committee. Colleagues who plan to participate actively in Joint Discussions, Special Sessions, Divisions, Commissions and Working Groups are requested to send their grant application to the General Secretary. The deadline for grant applications is in both cases February 15, 1997.

With 6 Symposia, 24 Joint Discussions, and 2 Special Sessions, the General Assembly in Kyoto will have an exceptionally rich scientific programme. Although the Secretariate has done its best to keep to a minimum overlaps of meetings with related topics, this large number of scientific sessions resulted unavoidably in some such conflicts. However, we felt that having a few overlaps was preferable to rejecting even more good proposals for Joint Discussions.

Like previous IAU Information Bulletins this Special Issue will appear simultaneously in printed

form and in the WWW. The WWW version of the IB will be updated (if necessary) at intervals of about 3 months. The printed version will not be updated. Both versions of this Preliminary Programme will be replaced by the Final Programme of the XXIIIrd IAU General Assembly, which will be distributed to all participants at the registration desk in Kyoto. The Final Programme will also contain a floor plan showing the location of the rooms referred to in this volume.

Updates and more detailed information on the GA can also be found in the GA home page of the Local Organizing Committee and by an electronic mail answering service which will be set up by the LOC (see page 55 of this Bulletin).

I am looking forward to meeting a major fraction of the members of our Union and many personal friends in Kyoto.

September 1996

Immo Appenzeller

General Secretary

\*\*\*\*\*

## **MESSAGE FROM THE LOCAL ORGANIZING COMMITTEE**

Welcome to Japan, and welcome to Kyoto!

In addition to the new style of the General Assembly, which started at the last meeting in The Hague, we have introduced some new features into its operation: 1) WWW, 2) Automatic E-mail Answering Service, 3) Video Poster Papers, and 4) a free Banquet.

The WWW is our major medium to present the practical and scientific information of the General Assembly. We will update and expand it from time to time. The first part is the detailed version of practical information, some parts of which are omitted from the printed version in this issue due to the page allowance. It also includes a number of tips to enhance your stay in Kyoto inexpensively.

The second part deals with abstracts of accepted poster papers, the updated scientific programmes, the floor plan, and other useful information for scientific purpose. The abstracts will appear after the selection by the SOCs around next April. We hope to include the abstracts of not only poster papers but also oral presentations as much as possible. As an additional function, we provide an electronic way of registration and hotel/tour reservations on the WWW, starting November 1, 1996. Should you register by the WWW or by e-mail, only credit cards are acceptable.

For those whose network access to Japan is tight, we provide an Automatic E-mail Answering Service. Its details are given in the corresponding section of this issue. This service offers the same facilities as the WWW. You may obtain registration/reservation forms through this service and can send back the forms, once filled in, by e-mail.

For more vivid presentation of your scientific results, we will prepare some video monitors at a corner of the building for poster papers (see the corresponding section of this Information Bulletin for detailed instructions) We will concentrate most of the common facilities, such as exhibitions, mail boxes, communication boards, computer terminals and refreshments in the same building, in order to make this area serve as a place for discussions and exchange of information.

The last point is the rearrangement of the reception and the banquet. Taking into account that there will be two series of Symposia, the reception will take place in the first week whereas the banquet will be in the second week. Both events are free of charge, in order to offer the chance to most participants to get together in a friendly atmosphere.

The Japanese astronomical community is eagerly looking forward to seeing all of you in Kyoto. We hope all the participants enjoy this General Assembly as well as the cultural treasures and beauties of Kyoto.

With best regards,

Toshio FUKUSHIMA,

Chairperson of the LOC

\*\*\*\*\*  
\*\*\*\*\*

## **IMPORTANT DATES AND ADDRESSES**

### **DEADLINES TO REMEMBER**

Submission of poster abstracts	February 15, 1997
Grant applications	February 15, 1997
Early registration	April 30, 1997
Hotel/Tour reservation	June 30, 1997
Registration by Mail/Facsimile/E-mail/WWW	July 15, 1997

### **ADDRESSES**

For inquiries concerning the XXIIIrd General Assembly in general and the Scientific Programme, please contact:

Prof. Immo Appenzeller, General Secretary      Telephone: 33 1 43 25 8358  
International Astronomical Union (IAU)      Facsimile: 33 1 43 25 2616  
98 bis, bd Arago, F 75014 Paris, France E-mail: iau@iap.fr

For all inquiries concerning registration and local arrangements in Kyoto except hotel/tour reservations, please contact:

Prof. T. Fukushima, Chair      Telephone: 81 422 34 3027  
Local Organizing Committee,      Facsimile: 81 422 34 3027  
the XXIIIrd General Assembly of the IAU E-mail: iau97@tenmon.or.jp  
National Astronomical Observatory  
2-21-1, Ohsawa, Mitaka, Tokyo 181, Japan

For all inquiries concerning hotel/tour reservations in Kyoto, please contact:

Japan Travel Bureau, Inc.      Telephone: 81 3 5620 9429  
International Travel Division      Facsimile: 81 3 5620 9499  
Convention Center (CD100993-543)      E-mail will be available after November 1, 1996  
5-5-2, Kiba, Koto-ku, Tokyo135, Japan

## SCIENTIFIC PROGRAMME: OVERVIEW

### INVITED DISCOURSES

JD 1 The Hubble Deep Field R.E. Williams



- JD 2 The Cataclysmic Variable Stars B. Warner  
JD 3 Black Holes in the Universe I.D. Novikov

## SYMPOSIA

- S 183 Cosmological Parameters and the Evolution of the Universe  
S 184 The Central Regions of the Galaxy and Galaxies  
S 185 New Eyes to see Inside the Sun and Stars:  
Pushing the Limits of Helio- and Asteroseismology with  
New Observations from Ground and from Space  
S 186 Galaxy Interactions at High and Low Redshift  
S 187 Cosmic Chemical Evolution  
S 188 The Hot Universe

## JOINT DISCUSSIONS

- JD 1 Abundance Ratios in the oldest Stars: Bulge and extreme Halo  
JD 2 Dwarf Galaxies: Probes for Galaxy Formation and Evolution  
JD 3 Precession-Nutation and Astronomical Constants  
JD 4 Challenges in Atomic Physics for Cosmic X-Ray Spectroscopy  
JD 5 Preserving of the Astronomical Windows  
JD 6 Interactions between Planets and Small Bodies  
JD 7 The New International Celestial Reference Frame  
JD 8 Stellar Evolution in Real Time  
JD 9 Future Large Scale Facilities in Astronomy  
JD 10 Low-Luminosity Stars  
JD 11 Redshift Surveys in the 21st Century  
JD 12 Electronic Publishing: Now and the Future  
JD 13 Detection and Study of Planets outside the Solar System  
JD 14 The first Results of Hipparcos and Tycho  
JD 15 The Combination of Theory, Observation, and Simulation

for the Dynamics of Stars and Star Clusters in the Galaxy

- JD 16 Spectroscopy with Large Telescopes of Chemically Peculiar Stars
- JD 17 History of Oriental Astronomy
- JD 18 High Energy Transients
- JD 19 Physics of the Sun and Heliosphere in the Era of Space Probes:  
Scientific Highlights of ULYSSES, SOHO, and YOHKOH
- JD 20 Enhancing Astronomical Research and Education in Developing Countries
- JD 21 The Megamaser - AGN Connection
- JD 22 Astronomy from the Moon
- JD 23 The Leonid Meteor Storms: Historical Significance  
and Upcoming Opportunities
- JD 24 Pulsating Stars - Recent Developments in Theory and Observation

#### SPECIAL SESSIONS

- SPS 1 Main Issues of the Galileo Mission to the Jupiter System
- SPS 2 Highlights of the ISO Mission

## CALENDAR OF EVENTS: Symposia, Joint Discussions & Special Sessions

\*\*\*\*\*

	Room	H	A	B1	B2	C1	C2	D	E
Date	Time								
Aug. 18	14-15.30		S183	S184				S185	
(M)	16-17.30		S183	S184				S185	

Aug. 19	9-10.30	S183	S184				S185	
(Tue)	11-12.30	S183	S184				S185	
	14-15.30	S183	S184				S185	
	16-17.30	S183	S184				S185	

Aug. 20	9-10.30	S183	S184				S185	
(W)	11-12.30	S183	S184				S185	
	14.00	General Assembly - Main Hall						

Aug. 21	9-10.30	S183	S184	SPS 1	JD 2	JD 3	S185	JD 1
(Th)	11-12.30	S183	S184	SPS 1	JD 2	JD 3	S185	JD 1
	14-15.30	S183	S184	SPS 1	JD 2	JD 3	S185	JD 1
	16-17.30	S183	S184	SPS 1	JD 2	JD 3	S185	JD 1
	18.15	Invited Discourse 1 - Main Hall						

Aug. 22	9-10.30	S183	S184	JD 5	JD 4	JD 7	S185	JD 6
(F)	11-12.30	S183	S184	JD 5	JD 4	JD 7	S185	JD 6
	14-15.30	JD 8	JD 10	JD 5	JD 4	JD 7		JD 6
	16-17.30	JD 8	JD 10	JD 5	JD 4	JD 7		JD 6
	18.15	Invited Discourse 2 - Main Hall						

Aug. 23	9-10.30	JD 8	JD 10	JD 5	JD 4		JD 9	JD 6
(Sa)	11-12.30	JD 8	JD 10	JD 5	JD 4		JD 9	JD 6
	14-15.30						JD 9	
	16-17.30						JD 9	

\*\*\*\*\*

Aug. 25	9-10.30	JD 17	SPS 2	JD 13	JD 12	JD 15	JD 16	JD 11	JD 14
(M)	11-12.30	JD 17	SPS 2	JD 13	JD 12	JD 15	JD 16	JD 11	JD 14
	14-15.30	JD 17	SPS 2	JD 13	JD 12	JD 15	JD 16	JD 11	JD 14
	16-17.30	JD 17	SPS 2	JD 13	JD 12	JD 15	JD 16	JD 11	JD 14

Aug. 26	9-10.30	JD 17	JD 21	JD 13	JD 18	JD 20	JD 24		JD 19
(Tue)	11-12.30		JD 21	JD 13	JD 18	JD 20	JD 24		JD 19
	14-15.30		S187	S186	JD 18	JD 20	JD 24	S188	JD 19
	16-17.30		S187	S186	JD 18	JD 20	JD 24	S188	JD 19
	18.15	Invited Discourse 3 - Main Hall							

Aug. 27	9-10.30		S187	S186	JD 18	JD 22	JD 23	S188	JD 19
(W)	11-12.30		S187	S186	JD 18	JD 22	JD 23	S188	JD 19
	14.00	General Assembly - Main Hall							

Aug. 28	9-10.30		S187	S186				S188	
(Th)	11-12.30		S187	S186				S188	
	14-15.30		S187	S186				S188	
	16-17.30		S187	S186				S188	

Aug. 29	9-10.30		S187	S186				S188	
(F)	11-12.30		S187	S186				S188	
	14-15.30		S187	S186				S188	
	16-17.30		S187	S186				S188	

Aug. 30	9-10.30		S187	S186				S188	
(Sa)	11-12.30		S187	S186				S188	

\*\*\*\*\*

## CALENDAR OF EVENTS: Division, Commission & Working Group Meetings

\*\*\*\*\*

	Room	F	G	H	I	J	K	Other
Aug. 20	9-10.30	WGPSN					EC+DPs	
(W)	11-12.30	WGPSN					EC+DPs	40(B2), 34 (E)
	Lunch							Div.II (C2)
	14.00	General Assembly - Main Hall						
Aug. 21	9-10.30		5 WG			45 WG	CPs	
(Th)	11-12.30	46	5 WG	9 WG	20			
	14-15.30	51	5 WG	14	22	37	30	
	16-17.30	9	5 WG	14	22	37	30	
Aug. 22	9-10.30	25	5		45	36		
(F)	11-12.30	26			45	36		
	14-15.30	9 WG	38	41	45	WGDA		
	16-17.30	9 WG		41	45	WGDA		
Aug. 23	9-10.30	19	8	24	6	45 WG		Div.II (C2)
(Sa)	11-12.30	19	8/24	44		21		VIII (C2)
	14-15.30							
	16-17.30							
Aug. 25	9-10.30	15	28		50	40		NR/NC/
(M)	11-12.30	46	35		WGFLSF	40		F C
	14-15.30							C Ps
	16-17.30		27					
Aug. 26	9-10.30	51	8/24		20 WG	21	31	47 (D)
(Tue)	11-12.30	4	8/24	41	20 WG	33	31	
	14-15.30	19 WG	7	16	20 WG	45 WG	31	
	16-17.30	19 WG	7	16	20	40	31	

Aug. 27	9-10.30	VLBI WG	5	27 WG	42	34
(W)	11-12.30	URSI WG	25	29	42	27
	14.00	General Assembly - Main Hall				

## Abbreviations:

EC: Executive Committee  
 CP: Commission President  
 NC: Nominating Committee  
 DP: Division President  
 NR: National Representative  
 FC: Finance Committee  
 WG: Working Group

\*\*\*\*\*

## INDIVIDUAL PROGRAMMES - SYMPOSIA

S 183 COSMOLOGICAL PARAMETERS AND EVOLUTION  
 OF THE UNIVERSE

Supporting Commissions: 47 (Cosmology)

Co-Supporting Commissions: 28 (Galaxies) & 44 (Space & High Energy  
 Astrophysics)

SOC: R. Ellis (UK), W. Freedman (USA), K. Freeman (Australia), D. Mathewson  
 (Australia), J.V. Narlikar (India, Co-Chair), R.B. Partridge (USA), K. Sato  
 (Japan, Chair) A.A. Starobinsky (Russia), A. Szalay (Hungary), G.A. Tammann  
 (Switzerland) & J. Truemper (Germany)

Contact address: K. Sato, Dept. Physics, School of Science, The University of Tokyo, Bunkyo-ku, Tokyo 113 Japan, Facsimile: 81 3 5689 0465, E-mail: sato@phys.s.u-tokyo.ac.jp

Each day there will be plenary review talks on topics of current interest and workshops focussed on specific areas. The broad distribution by subject and day is outlined below:

Monday August 18 afternoon: Session I

Measurements of Hubble's constant

Galaxy counts and radio source counts

Gravitational (weak) lensing by clusters

Tuesday August 19 morning: Session II

Workshop on Large Scale Observations of Discrete Sources. May include invited contributions on correlation functions, chemical evolution, x-rays from clusters, abundance determination of light nuclei.

Tuesday August 19 afternoon: Session III

Stellar and galactic ages

IGM and Gunn-Peterson effect

Density of hot gas in clusters

Anisotropies of MBR

Future studies of MBR

Observational constraints on models of large scale structure

Wednesday August 20 morning: Session IV

Workshop on Dark Matter and Structure Formation. May include invited contributions on MACHOs etc., laboratory searches and bounds on dark matter candidates, theoretical approaches to structure formation.

Thursday August 21 morning : Session V

Objects of large redshifts

Redshift surveys

Constraints on parameters of standard models

The cosmological constant

Alternative cosmologies

Thursday August 21 afternoon: Session VI

Workshop on Cosmological Models. May include invited talks on inflation and observable relics, phase transitions and topological structures, astrophysical issues relating to various cosmologies.

Friday August 22 morning: Session VII

Summary Talks: One on theoretical aspects and one on the observational issues.

Panel Discussion on The Standard Cosmology: Strengths, weaknesses and alternatives.

S 184 THE CENTRAL REGIONS OF THE GALAXY AND GALAXIES

Supporting Commission: 40 (Radio Astronomy)

Co-Supporting Commissions: 28 (Galaxies) & 33 (Structure & Dynamics of Galactic Systems)



SOC: J. Binney (UK), F. Combes (France), R. Genzel (Germany, Co-Chair), J. Kormendy (Canada), R.P. Kraft (USA), M. Morris (USA, Co-Chair), N. Scoville (USA), Y. Sofue (Japan, Chair) & M. Tsuboi (Japan)

Contact address: Dr. Yoshiaki Sofue, Institute of Astronomy, University of Tokyo, Mitaka, Tokyo 181, Japan, Telephone: 81 422 34 3734, Facsimile: 81 422 34 3749, E-mail: sofue@mtk.ioa.s.u-tokyo.ac.jp or iau184@mtk.ioa.s.u-tokyo.ac.jp

Monday August 18 afternoon: Session 1: Star Clusters and Star Formation

Galactic Center star clusters

Nuclear star clusters in galaxies

Evolution and dynamics of dense star clusters

Tuesday August 19 morning: Session 2: Star Clusters and Star Formation=  
(cntd)

Galactic bulges: Structure and evolution

Star formation

Starbursts

Tuesday August 19 afternoon: Session 3: Nuclear Interstellar Medium

Neutral ISM in the Galactic Center

Molecular gas in nuclei of galaxies

Evolution of nuclear gas

Wednesday August 20 morning: Session 4: Nuclear Interstellar Medium (cntd)

Rotation and kinematics of the nuclear gas disks

Gas dynamics in the central pc to kpc

Bars and shocks

Angular momentum and accretion

Thursday August 21 morning: Session 5: Nuclear Interstellar Medium (cntd)

Magnetic phenomena

High-energy phenomena

Outflow and circulation

Thursday August 21 afternoon: Session 6: Black Holes and Central Activity

Black holes in galaxies

The case for a black hole in the Milky Way center

Friday August 22 morning: Session 7: Black Holes and Central Activity  
(cntd)

Circum-nuclear mass distribution and kinematics

Formation and evolution of black holes

Black hole powering of central activity

S 185 NEW EYES TO SEE INSIDE THE SUN AND STARS.  
PUSHING THE LIMITS OF HELIO- AND ASTEROSEISMOLOGY  
WITH NEW OBSERVATIONS FROM GROUND AND FROM SPACE

Supporting Divisions: II (The Sun and the Heliosphere), IV (Stars)

Supporting Commissions: 10 (Solar Activity), 12 (Solar Radiation and  
Structure) & 27 (Variable Stars)

Co-Supporting Commissions: 25 (Stellar Photometry and Polarimetry), 36  
(Theory of Stellar Atmospheres)

SOC: K. Chitre (India), J. Christensen-Dalsgaard (Denmark), F.-L. Deubner  
(Germany, Chairperson), . Domingo (Netherlands), Y. Elsworth (UK), C.  
Froehlich (Switzerland), D. Kurtz (South Africa, Co-Chairperson), J.  
Leibacher (USA), J. Provost (France), H. Shibahashi (Japan) & J. Smak  
(Poland)

Contact address: Prof. Franz-Ludwig Deubner, Astronomisches Institut der  
Universitaet Wuerzburg, Am Hubland, D 97074 Wuerzburg, Germany,

Telephone: 49

931 888 5031, Facsimile: 49 931 888 4603, E-mail:

deubner@astro.uni-wuerzburg.de

#### Global Structure and Evolution of the Solar and Stellar Interior

Monday August 18 afternoon: Session 1

Keynote talk - New Developments in Helioseismology	D.O. Gough (UK)*
What data are needed to see inside the Sun and stars?	Y. Elsworth (UK)
Data analysis strategies	F. Hill (USA)
Internal rotation, mixing, and the lithium-abundance	B. Chaboyer (Canada)

Tuesday August 19 morning: Session 2

Solar convection zone and radius	R. Ulrich (USA)
Stellar convective cores	I. Roxburgh (UK)
Solar irradiance variations	C. Froehlich (Switzerland)
Solar irradiance (theory)	H. Spruit (Germany)

## Large Scale Structure of the Sun

Tuesday August 19 afternoon: Session 3

Inversion methods M. Thompson (UK)

Inversion of solar structure S. Vauclair (France)

Internal rotation and large scale flows J. Schou (USA)

## Asteroseismology

Keynote talk - New Developments in Asteroseismology D. Kurtz (South Africa)

## Solar Small Scale Structure

Wednesday August 20 morning: Session 4

Time-distance analysis T. Duvall (USA)

Magnetoseismology P. Goode (USA)

Sunspot seismology D. Braun (USA)

Interaction of convection and oscillations P. Kumar (USA)

Excitation and damping of solar oscillations A. Nordlund (Denmark)

## Asteroseismology (contd.)

Thursday August 21 morning: Session 5

Theoretical aspects in asteroseismology J. Christensen-Dalsgaard (Denmark)

White Dwarfs and pre-White Dwarfs - observations J. Clemens (USA)

White Dwarfs - theory S. Kawaler (USA)

roAp stars - observations J. Matthews (Canada)

roAp stars - theory A. Gautschy (Germany)

Detection and/or attempted detection of solar-type oscillations T. Bedding

(Australia)

Thursday August 21 afternoon: Session 6

( Scuti stars - observations M. Breger (Austria)

( Scuti stars - theory J. Guzik (USA)

Discovery of g-mode pulsations in ( Dor stars K. Krisciunas (USA)

B Star pulsation - observational evidence D. Baade (Germany)

B Star pulsation - theory and seismological prospects W. Dziembowski  
(Poland)

Observations of 72 beat Cepheids discovered with MACHO D. Welch (Canada)

EC14026 stars - pulsating hot subdwarfs D. Kilkenny (South Africa)

Impact of HIPPARCOS on asteroseismology (TBA)

Solar Atmosphere, and Synthesis of the Symposium

Friday August 22 morning: Session 7

CO-diagnostics and the temperature structure of the atmosphere T. Ayres  
(USA)

High frequency (pseudo-) modes S. Jefferies (USA)

Phase relations of line shifts and intensity fluctuations F.-L. Deubner  
(Germany)

The New Chromosphere - simulations M. Carlsson (Norway)

Meeting Summary: Synthesis of solar-stellar seismology (TBA)

\* Speaker to be confirmed

S 186 GALAXY INTERACTIONS AT LOW AND HIGH REDSHIFT

Supporting Commission: 28 (Galaxies)

Co-Supporting Commissions: 33 (Structure & dynamics of the galactic system), 34 (Interstellar matter), 37 (Star clusters & Associations) & 44 (Space & high energy astrophysics)

SOC: J. Barnes (USA), F. Combes (France), G. Efstathiou (UK), R. Ellis (UK), K. Freeman (Australia), I. Karachentsev (Russia), I. Mirabel (France), M. Noguchi (Japan), D. Sanders (USA, Chair), F. Schweizer (USA), J. vanGorkom (USA), V. Trimble (IAU) & S. White (Germany)

Contact address: D. B. Sanders, Institute for Astronomy, University of Hawaii, 2680 Woodlawn Drive, Honolulu, HI 96822, USA, Telephone: 1 808 956 5055, Facsimile: 1 808 956 9580, E-mail: sanders@ifa.hawaii.edu

The emphasis of this Symposium will be on the large body of new ground-based and spacecraft observations which implicate interactions/mergers in galactic activity (starbursts and AGN) and galaxy evolution, and on the latest theoretical models which unify these apparently diverse phenomena. The basic theme will be the development of a new cosmological perspective on interacting galaxies, tracing the effects of interactions/mergers from the current epoch back toward high redshifts.

Tuesday August 26 afternoon

Session 1: Overview

Introductory remarks

Overview of Interactions at Low-z

Overview of Interactions at High-z

Interacting/Peculiar Galaxies - Past Definitions

Session 2: The Local Group (z = 3D 0)

Formation of the Local Group  
Dynamics of the Magellanic system  
Nature & fate of the Sagittarius dwarf  
Moving groups in the Galactic halo  
Kinematics of stellar halos  
The M81 group at 21 cm

Wednesday August 27 morning

Session 3: Tidal Interactions

Bridges & Tails  
Dwarf galaxies in tidal tails  
Return of material from tails  
Interaction signatures in HI  
Extended gas in interacting systems  
Rings and embedded disks

Session 4: Mergers & Spheroids

Structure of normal ellipticals  
Dynamics of merger remnants  
Shells, ripples & plumes  
Globular clusters in ellipticals  
Counter-rotating cores  
E+A Galaxies

Thursday August 28 all day

Session 5: Starbursts (Global & Local)

Gas Dynamics in Mergers

Molecular gas in starbursts  
Evolution of starburst populations  
Young clusters in merging galaxies  
Evolution of globular cluster systems  
X-ray observations of starbursts

Session 6: Nuclear Activity

Luminous infrared galaxies  
Surveys of QSOs/Hosts  
Surveys of radio galaxies  
Fueling requirements for AGNs  
Molecular gas in AGNs  
Superwinds from starburst galaxies  
Metal enrichment of the IGM

Session 7: Clusters

Butcher-Oemler galaxies  
Interactions in distant clusters  
ROSAT studies of clusters & groups  
ASCA observations of clusters  
Cluster & group evolution  
Compact Groups

Friday August 29 all day; Saturday August 30 morning

Session 8: Deep Fields

Morphology of galaxies in the HDF/MDS  
The HDF/MDS - Spectroscopy  
Faint Blue Galaxies  
Deep/Ultradeep-field observations



The high-z population of galaxies

Interpretation of number counts in Deep Fields

Session 9: Galaxy evolution with Redshift

Morphology of field galaxies versus redshift

Molecular Gas at High-z

Theory of Star Formation & QSO Abs. Lines

Mergers and hierarchical galaxy formation - theory

Mergers and hierarchical galaxy formation - models

Session 10: Prospects & Theoretical Perspectives

Interactions, activity, and galactic evolution

Beyond the HDF -- the NGST

The proposed format of the meeting would include invited talks/reviews for most of the major topics listed above plus some contributed talks. Ample space will be allowed for poster contributions. In addition to all oral contributions, an attempt will be made to include poster abstracts in the published proceedings.

S 187 COSMIC CHEMICAL EVOLUTION

Supporting Commission: 28 (Galaxies)

Co-Supporting Commissions: 29 (Stellar Spectra), 35 (Stellar Constitution)

& 47 (Cosmology)

SOC: J. Audouze (France), J. Bergeron (France), M. Fall (USA), B.

Gustafsson (Sweden), S. Lilly (Canada), F. Matteucci (Italy), K. Nomoto

(Japan, Co-Chairperson), B. Pagel (Denmark), M. Pettini (UK), J. Truran  
(USA, Co-Chairperson) & S. White (Germany)

Contact Address: James W. Truran, Department of Astronomy and Astrophysics,  
University of Chicago, 5640 S. Ellis Avenue, Chicago, IL 60637, USA,  
Telephone: 1 312 702 9584 (direct) or 1 312 702 2503 (secretary),  
Facsimile: 1 312 702 6645, E-mail: truran@nova.uchicago.edu

Tuesday August 26 afternoon: Session 1: Pre-Galactic Nucleosynthesis

Overview: The Abundance History of the Universe J. Truran (USA)  
Big-Bang nucleosynthesis D. Schramm (USA)  
The Nature of a Population III J. Ostriker (USA)  
Galaxy formation S. White (Germany)

Wednesday August 27 morning: Session 2: Stellar Evolution and  
Nucleosynthesis

Nucleosynthesis in red giant stars I. Iben (USA)  
Nucleosynthesis in SNe Ia K. Nomoto (Japan)  
Nucleosynthesis in SNe II S. Woosley (USA)  
Light element synthesis in the galaxy N. Prantzos (France)

Thursday August 28 morning: Session 3: Abundances in Stars and Galaxies

Abundances in halo population stars C. Sneden (USA)  
Abundances in bulge stars M. Rich (USA)  
Abundances in the galactic disk B. Edvardsson (Sweden)  
Abundances in nearby galaxies S. Faber (USA)

Thursday August 28 afternoon: Session 4: Abundances in Cluster Gas and QSO  
Absorbers

Gas phase abundances in clusters            T. Ohashi (Japan)  
Evolution of Cluster Gas  
Abundances in damped Lyman-Alpha systems  
Dust Signatures in damped Lyman-Alpha System Abundances    M. Pettitini (UK)

Friday August 29 morning:    Session 5:    Galaxies at Significant Redshift

The Evolution of Galaxies at  $z=1$   
Morphological Evolution of Galaxies  
Galaxy evolution at high redshifts            L. Cowie (USA)  
Stellar population synthesis models           S. Charlot (USA)

Friday August 29 afternoon:    Session 6:    Galaxy Formation and Evolution

QSO Absorbers and Galaxy Formation  
Formation of Star Clusters  
Chemical Evolution of Galaxies            F. Matteucci (Italy)  
Evolution of Stellar Populations in our Galaxy

Saturday August 30 morning:    Session 7:    Cosmic Chemical Evolution

Global approaches to galactic chemical evolution            M. Fall (USA)  
Evolution of Damped Lyman-Alpha Galaxies  
Summary    B. Pagel (Denmark)

Summary B. Pagel (Denmark)

S 188    THE HOT UNIVERSE

Supporting Commission: 44 (Space & High Energy Astrophysics)  
 Co-Supporting Commissions: 14 (Atomic & Molecular Data), 26 (Double &  
 Multiple Stars)\*, 28 (Galaxies), 34 (Interstellar Matter)\*, 35 (Stellar  
 Constitution)\*, 36 (Theory of Stellar Atmospheres)\* & 42 (Close Binary  
 Stars). (\* : TBC)

SOC: K. Koyama (Japan, Chair), A. Fabian (UK), N. Gehrels (USA), G.  
 Hasinger (Germany), D. Leahy (Canada), E. Meurs (Ireland), T. Montmerle  
 (France), F. Pacini (Italy), R. Pallavicini (Italy), A. Parmar  
 (Netherlands), R. Sunyaev (Russia) & J. Swank (USA)

Contact address: Dr. Katsuji Koyama, Department of Physics, Graduate School  
 of Science, Kyoto University, Sakyo-ku, Kyoto, 606 Japan, Telephone: 81 75  
 753 3833, Facsimile: 81 75 701 5377, E-mail:  
 koyama@cr.scphys.kyoto-u.ac.jp

Tuesday August 26 afternoon

Opening talk

Overview of the Hot Universe

Session 1: Plasma and Fresh Nucleosynthesis Phenomena

1-1. Sun and stars

Dynamics of solar flares and coronae S. Tsuneta (Japan)

Theory of flares and MHD jets TBA

X-ray coronae from stars TBA

New quest for X-rays from young stellar objects T. Montmerle (France)

1-2. Novae, supernova remnants and Galactic hot plasma

Atomic abundance in non-equilibrium plasma of SNRs H. Tsunemi (Japan)  
 Shock acceleration in shell-like SNRs R. Petre (USA)  
 Astrophysical plasma and atomic processes TBA  
 Hot plasma in the Galaxy S. Yamauchi (Japan)  
 X-ray and  $\gamma$ -ray emissions from supernova explosions K. Nomoto (Japan)  
 26Al  $\gamma$ -rays in the Galaxy TBA  
 Nuclear  $\gamma$ -rays from Orion TBA

Wednesday August 27 morning

### 1-3. Galaxies and their clusters

Abundance problems in galaxy hot plasmas M. Loewenstein (USA)  
 Hot gaseous halo in elliptical and spiral galaxies TBA  
 Hot gas in groups and their galaxies T. Ponman (UK)  
 Spatial distribution of temperature and abundances in clusters TBA  
 Iron abundance in distant clusters TBA

Thursday August 28 morning

### Session 2: Future Space Programs

Recent results from SAX TBA  
 Status report of ASTRO-E Y. Ogawara (Japan)  
 AXAF  
 XMM  
 ABRIXAS G. Hasinger (Germany)  
 Spectrum X-Gamma  
 Integral  
 Visions of high-energy missions beyond the current program M. Elvis (USA)

Thursday August 28 afternoon

Session 3: Diagnostics of High Gravity Objects with X- and Gamma-rays

3-1. White dwarf and neutron star binaries

Mass determination of accreting magnetic white dwarfs M. Ishida (Japan)  
with hard X-ray spectroscopy

Photoionized plasmas in high-mass X-ray binaries F. Nagase (Japan)

Spectral properties of low-mass X-ray binary systems N. White (USA)

(-ray emission theory of isolated pulsars TBA

Binary structure of accreting neutron stars D. Leahy (Canada)

X-rays and (-rays from isolated neutron stars D. Thompson (USA)

Friday August 29 morning:

Millisecond time variations of X-ray binaries J. Swank (USA)

Type I and Type II bursts : New results from GRO J1744-28 W. Lewin (USA)

3-2. Black hole binaries

Super-Eddington sources and super soft sources TBA

High energy aspects of Galactic black hole candidates TBA

Superluminal sources as observed in Radio, P. Durouchoux (France)

X-ray and Gamma-rays

X-ray spectrum of Cyg X-1 in the high state

Friday August 29 afternoon

3-3. AGNs

Advection-dominated disks TBA

Evidence for strong gravity in the AGN Plasma A. Fabian (UK)

X-ray aspects of the IRAS galaxies E. Meurs (Ireland)  
 (-rays from AGNs N. Gehrels (USA)  
 Extreme high energy emission from astronomical T. Kifune (Japan)  
 objects and its emission mechanisms  
 High energy phenomena in AGN jets F. Takahara (Japan)

### 3-4. Gamma-ray bursts

Gamma-ray burst observation from CGRO G. Fishman (USA)  
 X-ray identifications of Gamma-ray burst sources T. Murakami (Japan)  
 Gamma-ray burst theory D. Hartmann (USA)

Saturday August 30 morning

### Session 4: Large Scale Hot Plasmas and their Relation with Dark Matter

Cooling flows in clusters of galaxies C. Sarazin (USA)  
 New aspects of hot gas in galaxy clusters R. Mushotzky (USA)  
 Structure and evolution of clusters of galaxies TBA  
 Hierarchical structure of dark matter K. Makishima (Japan)  
 Sunyaev-Zel'dovich clusters J. Hughes (USA)  
 Large scale structure in X-rays TBA

## INDIVIDUAL PROGRAMMES - JOINT DISCUSSIONS

JD 1 ABUNDANCE RATIOS IN THE OLDEST STARS

Supporting Division: IV (Stars)

Supporting Commission: 29 (Stellar spectra)

Co-Supporting Commissions: 28 (Galaxies), 36 (Theory of stellar

atmospheres), 37 (Stellar clusters and associations)

SOC: N. Arimoto (Japan), T. Beers (USA), M. Bessell (Australia), J. Bergeron (Germany), R. Cayrel (France), G. Gilmore (UK), B. Gustafsson (Sweden), F. Matteucci (Italy), P. Nissen (Denmark), & M. Rich (USA)

Contact Address: Beatriz Barbuy, U. Sao Paulo, CP 9638, Sao Paulo 01065-970, Brazil, Telephone: 55 11 5778599 ext.: 230, Facsimile: 55 11 2763848/55 / 11 88 48550/55 / 11 577 8599, E-mail: barbuy@vax.iagusp.usp.br or barbuy@atmos.iagusp.usp.br or barbuy@astrol.iagusp.usp.br

Thursday August 21 morning: Abundances in Old Stars

Abundance ratios in the most metal-poor field stars - talk 1,2 TBA

Abundance ratios in metal-poor globular clusters R. Kraft (USA)\*

Survey of metal-poor stars T. Beers (USA)

Abundances of metal-poor stars and the formation of the halo R. Cayrel= (France)

Abundances and Element Ratios in the Galactic Bulge: M. Rich (USA)

Present Status and Implications for Bulge Formation

Abundance ratios in the most metal-rich disk stars B. Gustafsson (Sweden)

Abundance ratios in bulge globular clusters TBA

Thursday August 21 afternoon: Abundance Ratios: Chemical Evolution / Elliptical Galaxies / QSO Absorption Lines

Chemical evolution of the bulge and ellipticals F. Matteucci (Italy)

Chemical evolution of our Galaxy at the very beginning N. Arimoto (Japan)

Abundance ratios and star formation histories of E/S0 galaxies R. Bender



(Germany)\*

Abundance ratios in elliptical galaxies talk 1,2 TBA

Abundances in quasar absorption line systems W. Sargent (USA)

talk 2,3 TBA

Summary D. Lambert (USA)

JD 2 DWARF GALAXIES: PROBES FOR GALAXY FORMATION  
AND EVOLUTION

Supporting Division: VIII (Galaxies and the Universe)

Co-supporting Division: X (Radio astronomy)

Supporting Commission: 28 (Galaxies)

Co-Supporting Commission: 40 (Radio astronomy)

SOC: E. Brinks (Mexico, Chair), N. Brosch (Israel), A. Ferrara (Italy),  
K.C. Freeman (Australia), Yu. Izotov (Ukraine), D. Kunth (France), J.-R. Roy  
(Canada), E.D. Skillman (USA), T.X. Thuan (USA, Co-Chair)

Contact addresses: Main contact: Elias Brinks, Departamento de Astronomia,  
Universidad de Guanajuato, Apartado Postal 144, Guanajuato, C.P. 36000,  
Mexico, Telephone: 52 473 27155, Facsimile: 52 473 25749. E-mail:  
ebrinks@andromeda.cimat.mx

and

Trinh X. Thuan, Department of Astronomy, University of Virginia, Box 3818,  
Charlottesville, VA 22903, USA, Telephone: 1 804 924 4894, Facsimile: 1  
804 924 3104, E-mail: txt@starburst.astro.virginia.edu

Thursday August 21 morning: Local Group Dwarfs; Dark Matter

Dwarf Galaxies of the Local Group P.W. Hodge (USA)  
 Multi-spectral studies of nearby Dwarf Galaxies G. Richter (Germany)  
 Star Formation Histories of nearby Dwarf Irregular Galaxies E. Tolstoy  
 (Germany)  
 Multi-fiber Spectroscopy of nearby dE T.E. Armandroff (USA)  
 HI studies of Local Group Dwarfs K.-Y. Lo (USA)  
 HI studies of Southern Dwarf Galaxies W. Walsh (Australia)  
 Dark Matter in Dwarf Galaxies C. Carignan (Canada)  
 Dwarfs in Clusters M.L. Mateo (USA)  
 Tidal Dwarfs I.F. Mirabel (France)

Thursday August 21 afternoon: Star Formation, History and Evolution

Studies of Virgo Cluster Dwarf Galaxies E. Almoznino (Israel)  
 Star Formation Rate and History in Wolf-Rayet Galaxies W.D. Vacca (USA)  
 Evolutionary Studies of High  $M_H/L$  Galaxies L. van Zee (USA)  
 The relation between CO and SF in Dwarf Galaxies P.M. Gondhalekar (UK)  
 Are PAH molecules observed in Star-Forming Dwarfs? D. Kunth (France)  
 Young Dwarf Galaxies T.X. Thuan (USA)  
 Chemo-dynamical evolution of Dwarf Galaxies G. Hensler (Germany)  
 Cosmologically distant Bursting Dwarfs - new Keck results D.C. Koo (USA)

JD 3 PRECESSION-NUTATION AND ASTRONOMICAL CONSTANTS  
 FOR THE DAWN OF THE 21st CENTURY

Supporting Division: I (Fundamental astronomy)  
 Supporting Commission: 19 (Rotation of the Earth)  
 Co-supporting Commissions: 4 (Ephemerides), 5 (Documentation &  
 astronomical data), 7 (Celestial mechanics), 8 (Positional astronomy), 24  
 (Photographic astrometry) & 31 (Time)

SOC: P. Bretagnon (France), V. Brumberg (Russia), N. Capitaine (France), V. Dehant (Belgium, Chair), T. Fukushima (Japan, Chair), E. Groten (Germany), H. Kinoshita (Japan), B. Kolaczek (Poland), D.D. McCarthy (USA), P.K. Seidelmann (USA) & P. Wallace (UK)

Contact address: V. Dehant, Observatoire Royal de Belgique, Ave. Circulaire 3, B 1180 Bruxelles, Belgium, Telephone: 32 2 373 02 66, Facsimile: 32 2 374 98 22, E-mail: veroniq@oma.be

Welcome: V. Dehant (Belgium) & T. Fukushima (Japan)

Thursday August 21 morning: Session 1

Introductory talk:

Overview and current situation for precession/nutation N. Capitaine (France)

The planetary theories and the precession of the ecliptic P. Bretagnon (France)

The theory of Earth's rotation and the precession-nutation of the equator J. Souchay (France) & H. Kinoshita (Japan)

Fundamental arguments of the current nutation theory X.X. Newhall (USA)

Observations of the celestial ephemeris Pole in an inertial frame M. Feissel (France)

Relativistic considerations for precession-nutation M. Soffel (Germany) & S.A. Klioner (Russia)

The best available nutation series from the theoretical and observational point of view P.M. Mathews (India) & T.A. Herring (USA)

Short presentations of the posters

Thursday August 21 afternoon: Session 2

Astronomical effects of a change in the precession/nutation model J.  
Kovalevsky (France)  
Latest best estimates of astronomical constants D.D. McCarthy (USA)  
SOFA-progress (Standards of Fundamental Astronomy) and plans P.T. Wallace  
(UK)  
GRT-consistent (General Relativity Theory) definitions V.A. Brumberg (Russia)  
of astronomical constants

Discussion and possible recommendations

#### JD 4 CHALLENGES IN ATOMIC PHYSICS

FOR COSMIC X-RAY SPECTROSCOPY

Supporting Division: XI (Space & high energy astrophysics)  
Supporting Commission: 44 (Space & high energy astrophysics)  
Co-Supporting Commission: 14 (Atomic & molecular data)

SOC: P. Beiersdorfer (USA), J. Dubau (France), J. Hughes (USA), J. Kaastra  
(Netherlands), S. Kahn (USA, Chairperson), E. Kallne (Sweden), F. Keenan  
(UK), K. Masai (Japan), H. Mason (UK), A. Mueller (Germany), H. Netzer  
(Israel), F. Paerels (USA/Netherlands), A. Pradhan (USA), U. I. Safronova  
(Russia)

Contact Address: Dr. Frits Paerels, Columbia Astrophysics Laboratory,  
Columbia University, 538 W. 120th St., New York, NY 10027, USA, Telephone:  
1 212 854 8125, Facsimile: 1 212 854 8121, E-mail:  
frits@naima.phys.columbia.edu

Friday August 22 morning: Atomic Processes in Astrophysical Plasmas

Coronal plasmas G. Doschek (USA)

Photoionized plasmas G. Ferland (USA)

Nonequilibrium Plasmas K. Masai (Japan)

Friday August 22 afternoon: Observational Status of Cosmic X-ray=  
Spectroscopy

Stellar coronae A. Brown (USA)

Supernova remnants J. Raymond (USA)

X-Ray binaries D. Liedahl (USA)

Active galactic nuclei H. Netzer (Israel)

Clusters of galaxies R. Mushotzky (USA)

Observational capabilities of AXAF, SXG, XMM, Astro E F. Paerels (USA)

Atomic Modelling

Presentations of methodology and results from various groups:

A. Pradhan, (USA), M. Klapisch (USA) & H. Mason (UK)

Saturday August 23 morning: Laboratory Tests

Tokamaks H.-J. Kunze (Germany)

Ion traps, storage rings P. Beiersdorfer (USA)

Laser plasmas S. Rose (UK)

Forum:Chair: S. Kahn (USA). L. Culhane (UK), W. Goldstein (USA), K.  
Makishima (Japan) & H. Schnopper (Denmark).

JD 5 PRESERVING OF THE ASTRONOMICAL WINDOWS

Supporting Division: X (Radio astronomy)

Supporting Commissions: 40 (Radio astronomy) & 50 (Protection of existing and potential observatory sites)

Co-supporting Commissions: 8 (Positional astronomy), 21 (Light of the night sky), 46 (Teaching of astronomy) & 51 (Bioastronomy: search for extraterrestrial life)

SOC: N. Brouillet (France), B. Hidayat (Indonesia), Jingyao Hu (China), S. Isobe (Japan, Chairperson), K. Mattila (Finland), D. McNally (UK), J. Percy (Canada), W. Wamstaker (Spain) & J. Whiteoak (Australia)

Contact address: Syuzo Isobe, National Astronomical Observatory,  
2-21-1, Osawa, Mitaka, Tokyo 181, Japan, Telephone: 81 422 34 3645,  
Facsimile: 81 422 34 3641, E-mail: isobesz@cc.nao.ac.jp

Friday August 22 morning

No. 1: The problem facing observational astronomy

An outline summary accross the field D. McNally (UK)  
Impact on radio astronomy M. Morimoto (Japan)  
Impact on space astronomy D. Macchetto (USA)  
Damage to astronomy education and culture J. Percy (Canada)

No. 2: Light pollution

Growth of light pollution at optical and infrared bands D. Crawford (USA)  
Natural optical background Ch. Leinert (Germany)  
Good outdoor lighting design and K. Narisada (Japan)  
activities of lighting engineering  
Bilateral agreements on limits to outdoor lighting D.A. Schreuder=  
(Netherland)

Friday August 22 afternoon

No. 1: Radio interference

US perspective for interference to radio astronomy T. Gergeley (USA)  
 European perspective for interference to radio astronomy H. Kohlmann  
 (Netherlands)  
 Japanese perspective for interference to radio astronomy M. Ishiguro  
 (Japan)  
 Sharing the radio spectrum J. Cohen (UK)  
 How can radio astronomy survive? W. Baan (USA)

No. 2: Space debris

Space debris-amounts and growth W. Flury (Germany)  
 Space debris and astronomy D. Malin (Australia)  
 A quantification of space impact on astronomy S. Tritton (UK)  
 Space debris and space observatories H. Yano (Japan)

Saturday August 23 morning

No.1: Other phenomena and education

Ground and atmosphere J. Kovalevsky (France)  
 Prevention of pollution in interplanetary space C. Keay (USA)  
 The process of frequency measurement, international treaties  
 and responsibility of astronomers J. Tarter (USA)  
 Public education to preserve the astronomical windows W. Sullivan (USA)

No. 2: The general response

The issues of space debris and near-earth objects at the UN H. I. Haubold  
(Austria)

Bilateral agreements, zoning, international protocol S. Isobe (Japan)

Loss of investment in facilities L. Woltjer (France)

#### JD 6 INTERACTIONS BETWEEN PLANETS AND SMALL BODIES

Supporting Division: III (Planetary System Sciences)

Supporting Commission: 16 (Physical Study of Planets & Satellites)

Co-supporting Commissions: 7 (Celestial Mechanics), 15 (Physical Study of  
Comets, Minor Planets & Meteorites), 20 (Positions & Motions of Minor  
Planets, Comets & Satellites), 22 (Meteors & Interplanetary Dust) & the  
WGNEO (Working Group for Near-Earth Objects)

SOC: M.F. A'Hearn (USA), E.L.G. Bowell (USA), A. Carusi (Italy), S.  
Ferraz-Mello (Brazil), M.Ya. Marov (Russia, Chairperson), J. Rahe (USA), H.  
Rickman (Sweden, Chairperson), M.J. Valtonen (Finland), I.P. Williams (UK) &  
S. Yabushita (Japan)

Contact address: Dr. Hans Rickman, Uppsala Astronomical Observatory, Box  
515, S 75120 Uppsala, Sweden, Telephone: 46 18 51 35 22, Facsimile: 46 18  
52 75 83, E-mail: hans@astro.uu.se

Friday August 22 morning: Impacts and Solar System Evolution

Cratering in the Solar System G. Neukum (Germany)

Physics of impacts & crater formation B.A. Ivanov (Russia)



Icy impacts & the origin of atmospheres T. Owen (USA)

Comets & the organic origin of life in the Solar System C. Chyba (USA)

Impact evolution of atmospheres D. Grinspoon (USA)

Friday August 22 afternoon: Origin and Dynamics of Planet-Crossing Bodies

Comet showers, mass extinctions & the Galaxy M. Rampino (USA)

Dynamical constraints on cometary & asteroidal impactor populations  
M.E. Bailey (UK)

Population & size distribution of comets in the terrestrial planets zone  
J.A. Fernandez (Uruguay)

Asteroid dynamics A. Morbidelli (France)

The Kuiper Belt R. Malhotra (USA)

Saturday August 23 morning: Observations of Impacts and Impactors

Aspects of the terrestrial influx of small meteoroids D.I. Steel (Australia)

NEOs, the Spaceguard System & The Spaceguard Foundation A. Carusi (Italy)

NASA's ground- & space-based efforts J. Rahe (USA)

The SL-9 impacts -- Effects on Jupiter's atmosphere D. Hunten (USA)

The SL-9 splitting & impacts -- General Picture M.F. A'Hearn (USA)

Some time is set aside for contributed papers. Titles and abstracts should be submitted to H. Rickman (see Contact Address above) before 1 May 1997.

JD 7 THE NEW INTERNATIONAL CELESTIAL REFERENCE FRAME

Supporting Division: I (Fundamental Astronomy)

Supporting Commission: 8 (Positional Astronomy)

Co-Supporting Commissions: 4 (Ephemerides), 7 (Celestial mechanics), 19 (Rotation of the Earth) & 31 (Time)

SOC: T.E. Corbin (USA), M. Feissel (France), S. Ferraz Mello (Brazil), J. Kovalevsky (France), I.I. Kumkova (Russia), M. Miyamoto (Japan), L.V. Morrison (UK, Chairman), E.M. Standish (USA), C. de Veigt (Germany) & J. Vondrak (Czech Republic)

Contact address: Dr. L.V. Morrison, Royal Greenwich Observatory, Madingley Road, Cambridge CB3 0EZ, UK, Telephone: 44 1223 374771, Facsimile: 44 1223 374700, E-mail: merlp@ast.cam.ac.uk

Friday August 22 morning: The new International Celestial Reference Frame (ICRF)}

Report of the WG Reference L.V. Morrison (UK)  
Formation of ICRF M. Feissel (France) & C. Ma (USA)  
Optical counterpart of ICRF: Hipparcos L. Lindegren (Sweden)  
Maintenance of ICRF

- Radio T.M. Eubanks (USA)
- Optical C. de Veigt (Germany)
- Radio-Optical link J. Kovalevsky (France)

Friday August 22 afternoon: Linking other frames to the ICRF

Linking Tycho to ICRF E. H=F8g (Denmark)  
Linking dynamical reference frame to ICRF E.M. Standish (USA)  
Linking FK5 to ICRF H. Schwan (Germany)  
Referring Schmidt surveys to ICRF B. Lasker (USA)  
Referring CCD images to ICRF P.D. Barthel (Netherlands)  
IAU Resolution implementing the ICRF

JD 8 STELLAR EVOLUTION IN REAL TIME

Supporting Division: V (Variable Stars)

Supporting Commissions: 42 (Close binary stars) & 27 (Variable stars)

Co-Supporting Divisions: IX (Optical techniques)

Co-Supporting Commissions: 9 (Instruments and techniques), 25 (Stellar photometry & polarimetry), 29 (Stellar spectra), 30 (Radial velocities), 35 (Stellar constitution), 41 (History of Astronomy) & 44 (Space & high energy)

SOC: M. Breger (Austria), E. Guinan (USA, Co-Chair), J. Hearnshaw (New Zealand), R. Koch (USA, Co-Chair), D. Kurtz (South Africa), C. Maceroni (Italy), V. Niemela (Argentina), K. Nomoto (Japan), J. Percy (Canada), V. Trimble (USA), R. Webbink (USA) & E. Zsoldos (Hungary).

Contact Address: Dr. Edward F. Guinan, Dept. of Astronomy and Astrophysics, Villanova University, Villanova, PA 19085, USA, Telephone: 1 610 519 4823, Facsimile: 1 610 519 6132 (University) & 1 610 325 9788 (Home), E-mail: guinan@ucis.vill.edu

and

Robert Koch e-mail: rhkoch@sas.upenn.edu

Friday August 22 afternoon

Part I - Stellar Evolution- Observation, Theory, and History

Real Time Stellar Evolution: Brief Introduction E. Guinan (USA)  
 Observational Aspects of Stellar Evolution A. Maeder (Switzerland)  
 Binary Star Evolution- Observational Aspects P. Eggleton (UK)  
 Stellar Evolution from Historical Data J. Hearnshaw (New Zealand)  
 The Problem of "Red" Sirius- Evolutionary or Spurious? K. Brecher (USA)

Part II - Direct Evidence of Stellar Evolution in Real Time

Evolution of the Crab Nebula and its Pulsar V. Trimble (USA)  
 The Remarkable Evolution of the Post-AGB Star FG Sge J. Jurcsik (Hungary)  
 B. Montesinos (Spain)  
 Supernova 1987A- Ten Years After K. Nomoto (Japan)  
 Rapid Evolutionary Changes in the WR Binaries V. Niemela (Argentina)  
 HD 5980 and CV Serpentis S. Shore (USA)  
 Poster Review E. Guinan (USA)

Saturday August 23 morning

Part III - Indirect Evidences of Stellar Evolution: Period and Luminosity  
 Changes

Period and Mode Changes in Pulsating Stars near the Main-sequence: ( Cep and ( Scuti Stars M. Breger (Austria)  
 M. Jerziewicz (Poland)  
 Evidences of Stellar Evolution in Miras, RV Tauri and RR Lyrae Stars J. Percy (Canada)  
 P. Whitelock (Soputh Africa)  
 The Cessation of Pulsations in Polaris D. Fernie (Canada)  
 Evolutionary Changes in Luminous Stars E. Zsoldos (Hungary)

Part III- Continued

Angular Momentum Loss in Close Binaries A. Lanza (Italy), C. Maceroni=  
 (Italy)

Evolutionary Changes in Beta Lyrae P. Harmanec (Czech)

Part IV- Impact of New Technologies on Directly Measuring Stellar Evolution

Impact of New Instruments and Technologies on Observing D. Kurtz (South=  
 Africa)

Stellar Evolution: Current and Future Expectations Y. Kondo (USA)

Because of the the severe time limitations of this JD, some important topics could not be included. To help alleviate this problem and to broaden the scope of the JD, there will be a poster session connected with this meeting.

Papers are invited on topics that relate to the theme of observational and theoretical aspects of stellar evolution that can be discerned from the scrutiny of historical data as well as telescopic observations made over the last 200 yrs. In particular papers on historic supernovae and novae, the problem of the "Red Sirius", ( Carinae, P Cygni, and related topics, as well as solar variability will be especially welcome. An appreciation of the poster papers will made during the oral sessions.

#### JD 9 FUTURE LARGE SCALE FACILITIES IN ASTRONOMY

Co-supporting Commissions: 9 (Instruments & techniques), 40 (Radio astronomy) & 44 (Space & high energy astrophysics)

SOC: H. Butcher (Netherlands, Chairperson), R. Ekers (Australia), R. Giacconi (Germany), Nan Rendong (China), F. Pacini (Italy), Y. Tanaka (Japan) & H. Tananbaum (USA)

Contact address: Prof. Dr. Harvey Butcher, Netherlands Foundation for Research in Astronomy, P.O. Box 2, NL 7990 AA Dwingeloo, Netherlands,  
Telephone: 31 521 59 5100, Facsimile: 31 521 59 7332, E-mail: =  
butcher@nfra.nl

Saturday August 23 morning

Session 1: Optical/IR ground-based facilities

Review of current large projects R. Giacconi (Germany)

Status of facilities planned or under discussion:

Big European Telescope F. Sanchez (Spain)

Large Binocular Telescope P. Strittmatter (USA)

Session 2: Radio ground-based facilities

Review of current large projects and upgrades R. Ekers (Australia)

Status of facilities planned or under discussion:

Milli-meter array R. Brown (USA)

Large mm and sub-mm array M. Ishiguro (Japan)

Large southern mm array R. Booth (Sweden)

Square kilometer array P. Dewdney (Canada), R. Nan (China)

G. Swarup (India), H. Butcher (Netherlands)

Saturday August 23 afternoon

Session 3: New space missions in astronomy

High Energy Facilities Y. Tanaka (Japan)

UV/Optical/Near-IR Facilities A. Dressler (USA)

Low Energy Facilities H. Habing (Netherlands)

Session 4: Other Large Scale Facilities

Review of other planned facilities- M. Longair (UK)

Facilities arguably needed but as yet unplanned

Session 5: International Collaboration

Evolving politics of collaboration F. Praderie (France)

JD 10 LOW-LUMINOSITY STARS

Supporting Division: VII (The galactic system)

Supporting Commission: 33 (Structure & dynamics of the galactic system)

Co-supporting Commission: 37 (Star clusters & associations)

SOC: T. Axelrod (Australia), J. Binney (UK, Chairperson), A. Burrows (USA),  
G. Da Costa (Australia), M. Grenon (Switzerland), T. Nakano (Japan), M.  
Perryman (Netherlands), H. Richer (Canada) & J. Sellwood (USA)

Contact address: Prof. J.J. Binney, Theoretical Physics, Keble Road, Oxford  
OX1 3NP, England, Telephone: 44 1865 273 979, Facsimile: 44 1865 273 947,  
E-mail: binney@thphys.ox.ac.uk

Friday August 22 afternoon

## I. Dynamical constraints

The programme J. Binney (UK)

Large-scale dynamical constraints on the mass of the disk J. Sellwood (USA)

The Oort limit TBA

Mass constraints from stochastic heating and wide binaries M. Weinberg (USA)

Results of microlensing surveys C. Alcock (USA)

Prospects for microlensing surveys A. Udalski (Poland)

Summary of dynamical constraints on N(M) N.W. Evans (UK)

## II. Candidate Objects

Main-sequence L(M, age, Z) from models A. Burrows (USA)

Main-sequence colours as a function of L M. Grenon (Switzerland)

Saturday August 23 morning

Main-sequence M(L) from binaries T. Henry (USA)  
 Ground-based searches for brown dwarfs C. Tinney (Australia)  
 Space-based searches for brown dwarfs J. Bahcall (USA)  
 Do we expect a feature in ((M) at M=3D0.08 M(? T. Nakano (Japan)  
 White-dwarf cooling curves and searches for white dwarfs M. Wood (USA)  
 Contribution of white dwarfs to cluster masses T. von Hippel (USA)

Summary I.N. Reid (USA)

JD 11 REDSHIFT SURVEYS IN THE 21ST CENTURY

Supporting Division: VIII (Galaxies and Cosmology)

Supporting Commission: 28 (Galaxies)

Co-Supporting Comissions: 30 (Radial Velocities) & 47 (Cosmology)

SOC: M. Colless (Australia), R. Ellis (UK), V. de Lapparent (France), A. Fairall (South Africa, Co-Chairman), M. Fukugita (Japan), R. Giovanelli (USA), J. Huchra (USA, Co-Chairman), D. Koo (USA), R.C. Kraan-Korteweg (France), B. Peterson (Australia), W. Saunders (UK), M. Strauss (USA) & M. Vogeley (USA).

Contact address: J. Huchra, OIR, Center for Astrophysics, 60 Garden St,  
 Cambridge, MA 02138-1516, USA, Telephone: 1 617 495 7375, Facsimile: 1 617  
 495 7467, E-mail: huchra@fang.harvard.edu

or

A.P. Fairall, Dept. of Astronomy, University of Cape Town, Rondebosch, 7700  
 South Africa. Telephone: 27 21 650 2392, Facsimile: 27 21 650 3352,



E-mail: fairall@uctvms.uct.ac.za.

Monday August 25 morning

Brief introduction and overview A. Fairall (South Africa)

The Sloan Digital Sky survey M. Fukugita (Japan)

The two-degree field z-survey on the K. Taylor (Australia) & M. Colless  
(Australia)

Anglo-Australian Telescope

The 2MASS survey J. Huchra (USA)

Monday August 25 afternoon

The Las-Campanas survey A. Oemler (USA)

The Canada-France redshift survey S. Lilly (Canada)

Surveys using large-aperture liquid-mirror telescopes P. Hickson (Canada)

Future trends in instrumentation D. Fabricant (USA)

Future 21-cm surveys R. Giovanelli (USA)

JD 12 ELECTRONIC PUBLISHING: NOW AND THE FUTURE

Supporting Commission: 5 (Documentation & astronomical data) & Commission 5

Working Group II on information handling

Co-supporting Divisions: II (The Sun & the heliosphere), IV (Stars), V  
(Variable stars) & IX (Optical techniques)

Co-supporting Commissions: 4 (Ephemerides), 7 (Celestial mechanics), 10

(Solar activity), 12 (Solar radiation & structure), 14 (Atomic data), 19

(Rotation of the Earth), 24 (Photographic astrometry), 25 (Stellar

photometry & polarimetry), 28 (Galaxies), 40 (Radio astronomy), 44 (Space &

high energy), 46 (Teaching of Astronomy), 50 (Protection of existing &

potential observatory sites), 51 (Bioastrometry: Search for

extraterrestrial life)

SOC: H. Andernach (Spain), P. Boyce (USA), Y Chu (China), B. Corbin (USA),  
D. Egret (France), A. G. Hearn (Netherlands, Chairperson), F. Murtagh (ESO),  
S. Mitton (UK), S. Nishimura (Japan), R. Norris (Australia) & M. Tsvetkov  
(Bulgaria)

Contact adress: Professor A. G. Hearn, Sterrekundig Instituut, Postbus  
80000, NL 3508 TA Utrecht, The Netherlands, Telephone: 31 30 253 5202/253  
5200, Facsimile: 31 30 253 5201, E-mail: ahearn@fys.ruu.nl

Electronic publishing is developing rapidly, and by the time of the General  
Assembly at least three major journals will be publishing parallel  
electronic versions. This will bring many benefits and many problems. The  
astrophysical community is faced with decisions about the nature of their  
publications in the future. The Joint Discussion will start with a survey  
of the present state of affairs. Among the problems to be discussed will be:  
Will the paper journal disappear? How should we archive the journals? What  
will be the impact on scientists in developing countries? How can we  
exploit the new possibilities for research and education?

Monday August 25 all day

Introduction A. G. Hearn (Netherlands)  
AAS electronic publishing P. Boyce (USA)  
Electronic Publishing outside Astrophysics S. Mitton (UK)  
Archiving U. Grothkopf (ESO)  
Will the classical journal survive? R. Norris (Australia)  
Electronic preprinting TBA  
Impact on developing TBA  
Panel discussion A. G. Hearn (Netherlands)

## Chairperson

JD 13 DETECTION AND STUDY OF PLANETS

OUTSIDE THE SOLAR SYSTEM

Supporting Division: III (Planetary system sciences)

Supporting Commission: 51 (Bioastronomy)

Co-supporting Commissions: 9 (Instruments & techniques), 15 (Physical study of comets, minor planets & meteorites), 16 (Physical study of planets & satellites), 24 (Photographic astrometry), 25 (Stellar photometry & polarimetry) & 44 (Space & high energy astrophysics)

SOC: C.J. Cesarsky (France), G.C. Consolmagno (Vatican City), Matsumoto (Japan), A.J.Penny (UK, Chairperson), M.A.C. Perryman (Netherlands), J.G. Tarter (USA), H.A. Thronson (USA) & T.C. Owen (USA)

Contact address: Dr. Alan J. Penny, Rutherford Appleton Laboratory, Chilton, Didcot, Oxon OX11 0QX, UK, Telephone: 44 1235 44 5675, Facsimile: 44 1235 44 6667, E-mail: a.j.penny@rl.ac.uk

Monday August 25 morning: Planet Characterization

Planet formation TBA

Evolution of planetary atmospheres T.C. Owen (USA)

Origin of life TBA

Interplanetary dust around stars P. Artymowicz (Sweden)

Planet/brown dwarf signatures R.Brown (USA)

Detection of life A. Leger (France)

Monday August 25 afternoon: Searches - I

Radial velocity searches            M. Mayor (Switzerland)  
 Microlensing searches        TBA  
 Ground optical interferometry searches    F. Paresce (Germany)  
 Photometric searches        Borucki (USA)  
 Ground optical astrometric searches        G. Gatewood (USA)

Tuesday August 26 morning: Searches - II

Ground radio astrometric searches        D.L. Jones (USA)  
 MM astrometric searches R.S. Simon (USA)  
 Space astrometry searches        M.A.C. Perryman (Netherlands)  
 Space interferometry searches    J.-M. Mariotti (France)  
 Searches for intelligent life    J.G. Tarter (USA)

JD 14 THE FIRST RESULTS OF HIPPARCOS AND TYCHO

Supporting Division: I (Fundamental Astronomy)  
 Supporting Commission: 24 (Photographic Astrometry)  
 Co-supporting Divisions: IV (Stars), V (Variable stars), VII (Galactic= system)  
 Co-supporting Commissions: 5 (Documentation & astronomical data), 8 (Positional astronomy), 19 (Rotation of the Earth), 20 (Positions & motions of minor planets, comets & satellites), 25 (Stellar photometry), 26 (Double & multiple stars), 27 (Variable stars), 29 (Stellar spectra), 33 (Structure & dynamics of the galactic system), 37 (Star clusters & associations), 42 (Close binary stars) & 45 (Stellar classification).

SOC: L. Blitz (USA), M. Feast (South Africa), G. Gilmore (UK), M. Grenon (Switzerland), C. Jaschek (Spain), M. Lattanzi (Italy), A. Maeder (Switzerland), J. E. Norris (Australia), M.A.C. Perryman (Netherlands) & C.

Turon (France, Chairperson).

Contact address: Dr. Catherine Turon, Observatoire de Paris-Meudon, F 92195  
Meudon Cedex, France, Telephone: 33 1 45 07 7837, Facsimile: 33 1 45 07  
7878, E-mail: catherine.turon@obspm.fr

Monday August 25 morning

### 1. Hipparcos and Tycho results

Astrometric results, extragalactic link and results L. Lindegren (Sweden)  
on double and multiple stars J. Kovalevsky (France)/F. Mignard (France)  
Photometric results, calibrations F. Mignard (France)/ F. van Leeuwen (UK)  
and variability & M. Grenon (Switzerland)  
Results on solar system objects L. Lindegren (Sweden)/F. Mignard (France)  
Tycho results E. H=F8g (Denmark)/U. Bastian (Germany)

### 2. Impact on our knowledge of nearby stars

Stellar interiors and ages: A. Baglin (France)  
increased accuracy of absolute magnitude determinations.  
Which consequences on models?

A second review among: HR diagram and ages; Luminosity and mass functions;  
Stellar masses.

Monday August 25 afternoon

### 3. Impact on galactic astronomy and distance scale primary indicators

Galactic evolution: increased accuracy of distances, G. Hensler (Germany)  
absolute magnitudes and velocity determinations.

Which consequences on dynamical/chemical evolution models?

A second review among: Calibration of "primary" distance indicators;  
Cosmological impact of a revised calibration of distances; Stellar  
populations kinematics; Three dimensional structure and dynamics of nearby  
open clusters.

#### 4. Selected highlights

Selected highlights M.A.C. Perryman (Netherlands)

Variability statistics before and after Hipparcos M. Grenon (Switzerland)

F. van Leeuwen (UK)

5. Prospects for microarcsec astrometry M.A.C. Perryman (Netherlands)

& L. Lindegren (Sweden)

6. Conclusion J. Kovalevsky (France)

A few contributions and many posters are welcome.

JD15 THE COMBINATION OF THEORY, OBSERVATIONS,  
AND SIMULATION FOR THE DYNAMICS OF STARS  
AND STAR CLUSTERS IN THE GALAXY

Supporting Division: VII (Galactic system)

Supporting Commissions: 33 (Structure & dynamics of the galactic system) &  
37 (Star clusters & associations)

SOC: L. Athanassoula (France), D. Heggie (UK, Chair), S. Inagaki (Japan),  
I. King (USA), J. Makino (Japan), S. McMillan (USA), G. Meylan (Germany, ESO)

& R. Spurzem (Germany)

Contact address:

Dr. R. Spurzem, Astronomisches Rechen-Institut, Moenchhofstrasse 12-14,  
D-69120 Heidelberg, Germany, Phone 49 6221 405 230 (Office) or  
49 6221 405 0 (Switchboard), Email: spurzem@relay.ari.uni-heidelberg.de  
WWW: <http://www.astrophysik.uni-kiel.de/pershome/supas028/iau.html>

Monday August 25 morning

Dynamical simulations: M. Giersz (UK), D. Heggie (UK)

Methods and comparisons (60 min.) R. Spurzem (Germany), K. Takahashi  
(Japan)

Using GRAPE for N-body simulations (60 min) S. Aarseth, (UK)\*, J. Makino  
(Japan)

M. Taiji (Japan), F. Summers (USA)

Mass functions of Globular Clusters (45 min) P. Guhathakurta (USA), G.  
Piotto (Italy)

E. Vesperini (USA)

Structure of Globular Clusters (45 min) D. Merritt (USA), C. Grillmair  
(USA)

G. Drukier (USA)\*

Monday, August 25, afternoon

Binaries in Globular Clusters (60 min) S. Macmillan (USA), S. Phinney  
(USA)\*

C. Pryor (USA), G. Meylan (Germany)

The interface between stellar evolution

and dynamical evolution (60min) F. Verbunt (Netherlands), C. Tout (UK)

D. Chernoff (USA), H.-M. Lee (Korea)

The Galactic Bar (45 min) J. Binney (UK), O. Gerhard (Switzerland)  
H.-S. Zhao (Germany)

The Galactic Disk (45 min) E. Athanassoula (France), J. Sellwood (USA)  
S. Tremaine (Canada)\*

n.b.: Each group of speakers will divide up the time and will coordinate  
their talks.

\* Speaker to be confirmed

JD 16 SPECTROSCOPY WITH LARGE TELESCOPES  
OF CHEMICALLY PECULIAR STARS

Supporting Division: IV (Stars)

Supporting Commissions: 29 (Stellar spectra), 36 (Theory of stellar  
atmospheres) & 45 (Stellar classification)

Co-Supporting Commissions: 14 (Atomic and molecular data) & 27 (Variable  
stars)

SOC: G. Alecian (France), J. Babel (Germany), M. Gerbaldi (France), R.O.  
Gray (USA), G. Mathys (Chile), P. North (Switzerland), M. Takada-Hidai  
(Japan, Chairperson) & J. Zverko (Slovakia, Co-Chairperson)

Contact address: Dr. Masahide Takada-Hidai, Research Institute of  
Civilization, Tokai University, 1117 Kitakaname, Hiratsuka, 259-12, Japan,  
Telephone: 81 463 58 1211 ext. 4813, Facsimile: 81 463 59 4047, E-mail:  
hidai@keyaki.cc.u-tokai.ac.jp



Monday August 25 morning

Basic tools

Model atmospheres

LTE models R.L. Kurucz (USA)

NLTE models I. Hubeny (USA)

Atomic databases

Observational aspects D.S. Leckrone (USA)

Theoretical aspects (OPACITY project) M.J. Seaton (UK)

Fundamental parameters

Observational aspects P. North (Switzerland)

Theoretical aspects M. Gerbaldi (France)

Abundance analyses with LTE and NLTE

LTE and NLTE analyses in CP and normal stars Y. Takeda (Japan)

Element distributions in CP star atmospheres K.C. Smith (UK)

Monday August 25 afternoon

Large scale motions and diffusion processes

Stellar evolution, particle transport, and the CP phenomena G. Michaud  
(Canada)

Diffusion in CP stars: The quest for accuracy G. Alecian (France)

Radiatively driven winds and diffusion in magnetic CP stars J. Babel=  
(Germany)

Magnetic fields

Magnetic fields of CP stars diagnosed from G. Mathys (Chile)  
spectroscopic observations

Theoretical (modelling) aspects M. Landolfi (Italy)

## Variabilities

Observational aspects of Lambda Bootis W. Weiss (Austria)  
and non-magnetic CP stars

Observational aspects of variabilities of J. Matthews (Canada)  
magnetic Ap stars

Theoretical aspects of pulsations of Ap stars H. Shibahashi (Japan)

## JD 17 HISTORY OF ORIENTAL ASTRONOMY

Supporting Commission: 41 (History of Astronomy): a joint commission of  
IAU and IUHPS

Co-Supporting Commission: 46 (Astronomy Education)

SOC: S. M. R. Ansari (Chairperson, India), S. D=É9barbat (France), S. J.  
Dick (USA, Co-Chairperson), B. Hidayat (Indonesia), O. Gingerich (USA), Y.  
Maeyama (Germany), Il-S. Nha (Korea), D. Pingree (USA), Y. Sobouti (Iran) &  
Xi Zezong (China)

Contact addresses: Prof. S. M. R. Ansari, c/o Physics Dept. Aligarh Muslim  
University, Aligarh 202002, India, Telephone: 91 571 40 1952 (res.),  
Facsimile: 91 571 40 0105, 40 0848 or 40 0466, Telex: 564 230 AMU IN  
or

Dr. S. J. Dick, US Naval Observatory, Washington, DC 20392-5420, USA,  
Telephone: 1 202 762 1438, Facsimile: 1 202 762 1461, E-mail:  
dick@ariel.usno.navy.mil

>Monday August 25 morning: Sessions I & II

Oriental Astronomy during the Ancient and Medieval Period

- Development of Astronomy in Ancient China Y. Maeyama (Germany)
- Islamic Astronomy in in China B. van Dahlen (Netherlands/Japan)/  
An Arabic commentary on al-Tusi's T. Kusuba (Japan)  
Tadhkirah and its Sanscrit translation
- Assimilation of observational instruments V.N. Sharma (USA)  
of Islamic Astronomy in Indian Astronomy
- Ancient Indian Astronomy in China J. Xiao-Yuan (China)
- Korean Star Maps of the 18th Century Il-S. Nha (Korea)
- Eclipse records in early Korean History: F.R. Stephenson (UK)  
The Samguk Sagi and Koryo-sa
- Knowledge of Starry Sky and agricultural activities in Indonesia: B.  
Hidayat (Indonesia)  
A review
- The Projection Method of the Star Map K. Miyajima (Japan)  
in the Song Dynasty
- Monday August 25 afternoon: Session III
- Oriental Astronomy during the Ancient and Medieval Period (Cntd)
- Astronomical development in the Orient Kwan-Yu Chen (USA)  
down to the 12th-13th centuries
- On the Vedanga Astronomy Y. Ohashi (Japan)
- Spherical trigonometry in the Astronomy of Medieval Kerala School K.  
Plofker (USA)
- The solar altitude below horizon at dusk and dawn according W. Shou-Xian  
(China)  
to Ancient Chinese astronomical records
- Burmese Star maps M. Nishiyama (Japan)

Session IV: Modern Astronomy in the Orient

The Drkpaksasarani: A Sanskrit version D. Pingree (USA)

of de la Hire's Tabulae Astronomicae

Modern Astronomy in Indo-Persian sources S.M.R. Ansari (India)

Takamine and Saha: Contacts with western Astrophysics D.H. DeVorkin (USA)

East Asian historical records and modern Astronomy Xi Zezong (China)

Astronomy education in the East S. Isobe (Japan)

Tuesday, August 26, 9:00-10:30: Session I

Keplers's Laws in China K. Hashimoto (Japan)

Possible identification of some periodic comets Zh. Weifeng (China)  
before AD 1760

Contemporary Astronomy in Iran: A status report Y. Sobouti (Iran)

Changing historical trends in Astronomy education W. Orchiston (New  
Zealand)

in Australia and New Zealand

History of Oriental Astronomy: An overview S. Nakayama (Japan)

JD 18 HIGH ENERGY TRANSIENTS

Supporting Division: VIII (Space & high energy astrophysics)

Supporting Commission: 44 (High energy astrophysics)

Co-Supporting Commission: 28 (Galaxies)

SOC: C. Cesarsky (France), T. Courvoisier (Switzerland), G. Fasio (USA),  
N. Gehrels (USA), F. Pacini (Italy, Co-Chair), B. Paczynski (Poland/USA),  
R. Sunyaev (Russia), Y. Tanaka (Japan), V. Trimble (USA, Chair), J. Truemper  
(Germany) & M. Ward (UK)

Contact address: Virginia Trimble, Physics Department, University of  
California, Irvine CA 92696-4575 USA, Telephone: 1 714 824 6948 (or 1 301

405 5822), Facsimile: 1 714 824 2174 (or 1 301 314 9067). E-mail:  
vtrimble@uci.edu (or vtrimble@astro.umd.edu)

Tuesday August 26 morning - Chair: V. Trimble. Nearby Transients

Jets and high energy emission processes R. Blandford (USA)

Solar flare emission, the Yohkoh legacy M. Yoshimori (Japan), R. Ramaty=  
(USA)

The galactic superluminal sources L. Rodriguez (Mexico), R. Hjellming (USA)  
F. Mirabel (France)

Highlights from XTE J. Swank (USA)

Gamma-Ray transients M. Tavani (USA), D. Helfand (USA)

Tuesday August 26 afternoon - Chair: N. Gehrels. X-ray Binaries and  
Related Objects

Observations of XRB - Highlights from ROSAT J. Truemper (Germany)

Theory of X-Ray bursts W. Lewin (USA)

X-ray binaries: Evolutionary considerations V. Lipunov (Russia)  
E. van den Heuvel (Netherlands)

The bursting pulsar P. Joss (USA), J. van Paradijs (Netherlands)

Black Hole candidates Y. Tanaka (Japan)

Supersoft sources P. Kahabka (Netherlands)

Wednesday August 27 morning - Chair: F. Pacini. Distant Transients

Highlights from SIGMA/GRANAT R. Sunyaev (Russia)

Gamma-ray bursts: The observational picture BATSE representative

Observations of Gamma-Ray blazars T. Takahashi (Japan), R. Hartman (USA)

Models of Gamma-Ray blazars T. Courvoisier (Switzerland)

A. Levinson(USA), M. Salvati (Italy)

AGN X-rays L. Leighly (Japan)

Summing up: The nature of high energy transients P. Meszaros (USA), I.  
Lapidus (UK)

Many speakers and some topics are quite tentative. Poster contributions are greatly encouraged (contact the SOC Chair). There may be time for a few additional contributed talks.

JD 19 PHYSICS OF THE SUN AND HELIOSPHERE  
IN THE ERA OF SPACE PROBES :  
SCIENTIFIC HIGHLIGHTS OF SOHO, ULYSSES AND YOHKOH

Supporting Division: II (The Sun and the heliosphere)  
Supporting Commissions: 10 (Solar activity), 12 (Solar radiation & structure) & 49 (The interplanetary plasma & the heliosphere)

SOC: Guxiang Ai (China), L. Burlaga (USA), F.L. Deubner (Co-Chair, Germany), P. Foukal (USA), O. Engvold (Norway, Chair), E. Leer (Norway), H. Ripken (Germany, Co-Chair), T. Sakurai (Japan), F. Verheest (Belgium) & J.-C. Vial (France)

Contact address: Prof. Oddbjorn Engvold, Institute of Theoretical Astrophysics, University of Oslo, P.O.Box 1029, Blindern, N-0315 Oslo, Norway, Telephone: 47 22 85 6521, Facsimile: 47 22 85 6505, E-mail: oddbjorn.engvold@astro.uio.no

The meeting will be structured as three consecutive, half days (three full hours) sessions. Each session will include three invited reviews, each 20 minutes, and three contributed papers of 10 minutes each. The keynote talk (first talk of the first session), will be 35 minutes. There will be 10

minutes for discussion after each invited talk, and 5 minutes after each of the contributed papers. At the end of each 3 hour session, i.e. the last 45 minutes, one has an open discussion which is organized by the session chairperson.

Tuesday August 26 morning: Coronal Heating and Solar Wind Acceleration

Chair: Dr. T. Sakurai (Japan)

Heating of the solar corona P. Ulmschneider (Germany)

Structure of the solar atmosphere and V.H. Hansteen (Norway)

acceleration of the solar wind

Kinetic plasma theory and classical MHD theory M.V. Goldman (USA)

Tuesday 26 August, afternoon: Evolution and Termination of the 3-D Solar Wind

Chair: Dr. M. Dryer (USA)

Latitude manifestations of the solar wind J.T. Gosling (USA) \*

Composition of the solar wind, H. Fahr (Germany)

secondary ion generation and pick-up

Large-scale structure and termination of the heliosphere G. Zank (South=  
Africa)

Wednesday August 27 morning: Transient Events and their Solar Magnetic Field Sources

Chair: Dr. J.-C. Vial (France)

Manifestations of solar magnetic fields S. Solanki (Switzerland)

CMEs and interplanetary ejecta G.E. Brückner (USA)

Particle acceleration by waves and fields H. Kunow (Germany)

\* Speaker to be confirmed

JD 20 ENHANCING ASTRONOMICAL RESEARCH AND EDUCATION  
IN DEVELOPING COUNTRIES

Supporting Working Group: Working Group for the Worldwide Development of  
Astronomy

Co-Supporting Commissions: 38 (Exchange of Astronomers), 41 (History of  
Astronomy) & 46 (Teaching of Astronomy)

SOC: A.H. Batten (Canada, Chairman), J. Fierro (Mexico), J. B. Hearnshaw  
(New Zealand), H. Jorgensen (Denmark), D. McNally (UK), J.V. Narlikar  
(India), L.I. Onuora (Nigeria/UK), M. Othman (Malaysia), J.R. Percy  
(Canada), M.C. Pineda de Carias (Honduras) & D.G. Wentzel (USA)

Contact Address: Dr. A. H. Batten, Dominion Astrophysical Observatory,  
5071, W. Saanich Rd, Victoria, B.C., Canada V8X 4M6, Telephone: 1 250 363  
0009, Facsimile: 1 250 363 0045, E-mail: batten@dao.nrc.ca

Tuesday August 26 morning

Survey of Situation and Needs of Astronomers in Developing Countries

Astronomy Teaching and Research in Nigeria L.I. Onuora (Nigeria/UK)

The situation in Central America M.C. Pineda de Carias (Honduras)

Strategies for establishing Astronomy M. Othman (Malaysia)

in a Developing Country

New developments in Chinese Astronomy Li Qibin (China)

Modern astronomical developments in India R.H. Kochhar (India)

Existing Programmes of the IAU



Astronomy Education Programmes D.G. Wentzel (USA)

Exchange of Astronomers H. Jorgensen (Denmark)

IAU Science Services D. McNally (UK)

Tuesday August 26 afternoon

Astronomy Education in Developing Countries

Current developments in Astronomy Education J.R. Percy (Canada)

and their application to Developing Countries

Training in Astronomy M. Gerbaldi (France)

Growing-up Pains in a Developing Country S. Torres-Peimbert (Mexico)

The role of popularization in Developing Countries J. Fierro (Mexico)

How does the UN contribute to the worldwide H.J. Haubold (UN/Austria)

development of Astronomy and Space Science?

Access to Instruments, Journals and Books

Access to telescopes in Developing Countries J.B. Hearnshaw (New Zealand)

International networks of small telescopes D.L. Crawford (USA)

What can we do from Japan? K. Kodaira (Japan)

Access to Journals H.A. Abt (USA)

Collaboration at Institutional and Personal Levels

Networking between Institutions in the Third World J.V. Narlikar (India)

Radio astronomy in Developing Countries G. Swarup (India)

Title to be announced B. Hidayat (Indonesia)

JD 21 THE MEGAMASER - AGN CONNECTION

Supporting Division: II (The Sun and the heliosphere)

Supporting Commission: 40 (Radio Astronomy)

Co-Supporting Commission: 28 (Galaxies)

SOC: W.A. Baan (USA, Chairperson), R.J. Cohen (UK), C. Henkel (Germany),  
J.M. Moran (USA), N. Nakai (Japan), A.S. Wilson (USA) & J.B. Whiteoak  
(Australia)

Contact Address: Dr. Willem A. Baan, NAIC Arecibo Observatory, P.O. Box  
995, Arecibo, PR 00613, USA, Telephone: 1 787 878 2612, Facsimile: 1 787  
878 1861, E-mail: willem@naic.edu

Tuesday August 26 morning

Extragalactic Masers J.M.Cohen (UK) or C. Henkel (Germany)

High resolution studies of OH and H<sub>2</sub>CO sources W.A. Baan (USA)

H<sub>2</sub>O Megamasers and Black Holes J.M. Moran (USA)

The AGN Connection A.S. Wilson (USA) or J.F. Gallimore (Germany)

Megamaser excitation models M. Elitzur (USA) or N. Kylafis (Greece)

Nuclear H<sub>2</sub>O pumping D. Neufeld (USA)

Short contributions

Methanol in LMC J.B. Whiteoak (Australia)

OH at Galactic Nuclei C.J. Lonsdale (USA)

Distance determinations L. Greenhill (USA)

Recent VLBI results of some H<sub>2</sub>O Megamasers N. Nakai (Japan)

Megamasers as standard cosmological candles results from SWAS TBA

JD 22 ASTRONOMY FROM THE MOON

Supporting Division: XI (Space and high energy astrophysics)  
 Supporting Commission: 44 (Space and high energy astrophysics)  
 Co-Supporting Division: VIII (Galaxies and cosmology) & X (Radio=  
 astronomy)  
 Co-Supporting Commissions: 28 (Galaxies) & 40 (Radio astronomy)

SOC: D. B. Campbell (USA), S. Gulkis (USA), L. Gurvits (Russia), L. Higgs  
 (Canada), N. Kaifu (Japan), Y. Kondo (USA), J. Noordam (Netherlands), G.  
 Swarup (India), J.-P. Swings (Belgium), Y. Terzian (USA, Chairperson) & G.  
 Tofani (Italy)

Contact Address: Professor Yervant Terzian, 512 Space Sciences Building,  
 Department of Astronomy, Cornell University, Ithaca, NY 14853, Telephone:  
 607 255 4935, Facsimile: 607 255 9817, E-mail: =  
 terzian@astrosun.tn.cornell.edu

Wednesday August 27 morning

Session I: General Projects

The role of lunar astronomy in the exploration and C. Pilcher (USA)  
 development of the Moon

Mission to the Moon: A phased approach S. Volont=E9 (France)

Astronomy from the Moon: Efforts from Japan N. Kaifu (Japan)

Examples of possible astronomical research from  
 the Moon J. -P. Swings (Belgium)

Session II: Specific Projects

VLBI from the Moon L. Gurvits (Russia)

Low frequency radio astronomy from the Moon K. Weiler (USA)

Gamma-Ray astronomy from the Moon            N. Gehrels (USA)

SETI from the Moon            J. Heidmann (France)

Future plans            General Discussion

JD 23    THE LEONID METEOR STORMS:

HISTORICAL SIGNIFICANCE AND UPCOMING OPPORTUNITIES

Supporting Division:    III (Planetary System Science)

Supporting Commission:  22 (Meteors & Interplanetary dust)

Co-Supporting Commissions:  15 (Physical study of comets, minor planets & meteorites), 20 (Positions & motions of minor planets, comets and satellites) & 41 (History of Astronomy)

SOC:  M.H. A'Hearn (USA), P.B. Babadzhanov (Tajikstan), W.J. Baggaley (New Zealand), S. Dick (USA), I. Hasegawa (Japan), R.W. Hawkes (Canada) & V. Porubcan (Slovakia), I.P. Williams (UK, Chair) & D.K. Yeomans (USA)

Contact address:  Prof I.P.Williams, Astronomy Unit, Queen Mary & Westfield College, Mile End Rd, London E1 4NS, UK, Telephone:  44 171 975 5452, Facsimile:  44 181 981 9587, E-mail:  I.P.Williams@qmw.ac.uk

Wednesday August 27 morning

History of the Leonid Meteor Storms

Early observations of the Leonids            I. Hasegawa (Japan)  
and other storms in east Asia

Observations of the Leonids over the last millennium S. Dick (USA)  
Comet 55P/Tempel-Tuttle: its orbit and history D.K. Yeomans (USA)  
The Leonids and the comet history and theory I.P. Williams (USA)

Contemporary and planned Observations of the Leonids

Current Visual Observations P. Brown (Canada)  
Radar observations W.J. Baggaley (New Zealand)  
Use of TV and CamCorder R.W. Hawkes (Canada)  
Use of the New Adelaide system for Observations D. Steel (Australia)  
Radar observations in Japan J. Watanabe (Canada)  
Observations in Eastern Europe V. Porubcan (Slovakia)  
Observations in Central Asia P.B. Babadzhanov (Tajikistan)

JD 24 PULSATING STARS - RECENT DEVELOPMENTS

IN THEORY AND OBSERVATION

Supporting Division: V (Variable Stars)  
Supporting Commission: 27 (Variable Stars)  
Co-supporting Division: IV (Stars)  
Co-supporting Commission: 35 (Stellar Constitution)

SOC: M. Takeuti (Japan, Chairperson), J.R. Buchler (USA), G. Kovacs  
(Hungary), D. Sasselov (USA) & R.S. Stobie (South Africa)

Contact address: Dr M. Takeuti, Astronomical Institute, Tohoku University,  
Aoba-ku, Sendai 980-77 Japan, Telephone: 81 22 217 6512, Facsimile: 81 22  
217 6513, E-mail: takeuti@astr.tohoku.ac.jp

Tuesday August 26 morning: Progress in Observation of Pulsating Stars

Pulsating stars in microlensing database                    D. Minneti (USA)  
Single- and double-mode Cepheids: Results                D. Welch (Canada)  
    from the MACHO project  
IR observations of large amplitude pulsating stars        P. Whitelock (South  
    Africa)  
Parallaxes and light curves of pulsating stars from HIPPARCOS    M. Grenon  
    (Switzerland)  
Multisite observation of pulsating stars                S.Y. Jiang (China)  
VLBI study of Mira stars                    M. Miyoshi (Japan)

Tuesday August 26 afternoon: Recent Problems in Modeling Pulsating Stars

Models of pulsating stars                    H. Saio (Japan)  
Asteroseismology of Beta Cephei stars        M. Jerzykiewicz (Poland)  
Contribution to the model of pulsating stars in Galaxy, TBA  
    LMC, SMC, and other galaxies  
Hydrodynamic simulation of pulsation driven winds        E.A. Dorfi (Austria)  
Deterministic irregularity in pulsating stars    Z. Kollath (Hungary)

Review will be scheduled as 40 min talk.

(            short review (20 min)

\*            Speaker to be confirmed.

---

INDIVIDUAL PROGRAMMES: SPECIAL SESSIONS

SPS 1    MAIN ISSUE OF THE GALILEO MISSION TO THE JUPITER SYSTEM

Supporting Division: III (Planetary system sciences)

Supporting Commission: 16 (Physical study of planets & satellites)

SOC: C. Barbieri (Italy), M. Belton (USA), D. Gautier (France), A. Ingersoll (USA), T. Johnson (USA), T. Owen (USA), J. Rahe (USA, Chair), V. Tejfel (Kazakhstan), J. Veverka (USA) & R. Young (USA)

Contact Address: Prof. Mikhail Marov, Keldysh Institute of Applied Mathematics, Moscow 125047, Russia, Telephone: 7 095 250 0485, Facsimile: 7 095 972 0737, E-mail: marov@applmat.msk.su

Thursday August 21 all day

Information on this Session can be obtained directly from Professor Marov.

#### SPS 2 HIGHLIGHTS OF THE ISO MISSION

Supporting Division: XI (Space and high energy astrophysics)

Supporting Commission: 21 (Light of night sky)

Co-supporting Commission: 44 (Space and high energy physics)

SOC: C. Cesarsky (France), P. Clegg (UK), T. Encrenaz (France), T. de Graauw (Netherlands), H. Habing (Netherlands), M. Harwit (USA), G. Helou (USA), H. Okuda (Japan), M.F. Kessler (Spain), D. Lemke (Germany, Chairperson), A. Moorwood (Germany) & J.L. Puget (France)

Contact address: Dr. Dietrich Lemke, Max-Planck Institute fuer Astronomie,  
Koenigstuhl 17, D-69117 Heidelberg, Germany, Telephone: 49 6221 528259,

Facsimile: 49 6221 528246, E-mail: lemke@mpia-hd.mpg.de

Programme:

09.15 - 09.25	Mission Overview	M. Kessler
09.25 - 09.40	ISOCAM	C. Cesarsky
09.40 - 09.55	SWS	T. de Graauw
09.55 - 10.10	ISOPHOT	D. Lemke
10.10 - 10.25	LWS	P. Clegg
10.25 - 11.00	COFFEE and POSTERS	
11.00 - 11.20	Deep Surveys & Cosmology	S. Oliver
11.20 - 11.35	Very Deep Surveys	Y. Taniguchi
11.35 - 11.50	Galaxy Clusters	D. Elbaz
11.50 - 12.10	Active & Ultraluminous Galaxies	A. Moorwood
12.10 - 14.00	LUNCH and POSTERS	
14.00 - 14.20	Normal Galaxies	G. Helou
14.20 - 14.35	Star Formation	L. Nordh
14.35 - 14.55	Circumstellar Matter	H. Habing
14.55 - 15.15	Interstellar Matter	J. Puget
15.15 - 15.45	COFFEE and POSTERS	
15.45 - 16.00	Molecular Spectroscopy	tbc
16.00 - 16.15	Supernova Remnants	R. Tuffs
16.15 - 16.35	Solar System Objects	C. Leinert & T. Encrenaz
16.35 - 16.50	Comets	H.U. Keller
16.50 - 17.05	Summary and Outlook	M. Harwit



17.05

POSTERS

Note: Poster Abstracts are still accepted, until April 17th,1997

---

## **PRACTICAL INFORMATION**

### **ADDITIONAL INFORMATION ON THE GENERAL ASSEMBLY:**

By WWW:

We provide the latest information by way of the World-Wide Web (WWW) through the Astronomical Society of Japan. The URL of our page is:

<http://www.tenmon.or.jp/iau97/>

From this page, you can also visit other servers providing useful information about Kyoto and Japan. Note that "tenmon" means astronomy in Japanese. Registration and reservation of accommodation and tours are also possible through WWW.

by E-MAIL INFORMATION SERVICE:

We provide the latest information also by E-mails. Information is itemized as General Information, Registration, Accommodation, Forms, LaTeX Template etc. Each item is automatically sent back to one who sent an E-mail with a specific keyword in its Subject field to the following address:

[iau97-info@tenmon.or.jp](mailto:iau97-info@tenmon.or.jp)

No mail body is necessary. The detailed usage of this service is obtained

by sending any (blank) E-mail with "help" in its Subject field.

## **TRAVEL:**

### IMPORTANT ADVICE

The week around August 15 is one of the busiest tourist periods in Japan. Very many Japanese are travelling in Japan and abroad. On the weekend (August 16 and 17) most people are on their way back home. Therefore, it is strongly advised to reserve seats on international flights well in advance.

### VISAS

As of August 1996, no visa is required for short-stay visitors to Japan from the following countries: Argentine, Austria, Bahamas, Barbados, Belgium, Brunei (within 14 days), Canada, Chile, Colombia, Costa Rica, Croatia, Cyprus, Denmark, Dominican Republic, El Salvador, Finland, France, Germany, Greece, Guatemala, Honduras, Iceland, Ireland, Israel, Italy, Lesotho, Liechtenstein, Luxembourg, Malta, Mauritius, Mexico, Netherlands, New Zealand, Norway, Portugal, San Marino, Singapore, Slovenia, Spain, Suriname, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, United States of America, Uruguay. The length of stay allowed without visa is limited to three or six months for these countries, with the exception of Brunei (14 days).

As visa regulations may change, we recommend prospective participants from these countries to check that no visa is required at the nearest Consular Office or Embassy of Japan.

Those from other countries and regions are requested to contact the nearest Consular Office or Embassy of Japan at least THREE months in advance of their trip. The Local Organizing Committee will make any possible efforts to assist participants in obtaining visas when necessary. If you need assistance, please contact the LOC by providing the following information:.

1. full name and home address
2. date and place of birth
3. citizenship
4. affiliation and office address
5. date of issue and passport number
6. date and place (and preferably number) of visa application
7. trip schedule
8. facsimile number and/or E-mail address

#### GETTING TO KYOTO

By air

There are two major international airports in Japan:

1. Kansai International Airport (KIX) close to Kyoto.
2. New Tokyo International Airport (Narita:NRT) close to Tokyo.

From the airports to Kyoto, trains are highly recommended. As of August 1996, the service hours of direct train from/to the airports are as follows:

From	To	Service Hours	Typical Interval
KIX	Kyoto	6:29 - 22:18	30 min
Kyoto	KIX	5:31 - 20:16	30 min
NRT	Tokyo	7:43 - 21:43	30 or 60 min
Tokyo	NRT	6:30 - 20:03	30 or 60 min

Fare and travelling time are shown in

[Figure 1 \(Connection Map to/from Airports\)](#)

Train schedules are available through the WWW.

From Tokyo to Kyoto, see Transportation in Japan below.

### By sea

Some regular ship services are available to Japan from Russia, China, and Korea.

Port (Country) Port in Japan Vladivostok (Russia) Niigata, Fushiki Shanghai (China) Osaka, Kobe, Nagasaki Tsingtao (China) Shimonoseki Tientsin (China) Kobe Pusan (Korea) Hakata, Shimonoseki From Taiwan no direct access is available to Japan main islands. See also Transportation in Japan below. From the ports to Kyoto, trains are highly recommended. Fare and travelling time are shown in

[Figure 2 \(Connection Map to/from Seaports\)](#)

## TRANSPORTATION IN JAPAN

### By air

Regular domestic flights are available to all major cities in Japan. But only four flights per day are available from Narita Airport (NRT, Tokyo) to Kansai Airport (KIX, Osaka). Flights from Tokyo Airport (Haneda) to Osaka Airport (Itami) take 60 min and cost 15,600 Yen. Air travel on this route is recommended only when its fare is included in the fare of your international flight, since there are fewer planes than "Shinkansen" trains and approach to these airports is rather complicated.

### By train

Train is the most convenient public transport in Japan. You need to buy a ticket and show it at a station gate (Kaisatsu) before getting to platforms. Most trains are monoclasse although some trains have higher class cars named

"green car", which need supplemental charge.

Major cities in Japan are connected by a railway network operated by Japan Railway (JR) companies. The network includes "Shinkansen" (Bullet train) connecting big cities like Tokyo, Kyoto and Osaka. More than 5 services per hour are available between Tokyo and Kyoto, Osaka from 6:00 to 21:18. A non-limited mileage pass called "JR pass" can be purchased in advance outside of Japan. Please contact with travel agents in detail.

Some smaller railway companies operate lines connecting major sightseeing spots and cities; "Hankyu" and "Keihan" between Kyoto and Osaka, "Kintetsu" between Kyoto, Osaka, and Nara. More information will appear in the forthcoming Information Bulletins and on the WWW.

By car

Driving is on the left side. We discourage you driving a car because of heavy traffic jams and parking problems. However, should you decide to drive a car, an international driving license is requested. We also strongly recommend to buy unlimited liability insurance.

#### TRANSPORTATION IN KYOTO CITY

General Caution

Several independent companies and authorities operate buses, subways, and ailways in a single city area. Their fares are usually paid separately.

Subway & Railways

A subway line across the city in the north-south direction is available. Its service hours are 5:30 to 23:00 and the frequency is four to seven

minutes. The subway is scheduled to be extended up to the Kyoto International Conference Hall (KICH) by June 1997 and the closest station will then be "Kokusai-Kaikan" (international conference hall in Japanese), just in front of KICH. The fare is between 200 Yen and 290 Yen depending on the distance. One-day and two-day tickets are also available. The network of the subway and other railways in Kyoto city is shown in

—

[Figure 3 \(Guide Map of Kyoto City and Hotel Location\)](#)

#### Bus, Subway & combined Bus/Subway Fares

The bus network covers the whole city. The fare is 220 Yen per ride within the central city, although some bus routes extend up to the suburbs beyond the 220 Yen area. One-day and Two-day tickets are also available. The bus routes to Kyoto International Conference Hall are shown on Figure 3: Guide Map of Kyoto City and Hotel Location.

#### Taxis

Taxis are also available, but they are much more expensive than other means of transportation, approximately ten times of the corresponding subway and/or bus fare. It costs roughly 630 Yen for the first 2 km and 320 Yen/km for additional distance, for example 3,000 Yen from JR Kyoto station to KICH.

#### WEATHER & CLOTHING

Kyoto is usually hot and humid in August. The average low and high temperatures of a day in August are 24 C (75 F) and 33 C (91 F), respectively. The average humidity is 69%. Showers are possible in the evening. Light and casual clothing is appropriate. The Kyoto International

Conference Hall and all major hotels, buildings, trains, and buses are well air-conditioned. A light sweater or cardigan can be useful there. No formal dress is required at any events of the General Assembly.

#### ELECTRICITY

The voltage in Japan is 100 V AC. The frequency is 60 Hz in the western half of Japan including Kyoto and Osaka. In the eastern half including Tokyo, it is 50 Hz. The plugs are of the flat pin type and are similar, but not identical, to those used in the US, the difference being that both blades are the size of the narrower one of US type blades.

## **REGISTRATION:**

#### PARTICIPATION

Attendance at the XXIIIrd General Assembly is open to all members of the IAU and to non members invited by the IAU. Invitations can be provided by the Adhering Organizations/National Committees for the IAU, the Scientific Organization Committees of the Symposia and Joint Discussions or, if necessary, by the President of the Union through the IAU Secretariat. Please note that an invitation to attend the General Assembly does not imply any financial commitment towards the participant by the IAU or the Local Organizing Committee.

Each participant (IAU member or invited participant) may register one adult and/or child(ren) as guest(s). Registered guests cannot attend the scientific meetings (except for the Invited Discourses), but otherwise enjoys the same privileges as participants.

#### FINANCIAL SUPPORT TO ATTEND THE GENERAL ASSEMBLY

A limited number of travel grants to attend the XXIIIrd GA will be available for participants who cannot obtain necessary travel funds from national sources. Those who plan to contribute actively to one of the Symposia should send their grant application to the corresponding Symposium Scientific Organising Committee. Colleagues who plan to participate actively in Joint Discussions, Special Sessions, Divisions, Commissions and Working Groups are requested to send their grant application to the General Secretary. The deadline for grant applications is in both cases February 15, 1997. For all grant applications the form attached to this Bulletin has to be used.

#### HOW TO REGISTER

Participants should complete the (blue) Registration Form attached in this Bulletin and return it to the LOC (address on the form and page 3 of this Bulletin) no later than July 15, 1997. Note that the return addresses are different between blue and yellow forms. We accept forms sent by regular mail, facsimile, and e-mail and registration through our WWW registration page, <http://www.tenmon.or.jp/iau97/> After that date, advance registrations by mail/facsimile/e-mail/WWW are no longer accepted. However late registration will still be possible upon arrival in Kyoto at the Registration Desk in the conference hall until August 29.

Each person attending any portion of the XXIIIrd General Assembly or the associated symposia must register and pay the appropriate fee, as shown below:

Registration & payment received before April 30, 1997      after April 30, 1997:

IAU Member	Yen 30,000	Yen 35,000
Invited Participant *	Yen 30,000	Yen 35,000



Registered Guest**	Yen 10,000	Yen 15,000
Child(ren) 11 years old or younger	Free	Free

\* invited by the IAU, Adhering Organizations or National Committee or SOC

\*\* must be registered on the same form as the IAU member or the invited participant

\*\*\* must be registered on the same form as the IAU member or the invited participant.

For most of tours, children of age less than 6 are free and children of age 6 to 11 will get about 20-50 % discount.

Applications should be accompanied by a remittance covering the registration fee. No registration will be confirmed in the absence of this payment. Personal checks are NOT accepted. All payments must be in Japanese Yen. Payment should be in one of the following forms (in the case of E-mail/WWW registration, only credit cards may be used):

- A bank draft payable at a Japanese bank (Bank of Tokyo Mitsubishi, preferably) to the order of "Dai 23 Kai Kokusai-Tenmongaku-Rengo Soukai Soshiki-Iinkai Kaikei Arimoto Nobuo".

- A bank transfer to "Dai 23 Kai Kokusai-Tenmongaku-Rengo Soukai Soshiki-Iinkai Kaikei Arimoto Nobuo", account at the Bank of Tokyo Mitsubishi, Musashi-Sakai Branch (Branch 221) 2-2-3, Kyohnan, Musashino, Tokyo 180, Japan, (Account 0837975).

- Credit cards: VISA, MasterCard, and AMEX

Confirmations

Registrations will be confirmed via e-mail/facsimile/mail by the LOC within two weeks after receipt of the registration form and payment. If any confirmation does not arrive six weeks after your sending, please contact the LOC by e-mail/facsimile.

#### Cancellation & Refunds

For notices sent before June 15, 1997 (date postmark), a charge of transfer of 2,000 Yen or so will be deducted before refunding. For late notices sent before August 1, 1997 (date postmark), the half of payment will be refund. Regrettably, no refund requests will be accepted after that date.

## **RESERVATIONS FOR HOTEL ACCOMMODATION, SOCIAL & CULTURAL EVENTS, & TOURS**

JAPAN TRAVEL BUREAU

Reservations for accommodation and most tours are under the responsibility of the Japan Travel Bureau (JTB), which has been appointed as the official travel agent for the General Assembly:

Japan Travel Bureau, Inc.

International Travel Division

Convention Center (CD100993-543)

5-5-2, Kiba, Koto-ku, Tokyo135, Japan

Telephone: 81 3 5620 9429

Facsimile: 81 3 5620 9499

E-mail will be available after November 1, 1996

JTB will accept reservation requests during the period November 1, 1996 to June 30, 1997, and should be contacted for all questions concerning accommodation, tours, and related local arrangements.

#### LIST OF HOTELS & HOTEL ACCOMMODATION

Room charge per night (in Yen)

Cat.	Name of Hotel	Single	Twin	Triple	Location	ID
A	Takaragaike Prince Hotel	17,000	20,000		5 min to KICH	1
A	Kyoto Hotel	14,500	20,000		10 min to Oike	2
A	Miyako Hotel (Deluxe)	17,000	20,000		taxi to Oike	3
B	Miyako Hotel (Standard)	14,000	17,000		taxi to Oike	4
B	Kyoto ANA Hotel	9,500	17,000		15 min to Oike	5
B	Kyoto Royal Hotel	9,500	17,000		15 min to Oike	6
C	Holiday Inn Kyoto	9,000	16,000		free shuttle	7
C	Karasuma Kyoto Hotel	8,500	16,000		1 min to Shijo	8

C	Hotel Keihan Kyoto	8,500	16,000	3 min to Kyoto	9
C	Hearton Hotel Kyoto	8,700	14,900	5 min to Oike	10
D	Kyoto Palaceside Hotel	8,000	13,000	near Marutamachi	11
D	Kyoto Prince Hotel	7,500	13,000	free shuttle	12
D	Hotel Gimmond Kyoto	7,000	12,000	5 min to Oike	13
D	Kyoto Garden Hotel	7,000	12,000	5 min to Oike	14
D	Hotel Alpha Kyoto	7,000	12,000	15 min to Oike	15
D	Maruko Inn Kyoto	7,000	12,000	10 min to Shijo	16
E	Hotel New Kyoto	-	11,000 15,000	near Marutamachi	17
E	Kyoto Tokyu Inn		12,000 15,000	bus to Gojo	18
Y	Utano Youth Hostel		4,150*	bus to Kita-Oji	19
Y	Higashiyama Youth Hostel		4,300*	bus to Oike	20

\* per person including 2 meals; 4-8 persons/room

Except Category Y, all have a private bath room with a bathtub.

Note that the number of single rooms is limited, around 450 in total.

JTB has block-booked hotels (See list in previous Table) in Kyoto during the period of the General Assembly. Reservations will be made on a first-come,

first-served basis. Please indicate your order of preference when filling in the (yellow) Application Form enclosed. If the hotel you had chosen is fully booked, a reservation in a similar hotel corresponding to your indications will be made. Most of the hotels are scattered within the central part of Kyoto. For location, see

[Figure 3 \(Guide Map of Kyoto City and Hotel Location\)](#)

## **SOCIAL & CULTURAL EVENTS**

All participants and their registered guests are welcome to attend the social and cultural events. We request participants to wear their badge at all events. Further to the badge, a ticket is required for the Japanese Music Concert. Some of these events are handled by the LOC, others by the Japanese Travel Bureau. Please use the appropriate form as indicated.

Reception, Monday August 18, evening      Free of charge

All participants and registered guests are welcome to the reception to be held on the evening of August 18 (Monday). Please tick the corresponding box of the (blue) Registration Form.

Welcome Brass Concert: Wednesday August 20, evening      Free of charge

Following the first General Assembly meeting, a brass concert will be held in the evening of August 20 (Wednesday) at KICH. Please tick the corresponding box of the (blue) Registration Form.

Japanese Music Concert, Monday August 25, evening      Adults: 1,500 Yen  
Children (Age 11 and under) 800 Yen

An evening concert will be performed at a hall kindly offered by the Kyoto School of Computer Sciences near JR Kyoto Station. The programme will contain traditional Japanese musics and plays. Please tick the corresponding box of the (blue) Registration Form.

Banquet, Wednesday August 27, evening Free of charge

All participants and registered guests are welcome to the banquet to be held on the evening of August 27 (Wednesday). Please tick the corresponding box of the (blue) Registration Form.

Recreational Tour to Nara, Sunday August 24, all day Free Transportation

The LOC arranges a Sunday tour in Nara on August 24. Some Japanese astronomers will accompany this tour. Nara was the imperial capital of Japan in the 8-th century. There are many famous old temples and shrines in Nara. Free transportation between Kyoto and Nara (a round trip by train) is provided by the LOC. After arriving at Nara, you are free to visit the places you are interested in. Admissions, lunch and bus or taxi fees are to be paid individually. A detailed guide map will be provided. Please tick the corresponding box of the (blue) Registration Form.

ST-1 Science Tour to the Nobeyama Radio Observatory

Saturday August 23 & Sunday August 24 Adults: 12,000 Yen

Children (Age 6-11): 6,000 Yen

Accommodation (4 up to 7 persons in a room) is included in this price

A visit to the Nobeyama Radio Observatory is planned from August 23 (Saturday) to August 24 (Sunday). The observatory belongs to the National Astronomical Observatory and is located in Nagano Prefecture. The Nobeyama 45 meter radio telescope, the Nobeyama Millimeter Array (interferometer with

six 10 meter dishes), and the Radio Heliograph are in operation. The tour is planned to leave Kyoto in the morning by bus. We go through expressways and arrive at the observatory after lunch. After a few hours of science visits, participants can enjoy a outdoor walking in cool atmosphere of highland and an evening beer party. Accommodations are booked near the observatory. They are of the type of youth hostels, a room being shared by 4-7 persons. The tour leaves Nobeyama next morning and comes back to Kyoto in the evening of August 24.

You can get more information on the observatory itself through the WWW. Its URL is:

<http://www.nro.nao.ac.jp/index-e.html>

The fare of tour includes two lunches, one breakfast as well as accommodation. Participants to the Nobeyama tour do not need to keep their hotel room(s) in Kyoto on August 23 (but please wait for confirmation of the trip before cancelling your reservation for that night). Minimum: 30 persons, maximum: 90 persons. Please register using the (yellow) Application Form.

## **PROGRAMME FOR ACCOMPANYING PERSONS & OPTIONAL TOURS**

Walking Tours in Kyoto (No pre-registration requested) Individual payment

Half day walking visits in various spots (temples, shrines, gardens, museums and shopping centers) in Kyoto are planned for accompanying persons on August 21, 22, 25, and 26. Japanese volunteers will post their plans in the entrance hall of Kyoto International Conference Hall. Admissions and transportation (bus, subway, and taxi) fees are to be paid individually.

Optional Tours.

The following tours are handled by the Japanese Travel Bureau. Please use the (yellow) Application Form to register.

OP-1 Kyoto morning, Daily 8:55 - around 12:40      Adults: 5,000 Yen

Children (Age 6-11): 4,000 Yen

Tour visits Nijo Castle, once used as the Tokugawa Shogun's accommodations; Golden Pavilion, a gilded structure, originally an Ashikaga Shogun's villa; Kyoto Imperial Palace, a former residence of Emperors (on Sat. and Sun.: visit Higashi Honganji Temple instead); and Kyoto Handicraft Center to watch demonstrations by skilled craftspersons. Tour disbands on arrival at the Kyoto Handicraft Center. Sending services to major hotels in Kyoto are offered by the Handicraft Center.

OP-2 Kyoto 1 Day, Daily 8:55 - around 17:30      Adults: 10,800 Yen

Children (Age 6-11): 8,700 Yen

The same as OP-1 for the morning. Lunch at Kyoto Handicraft Center. Tour visits Vermilion Heian Shrine, a magnificent structure strongly influenced by Chinese architecture; Sanjusangendo Hall and its 1,001 impressive statues of Buddha; and Kiyomizu Temple to enjoy a sweeping view of the city from its lofty terrace.

OP-3 Nara afternoon, Daily 13:40 - around 18:40      Adults: 5,900 Yen

Children (Age 6-11): 4,900 Yen

Tour visits Todaiji Temple, the world's largest wooden building that houses the 50-foot-high Great Buddha; Peaceful Deer Park, where many tame deer roam the grounds; Vermilion-hued Kasuga Shrine, with its thousands of lanterns. Countryside drive, an informative junket to Nara and return.



OP-4 Kyoto & Nara 1 Day, Daily 8:55 - around 18:40 Adults: 11,700 Yen

Children (Age 6-11): 9,400 Yen

The same as OP-1 for the morning. Lunch at Kyoto Handicraft Center. The same as OP-3 for the afternoon.

OP-5 Rapid Shooting, Daily 13:40 - around 18:00 Adults: 9,800 Yen

Children (Age 6-11): 8,500 Yen

Transfer to Kyoto Station and board a local train for Kameoka. Then, an exciting eight-mile, ninety-minute trip downstream, shooting the Hozu Rapids aboard a flat-bottomed boat from Kameoka to scenic Arashiyama. Return by local train to Kyoto. Non-reserved seats on local trains. This tour will not operate if the total number of participants does not reach 2.

OP-6 Special Night,

Tuesday, Thursday & Saturday, 18:40 - around 22:00 10,000 Yen

Being a guest at Tea Ceremony in the Japanese inn "Yoshiima". Supper at the Japanese inn "Yoshiima". Enjoy various kinds of Japanese traditional arts at Gion Corner.

This tour will not operate if the total number of participants does not reach 2.

#### Tour Conditions

Tour fare include (1) Sightseeing and transfers as shown in the itineraries, by motorcoach and/or sightseeing boats on a seat-sharing basis, plus admission fees to temple, shrine, etc.; (2) Railways: tourist-class reserved seats; (3) Meals as specified in each itinerary; (4) English-speaking guide.

## Payment, confirmation, cancellation & refunds

### Payment

Participants wishing to reserve hotel accommodations and tours should complete the (yellow) Application Form and return it to reach JTB no later than June 30, 1997. Note that the return addresses are different between blue and yellow forms. Application should be accompanied by a remittance covering the hotel deposit of 20,000 Yen and/or total tour fare and a handling charge of 500 Yen due JTB. No reservation will be confirmed in the absence of this payment. Personal checks are NOT accepted. All payment must be in Japanese Yen. The hotel deposit will be credited to your bill when checking out. Payment should be in the form of:

- A bank transfer to the Japan Travel Bureau, Inc. (Ref: CD100993-543) account at the Bank of Tokyo Mitsubishi, Shin-Marunouchi Branch 1-4-2, Marunouchi, Chiyoda-ku, Tokyo 100, Japan (Account number: 1025740)
- A bank check payable to the order of the Japan Travel Bureau, Inc.
- The following credit cards are acceptable:

MasterCard      VISA

Diners Club     AMEX

### Confirmations

JTB will confirm your reservations within 2 weeks after receipt of your accommodation form and payment, but no later than July 15, 1997. If confirmation is not received six weeks after mailing the form and payment, please contact JTB by facsimile (81 3 5620 9499).

### Cancellation & Refunds

In the event of cancellation, written notification should be sent to JTB.

The following cancellation fees will be deducted before refunding.

### Hotels

Up to 9 days before the first night of stay      2,000 Yen

2 to 8 days before      20% of daily room charge (minimum 2,000 Yen)

Less than 2 days before, or no notice      100% of daily room charge

### Tours

Up to 21 prior to departure day 2,000 Yen

20 - 8 days      10% of tour fare (minimum 2,000 Yen)

7 - 1 days      20% of tour fare (minimum 2,000 Yen)

Prior to starting time, or no notice      100% of tour fare

## **GENERAL INFORMATION ON FACILITIES**

### VENUE OF THE GENERAL ASSEMBLY

The XXIIIrd General Assembly of the IAU is to be held in "Kyoto Kokusai Kaikan (Kyoto International Conference Hall, KICH)", Takaragaike, Sakyo-ku, Kyoto. Full details of the facilities and services available to participants of the XXIIIrd IAU General Assembly will be given in the final programme.

### REGISTRATION DESK & GENERAL INFORMATION

The registration desk will be open from Sunday afternoon, August 17 through Friday afternoon, 29 August. It will be closed on Saturday afternoon and on August 24 (Sunday). All participants, including those who already registered by mail, e-mail or WWW, must first report to the registration desk and collect their registration package containing the final program, badges, the Abstract Book, etc. Badges will be required for entering the Conference Hall and for all General Assembly meetings and events.

#### TRAVEL DESK

A desk for general tourist information and travel assistance will be organized by the official travel agent, the Japan Travel Bureau, Inc. (JTB).

#### BANKING FACILITIES

At the major service offices in downtown Kyoto, you can easily exchange currency between Japanese Yen and US dollars (in cash and travellers check). Other major currency can be exchanged at some offices only. Their list will be published in Information Bulletin 79. Banks are open from 9:00 through to 15:00 and closed on Saturday & Sunday. The exchange rate is the same at all banks. US dollars can also be exchanged at some major hotels. Most stores accept credit cards (VISA, MasterCard, American Express, etc). Travellers checks or personal checks are normally not accepted in stores.

#### MAIL BOXES

Each participant will have his/her own mailbox.

#### MAIL, PHONE, FACSIMILE AND ELECTRONIC MAIL

The postal address of participants during the XXIIIrd General Assembly will be

IAU XXIIIrd General Assembly  
Kyoto International Conference Hall  
Takaragaike, Sakyo-ku, Kyoto 606  
Japan

Note that this address is only valid during the General Assembly.

There are some public phone boxes at KICH. The service of sending a message by facsimile is available at KICH with charge. The telephone and facsimile numbers of the registration desk will be published in the Information Bulletin 79. Note that they are only for receiving urgent messages to participants.

A limited number of terminals will be available to participants to send/receive e-mail messages.

#### PHOTOCOPY

Photocopying machines will be available at the KICH. Participants will be charged for using this service.

#### DAILY NEWSPAPER

A Newspaper of the General Assembly will appear during the Assembly. It will carry articles of general interest to the astronomical community, reports on scientific and social programme of the days to come. The editors of the daily Newspaper are Drs Jun Jugaku and G. Seth Shostak.

#### COFFEE & TEA BREAKS

Cold green tea, cold water, and coffee will be served.

#### LUNCH FACILITIES

The Kyoto International Conference Hall hosts a restaurant, named "Grill", and a cafe. Prices are about 700-1,000 Yen per dish. There are also some small restaurants and coffee shops within 1 km around the Conference Hall. If you want to reduce the meal expenses, we recommend you to buy a box lunch at mini-stores (called "Kombini" in Japanese) in the downtown area.

#### MEDICAL AID

First Aid is available in the Kyoto International Conference Hall.

#### CHILD CARE

Please inquire at your hotel. Child care is available at Miyako Hotel and Kyoto ANA Hotel. There is no child care service available at Kyoto International Conference Hall.

#### EXHIBITIONS

Scientific and technical material of interest to the participants of the General Assembly may be exhibited during the meetings. Institutions and companies interested in using the opportunity to exhibit or display their material are requested to contact the Local Organizing Committee for information and conditions.

#### SCIENTIFIC PRESENTATIONS

#### FACILITIES FOR ORAL PRESENTATIONS

Overhead and slide projectors will be available in all the rooms for oral

presentation. Microphones will be available in large rooms. Video equipment will not be available in the lecture halls. However, a video corner will be set up in the poster room (see below).

#### VIDEO PRESENTATIONS

A limited number of video monitors will be available for poster presentations. They will be set up at a corner of the poster room. Those who want to use them are requested to add a line "(Video presentation planned)" at the end of the abstract as well as to attach a memo in submitting poster abstracts. Please be sure to include your e-mail address in the abstract for further contacts. Only videos recorded on normal-sized VHS (not S-VHS) cassettes in NTSC mode can be displayed. The presentation time will be assigned to one of the breaks. Detailed instructions will be given later.

#### POSTERS

Only posters prepared by actual participants of the General Assembly and related to one of the scientific events or related to business sessions of Commissions will be accepted. A room for 600 poster presentations is reserved. The present plan is to share one poster space by 4 papers in turn. Hence a total number of 2400 poster papers can be accommodated. Simple arithmetics results, on average, in 200 papers for a Symposium and 50 for a Joint Discussion of one-day length. If this is not enough, then we can offer more space by changing posters more frequently. Each poster will be assigned a number referring to the poster board in the Congress building. The poster board for a paper will be 90 x 90 cm.

#### Selection of Posters and Publication of Poster Abstracts

Selection of poster papers will be made by the Scientific Organizing

Committees (SOCs) of Symposia and Joint Discussions, on the basis of Poster Abstracts received before February 15, 1997 at the SOC contact address given in this Bulletin. Poster papers accepted by a SOC and communicated to the Local Organizing Committee will be accepted for display and registered by the LOC when at least one of the authors has registered and paid his/her registration fee before June 15, 1997. Only the registered poster papers will be included in the Abstracts Book and WWW page and will be allocated a poster board. Hence, authors of poster papers have to register no later than by June 15th, 1997.

Copies of the Abstract Book containing the Abstracts of all posters accepted by Symposium and Joint Discussion SOCs, and a floor plan of the poster area, will be distributed at the Assembly. For publication in the Abstract Book, poster abstracts must be prepared following the instructions given below.

#### Preparation of Abstracts

Each page of the Abstract Book will contain four abstracts. The page size is A4: 21.0 cm by 29.7 cm. The actual size for each abstract in print is 7.8 cm wide and 10.6 cm high. Please send the abstract to the SOCs by E-mail in the following two forms:

(1) a LaTeX file following a template available on the WWW page or by E-mail from LOC,

and

(2) a plain ASCII text for inclusion in the WWW page.

We strongly ask you to send BOTH of the above two forms by E-mail. If e-mail is not available, however, please send the SOCs a camera-ready copy being 11 cm wide and 15 cm high, which will be reduced by 70.7 % before



printing. Any typeface, font sizes, and line spacings will be accepted, but oversized manuscripts will be shortened for printing.

The manuscript must include title, author name(s), institute(s), e-mail address(es), and main text. Each abstract must be shorter than 200 words.

\*\*\*\*\*  
\*\*\*\*\*

---

Page last modified by the [IAU Secretariat](#) on 2003-12-01.