



INTERNATIONAL
ASTRONOMICAL
UNION

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ASTRONOMIQUE
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INFORMATION BULLETIN

JUNE 2006

88



IAU Executive Committee

PRESIDENT

Ronald D. Ekers

CSIRO / ATNF
PO Box 76
AU - Epping NSW 1710
Australia
Tel: +61 2 9372 4600
Fax: +61 2 9372 4450
rekers@atnf.csiro.au

PRESIDENT-ELECT

Catherine Cesarsky

Director General
ESO
Karl Schwarzschildstr 2
DE - 85748 Garching
Germany
Tel: +49 893 200 6227
Fax: +49 893 202 362
ccesarsk@eso.org

GENERAL SECRETARY

Oddbjørn Engvold

IAU
98 bis, bd Arago
FR - 75014 Paris
France
Tel: +33 1 43 25 83 58
Fax: +33 1 43 25 26 16
iau@iap.fr

Home Institute

Inst.Theoretical Astrophysics
P.O. Box 1029
Blindern
NO - 0315 Oslo 3
Norway
Tel: +47 22 85 65 21
Fax: +47 22 85 65 05
oengvold@astro.uio.no

ASSISTANT GENERAL SECRETARY

Karel A. van der Hucht

SRON - Netherlands Inst for
Space Research
Sorbonnelaan 2
NL - 3584 CA Utrecht
the Netherlands
Tel: +31 30 253 57 29/56 00
Fax: +31 30 254 08 60
K.A.van.der.Hucht@sron.nl

VICE-PRESIDENTS

Beatriz Barbuy

IAG
University of São Paulo
Rua do Matao 1226
Cidade Universitaria
BR - São Paulo SP 05508 900
Brazil
Tel: +55 11 3091 2810
Fax: +55 11 3091 2860
barbuy@astro.iag.usp.br

Cheng Fang

Astronomy Dept
Nanjing University
Hankou Rd 22
CN - Nanjing, Jiangsu 210093
China PR
Tel: +86 258 359 6817
Fax: +86 258 359 6817
fangc@nju.edu.cn

Kenneth A. Pounds

Dept Physics & Astronomy
University of Leicester
University Rd
GB - Leicester LE1 7RH
United Kingdom
Tel: +44 116 252 3509
Fax: +44 116 252 3311
kap@star.le.ac.uk

Silvia Torres-Peimbert

Instituto de Astronomía
UNAM
Apt Postal 70 264
MX - Mexico DF 04510
Mexico
Tel: +52 55 5622 3906
Fax: +52 55 5616 0653
silvia@astrocu.unam.mx

Brian Warner

Astronomy Dept
University Cape Town (UCT)
Private Bag
ZA - 7700 Rondebosch
South Africa
Tel: +27 21 650 2391
Fax: +27 21 650 3342
warner@physci.uct.ac.za

Robert E. Williams

STScI
3700 San Martin Dr
US - Baltimore MD 21218
USA
Tel: +1 410 338 4963
Fax: +1 410 338 2617
wms@stsci.edu

ADVISERS

Franco Pacini

(Outgoing President)
Dpt di Astronomia
Università Degli Studi
Largo E. Fermi 5
IT - 50125 Firenze
Italy
Tel: +39 055 275 21/2232
Fax: +39 055 220 039
pacini@arcetri.astro.it

Hans Rickman

(Outgoing General
Secretary)
Astronomical Observatory
Uppsala University
P.O. Box 515
SE - 751 20 Uppsala
Sweden
Tel: +46 18 471 5971
Fax: +46 18 471 5999
hans@astro.uu.se

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PREFACE

The IAU General Assembly (GA) is held every three years and provides a unique opportunity to be informed and updated on progress and developments over the full range of the fields of astronomy. Meeting and interacting with colleagues in very different fields than our own is both stimulating and rewarding. I refer you to the exciting and varied scientific program of the XXVIth IAU General Assembly in Prague that is further described in this issue of the Information Bulletin (IB). I would in particular like to point you to a new program element this year, which contains special arrangements for the young astronomers of the Union. Two specific events for Young Astronomers (here defined as those who have earned a Ph.D. in the last three years, or are currently enrolled in a Ph.D. program) will take place during the General Assembly. These are the "Young Astronomer Lunch-Debate" on August 15th, and a "Young Astronomer Consulting Service" during the entire duration of the GA. Although our prime reason for going to Prague in August is to enjoy and benefit from the rich scientific program and important business sessions, we are naturally also thrilled to have this occasion to enjoy the wonderful city of Prague with its numerous cultural opportunities. Our colleagues in Prague have prepared a very fine program for this IAU General Assembly.

I take this opportunity to comment briefly on some of the items covered in this issue of the IB in order to underline their relevance and significance towards fulfilling the aim and objective of the IAU.

Initiatives and new ideas most often originate in the Divisions, Commissions, Working Groups, Program Groups and other services of the IAU. It is the responsibility of the Union's governing bodies, i.e. its Executive Committee (EC), Officers and finally the General Assembly itself, to create an adequate structure and suitable conditions to ensure a well functioning Union acting in the best interests of both the science and the astronomical community. To achieve this goal, the Statutes and Bye-Laws are continuously reviewed and updated when deemed necessary. A few very important changes will be introduced at this GA of the IAU. The paragraph texts that have been modified are highlighted in the copies of the IAU Statutes and Bye-Laws that we include in this IB. We ask you to pay close attention to these. For your information, we also include the four IAU Resolutions that will be presented for voting at the GA in Prague.

The IAU Central Bureau for Astronomical Telegrams (CBAT) issues its frequent electronic telegrams which keep astronomers and the interested public informed about astronomical events and news. For more information about this important service I refer you to the CBAT report in this issue of the IB (p. 31). As an example, I am receiving the announcement of the IAU's naming of the two new satellites of Pluto as I write this preface. The IAU Minor Planet Center (MPC) is in charge of the important task of recording and maintaining the inventory of small bodies in the solar system, and it thereby provides another highly appreciated and important service to our community at large. A special thank goes to Brian Marsden, who has served as Director of the MPC for nearly 30 years, for his great service and contribution to the IAU and the public. I am very pleased with the new Memorandum of Agreement that was recently concluded between the Smithsonian Astrophysical Observatory (SAO) and the IAU which will secure the continued operation of the MPC.

The IAU's initiative to have 2009 proclaimed the International Year of Astronomy is awaiting UN endorsement this fall. National Members are encouraged to nominate contact persons who may interact with the IAU in the planning of this big event, whom I hope will be able to participate in the plenary session on 2009 IYA on Friday, August 18, in Prague.

IAU programs in science and education are based on extensive collaborations with other institutions and organizations worldwide. The IAU currently benefits, via specially appointed representatives, from fruitful collaborations and the exchange of mutually relevant scientific information with 26 scientific organizations. The umbrella organization, the International Council for Science (ICSU) provides another valuable network for important collaboration with sister Unions.

The IAU has received close to 920 nominations for new Individual Memberships, which should ensure a vital growth of the activities of the Union. The same positive trend is observed in the three applications for National Membership this year.

Proceedings from IAU meetings constitute an essential record and updated source of information on new results and progress over the wide field of astronomy. The very timely publication of the IAU Proceedings in the recent past is to be primarily credited to the excellent work of the Assistant General Secretary, Karel van der Hucht.

This IAU Information Bulletin will be the last in my triennium as General Secretary and I wish to extend my heartfelt thanks to my fellow Officers and EC Members, as well as to the Division Presidents for their invaluable, generous support and assistance in my work for the Union. I am equally grateful to many other colleagues for their always positive responses when I called on them for advice and help. Last, but not least, the IAU Secretariat could not function without the untiring and dedicated work of my two associates, Monique Léger-Orine, whose extensive knowledge and insight in all aspects of the operation of the Union have been indispensable for my work in these past three years, and Claire Vidonne who in particular has brought the database and website up to the present standard. My sincere thanks go to both of them.

I look forward to seeing many of you in Prague.

Oddbjørn Engvold, IAU General Secretary, June 23, 2006.

1. MAIN DEADLINES AND EVENTS

FOR COMPLETE AND UPDATED INFORMATION

please see: http://www.iau.org/DATES_AND_DEADLINES.141.0.html

2006

- Aug 14-25 XXVIth IAU General Assembly (*Prague, Czech Republic*)
- Aug 14-17 **IAUS 235**: Galaxy Evolution across the Hubble Time (*Czech Rep.*)
- Aug 14-18 **IAUS 236**: Near Earth Objects, our Celestial Neighbors: Opportunity and Risk (*Czech Rep.*)
- Aug 14-18 **IAUS 237**: Triggered Star Formation in a Turbulent ISM (*Czech Rep.*)
- Aug 21-25 **IAUS 238**: Black Holes: from Stars to Galaxies - across the Range of Masses (*Czech Rep.*)
- Aug 21-25 **IAUS 239**: Convection in Astrophysics (*Czech Rep.*)
- Aug 22-25 **IAUS 240**: Binary Stars as Critical Tools and Tests in Contemporary Astrophysics (*Czech Rep.*)
- Nov 1 Contributions for Highlights of Astronomy Vol. 14 due at IAU Secretariat
- Nov 1 Contributions for Transactions XXVIB due at IAU due at IAU Secretariat
- Dec 10-14 **IAUS 241**: Stellar Populations as Building Blocks of Galaxies (*Spain*)

2007

- Mar 12-16 **IAUS 242**: Astrophysical Masers and their Environments (*Australia*)
- May 21-25 **IAUS 243**: Star-Disk Interaction in Young Stars (*France*)
- June 25-29 **IAUS 244**: Dark Galaxies and Lost Baryons (*UK*)
- July 16-20 **IAUS 245**: Formation and Evolution of Galaxy Bulges (*UK*)
- Sept 5-9 **IAUS 246**: Dynamical Evolution of Dense Stellar Systems (*Italy*)
- Sept 17-22 **IAUS 247**: Waves and Oscillations in the Solar Atmosphere: Heating and Magneto-Seismology (*Venezuela*)
- Oct 15-19 **IAUS 248**: A Giant Step: from Milli- to Micro-arcsecond Astrometry (*China*)
- Oct 22-26 **IAUS 249**: Exoplanets: Detection, Formation and Dynamics (*China*)
- Nov 26-30 **LARIM 2007**: 12th Latin-American Regional IAU Meeting (*Venezuela*)
- Dec 10-14 **IAUS 250**: Massive Stars as Cosmic Engines (*HI, USA*)

2008

- Aug 1-4 **APRIM 2008**: 10th Asian-Pacific Regional IAU Meeting (*China*)

2009

- Aug 2-15 XXVIIth IAU General Assembly (*Rio de Janeiro, Brazil*)

2. SCIENTIFIC MEETINGS

Proposals for IAU Symposia and co-sponsored meetings planned for 2008 must reach the Assistant General Secretary via the IAU Proposal website:

<http://solarphys.uio.no/IAU/>

before December 1, 2006!

Letters-of-Intent should be submitted to the Assistant General Secretary

before September 15, 2006!

See: http://www.iau.org/Submission_of_Proposals.113.0.html

2.1. FUTURE SYMPOSIA

IAUS 235 **Galaxy Evolution across the Hubble Time**

From Monday 14 through Thursday 17 August 2006, Prague, Czech Rep.

<http://astro.cas.cz/iaus235/>

Coordinating Division/Commissions: VIII, 28, 33, 34 & 47

Scientific Organizing Committee:

Roberto Abraham (Canada), Ronald J. Buta (USA), Catherine J. Cesarsky (IAU, Ex Officio), Françoise Combes (France, Co-Chair), Mark Dickinson (USA), Michael A. Dopita (Australia), Marijn Franx (The Netherlands), Kenneth C. Freeman (Australia), Uta Fritze-von Alvensleben (Germany), Masataka Uragita (Japan), Gerhard Hensler (Austria), Simon J. Lilly (Switzerland), Jan Palouš (Czech Republic, Co-Chair), Ian Smail (UK) & Roberto J. Terlevich (Mexico).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- Morphology and dynamics of galaxies
- Gas-stars cycle
- Stellar populations
- Galaxies in clusters
- Galaxies in early universe

Editors: Françoise Combes (Chief Editor) & Jan Palouš.

Contact address: Jan Palouš

Astronomical Institute, Academy of Sciences of the Czech Republic, Bocni II 1401, CZ - 41 31 Prague 4, Czech Republic

Tel.: +420 267 103 038 - Fax: +420 272 769 023 - E-mail: palous@ig.cas.cz

IAUS 236 **Near Earth Objects, our Celestial Neighbors: Opportunity and Risk**

From Monday 14 through Friday 18 August 2006, Prague, Czech Rep.

<http://adams.dm.unipi.it/iaus236/>

Coordinating Division/Commissions: III, 15, 16, 20 & 22

Scientific Organizing Committee:

Guy J. Consolmagno (Vatican City State), Syuzo Sobe (Japan), Zoran Knezevic (Serbia & Montenegro), Ingrid Mann (Germany), Andrea Milani (Italy, Co-Chair), David Morrison (USA), Petr Pravec (Czech Republic), Hans Rickman (IAU, Ex Officio), Hans Scholl (France), Timothy B. Spahr (USA), Edward F. Tedesco (USA), Giovanni B. Valsecchi (Italy, Co-Chair), David Vokrouhlicky (Czech Republic, Co-Chair), Iwan P. Williams (UK), Donald K. Yeomans (USA) & Jin Zhu (China, Nanjing).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- Origin and dynamics of NEOs
- Physical properties of NEOs, including internal structure
- Next generation surveys and synergies with other astronomical communities
- Spacecraft exploration of NEOs
- Interactions of NEOs with planets: cratering, meteors and meteorites
- The astronomical aspects of the impact hazard

Editors: Andrea Milani (Chief Editor) & Giovanni B. Valsecchi, and David Vokrouhlicky.

Contact address: Giovanni B. Valsecchi

INAF-IASF, via Fosso del Cavaliere 100, IT - 0133 Roma, Italy

Tel.: +39 06 4993 4446 - Fax: +39 06 2066 0188 - E-mail: giovanni@rm.iasf.cnr.it

IAUS 237 Triggered Star Formation in a Turbulent ISM

From Monday 14 through Friday 18 August 2006, Prague, Czech Rep.

<http://astro.cas.cz/iaus237/>

Coordinating Division/Commissions: VI, 34 & 37

Scientific Organizing Committee:

Philippe André (France), Leo Blitz (USA), Bruce G. Elmegreen (USA, Co-Chair), Yasuo Fukui (Japan), Pavel Kroupa (Germany), Sally Oey (USA), Eve C. Ostriker (USA), Jan Palouš (Czech Republic, Co-Chair), Monica Rubio (Chile), Steve Shore (Italy), Guillermo Tenorio-Tagle (Mexico), Anthony P. Whitworth (UK), Robert E. Williams (IAU, Ex Officio) & Hans Zinnecker (Germany).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- General ISM related to cloud formation
- GMC cores and small-scale triggering
- Clusters, associations, and large-scale triggering
- Galaxy-wide triggering

Editors: Bruce G. Elmegreen (Chief Editor) & Jan Palouš.

Contact address: Jan Palouš

Astronomical Institute, Academy of Sciences of the Czech Republic, Bocni II 1401, CZ - 41 31 Prague 4, Czech Republic

Tel.: +420 267 103 038 - Fax: +420 272 769 023 - E-mail: palous@ig.cas.cz

IAUS 238 Black Holes: from Stars to Galaxies - across the Range of Masses

From Monday 21 through Friday 25 August 2006, Prague, Czech Rep.

<http://astro.cas.cz/iaus238/index.php?section=1>

Coordinating Division/Commissions: XI, 28, 30, 40 & 42

Scientific Organizing Committee:

Roger D. Blandford (USA), Annalisa Celotti (Italy), Bozena Czerny (Poland), Philip A. Charles (South Africa), Andrew C. Fabian (UK), Reinhard Genzel (Germany), Günther Hasinger (Germany), Vladimir Karas (Czech Republic, Co-Chair), Kazuo Makishima (Japan), Giorgio Matt (Italy, Co-Chair), Felix Mirabel (Chile), Kenneth A. Pounds (IAU, Ex Officio), Martin J. Rees (UK), Jean H. Swank (USA), Tahir Yaqoob (USA) & Shuang Nan Zhang (China, Nanjing).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- Observational evidence for stellar-mass black holes. Formation and evolution of stellar-mass black holes, connection with gamma-ray bursts
- Matter accretion and ejection in stellar mass black holes. Observational evidence for intermediate mass black holes: ultraluminous X-ray sources
- The Galactic Center. Observational evidence for supermassive black holes, connection with the host galaxies
- Formation and evolution of supermassive black holes, black hole binary merging. Matter accretion and ejection in supermassive black holes
- Common phenomenology in black holes of all masses. Strong-gravity effects: spectra, timing, polarimetry

Editors: Vladimir Karas (Chief Editor) & Giorgio Matt.

Contact address: Vladimir Karas

Astronomical Institute, Academy of Sciences of the Czech Republic, Bocni II/1401, CZ - 141 31 Prague, Czech Republic

Tel.: +420 267 103 045 - Fax: +420 272 769 023 - E-mail: vladimir.karas@cuni.cz

IAUS 239 Convection in Astrophysics

From Monday 21 through Friday 25 August 2006, Prague, Czech Rep.

<http://www.astro.keele.ac.uk/iaus239/>

Coordinating Division/Commissions: IV, 10, 12, 16, 27, 29, 34, 35, 36 & 37

Scientific Organizing Committee:

Beatriz Barbuy (IAU, Ex Officio), Kwing Lam Chan (China, Nanjing), Francesca D'Antona (Italy), Thomas L. Duvall (USA), Andrew P. Ingersoll (USA), Jiri Kubat (Czech Republic), Friedrich Kupka (Germany, Co-Chair), Aake Nordlund (Denmark), Ian W. Roxburgh (UK, Co-Chair), Barry Smalley (UK), Sami K. Solanki (Germany), Juri Toomre (USA) & Sylvie D. Vauclair (France).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- Modelling and simulation techniques of convection
- Observing convection
- Convection and radiation
- Convection in planets and brown dwarfs
- Convection and nuclear reactions
- Convective mixing
- Convection, pulsation and mass loss
- Convection, rotation and discs
- MHD convection and dynamos

Editors: Friedrich Kupka (Chief Editor), Ian W. Roxburgh & Kwing Lam Chan.

Contact address: Ian W. Roxburgh

School of Mathematical Sciences, Queen Mary, University of London, Mile End Road, GB - London E1 4NS, UK

Tel.: +44 20 7882 5441 - Fax: +44 20 8983 3522 - E-mail: i.w.roxburgh@qmul.ac.uk

IAUS 240 Binary Stars as Critical Tools and Tests in Contemporary Astrophysics

From Tuesday 22 through Friday 25 August 2006, Prague, Czech Rep.

<http://ad.usno.navy.mil/iaus240/>

Coordinating Division/Commissions: IV, 26 & 42

Scientific Organizing Committee:

Christine Allen (Mexico), Dmitrij V. Bisikalo (Russian Federation), John Davis (Australia), Edward F. Guinan (USA, Co-Chair), Petr Harmanec (Czech Republic, Co-Chair), William I. Hartkopf (USA, Co-Chair), Patricia Lampens (Belgium), Josefina F. Ling (Spain), Katalin Olah (Hungary), Terry D. Oswalt (USA), Kresimir Pavlovski (Croatia), Geraldine J. Peters (USA), Slavek M. Rucinski (Canada), Colin D. Scarfe (Canada), Brian Warner (IAU, Ex Officio), Marek Wolf (Czech Republic) & Hans Zinnecker (Germany).

Local Organizing Committee Chair: Cyril Ron.

Preliminary Scientific Programme Topics:

- New observing and reduction techniques: long-baseline interferometry; precision photometry & spectroscopy; automatic searches; amateurs; light-curve modelling; simultaneous solutions
- Improving calibrations of distance, Teff: new results from classical methods; theories of rotating stars and binary formation; nomenclature
- Binaries as critical tests: tidal potential of Galaxy; theories of gravitation and mass exchange; asteroseismology for pulsating stars in binaries; influence of binarity on stellar activity
- Confronting needs of observers and theoreticians, dealing with flood of data expected from planned surveys; the Virtual Observatory

Editors: William I. Hartkopf (Chief Editor), Petr Harmanec & Edward F. Guinan.

Contact address: William I. Hartkopf

U.S. Naval Observatory, 3450 Massachusetts Avenue, US - Washington DC 20392, USA
Tel.: +1 202 762 1478 - Fax: +1 202 762 1516 - E-mail: wih@usno.navy.mil

IAUS 241 Stellar Populations as Building Blocks of Galaxies

December 10-14, 2006, La Palma, Canary Islands, Spain

<http://www.iac.es/proyect/iaus241/pages/index.php>

Coordinating Divisions: VII & VIII

Supporting Commissions: 28, 33, 35, 36, 37, 45 & 47

Scientific Organizing Committee:

Antonio Aparicio (Spain), Nobuo Arimoto (Japan), Beatriz Barbuy (Brazil, Ex Officio), Alessandro Bressan (Italy), Gustavo A. Bruzual (Venezuela), Roger L. Davies (UK), G. Javier Gorgas (Spain), Timothy M. Heckman (USA), Guinevere Kauffmann (Germany), Reynier F. Peletier (The Netherlands, Co-Chair), James A. Rose (USA), Donald A. Vandenberg (Canada) & Alexandre Vazdekis (Spain, Co-Chair).

Local Organizing Committee Chair: Alexandre Vazdekis (Spain)

Principal Topics:

- Stellar tracks and isochrones
- Theoretical and empirical stellar spectral libraries
- Simple and complex stellar population models and their calibration
- Stellar populations in our Galaxy
- Resolved stellar populations
- Unresolved stellar populations in nearby early-type galaxies
- Unresolved stellar populations in nearby late-type galaxies
- Stellar Populations at higher redshifts
- New observing facilities and the network, and their implication for stellar populations

Editors: Alexandre Vazdekis & Reynier F. Peletier.

Contact address: Alexandre Vazdekis,
 Instituto de Astrofísica de Canarias, Via Lactea s/n, ES 38200 La Laguna, Tenerife, Spain
 Tel: +34 922 605 264 - Fax: +34 922 605 210 - E-mail: vazdekis@ll.iac.es

IAUS 242 Astrophysical Masers and their Environments

March 12-16, 2007, Alice Springs, Australia

<http://www.atnf.csiro.au/research/masermeeing/>

Scientific Organizing Committee:

Willem A. Baan (Netherlands), Jessica M. Chapman (Co-Chair, Australia), Philip J. Diamond (Co-Chair, UK), Moshe Elitzur (USA), Elizabeth M.L. Humphreys (USA), Hiroshi Imai (Japan), Athol Kemball (USA), Karl M. Menten (Germany), Luis F. Rodriguez (Mexico), Vyacheslav I. Slysh (Russia) & Ji Yang (China).

Local Organizing Committee Chair: James L. Caswell (ATNF), Jessica M. Chapman (ATNF, Chair), Vicki Drazenovic (ATNF), Anne Green (SP, IoA, US) & Mark J. Wardle (DP, MU).

Principal Topics:

- Maser theory.
- Polarisation and magnetic fields.
- Surveys.
- Masers and star formation.
- Stellar masers, circumstellar winds and supernovae remnants.
- Masers, galactic structure and the Galactic Centre.
- Masers in AGN environments.
- Masers and starburst activity.
- Diagnostics and interpretation in extragalactic environments.
- New mm and sub-mm masers and future facilities.

Editors: Jessica M. Chapman (Chief Editor) & Willem A. Baan.

Contact address: Jessica M. Chapman - E-mail: Jessica.Chapman@csiro.au

IAUS 243 Star-Disk Interaction in Young Stars

May 21-25, 2007, Grenoble, France

URL to be determined

Scientific Organizing Committee:

Silvia H.P. Alencar (Brasil), Immo Appenzeller (Germany), Francesca Bacciotti (Italy), Gibor B. Basri (USA), Jérôme Bouvier (Chair, France), Silvie Cabrit (France), Suzan Edwards (USA), Moira M. Jardine (UK), Rony Keppens (Netherlands), Oded Regev (Israel), Bo Reipurth (USA) & Kazunari Shibata (Japan).

Local Organizing Committee Chair: Agnes Blanc, Françoise Bouillet, Jérôme Bouvier (Chair), Jonathan Ferreira & Thierry Montmerle (all at LAOG).

Principal Topics:

- A historical perspective.
- Magnetic field origin and topology.
- The magnetospheric accretion flow.
- Jet launching and outflows.
- Angular momentum transport.
- Varying the boundary conditions.
- Summary and concluding remarks.

Editors: Jérôme Bouvier (CE) & Immo Appenzeller.

Contact address: Jérôme Bouvier - E-mail: Jerome.Bouvier@obs.ujf-grenoble.fr

IAUS 244 Dark Galaxies and Lost Baryons*June 25-29, 2007, Cardiff, United Kingdom*<http://www.astro.cf.ac.uk/iau244/>**Scientific Organizing Committee:**

Jonathan I. Davies (co-Chair, UK), Carlos S. Frenk (UK), Kenneth C. Freeman (co-Chair, Australia), Riccardo Giovanelli (USA), Christopher D. Impey (USA), Igor D. Karachentsev (Russia), Pierre Magain (Belgium), Ben Moore (Switzerland), Jessica L. Rosenberg (USA), Sabina Sabatini (Italy), Paolo Salucci (Italy), Joop Schaye (Netherlands) & Simon D.M. White (Germany).

Local Organizing Committee Chair: Luca Cortese, Jonathan I. Davies (Chair), Michael D. Disney & Sue Hayward-Lewis (all at Cardiff University).

Principal Topics:

- Theoretical predictions that dark galaxies exist.
- Theoretical predictions about the nature of dark galaxies.
- Quasar absorption features in relation to dark galaxies.
- Weak lensing and its implications for dark galaxies.
- X-ray observations and dark masses.
- Disturbed galaxies interpreting the data.
- The SZ effect and the detection of optically dark structures.
- 21cm surveys - implications for gas rich optically dark galaxies.
- The numbers and properties of dark matter dominated dwarf galaxies.
- Using and developing new instruments and techniques.

Editors: Jonathan I. Davies (Chief Editor) & Michael D. Disney.

Contact address: Jonathan I. Davies - E-mail: jid@astro.cf.ac.uk

IAUS 245 Formation and Evolution of Galaxy Bulges*July 16-20, 2007, Oxford, United Kingdom*<http://www-astro.physics.ox.ac.uk/~iaus245/>**Scientific Organizing Committee:**

Nobuo Arimoto (Japan), Evangelia Athanassoula (France), Beatriz Barbuy (Brasil), Martin Bureau (Chair, UK), Sandra M. Faber (USA), Kenneth C. Freeman (Australia), Guinevere Kauffmann (Germany), Dante Minniti (Chile), Douglas O. Richstone (U.S.A.), Rachel S. Somerville (Germany), Matthias Steinmetz (Germany) & Sukyoung K. Yi (South Korea).

Local Organizing Committee Chair: Martin Bureau (Chair), Vanessa Ferraro-Wood, Davor Krajnovic, Millicent L. Maier & Marc Sarzi.

Principal Topics:

- Classical bulge models.
- Bulges and hierarchical formation.
- Bulges and secular evolution.
- Star formation and gaseous flows.
- Black holes and nuclear activity.
- Integrated stellar populations.
- Resolved stellar populations.
- Surveys.
- High-z universe.

Editors: Martin Bureau (CE), Evangelia Athanassoula & Beatriz Barbuy.

Contact address: Martin Bureau - E-mail: bureau@astro.ox.ac.uk

IAUS 246 Dynamical Evolution of Dense Stellar Systems*Sept. 5-9, 2007, Capri, Italy*<http://www.physics.drexel.edu/~iaus246/>**Scientific Organizing Committee:**

Sverre J. Aarseth (UK), Holger Baumgardt (Germany), Christian M. Boily (France), Miroslav Giersz (Poland), Douglas C. Heggie (UK), Vassiliki Kalogera (USA), Junichiro Makino (Japan), Rosemary A. Mardling (Australia), Stephen L.W. McMillan (USA), Georges Meylan (Switzerland), Seppo Mikkola (Finland), Simon F. Portegies Zwart (Netherlands), Alison I. Sills (Canada), Rainer Spurzem (Germany), Michele Trenti (USA) & Enrico Vesperini (Chair, USA).

Local Organizing Committee Chair: Elena Ferraro, Anna Pecoraro (Chair) & Michele Trenti.

Principal Topics:

- Stellar cluster formation and early evolution.
- Properties of cluster stellar populations.
- Stellar clusters in starburst galaxies and mergers.
- Few-body stellar systems.
- Open clusters.
- Globular clusters.
- Galactic and extra-galactic globular cluster systems.
- Exotic stellar populations in dense stellar systems.
- Interplay between binary dynamics and evolution and stellar cluster dynamical evolution.
- Computational aspects of simulations of dense stellar systems

Editors: Enrico Vesperini (Chief Editor), Miroslav Giersz & Alison I. Sills.

Contact address: Enrico Vesperini - E-mail: vesperin@physics.drexel.edu

IAUS 247 Waves and Oscillations in the Solar Atmosphere: Heating and Magneto-Seismology*Sept. 17-22, 2007, Porlamar, Isla de Margarita, Venezuela*<http://www.iaus247.org/>**Scientific Organizing Committee:**

Jose L. Ballester (Spain), Arnold O. Benz (Switzerland), Paul S. Cally (Australia), Robert Erdélyi (co-Chair, UK), S. Sirajul Hasan (India), Cristina H. Mandrini (Argentina), John T. Mariska (USA), César A. Mendoza-Briceño (co-Chair, Venezuela), Fabio Reale (Italy), Robert J. Rutten (Netherlands), Sami K. Solanki (Germany), Aleksander V. Stepanov (Russia), Takashi Sakurai (Japan), Brigitte Schmieder (France), Alan M. Title (USA) & TongJian Wang (China).

Local Organizing Committee Chair: N.Y. Añez, S. Miguel H. Ibanez, César A. Mendoza-Briceño (Chair), Abtonio Parravano & Leonardo Di G. Sigalotti.

Principal Topics:

- Waves and oscillations in solar and stellar interior (dynamo waves).
- Coupling of global solar and stellar motions into the lower atmosphere.
- Seismology of the lower solar atmosphere.
- Seismology of open vs. closed magnetic structures.
- Prominence oscillations.
- Dynamical processes and coupling in the magnetic atmosphere of stars.
- Global solar and stellar atmospheric/coronal seismology.

- Fundamental physical processes in coronae: waves, turbulence, reconnection.
- Waves and instabilities in atmospheric plasmas.
- Wave-particle interactions in magnetized plasmas .

Editors: César A. Mendoza-Briceño (Chief Editor) & Robert Erdélyi.

Contact address: César A. Mendoza-Briceño - E-mail: cesar@ula.ve

IAUS 248 A Giant Step: from Milli- to Micro-arcsecond Astrometry

Oct. 15-19, 2007, Shanghai, PR. China

<http://www.shao.ac.cn/iaus248/>

Scientific Organizing Committee:

Alexandre H. Andrei (Brasil), Pieter T. de Zeeuw (Netherlands), Dafydd W. Evans (UK), Wenjing Jin (China Nanjing), Sergei A. Klioner (Germany), Irina I. Kumkova (Russia), Ralf Launhardt (Germany), Chunlin Lu (China Nanjing), François Mignard (France), Michael A.C. Perryman (Co-Chair, Netherlands), Imants Platais (USA), Mark J. Reid (USA), David Schade (Canada), Magda Stavinschi (Romania), Catherine Turon (France) & Shuhua Ye (Co-Chair, China Nanjing).

Local Organizing Committee Chair: Li Chen, Guoxuan Dong, Cheng Huang (Chair), Chengli Huang & Jinling Li (all at SHAO).

Principal Topics:

- Hipparcos Catalogue: 10th anniversary and its legacy.
- Post-Hipparcos advances in ground-based astrometry.
- Second-generation astrometric satellites: The Gaia and SIM missions.
- Astrometry with interferometers (optical & radio).
- Celestial reference frames at multi-wavelengths.
- Towards a reference frame at the microarcsecond level.
- Astrometry in the age of large surveys and virtual observatories.
- Galactic structure and evolution.
- Astrometric education and outreach.

Editors: Wenjing Jin (Chief Editor), Imants Platais & Michael A.C. Perryman.

Contact address: Imants Platais - E-mail: imants@pha.jhu.edu

IAUS 249 Exoplanets: Detection, Formation and Dynamics

Oct. 22-26, 2007, Suzhou, PR. China

<http://iaus249.nju.edu.cn/>

Scientific Organizing Committee:

France Allard (France), Pierre Barge (France), Alan P. Boss (USA), Rudolf Dvorak (Austria), Sylvio Ferraz Mello (Co-Chair, Brazil), John D. Hadjidemetriou (Greece), Douglas N.C. Lin (USA), Renu Malhotra (USA), Geoffrey W. Marcy (USA), Michel Mayor (Switzerland), Victoria S. Meadows (USA), Karen Meech (USA), Andrea Milani (Italy), Richard P. Nelson (UK), Penny Sackett (Australia) & Yi-Sui Sun (Co-Chair, China Nanjing).

Local Organizing Committee Chair: Ji-Lin Zhou (Chair), Li-Yong Zhou & Yong-Luo Cao.

Principal Topics:

- Terrestrial planet detection (CoRoT and Kepler).
- Transits of planets across the stars.
- Reduction techniques. Determination of orbits and physical parameters.
- Physical modelisation (atmosphere, structure, evolution).
- Star-Hot Jupiter interactions (tides, evaporation, magnetic fields).

- Planetary formation Disk-planet interaction: theory and simulations.
- Planetary migration;
- Dynamics of multi-planet systems.
- Planets in binary stars.
- Planetary habitability.

Editors: Sylvio Ferraz Mello (Chief Editor), Yi-Sui Sun & Ji-Lin Zhou.

Contact address: Ji-Lin Zhou - E-mail: zhoujl@nju.edu.cn

IAUS 250 Massive Stars as Cosmic Engines
Dec. 10-14, 2007, Kauai, Hawaii, USA
<http://www.ifa.hawaii.edu/iau250>

Scientific Organizing Committee:

Paul A. Crowther (Co-Chair, UK), Michael A. Dopita (Australia), Johan P.U. Fynbo (Denmark), Eva K. Grebel (Switzerland), Timothy M. Heckman (USA), Deidre A. Hunter (USA), Gloria Koenigsberger (Mexico), Rolf-Peter Kudritzki (USA), Norbert Langer (Netherlands), Andrew I. MacFadyen (USA), Francesca Matteucci (Italy), Georges Meynet (Switzerland), Anthony J.F. Moffat (Canada), Ken'ichi Nomoto (Japan), Max Pettini (UK) & Joachim Puls (Co-Chair, Germany).

Local Organizing Committee Chair: Fabio Bresolin (Chair), Laurie Clark, Miguel A. Urbaneja, Karl Uyebara & Karen Teramuna (all at IfA, Hawaii, USA).

Principal Topics:

- New observational studies of massive stars.
- New theoretical atmospheric developments.
- Massive star evolution of single & binary stars: rotation, magnetic fields, Z-dependence.
- Colliding wind effects in massive binaries, dust formation.
- Interactions with ISM; wind-blown bubbles, feedback and superwinds; stars versus AGN.
- Core-collapse SN, GRBs, and their host galaxies at high redshift.
- Massive stellar populations in the Local Group & beyond, super star clusters, starbursts.
- Nucleosynthesis in massive stars and their role in the early chemical evolution of galaxies.
- Formation of Population III stars, re-ionization and early enrichment.
- Stellar populations in high-z galaxies selected at optical, IR and sub-mm wavelengths.

Editors: Fabio Bresolin (Chief Editor), Paul A. Crowther & Joachim Puls.

Contact address: Paul A. Crowther - E-mail: Paul.Crowther@sheffield.ac.uk

2.2. FUTURE JOINT DISCUSSIONS

JD 01 Cosmic Particle Acceleration - from Solar System to AGNs
Wednesday 16 (full day) & Thursday 17 (a.m.) Aug. 2006, Prague, Czech Rep.
<http://wave.asu.cas.cz/iaujd01/>

Coordinating Divisions: II & XI

Participating Divisions/Commissions: VIII, X & XI/10, 12, 28, 40, 44 & 49

Scientific Organizing Committee:

Jonathan Aarons (USA), Roger D. Blandford (USA), John C. Brown (UK, Co-Chair), Mary K. Hudson (USA), Marian Karlicky (Czech Republic, Co-Chair), John Kirk (Germany, Co-Chair), Robert P. Lin (USA), Donald B. Melrose (Australia), Kazunari Shibata (Japan), Nicole Vilmer (France) & Alan M. Watson (UK).

Preliminary Scientific Programme Topics:

- Overview of cosmic particle acceleration
- Production and role of solar energetic solar particles
- Acceleration in planetary magnetospheres and the ISM
- Pulsars/pulsar winds and supernova remnants
- Active stars and colliding stellar winds
- Gamma-ray bursters
- AGNs, jets and clusters of galaxies
- Theory of acceleration mechanisms and their diagnostics
- Particle in cell and other simulations

Editors: Marian Karlicky (Chief Editor) & John C. Brown.

Contact address: John C. Brown

Physics and Astronomy Department, Kelvin Building, University of Glasgow,
GB - Glasgow G12 8QQ, UK

Tel.: +44 141 330 5182 - Fax: +44 141 330 5183 - E-mail: john@astro.gla.ac.uk

JD 02 On the Present and Future of Pulsar Astronomy

Wednesday 16 (full day) & Thursday 17 (a.m.) Aug. 2006, Prague, Czech Rep.

http://www.mpe.mpg.de/IAU_JD02

Coordinating Division: XI

Participating Commissions: 31, 33, 40 & 44

Scientific Organizing Committee:

Jonathan Arons (USA), Werner Becker (Germany, Co-Chair), Kwong Sang Cheng (China, Nanjing), Ocker C. de Jager (South Africa), Janusz A. Gil (Poland, Co-Chair), Nobuyuki Kawai (Japan), Michael Kramer (UK), H. Jan M.E. Kuijpers (The Netherlands), Roger W. Romani (USA), Bronislaw Rudak (Poland), David J. Thompson (USA) & Vladimir V. Usov (Israel/Russian Federation).

Preliminary Scientific Programme Topics:

- Global properties and internal structure on neutron stars
- Structure and evolution of neutron star magnetic field
- The evolution of rotation-powered pulsars
- Pulsar electrodynamics
- Non-thermal emission from pulsars
- Collective plasma processes
- Thermal emission from neutron stars and anomalous X-ray pulsars
- General relativity effects and gravitational waves from binary and fast spinning pulsars

Editors: Werner Becker (Chief Editor), Janusz A. Gil & Bronislaw Rudak.

Contact address: Werner Becker

Max-Planck-Institut für Extraterrestrische Physik, Giessenbachstrasse 1, DE - 85741
Garching, Germany

Tel.: +49 89 30000 3588 - Fax: +49 89 30000 3569 - E-mail: web@mpe.mpg.de

JD 03 Solar Active Regions and 3D Magnetic Structure

Wednesday 16 (full day) & Thursday 17 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://www.csun.edu/physicsandastronomy/IAUJD3/>

Coordinating Division: II

Participating Commission: 49

Scientific Organizing Committee:

Subramanian Ananthakrishnan (India), Thomas E. Berger (USA), John M. Davis (USA), Oddbjorn Engvold (Norway), Dale E. Gary (USA), Axel Hofmann (Germany), Hongqi Zhong (China, Nanjing), Donald B. Melrose (Australia), Debi Prasad Choudhary (USA, Co-Chair), Eric R. Priest (UK), Robert J. Rutten (The Netherlands), Takashi Sakurai (Japan), Brigitte Schmieder (France), Michal Sobotka (Czech Republic, Co-Chair), Sami K. Solanki (Germany) & Jan O. Stenflo (Switzerland).

Preliminary Scientific Programme Topics:

- Photospheric magnetic field: observation and inversion techniques
- Chromospheric magnetic field: observation and inversion techniques
- Coronal magnetic field: observation and inversion techniques
- Magnetic field below the photosphere
- Extrapolation of the photospheric field for modelling of 3-D magnetic field structure
- Small-scale structures and magnetic field
- Coronal and chromospheric heating theory
- Eruptions, filaments, CMEs, and space weather implications
- Instrumentation and measuring techniques

Editors: Debi Prasad Choudhary (Chief Editor) & Michal Sobotka.

Contact address: Debi Prasad Choudhary

Department of Physics and Astronomy, California State University, Northridge,
18111 Nordhoff Street, US - Northridge, CA 91330-8268, USA

Tel.: +1 818 677 2775 - Fax: +1 818 677 3234 - E-mail: DebiPrasad.Choudhary@csun.edu

JD 04 The Ultraviolet Universe: Stars from Birth to Death

dedicated to Prof. Cornelis de Jager (85), pioneer in UV studies

Wednesday 16 (full day) & Thursday 17 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://www.mat.ucm.es/~aig/investigacion/IAUPrague/index.htm>

Coordinating Division: XI

Participating Commissions: 14, 30 & 36

Scientific Organizing Committee:

Thomas R. Ayres (USA), Martin A. Barstow (UK), William P. Blair (USA), Domitilla de Martino (Italy), Michael A. Dopita (Australia), Ana I. Gómez de Castro (Spain), Jiri Grygar (Czech Republic), John B. Hutchings (Canada), Carole Jordan (UK), Yoji Kondo (USA), Elia M. Leibowitz (Israel), Andrzej Niedzielski (Poland), Boris M. Shustov (Russian Federation), Jorge Sahade (Argentina), Willem Wamsteker (†) (Spain, Chair) & Zhen-Ru Wang (China, Nanjing).

Preliminary Scientific Programme Topics:

- Newly formed stars and their direct violent environment
- Mass loss phases in massive stars
- Different levels of interaction in binary stars
- The white dwarf sequence
- Differences and similarities in classical novae
- Different ways to become a supernova

Editors: Ana I. Gómez de Castro (Chief Editor) & Willem Wamsteker (†).

Contact address: Ana I. Gómez de Castro

Instituto de Astronomía y Geodesia (CSIC-UCM)

Fac. de CC Matemáticas Universidad Complutense de Madrid, ES - 28040 Madrid

Tel.: +34 91 39445 78 - Fax: +34 91 394615 - E-mail: aig@mat.ucm.es

JD 05 Calibrating the Top of the Stellar M-L Relation*Wednesday 16 (full day) Aug. 2006, Prague, Czech Rep.*<http://www.stsci.edu/science/starburst/Prague/>**Coordinating Division:** IV**Participating Divisions/Commissions:** VI & VIII/26, 28, 29, 34, 35, 36, 37, 42, 45 & 47**Scientific Organizing Committee:**

Norbert Langer (The Netherlands), Claus Leitherer (USA, Chair), Anthony F.J. Moffat (Canada), Stanley P. Owocki (USA), and Joachim Puls (Germany).

Preliminary Scientific Programme Topics:

- Empirical mass determinations of the most massive single stars
- Models for massive stars on and off the main sequence
- Stability near the Eddington limit with and without rotation
- Comparisons of atmospheric and evolutionary masses
- Efforts to detect, monitor and analyze massive binaries
- Mass and energy return to the interstellar medium from massive stars
- Extrapolation to the first generation of stars with ultra-high mass
- The role of hot massive stars during the epoch of re-ionization in the early universe

Editors: Claus Leitherer (Chief Editor), Anthony F.J. Moffat & Joachim Puls.**Contact address:** Claus LeithererSpace Telescope Science Institute, 3700 San Martin Drive,
US - Baltimore, MD 21218, USA

Tel.: +1 410 338 4425 - Fax: +1 410 338 4767 - E-mail: leitherer@stsci.edu

JD 06 Neutron Stars and Black Holes in Star Clusters*Thursday 17 (p.m.) & Friday 18 (full day) Aug. 2006, Prague, Czech Rep.*<http://www.astro.northwestern.edu/IAUJD6/>**Coordinating Division:** XI**Participating Commissions:** 26, 28, 30, 31, 33, 35, 37, 40, 42 & 44**Scientific Organizing Committee:**

Tomasz Bulik (Poland), V. Jorge Casares (Spain), Philip A. Charles (South Africa), Monica Colpi (Italy), Robert P. Fender (UK), Pranab Ghosh (India), Ericourgoulhon (France), Jonathan E. Grindlay (USA), Victoria M. Kaspi (Canada), Andrew R. King (UK), Richard N. Manchester (Australia), I. Felix Mirabel (Chile), Frederic A. Rasio (USA, Co-Chair), Hans Ritter (Germany), Masara Shibata (Japan) & Ingrid H. Stairs (Canada, Co-Chair).

Preliminary Scientific Programme Topics:

- X-ray binaries in the Milky Way and other galaxies
- Radio and X-ray millisecond pulsars
- X-ray transients
- Optical reprocessing and fast variability
- X-ray sources and radio pulsars in globular clusters
- Compact objects in massive binaries and starbursts
- Connection to gamma-ray bursts
- Modelling of accretion disks
- Quasi-periodic oscillations
- Ultra-luminous X-ray sources
- Formation and evolution of massive binaries
- Supernovae and kicks in binaries
- Compact binaries as sources of gravitational waves
- Relativistic binaries and tests of general relativity

Editors: Frederic A. Rasio (Chief Editor), Victoria M. Kaspi & Robert P. Fender.

Contact address: Frederic A. Rasio

Department of Physics and Astronomy, Northwestern University, 2145 Sheridan Road,
US - Evanston, IL 60208, USA

Tel.: +1 847 467 3419 - Fax: +1 847 467 6857 - E-mail: rasio@northwestern.edu

JD 07 The Universe at $z > 6$

Thursday 17 (p.m.) & Friday 18 (full day) Aug. 2006, Prague, Czech Rep.

<http://obswww.unige.ch/~schaerer/jd07/>

Coordinating Division: VIII

Participating Commissions: 28 & 47

Scientific Organizing Committee:

Andrea Ferrara (Italy, Co-Chair), Esther M. Hu (USA), Matthew D. Lehnert (Germany),
Roser D. Pello (France), Daniel Schaerer (Switzerland, Co-Chair) & Yoshiaki Taniguchi
(Japan).

Preliminary Scientific Programme Topics:

- Galaxies at $z > 6$
- Interstellar and intergalactic medium at $z > 6$
- Quasars at $z > 6$
- Observational approaches to $z > 6$: deep fields, search techniques, use of gravitational lensing
- Gamma-ray bursts to probe the early Universe
- Star formation in the early Universe, simulations
- Feedback mechanisms at high- z at various scales, galactic and IGM including galaxy outflows
- Early chemical evolution of the Universe
- Cosmic re-ionization, simulations, observational constraints

Editors: Daniel Schaerer (Chief Editor) & Andrea Ferrara.

Contact address: Daniel Schaerer

Observatoire de Genève, 51, Ch. des Maillettes, CH - 1290 Sauverny, Switzerland

Tel.: +41 22 379 2454 - Fax: +41 22 379 2205 - E-mail: daniel.schaerer@obs.unige.ch

JD 08 Solar and Stellar Activity Cycles

Thursday 17 (p.m.) & Friday 18 (full day) Aug. 2006, Prague, Czech Rep.

http://www.aip.de/iau2006_jd8/

Coordinating Division: II

Participating Division/Commissions: IV/10, 12, 29, 35, 36 & 49

Scientific Organizing Committee:

Pavel Ambroz (Czech Republic), Martin Asplund (Australia), Svetlana V. Berdyugina
(Switzerland), Andrew C. Cameron (UK), Dainis Dravins (Sweden), Lidia van Driel-
Gesztelyi (France), Cheng Fang (China, Nanjing), Alexander Kosovichev (USA, Co-Chair),
John D. Landstreet (Canada), Valentin I. Makarov (Russian Federation), Gautier Mathys
(Chile), Roberto Pallavicini (Italy), Fernando Moreno-Insertis (Spain), Takashi Sakurai
(Japan), Klaus G. Strassmeier (Germany, Co-Chair) & P. Venkatakrisnan (India).

Preliminary Scientific Programme Topics:

- Observations and models of the physical processes responsible for stellar magnetic cycles
- Advances in understanding the dynamo mechanism, generation, transport and dissipation of magnetic fields

- Recent results of observations of almost a complete 11-year solar cycle from SOHO and ground-based observatories
- Multi-wavelength observations of the solar-type activity on other stars
- Compare and contrast properties of stellar and solar cycles with theories
- Planning for future observations and modelling

Editors: Klaus G. Strassmeier (Chief Editor) & Alexander Kosovichev.

Contact address: Alexander Kosovichev

Wilcox Solar Observatory, Building HEPL, Room A204, 445 Via Palou,
US - Stanford, CA 94305-4085, USA

Tel.: +1 650 723 7667 - Fax: +1 650 725 2333 - E-mail: sasha@quake.stanford.edu

JD 09 Supernovae: One Millennium after SN1006

Thursday 17 (p.m.) & Friday 18 (full day) Aug. 2006, Prague, Czech Rep.

http://community.middlebury.edu/~iau_jd09/

Coordinating Division/Working Group: VIII, WG Supernovae

Participating Divisions/Commissions: VI & XII/34, 41 & 47

Scientific Organizing Committee:

Gloria Dubner (Argentina), Claes Fransson (Sweden), Wolfgang Hillebrandt (Germany, Co-Chair), Katsuji Koyama (Japan), Ken'ichi Nomoto (Japan), Robert Petre (USA), Pilar Ruiz-Lapuente (Spain), Brian P. Schmidt (Australia, Co-Chair), Virginia L. Trimble (USA), J. Graig Wheeler (USA) & P. Frank Winkler (USA, Co-Chair).

Preliminary Scientific Programme Topics:

- The history of SN 1006 and other historical supernovae
- SNR 1006 and other young supernova remnants
- The physics of supernovae: observations and theory
- Cosmological applications of supernovae

Editors: P. Frank Winkler (Chief Editor), Wolfgang Hillebrandt & Brian P. Schmidt.

Contact address: P. Frank Winkler

Department of Physics, Middlebury College, Bicentennial Way,
US - Middlebury, VT 05753, USA

Tel.: +1 802 443 5426 - Fax: +1 802 443 2072 - E-mail: winkler@middlebury.edu

JD 10 Progress in Planetary Exploration Missions

Monday 21 (full day) & Tuesday 22 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://www.oal.ul.pt/~roos/IAU06/index.html>

Coordinating Commission: 16

Participating Division/Commission: III/15

Scientific Organizing Committee:

Michael F. A'Hearn (USA), Carlo Blanco (Italy), Guy J. Consolmagno (Vatican City State, Chair) Régis Courtin (France), Dale P. Cruikshank (USA), Walter F. Huebner (USA), Petrus M.M. Jenniskens (The Netherlands), H. Uwe Keller (Germany), Leonid V. Ksanfomality (Russian Federation), Mikhail Ya. Marov (Russian Federation), Melissa A. McGrath (USA), Keth S. Noll (USA), Maarten C. Roos-Serote (Portugal), Edward F. Tedesco (USA) & Iwan P. Williams (UK).

Preliminary Scientific Programme Summary:

Results of planetary spacecraft missions that have returned results in the last triennium will be summarized by the project scientists and other principal investigators of the

missions. The new results will be related to highlight the body of work in Planetary Sciences, which has proceeded in parallel with the spacecraft missions Spirit/Opportunity, Mars Express, Cassini, Stardust, Genesis.

Editors: Guy J. Consolmagno (Chief Editor) & Melissa A. McGrath.

Contact address: Guy J. Consolmagno

Specola Vaticana, VA - 00120 Vatican City State

Tel.: +39 06 6988 5122 - Fax: +39 06 6988 4671 - E-mail: gjc@specola.va

JD 11 Pre-Solar Grains as Astrophysical Tools

Monday 21 (full day) Aug. 2006, Prague, Czech Rep.

<http://www.maths.monash.edu.au/~johnl/wgarg/JD.shtml>

Coordinating Division: IV

Participating Division/Commissions: VI/22, 34 & 35

Scientific Organizing Committee:

Anja C. Andersen (Denmark, Co-Chair), W. David Arnett (USA), Martin Asplund (Australia), Suchitra C. Balachandran (USA), John P. Bradley (USA), Mounib El Eid (Lebanon), Roberto Gallino (Italy), Sunetra Giridhar (India), John C. Lattanzio (Australia, Co-Chair), Jacobus Th. van Loon (UK), Nami Mowlavi (Switzerland), Takashi Yoshida (Japan) & Ernst Zinner (USA).

Preliminary Scientific Programme Topics:

- Introduction and Overview: Overview: Opportunities from Grains; Grain Measurements in Space and in the Lab; Abundances in Grains, Stars and the Galaxy
- Forming Grains: Condensation of Grains; Mass-loss: the role of Grains; Life Story of a Grain: Formation to the Lab
- Measuring Grains: Recent results on IR Grain Spectroscopy; The Nano-SIMS; The RIMS
- Solar grains and nucleosynthesis: Pre-solar grains and novae; Pre-solar grains and supernovae; Pre-solar grains and AGB stars; Overview: Agenda for the Future

Editors: Anja C. Andersen (Chief Editor) & John C. Lattanzio.

Contact address: John C. Lattanzio

School of Mathematical Sciences, Building 28, Monash University,

AU - Melbourne, VIC 3800, Australia

Tel.: +61 3 9905 4428 - Fax: +61 3 9905 4403 - E-mail: j.lattanzio@sci.monash.edu.au

JD 12 Long Wavelength Astrophysics

Monday 21 (full day) Aug. 2006, Prague, Czech Rep.

<http://lwa.nrl.navy.mil/IAU/>

Coordinating Division: X

Participating Divisions/Commissions: VI, VII & VIII/9 & 40

Scientific Organizing Committee:

Franklin Briggs (Australia), Gloria Dubner (Argentina), Luigina Feretti (Italy), Jacqueline N. Hewitt (USA), Namir E. Kassim (USA, Co-Chair), T. Joseph W. Lazio (USA, Co-Chair), A.V. Megn (Ukraine), Alexander A. Konovalenko (Ukraine), Alain Lecacheux (France), A. Pramesh Rao (India) & Huub J.A. Röttgering (The Netherlands).

Preliminary Scientific Programme Summary:

The greatest discoveries in astronomy have accompanied technological innovations that have opened new windows of the electromagnetic spectrum. One of the last poorly explored regions lies between 100 MHz and the ionospheric cutoff at 10 MHz. In the past,

variations in the ionosphere have limited ground-based instruments to small (< 5 km) apertures and hence relatively coarse angular resolution and sensitivity. Ever-increasing computing power combined with new calibration and imaging techniques make it possible to overcome this restriction. New instruments such as the Long Wavelength Array (LWA) in the southwest US and the Low Frequency Array (LOFAR) in The Netherlands are being proposed for development. As a preparation for these new instruments and as a result of new technologies, many exciting scientific results have been obtained at long wavelengths (< 1 GHz) in the past several years and continue to be generated, even with the very limited capabilities presently available. Since the last extensive discussion of long wavelength astrophysics was held in 2004 September, and that was a relatively local meeting, it is a good time to bring the world community of interested astronomers together to discuss new results and plan for advanced instruments to fully open this poorly studied wavelength range.

Editors: Namir E. Kassim (Chief Editor) & T. Joseph W. Lazio.

Contact address: T. Joseph W. Lazio

Naval Research Laboratory, Code 7231, 4555 Overlook Avenue, SW,
US - Washington, DC 20375-5351, USA

Tel.: +1 202 404 6329 - Fax: +1 202 404 8894 - E-mail: joseph.lazio@nrl.navy.mil

JD 13 Exploiting Large Surveys for Galactic Astronomy

Tuesday 22 (full day) & Wednesday 23 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://clavius.as.arizona.edu/vo/jd13/>

Coordinating Division: IV

Participating Divisions/Commissions: I, V, VII & IX /8, 25, 27, 30, 33, 35 & 45

Scientific Organizing Committee:

Christopher Corbally (Vatican City State/USA, Co-Chair), Coryn Bailer-Jones (Germany, Co-Chair), Sunetra Giridhar (India, Co-Chair), Laurent Eyer (Switzerland), Thomas H. Lloyd-Evans (UK), Dante Minniti (Chile), Heather Morrison (USA), Birgitta Nordström (Denmark), Imants Platais (USA) & Patricia A. Whitelock (South Africa).

Preliminary Scientific Programme Topics:

- Review of major surveys: photometric, spectroscopic, radial velocity, astrometric, variable star
- Impact of these data on models of the formation and evolution of the Galaxy and its substructures
- Limitations of surveys: photometric accuracy, spectroscopic discrimination, calibration, parameterization, population synthesis
- Future strategies for space- and ground-based surveys
- Contributed proposals for optimizing surveys and discussion

Editors: Christopher Corbally (Chief Editor), Coryn Bailer-Jones & Sunetra Giridhar.

Contact address: Christopher Corbally

Vatican Observatory, University of Arizona, 933 North Cherry Avenue,
US - Tucson, AZ 85721, USA

Tel.: +1 520 621 3225 - Fax: +1 520 621 1532 - E-mail: corbally@as.arizona.edu

JD 14 Modelling Dense Stellar Systems

Tuesday 22 (p.m.) & Wednesday 23 (full day) Aug. 2006, Prague, Czech Rep.

<http://www.astro.northwestern.edu/IAUJD14>

Coordinating Division: VII

Participating Commissions: 26, 33, 35 & 37

Scientific Organizing Committee:

Christian M. Boily (France), Melvyn B. Davies (Sweden), Douglas C. Heggie (UK), Piet Hut (USA), Ralf S. Klessen (Germany), Junichiro Makino (Japan), Rosemary A. Mardling (Australia), Stephen L.W. McMillan (USA), Georges Meylan (Switzerland), Giampaolo Piotto (Italy), Simon F. Portegies Zwart (The Netherlands), Alison I. Sills (Canada, Co-Chair), Rainer Spurzem (Germany) & Ladislav Subr (Czech Republic, Co-Chair).

Preliminary Scientific Programme Topics:

- Current observations of star clusters and galactic nuclei
- Modelling local interactions, e.g., direct stellar collisions, perturbed binary evolution
- Modelling global interactions, e.g., whole cluster models, star formation in crowded regions
- The most complete models of dense stellar systems, including feedback between stellar evolution, stellar dynamics, and stellar hydrodynamics, and confrontation with observed systems

Editors: Alison I. Sills (Chief Editor), Ladislav Subr & Simon F. Portegies Zwart.

Contact address: Ladislav Subr

Astronomical Institute, Charles, University, V Holesovickach 2,

CZ - 180 00 Praha, Czech Republic

Tel.: +420 221 912 575 - Fax: +420 221 912 577 - E-mail: subr@sirrah.troja.mff.cuni.cz

JD 15 New Cosmology Results from the Spitzer Space Telescope

Tuesday 22 (full day) & Wednesday 23 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://ssc.spitzer.caltech.edu/mtgs/iau2006-JD15/>

Coordinating Division: XI

Participating Commissions: 28, 44 & 47

Scientific Organizing Committee:

J. Bergeron (France), C. Cesarsky (France), V. Charmandaris (Greece), T. Courvoisier (Switzerland), G. Helou (USA, Chair), M. Im (Republic of South Korea), L. Infante (Chile), R. Ivison (UK), H. Okuda (Japan), Jan Palouš (Czech Republic), C. Steidel (USA), and R. Sunyaev (Russian Federation).

Preliminary Scientific Programme Topics:

- Overview of Spitzer Space Telescope mission and related science
- The Modern Universe, $z \sim 0$ out to $z \sim 1$
 - Local Universe results (e.g. SINGS), wide-area surveys (e.g. FLS, SWIRE),
- The Middle Universe, $z \sim 1$ to 3
 - Deep mid- and far-IR surveys, e.g. Groth Strip, GOODS, S-COSMOS
- The Distant Universe, $z \sim 3$ to 5 and beyond
 - Ultra-deep surveys (GOODS, GTO), lensing surveys
 - The Earliest Denizens of the Universe, $z > 5$
- Integrated phenomenological and theoretical perspectives
 - Galaxy populations from various wavelength surveys, their evolution and their inter-relations
 - Cosmic star formation history, galaxy merger history
 - Consistency with metallicity data, cosmic background data, other constraints
 - AGN versus starburst fraction and its evolution
 - Local analogs to early universe objects, e.g., low metallicity, emergent starbursts
 - ULIRGs and their role in the big picture, e.g., duty cycle, evolutionary paths

Editors: George Helou (Chief Editor) & TBD.

Contact address: George Helou

IPAC 100-22, California Institute of Technology, 770 South Wilson Avenue,

US - Pasadena, CA 91125, USA

Tel.: +1 626 395 1900 - Fax: +1 626 397 7018 - E-mail: helou@ipac.caltech.edu

JD 16 **Nomenclature, Precession and New Models in Fundamental Astronomy**
Tuesday 22 (full day) & Wednesday 23 (a.m.) Aug. 2006, Prague, Czech Rep.
<http://synte.obspm.fr/iauJD16/>

Coordinating Division: I**Participating Division/Commissions:** X/4, 5, 7, 8, 19, 31 & 40**Scientific Organizing Committee:**

Nicole Capitaine (France, Co-Chair), Aleksander Brzezinski (Poland), Mark R. Calabretta (Australia), Veronique Dehant (Belgium), Toshio Fukushima (Japan), James L. Hilton (USA, Co-Chair), Kenneth J. Johnston (USA), Irina I. Kumkova (Russian Federation), Andrea Milani (Italy), Robert A. Nelson (USA), Kenneth P. Seidelmann (USA), Michael Soffel (Germany) & Jan Vondrák (Czech Republic, Co-Chair).

Preliminary Scientific Programme Topics:

- State of the art in both the nomenclature in fundamental astronomy and in high-accuracy models for precession, the ecliptic and other astrometric models for reducing high-accuracy observations
- New definitions, methods, high-accuracy models and newly proposed terminology and their implementation
- Scientific applications of high-accuracy astrometric observations, models and accurate realizations of reference systems for ephemerides, celestial mechanics, astrometry, Earth rotation, time and radio-astronomy
- Work and recommendations of the Division I Working Groups on Nomenclature for Fundamental astronomy, Precession and the Ecliptic and Relativity for Celestial mechanics, astrometry and metrology
- The most recent astrometric models for precession, nutation, light deflection, relativistic transformation to the Solar system and the Earth, etc.
- Science with high-accuracy astronomy

Editors: Nicole Capitaine (Chief Editor), Jan Vondrák & James L. Hilton.**Contact address:** Nicole Capitaine

Observatoire de Paris, SYRTE, 61, avenue de l'Observatoire, FR - 75014 Paris, France

Tel.: +33 1 4051 2231 - Fax: +33 1 4051 2291 - E-mail: nicole.capitaine@obspm.fr

JD 17 **Highlights of Recent Progress in the Seismology of the Sun & Sun-like Stars**
Wednesday 23 (full day) Aug. 2006, Prague, Czech Rep.
<http://www.soho18.org/JD17/>

Coordinating Division: II**Participating Divisions/Commissions:** IV & V/12, 27 & 35**Scientific Organizing Committee:**

Bo N. Andersen (Norway), H.M. Antia (India), Annie Baglin (France), Paul S. Cally (Australia), Fabien Carrier (Switzerland), Hans Kjeldsen (Denmark), John W. Leibacher (USA, Co-Chair), Jaymie Matthews (Canada), Maria P. Di Mauro (Italy), Mario J.P.F.G Monteiro (Portugal), Pere L. Pallé (Spain), Philip H. Scherrer (USA), Michael J. Thompson (UK, Co-Chair), Sylvaine Turck-Chieze (France), Hiromoto Shibahashi (Japan) & Yousef Zhugzda (Russian Federation).

Preliminary Scientific Programme Summary:

The seismology and physics of localized structures beneath the surface of the Sun takes on a special significance with the completion of a solar cycle of high quality observations in 2006, at the same time that the testing of models of stellar structure moves into high gear with the extension of deep probes from the Sun to other solar-like stars and other multi-mode pulsators. This JD will provide the forum for practitioners in these various fields to synthesize and summarize the current state of these two closely related and rapidly developing fields.

Editors: John W. Leibacher (Chief Editor) & Michael J. Thompson.

Contact address: John W. Leibacher

National Solar Observatory, P O Box 26732, US - Tucson, AZ 85726, USA

Tel.: +1 520 318 8305 - Fax: +1 520 318 8400 - E-mail: jleibacher@nso.edu

2.3. FUTURE SPECIAL SESSIONS

SPS 01 **Astronomical Facilities of the Next Decade**

Wednesday 16 (full day) & Thursday 17 (a.m.) Aug. 2006, Prague, Czech Rep.

<http://www.ivoa.net/twiki/bin/view/IVOA/VoscienceIAUPrague>

Coordinating WG: Future Large Scale Facilities

Participating Division: IX

Scientific Organizing Committee:

Xiangqun Cui (China, Nanjing), Raymond G. Carlberg (Canada), Michel Dennefeld (France), Ewine F. van Dishoeck (The Netherlands), Gerard F. Gilmore (UK, Co-Chair), Günther Hasinger (Germany), Masanori Iye (Japan), Peter Quinn (Germany), Richard T. Schilizzi (The Netherlands, Co-Chair), Peter Stockman (USA), Nicholas A. Walton (UK) & Patricia A. Whitelock (South Africa).

Preliminary Scientific Programme Summary:

Astronomy will soon have available an exciting and powerful range of new facilities. This Discussion will present the status and scientific programme of those facilities which are under development and/or definition, and so (probably) will become real in the near future to the medium term. The programme will provide an overview of those projects which will become naturally complementary facilities in both implementation date and wavelength (or non-electromagnetic) coverage, and in which there is currently significant effort and new developments. Space missions of direct relevance include JWST, Herschel, Planck, Gaia and LISA, and planned far-IR and high-energy missions; Ground-based facilities include the newest 8-10m telescopes (SALT, GTC, LAMOST); ALMA; large survey facilities (VST, VISTA, PANSTARRS, LSST); Radio facilities, especially SKA; Extremely Large optical/infrared telescopes; Cosmic Ray facilities (HESS, PierreAuger); neutrino astronomy (IceCube, km³net); and the International Virtual Observatory.

Editors: Gerard F. Gilmore (Chief Editor) & Richard T. Schilizzi.

Contact address: Gerard F. Gilmore

Institute of Astronomy, University of Cambridge, Madingley Road,

GB - Cambridge CB3 0HA, UK

Tel.: +44 122 333 7548 - Fax: +44 122 333 7523 - E-mail: gil@ast.cam.ac.uk

SPS 02 Innovation in Teaching/Learning Astronomy Methods
Thursday 17 & Friday 18 (full days) Aug. 2006, Prague, Czech Rep.
<http://www.communicatingastronomy.org/innovation2006>

Coordinating Division: XII

Participating Commissions: 41 & 46

Scientific Organizing Committee:

Michael A. Bennett (USA), Julieta Fierro (Mexico), Michèle Gerbaldi (France), Petr Heinzel (Czech Republic), Bambang Hidayat (Indonesia), Syuzo Isobe (Japan), Edvard V. Kononovich (Russian Federation), Margarita Metaxa (Greece), Jay M. Pasachoff (USA, Co-Chair), John R. Percy (Canada), Rosa M. Ros (Spain, Co-Chair), Magdalena Stavinschi (Romania) & Richard M. West (Germany).

Preliminary Scientific Programme Summary:

Astronomy educates people, and gives very important opportunities to young people: In astronomy, we find a special relationship between science and technology, both the technology used in obtaining observations and the technology used in teaching. Astronomy also leads to an understanding of the history and the nature of science, distinguishing science from pseudo sciences. Since astronomy attracts young people to education in science and technology, we should struggle to make maximum advantage of the situation. But in many countries, astronomy is not in the standard curricula and teachers do not receive adequate education and support. Still, many scientific and educational societies and government agencies have produced materials and educational resources in astronomy for all educational levels. The aims of the proposed Special Session will be to contribute to the implementation of these recommendations, introducing some innovative points of view in teaching/learning methods. Astronomers from all countries developed or developing will be equally interested.

Preliminary Scientific Programme Topics

- General strategies for effective teaching
- Effective Use of Instruction and Information Technology
- Learning Science by Doing Science
- Astronomy Worldwide Education
- Practical issues connected with the implementation of the 2003 IAU Resolution

Editors: Jay M. Pasachoff (Chief Editor) & Rosa M. Ros.

Contact address: Rosa M. Ros

Department of Applied Mathematics 4, Universitat Politècnica de Catalunya,
 Jordi Girona 1-3, modul 3, ES - 08034 Barcelona, Spain

Tel.: +34 93 413 7073 - Fax: +34 93 413 7007 - E-mail: ros@mat.upc.es

**SPS 03 The Virtual Observatory in Action: New Science, New Technology, and
 Next Generation Facilities**
SPS 3a: Thursday 17 (p.m.) & Friday 18 (full day) Aug. 2006, Prague, Czech Rep.
SPS 3b: Monday 21 (full day) & Tuesday 22 (a.m.) Aug. 2006, Prague, Czech Rep.
<http://www.ivoa.net/pub/VOScienceIAUPrague>

Coordinating Division: XII

Participating Division/Commissions: XI/40 & 44

Participating WG: Future Large Scale Facilities

Scientific Organizing Committee:

Giuseppina Fabbiano (USA), Françoise Genova (France), Robert J. Hanisch (USA), Ajit K. Kembhavi (India), Andrew Lawrence (UK, Chair), Oleg Yu. Malkov (Russian Federation), Atilla Meszaros (Czech Republic), Raymond P. Norris (Australia), Masatoshi Ohishi (Japan), Peter Quinn (Germany), Isabelle F. Scholl (France), Enrique Solano (Spain), Alexander Szalay (USA), Nicholas A. Walton (UK), Roy Williams (USA) & Yongheng Zhao (China, Nanjing).

Preliminary Scientific Programme Topics

- Cosmology and galactic structure with very large databases
- Rare object multi-wavelength searches: the universe at 10 pc and $z = 10$
- Serendipitous discoveries with the VO the Sun-Earth connection
- Population analysis: stars, galaxies, quasars, solar system bodies
- Data mining with SDSS, WFCAM, VISTA and the LSST
- Data management for ALMA, ELT, GAIA, and SKA
- Technical progress on the VO infrastructure
- New data mining algorithms
- The semantic web and the future VO

Editors: Nicholas A. Walton (Chief Editor), Andrew Lawrence & Roy Williams.

Contact address: Andrew Lawrence

Institute for Astronomy, University of Edinburgh, Royal Observatory, Blackford Hill,
GB - Edinburgh, EH9 3HJ, UK

Tel.: +44 131 6688 346 - Fax: +44 131 6688 416 - E-mail: al@roe.ac.uk

SPS 04 Open for "Hot Topics"

SPS 4a: Friday 18 (p.m.) Aug. 2006, Prague, Czech Rep.

SPS 4b: Tuesday 22 (a.m.) Aug. 2006, Prague, Czech Rep.

One of the innovations in GAXXVI in Prague is the Special Sessions on Hot Topics (SPS4).

The process of selecting a scientific program while satisfying the many IAU stakeholders, combined with the complexity of organizing major meetings such as the IAU GA, means that the process had to start long before the meeting. Scientific symposia were proposed in mid 2004 – more than 2 years ago. This is longer than the time scale for some of the most exciting developments in our field so we have kept two time slots for presentations of new results which do not fit into the scientific symposia or joint discussions already scheduled, or which have occurred too recently to have been included in these programmes.

We have allocated two 3hour slots (see above). Presentations of new results will be possible in these sessions for "hot topics" which will be selected between now and the beginning of the meeting in Prague. Selection of contributions will be based on recommendations to me by the relevant Division Presidents. Obviously it will not be possible to include these in the printed program or abstract book but we shall be able to continually update the GA www page and make announcements in the GA Newspaper.

The format will be oral presentations with maximum length of 30min. Team presentations, panel discussions or even debates will be considered. A few slots will be reserved for allocation during the meeting so if it's really new and exciting be prepared – we may be able to get it in.

If you have something to contribute contact the relevant Division President.

Ron Ekers, President, IAU, June 2006.

SPS 05 Astronomy for Developing World

Monday 21 & Tuesday 22 (full days) Aug. 2006, Prague, Czech Rep.

<http://sps5.sao.ac.za>

Coordinating Division: XII

Participating Division/Commission: II/46

Scientific Organizing Committee:

Abdul A. Alsabti (UK/Iraq), Julieta Fierro (Mexico), Michèle Gerbaldi (France), Hans J. Haubold (Germany), John B. Hearnshaw (New Zealand, Chair), Barrie W. Jones (UK), Ajit K. Kembhavi (India), Hugo Levato (Argentina), Peter Martinez (South Africa), Jayant V. Narlikar (India), Jay M. Pasachoff (USA), John R. Percy (Canada), Boonrucksar Soonthornthum (Thailand), A. Peter Willmore (UK) & James C. White (USA).

Preliminary Scientific Programme Topics

- Coordination of the work of IAU Commission 46 with that of other organizations, such as UNOOSA, COSPAR and IHY2007
- Exploring the feasibility of a Third World Astronomy Institute (or Network) and encourage the participation of young astronomers from developing countries
- Training of astronomers
- Public outreach programmes in developing countries
- The virtual observatory in developing countries
- Progress of astronomy in various regions of the world
- The work of IAU Commission 46 through its various Program Groups

Editors: John B. Hearnshaw (Chief Editor) & Peter Martinez.

Contact address: John B. Hearnshaw

Department of Physics and Astronomy, University of Canterbury, Private Bag 4800, NZ - Christchurch 8020 New Zealand

Tel.: +64 3 364 2533 - Fax: +64 3 364 2469 - E-mail: john.hearnshaw@canterbury.ac.nz

SPS 06 Astronomical Data Management

Tuesday 22 (p.m.) Aug. 2006, Prague, Czech Rep.

<http://www.ivoa.net/twiki/bin/view/Astrodata/SpecialSession>

Coordinating Division: XII

Participating Commission: 5

Scientific Organizing Committee:

Giuseppina Fabbiano (USA), Françoise Genova (France), Robert J. Hanisch (USA), Ajit K. Kembhavi (India), Andrew Lawrence (UK), Oleg Yu. Malkov (Russian Federation), Atilla Meszaros (Czech Republic), Raymond P. Norris (Australia, Chair), Masatoshi Ohishi (Japan), Peter Quinn (Germany), Isabelle F. Scholl (France), Enrique Solano (Spain), Alexander Szalay (USA), Nicholas A. Walton (UK), Roy Williams (USA) & Yongheng Zhao (China, Nanjing).

Preliminary Scientific Programme Topics

- Alignment with OECD, ICSU, and IAU recommendations regarding open access to astronomical data.
- Recognition of the importance of considering data processing, storage, and management needs from the conception stage of a new project.
- Provisions to ensure equitable access to data and information by scientists in developing countries.
- Development of better processes to enable data in journals to be integrated in to data centres and the VO.

- Development of protocols for the long-term curation, preservation, and migration (between formats or media) of data, including validation and quality flagging.
- Recognition of the special role of the data centres, which are currently in the vanguard of data management activities, and of the VO, which will be the key access mechanism to astronomical data in the future, and which will be able to provide the tools and infrastructure for facilitating the framework.
- Close collaboration with colleagues in ICSU, CODATA, and other branches of science, especially when developing strategies to prevent excessive legal or IP ownership constraints being imposed on astronomical data.

Editor: Raymond P. Norris.

Contact address: Raymond P. Norris

CSIRO/ATNF, PO Box 76, AU - Epping NSW 710, Australia

Tel.: +61 2 9372 4416 - Fax: +61 2 9372 4310 - E-mail: Ray.Norris@csiro.au

SPS 07 Astronomy in Antarctica

Tuesday 22 (p.m.) & Wednesday 23 (full day) Aug. 2006, Prague, Czech Rep.

<http://www.phys.unsw.edu.au/jacara/iau>

Coordinating Division: IX

Participating Division/Commission: X/40

Scientific Organizing Committee:

Michael G. Burton (Australia, Chair), Maurizio Busso (Italy), Eric Fossat (France), James P. Lloyd (USA), Mark J. McCaughrean (UK), Christian Spiering (Germany) & Shoji Tori (Japan).

Preliminary Scientific Programme Summary

Antarctica offers a range of remarkable conditions that provide a superlative environment for the conduct of astronomy from the visible to the millimetre wavebands, as well as for high energy astrophysics experiments. This meeting will discuss the current state of Antarctic astronomy, especially following the winter-time opening of a new high plateau facility, Concordia Station at Dome C.

The status of facilities at the South Pole and Concordia will be reviewed, and new science results presented. This will be followed by a discussion on future plans for facilities. Finally, the meeting will provide an opportunity for discussing plans for the International Polar Year in 2007, including a possible site testing expedition to Dome A, the summit of the Antarctic plateau.

Editor: Michael G. Burton.

Contact address: Michael G. Burton

School of Physics, University of New South Wales, AU - Sydney, NSW 2052, Australia

Tel.: +61 2 9385 5618 - Fax: +61 2 9385 6060 - E-mail: m.burton@unsw.edu.au

2.4. FUTURE REGIONAL MEETINGS

12th Latin-American Regional IAU Meeting (LARIM-2007)

November 26-30, 2006, Isla de Margarita, Venezuela

URL to be determined

Scientific Organizing Committee:

Hernán Muriel (OAC, Argentina), Patricia B. Tissera (IAFE, Argentina), Claudia Mendes (USP, Brasil), Basilio X. Santiago (UFRGS, Brasil), Marcio Catelan (PUC, Chile), René A. Méndez (UCh, Chile), Leticia Carigi (UNAM, México), Esperanza Carrasco (INAOE,

México) Alberto D. Bolatto (Uruguay), Tabaré Gallardo (UM, Uruguay), Manuel A. Bautista (IVIC, Venezuela), César Briceño (CIDA, Venezuela, Co-Chair), Gustavo A. Bruzual (CIDA, Venezuela, Chair), & César Mendoza (ULA, Venezuela).

Local Organizing Committee Chair: Carlos Abad (CIDA, Mérida), Gladis Magris C. (CIDA, Mérida), Alejandra Melfo (ULA, Mérida), Jeanette Stock (LUZ, Maracaibo) & Anna Katherina Vivas (CIDA, Mérida, Chair).

Principal Topics:

- Stellar astronomy (theory and observations).
- Galactic astronomy (including galactic structure, astrometry, ISM).
- Solar and solar system physics.
- Star formation in different environments. Extra solar planets.
- Stellar evolution. Stellar remnants.
- Galaxies in the Local Group and nearby galaxies.
- Distant galaxies and cosmology. Numerical simulations of universe.
- Radio astronomy and space astronomy (IR, UV, X-ray, Gamma).
- Instrumentation and telescopes. New projects (regional and abroad).

Editors: Gustavo A. Bruzual, Gladis Magris C. & Leticia Carigi.

Contact address: Gustavo A. Bruzual - E-mail: bruzual@cida.ve

10th Asian-Pacific Regional IAU Meeting (APRIM-2008)

August 1-4 2008, Kunming, Yunnan, P.R. China

URL to be determined later

Scientific Organizing Committee:

Brian J. Boyle (Australia), Gregory G. Fahlman (Canada), Russ Taylor (Canada), Leonardo Bronfman (Chile), Yan Li (China Nanjing), Ding-Qiang Su (China Nanjing, Chair), Shuang Nan Zhang (China Nanjing), Sun Kwok (China Taipei), Jayant Vishnu Narlikar (India), Hakim L. Malasan (Indonesia), Premana W. Premadi (Indonesia), Satoru Ikeuchi (Japan), Norio Kaifu (Japan), Shin Mineshige (Japan), John B. Hearnshaw (New Zealand), Iraida S. Kim (Russia), Hyung Mok Lee (South Korea), & John P. Huchra (USA).

Local Organizing Committee Chair: Weiqun Gan (PMO), Xiaoyu Hong (SAO), Yan Li, YAO Chair), Jiangcheng Wang (YAO), & Yi Wang (NAO).

Principal Topics:

- Solar Physics, Sun-Earth Interaction, Planetary and Exo-planetary: Physics and Dynamics.
- Stellar Evolution, Activities, Binaries.
- Compact Objects, AGNs and High-Energy Astrophysics.
- The Milky Way, Interstellar Matter and Star Formation.
- Galaxies and Cosmology.
- Astronomical Instrumentation and Techniques.
- Astrometry, Virtual Observatory and others.
- Education and Popularization of Astronomy.

Editors: Shuang Nan Zhang (Chief Editor), Yan Li & Qing Juan Yu.

Contact address: Jiancheng Wang - E-mail: jcwang@public.km.yn.cn

2.5. POST MEETING REPORTS 2005 COLLOQUIA, SYMPOSIA, REGIONAL MEETINGS

Please see: http://www.iau.org/Post_Meeting_Reports.326.0.html

3. EXECUTIVE COMMITTEE MATTERS

3.1. 81ST MEETING OF THE EXECUTIVE COMMITTEE

There will be four sessions of Executive Committee Meeting 81 held on, respectively:

- Sunday August 1309:00-17:30
- Monday August 1409:00-12:30
- Tuesday August 1509:00-10:30
- Wednesday, August 23 . . .09:00-12:30

The first session will be held at the Academy of Sciences, and the following three sessions will take place at the venue of the General Assembly in the Prague Conference Center. The current IAU Division Presidents will be present in the session on Sunday August 13 from 11:00 to 17:30 and in the entire session on Monday, August 14.

3.2. 82ND MEETING OF THE EXECUTIVE COMMITTEE

The 82nd EC Meeting will be held at the Prague Conference Center, on

- Friday August 2509:00-17.30

The incoming Division Presidents are invited to this meeting of the EC.

3.3. TRIENNIAL EVALUATION OF COMMISSIONS AND WORKING GROUPS

In accordance with the *IAU Working Rules, Terms of Reference for Commissions*, § 43, the IAU Divisions are asked to review the need for changes in their associated Commissions, Working Groups and other scientific bodies.

The cited Terms of Reference require that: "At least six months before each General Assembly, the Organizing Committee shall submit to the parent Division(s) a report on its activities during the past triennium, with its recommendation as to whether the Commission should be continued for another three years, or merged with one or more other Commissions, or discontinued. If a continuation is proposed, a plan for the activities of the next triennium should be presented, including those of any Working Groups which the Commission proposes to maintain during that period."

The IAU Statutes, § 3, state furthermore that "A Commission is initially created for a period of six years. The parent Division may recommend its continuation for additional periods of three years at a time, if sufficient justification for its continued activity is presented to the Division and the Executive Committee." Since no currently existing Commission is less than six years old the reviewing will start already in 2006.

Detailed reports that have been received from all 12 IAU Divisions will be the basis for decisions about the structure of Commissions and Working Groups in 2006-2009. These decisions will be made by the IAU Executive Committee (EC) at its meeting Sunday August 13, 2006, in Prague. The IAU Division Presidents are invited to take part in this meeting of the EC.

Oddbjørn Engvold, IAU General Secretary, March 2006.

3.4. EC WORKING GROUP ON "NEAR EARTH OBJECTS"

In order for the IAU President and General Secretary to respond quickly to media and the public, as well as to governmental and international organizations, on incidents of Near-Earth asteroids and comets, it has been a long felt need for an advisory body that would be available on short notice. There is currently an Inter-Division I-III Working Group on

Near-Earth Objects with relevant expertise on these matters. The EC is informed that the two Divisions plan to discontinue this large WG whose activities may be equally well conducted under the Commission 20 of Division III.

In consultation with the two Divisions it is concluded that the advisory service to the IAU Officers and Secretariat would be secured much better by a small, 5-7 members, WG organized directly under the EC.

Based on the advice and help of the IAU Division III it is suggested to that the EC establish a WGNEO with, tentatively, the following Terms of Reference:

Terms of Reference

Near-Earth asteroids and comets (NEOs) and their potential to collide with the Earth are a topic of interest to the media, the public, and a variety of governmental and international organizations. The IAU has been, and will continue to be, the primary international scientific organization with expertise on this subject. Accordingly, the Executive Committee of the IAU establishes an EC Working Group on NEOs to advise the IAU leaders on the status of NEOs and their impact potential.

The EC WGNEO consists of 5-7 individuals with expertise concerning the nature of NEOs, their orbits, and appropriate ways to communicate information concerning the NEO impact hazard to the public and the media. The members of this group are appointed by the EC for three-year terms. As required in formulating its advice and recommendations, the EC WGNEO will consult with the broader community of experts on NEOs and related fields.

The EC WGNEO has three primary functions:

1. They provide timely information and advice to the IAU General Secretary and the IAU President whenever objects meriting particular attention are detected or questions are raised by the media.
2. They are authorized by the IAU Executive Committee to respond to the questions from the media on behalf of the IAU on topics related to NEOs and the impact hazard, and to provide input on NEO-related statements posted on the IAU website.
3. They shall keep the two IAU Officers informed on the general status of NEO surveys, orbital projections and other topics related to the impact hazard issue, including next-generation surveys and access to telescopes for follow-up observations.

The preparation of the new EC WGNEO and its terms of reference have been led by David Morrison, current Chair of the IAU Inter-Division WG on NEOs. The members of this WG will be appointed by the Executive Committee at its meeting in conjunction with the XXVIth IAU General Assembly.

Oddbjørn Engvold, IAU General Secretary, March 2006.

3.5. 2009: THE YEAR OF ASTRONOMY

At its General Assembly in Sydney in July 2003, the International Astronomical Union voted unanimously a resolution asking that the year 2009 be declared the Year of Astronomy by the United Nations, in recognition of the significance of Galileo's introduction of the astronomical telescope in 1609. The proclamation was subsequently prepared by the "2009: Year of Astronomy" Working Group, and forwarded to the UNESCO Executive Board. We were very happy that UNESCO General Conference in October, 2005, recommended that the United Nations General Assembly at its 60th session adopt a resolution declaring 2009 as the International Year of Astronomy. In its

recommendations to the UN General Assembly, the General Conference of UNESCO recognizes "that the study of the universe has led to numerous scientific discoveries that have great influence not only on humankind's understanding of the universe but also on the technological, social and economic development of society" and "that astronomy proves to have great implications in the study of science, philosophy, religion and culture". One hopes for the UN endorsement of the 2009 International Year of Astronomy (2009 IYA) proclamation at its session in October this year.

The Division XII WG on "Communicating Astronomy with the Public" (WGCAP) has agreed to prepare and lead a plenary session on 2009 IYA at the General Assembly in Prague. This session is scheduled for Friday August 18 11:00-12:30. The WGCAP is preparing, in consultation with Commission 41 on "History of Astronomy" and Commission 46 on "Astronomy Education & Development", a proposal on the content and structure of the 2009 IYA.

Oddbjørn Engvold, IAU General Secretary, May 2006.

4. COMMISSION MATTERS

4.1. COMMISSION 6: ANNUAL REPORT OF THE CBAT 2005

The year 2005 CBAT (THE CENTRAL BUREAU FOR ASTRONOMICAL TELEGRAMS) saw a marked transition toward the increased issuance of "Central Bureau Electronic Telegrams" (*CBETs*) as part of a plan to issue many reports more quickly and to help alleviate the cost of printing the *IAU Circulars (IAUCs)*; for example, follow-up material on supernovae is now routinely going onto *CBETs*, with mention of the supernovae types (with reference to specific *CBETs*) given briefly on *IAUCs*. During the year, older *CBETs* were made available at the *CBAT* website, and all *CBET* titles and authors are now indexed at the "Astrophysical Data System" (ADS) website. One appeal of the *CBETs* for authors of non-discovery reports is that they do not incur line charges. A total of 193 *IAU Circulars* were issued in 2005 --- remarkably similar to the number of 198 *IAUCs* published in 2004, considering that 243 *CBETs* were also issued in 2005 (compared to only 46 *CBETs* in 2004). As has been the case in recent years, the most common topics covered were supernovae, with 29 percent of the *IAUC* titles dealing with supernova discoveries and another 14 percent with follow-up information on already announced discoveries. Comets remain a prominent part of *IAUC* announcements, with 24 percent of the year's titles pertaining to discoveries or recoveries of comets, and another 12 percent dealing with follow-up information on comets. Around 11 percent of the year's *IAUC* titles dealt with Galactic novae and variable stars, including the ten new Galactic novae found in 2005. The brightest Galactic nova in 2005 was V5116 Sgr, reaching visual mag approx. 7.5 around July 5.

Numerous items during the year pertained to novae in other galaxies, including one in each of the Magellanic Clouds. As noted in last year's report, a new *CBAT* webpage was established to handle novae in M31, and the table therein was expanded considerably in 2005. Also during 2004, numerous separately titled *IAUC* items were published concerning other unusual transients observed at visible, radio, and high-energy wavelengths. A bright infrared outburst of the nucleus of Arp 299 was one such report. In addition to spectroscopic reports of new supernovae, other topics having reports published primarily in 2005 on *CBETs* and not on *IAUCs* include numerous reports of meteor activity and binary-nature detection for minor planets.

The Central Bureau issued 402 new designations for supernova discoveries announced during 2005, including 45 designations for belated 2004 discovery reports. The brightest supernova of the year, the type-II event in NGC 4945 that was designated 2005af, was found by amateur astronomers C. Jacques and E. Pimentel in Belo Horizonte, Brazil, and reached visual mag 12.5 in mid-February. The type-Ia supernova 2005df in NGC 1559 was found visually by the well-known Australian supernova discoverer R. Evans at mag 13.8 in early August. Some 250 of the supernovae were spectroscopically typed as Ia (or suspected Ia) events, 38 were type-Ib or type-Ic supernovae (or so suspected), 84 were type-II (or suspected type-II) events, and 33 were not classified. SN 2005cs in M51 was around mag 14 in late June, and a 24th-magnitude supposed red supergiant was reported on the *IAUCs* as being the likely progenitor.

Many faint supernova discoveries were reported in individual reports during the year by high-redshift surveys, and these were announced on *CBETs*, with brief summaries following on the printed *IAUCs*. The Sloan Digital Sky Survey detected 182 new supernovae in 2005 (45 percent of all the supernovae designated during the year), but only 26 of them were brighter than mag 20 at discovery. Among supernovae brighter than 20th magnitude, the Lick Observatory Supernova Survey again dominated in 2005, with 80 discoveries. Fully 92 supernovae (nearly a quarter of the total found in 2005) were discovered or co-discovered by amateur astronomers during the year --- a third more than in 2004 --- led by Tim Puckett's search with 37 discoveries.

The ongoing discussion by the *CBAT* Director with the "supernova community" (see the 2004 annual report) has continued, in which plans were drawn up for starting an e-mail list for rapid reporting of discoveries and follow-up information, intended to be posted also on a webpage --- the idea being that only registrants who are bona fide members of the international supernova community (including amateurs who discover supernovae) can post, but anybody can access the information. The *CBAT* Director and Assistant Director also participated in a Tucson conference in early December organized by the Virtual Observatory Event group to discuss ways of getting discoveries (especially of supernovae) properly reported and announced through the expanding VO network.

The continuing close collaboration of the *CBAT* with the Minor Planet Center resulted in near-simultaneous announcements on *IAU Circulars* and *Minor Planet Electronic Circulars* of most of the professional-survey comets, many of which are initially reported as asteroidal but found to show cometary appearance elsewhere by follow-up observers (many of whom again are amateurs) who monitor the *MPC's* "Near-Earth-Object Confirmation" webpage. The annual Edgar Wilson Award for comet discovery by amateurs was also announced by the Central Bureau in late June, with only two recipients in 2005. Fifty-three ground-based comet discoveries were announced on *IAUCs* during the year (led by the sixteen found by Steve Larson's surveys at the University of Arizona), plus scores of near-sun comets only seen with the SOHO-spacecraft coronagraphs (beginning in April 2005, the *IAUCs* have published extended physical information for all the newly announced SOHO comets). Comet 9P/Tempel received much attention in *CBAT* publications during the year because of its encounter with the *Deep Impact* spacecraft in early July.

Dominating solar-system news during the year, for which several items were published on *IAUCs*, were the discoveries of three unexpectedly bright (mag 17-18) transneptunian objects, two of which (2003 UB313 and 2003 EL61) appear to have sizes that exceed the diameter of Pluto, with both also possessing satellites. Thirteen new satellites of Saturn, two new satellites of Pluto, and two new rings of Uranus were announced on *IAUCs* in 2005, along with the assignment of new designations and names for Saturn XXXI-XXXIV,

Jupiter XXXIX-XLVIII, and Uranus XXII-XXVII. Several CBAT items were published during the year regarding the minor planet (99942) Apophis = 2004 MN₄, which will make an approach to within about 6 earth radii on 2029 April 13.9 UT and just possibly an even closer approach in 2036.

The *CBAT* has continued its notable presence on the World Wide Web, with those *Circulars* and *CBETs* older than about one year being posted freely. The number of paid subscribers to the printed edition of the IAU *Circulars* continued to fall, from 158 at the end of 2004 to 146 at the end of 2005. However, the subscriptions to the printed *IAUCs* do pay for the cost of printing and mailing, and there clearly is a continued interest in printing the *IAUCs* --- both from the subscribers and from contributors who perceive a certain prestige for a publication with a very long history in print, despite the simultaneous online presence. In addition, there were 15 free (complimentary or exchange) subscriptions to the printed *IAUCs* at the end of 2005. The printed *IAUCs* go to 60 addresses within North America and 101 outside of North America. The number of subscribers to the Computer Service (shared by the *CBAT* with the *MPC*, and which includes web access to all *CBAT* publications plus eligibility for e-mail delivery) remained very stable, at around 470.

Unfortunately, the subscription and line-charge income is no longer sufficient to sustain fully the salary of the current *CBAT* Director, as it has done since 1980, together with secretarial help. While there are likely sufficient funds through subscriptions and line charges to pay the Director's and secretary's salaries into 2007, a worrisome situation has developed regarding the financial relationship of the Minor Planet Center with the *CBAT*; while the two bureaus have co-existed financially since 1978, problems with *MPC* funding may necessitate separation of the two financially to prevent a collapse of the *CBAT*. Therefore, the Director has been actively seeking alternate sources of income to maintain the presence of the *CBAT* at the Harvard-Smithsonian Center for Astrophysics, including the submission of a proposal in November 2005 to the U.S. National Science Foundation for a 5-year grant to cover the Director's salary. By the time of the Prague meeting in August 2006, it is hoped that funding will have been obtained to keep the *CBAT* operating at the CfA.

Assistant Director G. V. Williams has continued to serve as joint *MPC/CBAT* webmaster (and has been responsible for the Web CS dissemination of the *IAUCs*). All of the year's *Circulars* were prepared by the undersigned, with very helpful editorial backup by Director Emeritus B. G. Marsden, who prepared some *CBETs* during the Director's absence from Cambridge during the year (and helped to proofread and referee many *IAUCs* prior to issuance and to discuss many *CBAT* matters from his decades of experience as *CBAT* Director).

Numerous referees worldwide, especially some who are Commission 6 members, are also to be thanked for their great help with many items published on *Circulars* in 2005, continuing the long practice of the *IAUCs* being a refereed publication. Correspondence with scientists, the general public, and the news media occupies much of the Director's time, with thousands of e-mails and many phone calls relating to *CBAT* science arriving each year. At SAO, Muazzez Lohmiller has continued to handle the accounts, addressing of envelopes, and other administrative matters. Dan Wooldridge continues, as he has for years, with the fine printing of the *IAUC* cards.

Daniel W. E. Green, Director of the Bureau, April 2006.

4.2. COMMISSION 20: ANNUAL REPORT OF THE MPC 2004

During 2004 the Minor Planet Center added a record 6.2 million observations to its files, bringing the total to 27.2 million. The number of new orbits added, almost 32 000, represented a 34-percent increase over 2003 but was still much less than the 50 000 in each of 2000, 2001 and 2002. Nonetheless, bringing the total to 96 154, additional new numberings of minor planets during 2004 were a record 22 518, even though the 31-percent fractional increase was the lowest since 1998 and less than half the record fractional increase in 2001 (a record, that is, apart from the fractional increases experienced in 1802 and 1801).

Following the fears expressed in last year's report that the rate of discovery of NEAs and PHAs was decreasing, it is encouraging to report a record 528 new NEA discoveries in 2004, bringing the total to 3132. The PHA contribution was 89, as it had been in 2002, bringing that total to 618. Although the record for the closest approach of a natural object to the earth (but missing the atmosphere) was broken twice (0.00033 and 0.000086 AU) during March, and December saw the passage at 0.00023 AU of an object that could be confirmed as it receded, the most intriguing NEA recorded during the year was 2004 MN4, a 300-400-m object that acquired a 1-in-38 probability of impact on (Friday) 2029 Apr. 13, before pre-discovery and radar observations confirmed a miss distance then of 0.00015-0.00030 AU (with instances of modest impact probability around the same date a few years later).

The number of new TNOs and centaurs was most decidedly down from recent years, the 76 given 2004 designations and the dozen earlier finds now recognized meaning that the total is still three shy of one thousand. Of this total, 53 percent have still been recorded at only a single opposition and have generally quite uncertain orbits. By far the most interesting object reported in the outer solar system during the year was 2003 VB12, now known as (90377) Sedna. Currently 90 AU from the sun, this 1700-km-or-so object will come to 76 AU at perihelion in 2076 and recede to 900 AU at aphelion.

After several bumper crops, it is particularly disappointing to report that no new objects were added to the roster of outer satellites in 2004, and it is unfortunate that of the 23 new outer jovian satellites discovered in 2003 as many as 14 have still been observed at only a single opposition.

In terms of publications, the combined number of pages of the *Minor Planet Circulars* and the MPS and MPO observation and orbit supplements amounted to 47 260, significantly up from 2003 and very slightly more than during the previous record year of 2002. The number of *Minor Planet Electronic Circulars* issued was a record 1659. Of these, 361 were "Daily Orbital Updates", and another 781 contained observations (and orbits) of unusual minor planets; 423 *MPECs* likewise involved comets and 12 referred to satellites. Although there were 13 monthly batches of *MPCs*, as many as eight of these were "mini-batches". Mini-batches do not in fact contain observations or orbits--including new numberings--of minor planets. While this may seem incongruous for an organization that deals principally with minor planets, the general increase in the burden of day-to-day work for the MPC's small staff means that the fraction of mini-batches, which already comprised half the *MPC* batches in 2003, is likely to increase in the future. Most unfortunately, this means that although credit for observers of comets and the initial observers of NEAs and TNOs is acknowledged in a timely fashion, recognition of those who make most of the follow-up observations of NEAs and TNOs, as well as routine observations of main-belt minor planets, is sometimes being made no more frequently than every three or four months. Since users of the MPC's services seem principally to be interested in receiving

the observations themselves, the MPC has therefore again expended a greater effort on issuing *MPS* batches on a weekly basis, as well as on "making available" (this being distinct from publishing) unidentified and unconfirmed single-night observations on a website (provided that the specific observers involved accept this practice).

The number of subscribers to the Computer Service the Minor Planet Center shares with the Central Bureau for Astronomical Telegrams dropped to around 450 for much of the year, but some recovery was evident in December.

The number of subscribers to the Extended Computer Service remained around 70. Subscriptions to the printed *MPCs* remained stable at 120-125.

Donations were again very gratefully received from M. Dawson (Luxembourg), D. S. Dixon (New Mexico), F. K. Edmondson (Indiana; senior former president of Commission 20) and an anonymous member of Commission 20, as well as new donors B.L. Stevens (New Mexico) and J. Sue (Hawaii). It might be added that most of these donors are currently also active amateur astronomers who in particular conduct follow-up observations—thereby making them also effective donors to the minor-planet community at large.

A modest increase in the support from the U.S. National Aeronautics and Space Administration is very much appreciated, as is the small subvention from the IAU. There was again very helpful support from the Tamkin Foundation and the Brinson Foundation, but the grant from the Kirsch Foundation that had been so helpful for most of 2003 came to an end early in 2004.

MPC Associate Director Gareth Williams, NEO Technical Specialist Tim Spahr and Associate Kyle Smalley have continued to put in yeoman service that has often allowed the MPC to be manned in excess of the 16/7 goal (with computers of course generally operative 24/7)- despite the fact that there was no resource to pay Smalley during some months. Spahr and Smalley are the staff members who are principally responsible for attending to NEAs, while Williams serves as system manager, maintains most of the MPC's computer programs and processes the most extensive batches of observations. The undersigned carries out most of the work on comets, satellites and TNOs.

In this connection, the assistance of Rachel Kisala, then a senior finishing high school, should be mentioned; during the four months she was on board she became particularly adept at reducing the measurements of comets observed by the SOHO-LASCO instrument. Muazzez Lohmiller was again responsible for maintaining subscriber accounts and address lists, as well as for mailing out the *MPCs*. Billy Duggan oversaw the printing, collating and stapling of the *MPCs* in the SAO's print shop. MPC Associate Syuichi Nakano continued to liaise with several observers in Japan, and Susan Russell helped with the editing of the citations for new namings of minor planets.

Brian G. Marsden, Director, Minor Planet Center, March 11, 2005.

4.3. COMMISSION 20: ANNUAL REPORT OF THE MPC 2005

The 6.9 million observations added to the Minor Planet Center's files during 2005 not only represented an 11-percent increase over the previous annual record, set in 2004, but they exceeded the total inventory as recently as early 2001. That total inventory is now 34.1 million. Although the number of orbits added to the MPC's files, almost 41 000, was significantly up from the two preceding years, the crop in each of the years 2000-2002 was still larger. The total inventory of orbits is now some 305 000. The increase in new numberings, a record 24 283, corresponds to the total inventory of numberings as of early

2001 and brings the current total to 120 437 objects, of which 12 779 have also been named. A record 631 NEAs were discovered during 2005, some 20 percent more than in 2004, and the total is now 3763. Of these, 742 are PHAs, compared to 618 known at the end of 2004, although this comparison is not strictly valid because of a recent change in the way the MPC computes the minimum distance between the orbit of a minor planet and the earth. The number, 92, of new discoveries of TNOs and Centaurs reported during 2005 were comparable to the reports during 2004. One of the TNOs, 2003 UB313, found at a record 97-AU distance and near the aphelion point of an orbit of eccentricity 0.44 and inclination 44 deg, has a diameter that is clearly some 25-percent larger than that of Pluto. Two more TNOs, 2003 EL61 and 2005 FY9, are evidently only slightly smaller than Pluto. Although substantially smaller, 2004 XR190 is noteworthy in that it was found near the 57-AU mean distance of a highly inclined orbit of eccentricity only 0.11.

Twelve new outer satellites of Saturn were reported in 2005 from images obtained beginning in late 2004. The 14 new outer satellites of Jupiter from 2003 still un-recovered at the end of 2004 remained un-recovered at the end of 2005.

The combined number of pages of Minor Planet Circulars and two supplement series published during 2005 amounted to 45 466, somewhat down from 2004 (and 2002), but still up from 2003. Following the pattern of the past couple of years, the supplementary batches with observations of minor planets generally were issued weekly (46 times during 2005), and although the MPCs themselves were issued 11 times during the year, most of these were just "mini-batches", those accompanied by the supplementary batches with orbits (and, specifically, the announcements of new numberings) being issued on only four of these occasions. These publications are all available electronically to subscribers, but it has been traditional to issue printed versions of the MPCs themselves. For many years, this printing and the necessary collating and stapling has been carried out with great dedication by Billy Duggan in the Smithsonian Astrophysical Observatory's print shop. Regrettably, the print shop was closed in November 2005, and this has meant that, while the electronic version of the MPCs will continue to be prepared as usual, the printed version must in the future be considerably restricted--essentially to the pages announcing the new numberings and namings of minor planets.

Despite the present infrequency of the definitive publications of orbits, orbital results are published, at least in preliminary form, in the "Daily Orbit Update" issues of the Minor Planet Electronic Circulars, there having been 358 of these DOUs out of the record total of 1708 MPECs issued during the year. As usual, most of the year's MPECs contained announcements of the discoveries (and second-opposition recoveries) of unusual minor planets (most specifically NEAs and TNOs), although 294 of the year's MPECs referred to comets and 13 to satellites. Finally, although not considered a publication (because the MPC can not accept responsibility for reliability), unidentified and unconfirmed single-night observations are "made available" monthly on a special website (provided that the observers involved do not object to this).

The hint of a late-2004 recovery in the number of subscribers to the Computer Service the Minor Planet Center shares with the Central Bureau for Astronomical Telegrams became more evident during 2005, which ended with some 470 subscribers. The number of subscribers to the Extended Computer Service remained around 70, while those to the printed MPCs was around 120.

In that it provides salary for 1.2 MPC staff members, the financial support from the U.S. National Aeronautics and Space Administration is essential for MPC operation. Further essential support for the salary of a staff member was again provided by the Brinson

Foundation, and the MPC was dramatically rescued from insolvency in October by a generous and unexpected gift from the TABASGO Foundation. Donations are also gratefully acknowledged from M. Dawson (Luxembourg), D. S. Dixon (New Mexico), F. K. Edmondson (Indiana; senior former president of Commission 20), P. A. Shugert (Texas), B. L. Stevens (New Mexico), an anonymous member of Commission 20, as well as an anonymous contributor in each of Europe and the U.S.

It is clear, however, that the MPC cannot continue to operate in the future without a serious infusion of funding. In addition to the undersigned, Associate Director Gareth Williams, NEO Technical Specialist Tim Spahr and Associate Kyle Smalley bring the MPC's scientific staff to four, and there is funding for little more than three. Furthermore, as is evident from the first paragraphs of this report, the effort made by the MPC is enormous, and two of its staff members regularly work in excess of 80 hours per week. Indeed, such work conducted in any normal business environment would be carried out by a staff of six or more. It was noted already in the 2004 report that there was no resource to pay one of the staff members for several months. Obviously, such a situation could not go on indefinitely, and it was satisfactorily resolved in 2005 without recourse to legal action. With the MPC's existing staff, it is no longer possible to maintain the 16/7 goal of manned support, and the official SAO policy is that the staff should not maintain The NEO Confirmation Page on Sundays.

As in the past, Associate Director Williams continued to manage the MPC's computer system, and he also maintains the vast majority of the MPC's computer programs and procedures. Muazzez Lohmiller was again responsible for maintaining subscriber accounts and address lists, as well as for mailing out the MPCs. From September onward high-school senior Masha Baryakhtar was a volunteer at the MPC, assisting with some of the orbital computations. Susan Russell again assisted with the editing of the citations for new namings of minor planets.

Brian G. Marsden, Director, Minor Planet Center, March 2006.

5. REPORTS BY IAU REPRESENTATIVES TO INTERNATIONAL ORGANIZATIONS (2003-2006)

5.1. CTTEE ON DATA FOR SCIENCE & TECHNOLOGY (CODATA)

Introduction

CODATA (<http://www.codata.org/>) is the ICSU's Committee on Data for Science and Technology, and its primary function is to address data issues that are common to several areas of science. Its value to astronomy comes in two main areas: its role in promoting cross-fertilization between disciplines, and its ability to represent data issues at the highest levels on behalf of all areas of science.

Promoting Inter-Disciplinary Connections

The development of the Virtual Observatory (VO) has parallels in several other branches of science, and astronomy can benefit from building cross-disciplinary links to them. The VO Special Session at the CODATA general Assembly in 2000 was one of the formative meetings that led to the International Virtual Observatory Alliance.

Another example of this role of CODATA is that the proposal for the Special Session on Astronomical Data Management at the IAU GA in Prague was partly a product of that cross-fertilization, and the recognition of the need for a consensus on what constitutes

good data management practice in astronomy. Specifically, the ICSU's Priority Area Assessment (PAA) on Scientific Data and Information made a number of recommendations on critical policy and management issues related to scientific data and information. The IAU's representative to CODATA, Norris, chaired the committee to formulate CODATA's response to the PAA (see below), and in the course of that process, recognised the inadequacies in the way that astronomical data are managed.

Other modes by which CODATA promotes cross-fertilization between disciplines are listed in Section "Activities" below.

Safeguarding Science Values

Perhaps CODATA's finest hour (so far!) was in 2000-2002 when it mobilized international opposition to some ill-conceived legislation by WIPO (World Intellectual Property organization), which tried to set up a rigorous system of licensing under which any use of data would need to be accompanied by a paper trail to prove that use of the data was legitimate. Unlike the current copyright laws, there would be no provision for "fair use" for education or research. This would effectively make unworkable our current practice of freely distributing data and information, and could mean that the Virtual Observatory initiatives would spend as much on lawyers as on developers.

Fortunately, CODATA and its allies were successful, and the proposed legislation was defeated in most arenas, and watered down in others. While the danger seems to have passed for the time being, it, or a similar threat, could return, and we must be vigilant to prevent it doing so. Most astronomers, like most scientists in other disciplines, were unaware that a war was being fought on their behalf, or that they were in danger of losing free access to databases such as ADS, CDS, NED, and astro-ph. The value of CODATA is that it is a body which focuses on data needs across all areas of science, and is able to remain vigilant to such threats, and mobilize resources when necessary to protect or use of scientific data.

Activities

CODATA engages in a number of activities to achieve its goals, including

- * The data science meetings held in association with the General Assembly, every two years (the next is in Beijing in October 2006).
- * The data science journal (<http://dsj.codataweb.org/>)
- * Specific task groups set up to tackle key issues spanning different disciplines.

In addition, CODATA actively engages in arenas in which it can effectively represent the data needs and values of the various scientific disciplines, including astronomy, which it represents. Two examples are:

i. ICSU Review on Scientific Data and Information

The International Council of Science (ICSU) set up a panel of independent experts to perform a Priority Area Assessment (PAA) on Scientific Data and Information. This panel was charged with assessing the strategic issues in this arena and reviewing ICSU's current activities. The report argues that there is a need for a strong ICSU role in identifying and addressing critical policy and management issues related to scientific data and information, similar to the seminal role ICSU played in the 1980's and 1990's in establishing an interdisciplinary and internationally coordinated research program on global environmental change. The CODATA response was enthusiastic support for the recommendations, and the suggestion that CODATA would actively play a key role in the implementation process.

ii. World Summit on the Information Society

Recognizing the growing impact of information and data on our society, the International Telecommunications Union (ITU) resolved in 1998 to hold a World Summit on the Information Society (WSIS) and place it on the agenda of the United Nations. This was endorsed by the UN General Assembly (Resolution 56/183). The Summit took place in two phases: 10-12 December 2003, in Geneva, and 16-18 November 2005 in Tunis. CODATA played a key role in WSIS, emphasizing not only the data needs of science, but also recognition of the role that science can play in formulating solutions.

The resulting declaration includes the following principles:

- * The sharing and strengthening of global knowledge for development can be enhanced by removing barriers to equitable access to information for economic, social, political, health, cultural, educational, and scientific activities and by facilitating access to public domain information, including by universal design and the use of assistive technologies.
- * We strive to promote universal access with equal opportunities for all to scientific knowledge and the creation and dissemination of scientific and technical information, including open access initiatives for scientific publishing.

Conclusion

The growth of eScience in astronomy, as in nearly every scientific discipline, means that CODATA plays an increasingly important role. It is important that the astronomy community continues to engage actively in CODATA both to ensure that astronomy's data needs are represented at the highest level internationally, and to ensure that astronomy can continue to share the lessons learnt from other disciplines.

Ray Norris, IAU's Representative to CODATA

5.2. CTTEE ON SPACE RESEARCH (COSPAR)

Report on COSPAR Scientific Commission B

"Space Studies of the Earth-Moon System, Planets and Small Bodies of the Solar System"
by Mikhail Marov, March 2006

The following summary on Scientific Commission B activity is based on the information available from the COSPAR Secretariat and the commission correspondence

Scientific Commission B updates: Chairs and Vice-Chairs

ChairJohnson TorrenceJPL

Vice-ChairMasson PhilippeUniv Paris-Sud

Vice-ChairThomas NicolasUniv of Bern

Vice-ChairKorablev OlegSpace Research Institute

Sub-Commission B1

ChairMukai TadashiKobe Univ

Vice-ChairBoice DanielSwRI - Space Sci. & Engineering Div.

Sub-Commission B2

ChairDrewes HermannDeutsches Geodaetisches Forsch.Inst.

The number of Commission B associates amounts to 1365 (Jan 2005)

Preparation of the next COSPAR Assembly in Beijing to be held in July, 2006

The main activity of COSPAR SC B was focused on the preparation of the next COSPAR Assembly in Beijing to be held in July, 2006. There was the Program Committee and LOC

meetings (with Professor Ronglan Xu as a Chair) in Beijing on 22-24 March 2005, followed by the COSPAR Bureau meeting where a segment of the results of the PC discussions on the scientific program was presented and the Bureau was updated on planning for the Assembly.

The President of COSPAR supports a LOC plan to restructure the program. Apparently these plans agree with the idea of making COSPAR an "active platform for definition or alignment of roadmaps for Lunar and Martian exploration".

Originally proposed sessions

B0.1	The Moon: Recent Results, Science, Future Robotic and Human Exploration B. Foing	4 days
B0.2	Mars Exploration: Latest Results and Status of International Cooperation P. Masson	4 days
B0.3/ D3.6	Cassini-Huygens in the Saturnian System: Planet Saturn, Rings, Titan, Icy (and other) Satellites, Magnetospheres D.L. Matson	5 days
B0.4	Solar System Exploration by Sample Return Missions A. Fujiwara, G. Schwehm, P. Jenniskens, H. Yano	5days
B1.1	Missions to Comets: Initial Results of On-going Missions (e.g. Deep Impact, Stardust), New Missions, International Cooperation, Remote Observations and Simulations in Support of Missions A.-C. Levasseur-Regourd	4days
B1.2	Missions to Asteroids: Initial Results of On-going Missions (e.g. Hayabusa), New Missions, International Cooperation, Remote Observations and Simulations in Support of Missions A.-C. Levasseur-Regourd	4days
PSD1/ B2.1	Satellite Dynamics: Meeting the Challenges of Positioning on Giga-to-Nanometer Scales J.M. Dow, P. Visser	5days

After Commission discussions it was decided:

- to merge sessions B1.1 (Comets), B1.2 (Asteroids), and B0.4 (Solar System Exploration by Sample Return Missions) into one unified session "Exploration of comets and small solar system bodies" running 5 full days; there is also an idea to break a 5 day meeting down into blocks to keep the mission specific stuff in one session (B1.1) and put theory and data analysis in B1.2 and laboratory work as B1.3 (it is more a question of responsibility and visibility than a question of content);
- the Mars session (B0.2) is to be extended to 5 full days, the Lunar Exploration session (B0.1) to be limited to 2 full days, and a Mercury's session is introduced; obviously, there more time should be allocated to Mars w.r.t. the Moon and there will be certainly an appeal for special Mercury session after Messenger, and with Bepi-Colombo preparation.

Report on COSPAR Scientific Commission D

(Space Plasmas in the Solar System, including Planetary Magnetospheres)

Recent (and continuing) activities of the COSPAR Scientific Commission D "Space Plasmas in the Solar System, including Planetary Magnetospheres" are mainly focused on

preparation of the coming 36th COSPAR Scientific Assembly, which will be held 16-23 July 2006 in Beijing, China (i.e., just one month before our GA). There will be 15 scientific sessions of the Commission D, six of them jointly with the Commission E (Research in Astrophysics from Space) and two of them jointly with the Commission C (Space Studies of the Upper Atmosphere of the Earth and Planets including Reference Atmospheres).

The topics of the sessions are:

- D1.1. Structure & Dynamics of the Three-Dimensional Heliosphere
- D1.2. Heliophysical Processes: Towards the International Heliophysical Year 2007
- D2.1./E3.1. Solar Wind & (I)CMEs: toward Integrated Sun-Earth Connection Science
- D2.2./E3.2. Magnetic Coupling in Solar & Stellar Atmospheres
- D2.3./E3.3. Probing the Solar Wind: Recent Results & Future Prospects
- D2.4./E3.4. The Radiation Environment of the Inner Heliosphere
- E2.1./D2.5./
E3.5. Scientific & Technological Requirements for Future High-Resolution
Solar Physics Space Missions
- E2.3./D2.6./
E3.6. Energetic Particles and Magnetic Reconnection on the Sun and in the
Heliosphere
- D3.1. Multiscale Magnetospheric Processes: Theory, Simulations, & Multipoint
Observations
- D3.2. Global Magnetospheric Dynamics & Energetic Particles
- D3.3. Comparative Magnetospheres
- D3.4. Ionosphere-Magnetosphere Coupling & Auroral Particle Acceleration
- D3.5. Paradigms & Reality of Space Physics: Measurements versus Common Wisdom
- C5.1./D4.1. Space Applications of Dusty Plasmas
- C5.2./D4.2. Active Experiments Related to Space Plasmas

Marek Vandas, IAU Representative to COSPAR Scientific Commission D

5.3. FEDERATION OF ASTRONOMICAL & GEOPHYSICAL SERVICES (FAGS)

The administration of ICSU proposed in 2004 that the "Federation of Astronomical and Geophysical Data Analysis Services" (FAGS) should cease to be an Interdisciplinary Service of ICSU. A meeting between the Service Directors, IUGG, IAU, URSI, and representatives of the ICSU administration in May 2005 did not change ICSU's determination to dissolve FAGS. Ultimately, this change required a vote at the 28th General Assembly of ICSU held in Suzhou, China in October 2005, who decided to have the decision by the ICSU Executive Board revised and extend ICSU's sponsorship of FAGS for a period of three years. During this period FAGS will continue to fulfill its role of coordination among the Services, while ICSU examines integration of this function within its activities in data and information.

The FAGS Council met at Observatoire de Paris, March 29-30, 2006, with the presence of the Service Directors and the three Unions to discuss and prepare the future organization of the FAGS. The new Chair of the FAGS Council, Dr. Nicole Capitaine, is leading this work.

Oddbjørn Engvold, IAU General Secretary

5.4. SCIENTIFIC CTTEE ON FREQUENCY ALLOCATIONS FOR RADIO ASTRONOMY & SPACE SCIENCE (IUCAF)

Annual Report for 2005

Introduction

The Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science, IUCAF, was formed in 1960 by URSI, IAU, and COSPAR. Its brief is to study and coordinate the requirements of radio frequency allocations for passive (i.e., non-emitting) radio sciences, such as radio astronomy, space research and remote sensing, in order to make these requirements known to the national and international bodies that allocate frequencies. IUCAF operates as a standing inter-disciplinary committee under the auspices of ICSU, the International Council for Science.

Membership

At the end of 2005 the composition of membership for IUCAF was:

URSI	.....S. Reising	.....(Com F)	.....USA
	U. Shankar	.....(Com J)	.....India
	W. Swartz	.....(Com G)	.....USA
	A. Tzioumis	.....(Com J)	.....Australia
	W. van Driel	.....(Com J; Chair)	.....France
IAU	.....H. Chung	.....	.....Korea
	R.J. Cohen	.....	.....United Kingdom
	D.T. Emerson	.....	.....USA
	M. Ohishi	.....	.....Japan
	K.F. Tapping	.....	.....Canada
COSPAR	...S. Gulkis	.....	.....USA
	J. Romney	.....	.....USA
at large:	...W.A. Baan	.....	.....Netherlands
	K. Ruf	.....	.....Germany

IUCAF also has a group of Correspondents, in order to improve its global geographic representation and for issues on spectrum regulation concerning astronomical observations in the optical and infrared domains.

International Meetings

During the period of January to December 2005, its Members and Correspondents represented IUCAF in the following international meetings:

February	ITU-R Task Group 1/9 (Compatibility between passive and active services) in Geneva, Switzerland
March	ITU-R Working Party 7D (radio astronomy) in San Diego, USA
May	ITU-R Task Group 1/8 (Compatibility between ultra-wideband devices (UWB) and radio-communication services) in San Diego, USA
June	Second Summer School in Spectrum Management for Radio Astronomy in Castel San Pietro, Italy
September	ITU-R Task Group 1/9 (Compatibility between passive and active services) in Geneva, Switzerland
October	ITU-R Task Group 1/8 (Compatibility between ultra-wideband devices (UWB) and radio-communication services) in Geneva, Switzerland

Space Frequency Coordination Group meeting SFCG-25 in Beijing, China
 URSI General Assembly in New Delhi, India

November ITU-R Working Party 7D (radio astronomy) in Geneva, Switzerland

Additionally, many IUCAF members and Correspondents participated in numerous national or regional meetings (including CORE, CRAF, RAFCAP, the FCC etc.), dealing with spectrum management issues.

IUCAF Business Meetings

During the year 2005 IUCAF had a face-to-face committee meeting before each of the ITU meetings of Working Parties and Task Groups of relevance to IUCAF, with the purpose of discussing issues on the agenda of the meetings in preparation for the public sessions. During these ITU sessions, typically lasting a week to 10 days, a number of ad-hoc meetings of IUCAF are held to discuss further its strategy. Other IUCAF business, such as action plans for future workshops and summer schools or initiatives and future contributions to international spectrum management meetings, are also discussed.

Although such face-to-face meetings have been convenient and effective, throughout the year much IUCAF business is undertaken via e-mail communications between the members and correspondents.

Contact with the Sponsoring Unions and ICSU

IUCAF keeps regular contact with the supporting Unions and with ICSU. The Unions play a strong supporting role for IUCAF and the membership is greatly encouraged by their support. IUCAF members actively participated in national URSI meetings, in IAU Colloquia and Symposia and in the 2005 URSI General Assembly.

IUCAF members are actively involved in the work of the URSI Scientific Commission on Telecommunication (SCT), whose brief is to form a liaison in matters of spectrum management between URSI and the International Telecommunication Union (ITU).

IUCAF members have played an active role in the redaction of the URSI White Paper on Solar Power Satellites (SPS). IUCAF's objective was to ensure that a White Paper published by URSI presents a balanced discussion of the SPS technology, including an honest comparison with other competing technologies and an evaluation of the risks involved, in particular to radio science. Unwanted radio emissions from SPS systems must be suppressed sufficiently to avoid interference with other radio services and applications, in accordance with the provisions of the Radio Regulations of the ITU.

In 2005, IUCAF has been working actively towards strengthening its links with other passive radio science communities and defining a concerted strategy in common spectrum management issues.

Protecting the Passive Radio Science Services

At the International Telecommunication Union, the work in the various Working Parties and Task Groups of interest to IUCAF was focused largely on the preparations for WRC-07, the ITU World Radio-communication Conference to be held in 2007.

Of particular concern to IUCAF in ITU-R Working Parties 7C and 7D, specializing in Earth exploration by satellites and in radio astronomy, respectively, is the protection of the 1400-1427 MHz passive band, which is used to measure soil moisture and ocean salinity and which contains the heavily observed interstellar 21-cm neutral hydrogen line, from unwanted emissions from fixed-satellite service (FSS) feeder links in the nearby bands 1 390-1 392 MHz and 1 430-1 432 MHz. Studies have suggested suppressing these frequency allocations to the FSS, and a decision on this issue will be made at WRC-07.

ITU-R Task Group 1/8, which finished its work in 2005, dealt with the introduction of unregistered low power ultra-wide bandwidth (UWB) devices (including vehicular anti-collision radars) transmitting across large parts of the radio spectrum, into bands that are already allocated to a variety of other services and in some of which "all emissions are prohibited" according to the ITU Radio Regulations. Studies have shown that unless appropriately controlled, the operation of such devices is likely to be harmful to the passive radio services.

ITU-R Task Group 1/9 deals with the protection of passive services, specifically the radio astronomy service and the Earth exploration-satellite (passive) service, from unwanted emissions of active services in adjacent and nearby bands. Its goal is to review and update, if appropriate, the tables of threshold levels used for consultation between the passive radio and active services that appear in Recommendation ITU-R SM.1633. Of particular concern to IUCAF is the protection of the 1610.6-1613.8 MHz and 22.21-22.5 GHz radio astronomy bands, which contain spectral lines of important interstellar molecules.

Within the Space Frequency Coordination Group, IUCAF has worked towards a Resolution on the sharing of the band 94-94.1 GHz between the radio astronomy service and Space agencies operating powerful satellite-borne cloud profile radars, which can potentially damage, and even destroy, receivers in radio telescopes observing in the direction of such radars. In particular, IUCAF is serving as the international coordination point between radio observatories and the operators of the Clouds at radar.

IUCAF Sponsored Meetings

The Second Summer School in Spectrum Management for Radio Astronomy was held in Castel San Pietro, Italy, from 6 to 10th June, 2005. Its main sponsors were IUCAF and RadioNet, the European Commission-funded Integrated Infrastructure Initiative (I3) for advanced radio astronomy in Europe.

The purpose of SS2005 was to offer a comprehensive view of both regulatory and technical issues related to the radio astronomers' use of the spectrum, as well as a view of how these issues are dealt with by other passive radio services, such as the Earth exploration satellite service. It was aimed specifically at young scientists and engineers involved in radio astronomy.

The number of participants (21), the quality and scope of the presentations all showed the importance that the astronomical community attributes to spectrum management as a tool necessary for maintaining the quality of radio astronomical data by limiting the levels of radio interference.

Publications and Reports

IUCAF has a permanent web address, <http://www.iucaf.org>, where the latest updates on the organization's activities are made available. All contributions to IUCAF-sponsored meetings are made available on this website.

Conclusion

IUCAF interests and activities range from preserving what has been achieved through regulatory measures or mitigation techniques, to looking very far into the future of high frequency use and giant radio telescope use. Current priorities, which will certainly keep us busy through the next years, include band-by-band studies for cases where allocations are made to satellite down-links close in frequency to the radio astronomy bands, to satellite up-links and terrestrial radio services in the vicinity of bands allocated to the Earth Exploration Satellite Service (passive), the coordination of the operation in shared bands of radio observatories and powerful transmissions from downward-looking satellite radars, the possible detrimental effects of ultra-wide band transmissions on all passive

services, and studies on the operational conditions that will allow the successful operation of future giant radio telescopes.

IUCAF is thankful for the moral and financial support that has been given for these continuing efforts by ICSU, URSI, the IAU, and COSPAR during the recent years. IUCAF also recognizes the support given by radio astronomy observatories, universities and national funding agencies to individual members in order to participate in the work of IUCAF.

Wim van Driel IAU Representative and chair of IUCAF

IUCAF website: <http://www.iucaf.org> - IUCAF contact: iucafchair@iucaf.org

5.5. SCIENTIFIC CTTEE ON ANTARCTIC RESEARCH (SCAR)

Report April 2005 – March 2006

Astronomical activities within SCAR (Scientific Committee on Antarctic Research) are coordinated by the AAA (Antarctic Astronomy and Astrophysics) Expert Group. An Action Group with AAA called PASTA (Plateau Astronomical Site Testing in Antarctica) coordinates the efforts of various nations to understand better the site conditions and their implications for astronomy. Both groups are under the auspices of the Standing Scientific Group on Physical Sciences, one of three Standing Scientific Groups within the organization.

AAA and PASTA last met in Bremen, Germany in July 2004. They will meet next on 9 July in Hobart, Australia, as part of the XXIX meeting of SCAR. An "Open Science Conference" of SCAR will be held over the succeeding few days, with astronomy expected to be a strong theme.

An international proposal, led by Professor Michael Burton, has been prepared to carry out a coordinated series of astronomical activities in both Antarctica and in the northern regions of Canada and Greenland as an International Polar Year 2007 – 2008 program. This includes a full astronomical site evaluation of the highest point on the Antarctic Plateau, Dome A. The proposal has now been conditionally endorsed by the ICSU/WMO Joint Committee for the International Polar Year, and will be a major item for discussion at the forthcoming meeting of SCAR.

A particular astronomical highlight of 2005 was the successful opening for full-year operation of the French-Italian "Concordia" Station at Dome C, Antarctica. Astronomy was one the key scientific programs of that historic first winter.

John W.V. Storey, IAU representative to SCAR, March 2006.

5.6. SCIENTIFIC CTTEE ON SOLAR-TERRESTRIAL PHYSICS (SCOSTEP)

Report on SCOSTEP Bureau Meetings in Rio, Brazil March 5 – 12, 2006

(Abstracted from notes by Joe Allen)

The first meeting of the The Scientific Committee On Solar-TERrestrial Physics (SCOSTEP) Bureau was on March 5. Minutes of the meeting are in preparation and will be posted on the SCOSTEP website when completed. Dr. Sunanda Basu represented CAWSES and gave a detailed presentation on the very active current status of CAWSES. At that meeting, the Bureau confirmed that Dr. Susan Avery will become the Co-Chair of CAWSES with Sunanda for a 4-month overlap period starting April 1 and then will become Chair of the CAWSES Science Steering Group on August 1, 2006. The Bureau accepted the retirement of Joe H. Allen, the long-time SCOSTEP Scientific Secretary. Both Sunanda and Joe had announced their intention of relinquishing their responsibilities due

to health reasons at the Bureau Meeting in Taipei in May 2005. The Bureau unanimously confirmed Gang Lu, Research Scientist at the National Center for Atmospheric Research (NCAR), as Scientific Secretary and accepted the kind offer of Tim Killeen, Director of NCAR, to host the Secretariat office there. On March 11, the SCOSTEP General Council met to discuss Bureau actions and consider concerns expressed by national Adherent Representatives. The Bureau held a half-day closing meeting on March 12 to consider actions arising from the Council Meeting the day before and to complete their agenda. The next meeting of the SCOSTEP Bureau will take place in conjunction with the IUGG Meeting in Perugia in July 2007.

The 11th Quadrennial Solar Terrestrial Symposium (STP-11) was held on 6-10 March 2006 in Rio de Janeiro, Brazil. The conference was attended by 135 participants from 26 countries in South and North America, East and West Europe, Asia, Australia, and Africa. The sessions of STP-11 were organized according to the CAWSES (Climate and Weather of the Sun-Earth System) themes. Prof. C. De Jager gave the opening keynote talk on "Solar Activity and Climate Variation". Other keynote presentations were given by J. Allen on "Space Weather", by G. Brasseur on "Middle Atmosphere", by A. Petrukovich on "Magnetotail Global Dynamical Structure and Stability", and by T. Killeen on "Progress and Challenges in Thermosphere/Ionosphere Sciences". The keynote presentations alone with a number of other talks are now available on the SCOSTEP website at <http://www.ngdc.noaa.gov/stp/SCOSTEP/> and at <http://www.hao.ucar.edu/scostep/>.

Other invited and contributed presentations given in the conference covered a wide range of research areas in the Sun-Earth system, from solar activities, magnetospheric and ionospheric disturbances, to the coupling processes in the middle and upper atmosphere. Over 170 scientific papers were presented at the conference in either oral or poster format, showing great recent advances in understanding the coupled Sun-Earth system.

Meetings of opportunity were held by the ISES Group led by David Boteler of Canada to discuss establishing a Space Weather Warning Center in Brazil to provide services to South America, Central America and Mexico. Also a special evening meeting on CAWSES opportunities in Brazil was held on Mar 8 and impressive presentations were given by our Brazilian colleagues on their very active participation in Sun-Earth system science.

Brigitte Schmieder, IAU Representative to SCOSTEP, March 2006.

5.7. UNION RADIO-SCIENTIFIQUE INTERNATIONALE (URSI)

A significant amount of the URSI activities during the last year have been centered in the celebration of their own General Assembly, that took place on New Delhi, India during October 23-29, 2005 (XXVIIIth URSI GA). As the IAU GAs, these also take place every three years. The program for the meeting included several sessions on radio astronomy, including one on future large radio telescopes. The Assembly, with more than 1400 participants, was considered to be a great success.

One of the main recommendations of the URSI Council during this GA was related to the increasing world's energy needs and the potential interest in collecting the Sun's energy in space and transmitting it through radio waves to the ground to feed the terrestrial power grid. The Council concluded that preliminary studies performed by radio scientists have evaluated the feasibility of Solar Power Satellite systems for such purposes, identifying potential benefits and problems, and that the resulting document, the URSI White Paper on Solar Power Satellite Systems, should be used as a reference to undertake worldwide coordinated studies to investigate the potential of Solar Power Satellites as an alternative energy source, taking into account all relevant scientific aspects, the environmental and

societal impact, the impact on other radio services, and the technical and economic feasibility. This is a relevant issue to radio astronomers since these systems could be major sources of radio interference. The URSI White Paper on Solar Power Satellite Systems can be found in the page of URSI: <http://www.ursi.org/>.

Also during the New Delhi GA the terms of reference of the 10 Commissions that for URSI were agreed. In particular, the interests of Commission J (Radio Astronomy, including remote sensing of celestial objects) are: (a) The observation and interpretation of all radio emissions and reflections from celestial objects, with (b) Emphasis is placed on: (i) the promotion of technical means for making radio-astronomical observations and data analysis, and (ii) support of activities to protect radio-astronomical observations from harmful interference. At present, the Chairperson of this Commission is Prof. Richard T. Schilizzi.

The main interaction of the IAU with URSI is via the Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science, IUCAF, that is formed by URSI, IAU, and COSPAR representatives. A detailed report of IUCAF's activities up to late 2004 is presented in the issue of March 2005 of the Radio Science Bulletin (pp. 70-72). At present, IUCAF's interests and activities range from preserving what has been achieved through regulatory measures or mitigation techniques, to look very far into the future of high frequency use and giant radio telescope use. Its current priorities include band-by-band studies for cases where allocations are made to satellite down-links close in frequency to the radio astronomy bands, the possible detrimental effects of ultra-wide band transmissions, and studies of the operational conditions that will allow the successful operation of giant radio telescopes.

Luis Rodriguez, President IAU Division X and IAU Representative to URSI, June 2006.

5.8. UNITED NATIONS-CTTEE ON THE PEACEFUL USES OF OUTER SPACE (UN-COPUOS)

Statement of the IAU to the 43rd Session of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) Scientific and Technical Subcommittee

Vienna, Austria, 20 February - 3 March 2006

Mr. Chairman, distinguished delegates and representatives,

The International Astronomical Union welcomes the continuing progress in the implementation of the recommendations of UNISPACE III. Several of these are of great importance for the future of astronomy, and several require the support of the international scientific community. The IAU, as representing the world's community of astronomers, is pleased to contribute to these issues together with interested delegations and other partners, notably the Committee on Space Research (COSPAR). A few of these issues will be briefly mentioned here.

Near Earth Objects, and the IAU

The issue of forecasting and potentially mitigating future impacts of asteroids on Earth has been before this Subcommittee repeatedly in the past. In recent years, there has been an increasing awareness of the hazard posed by Near-Earth objects (NEOs) to the Earth and its inhabitants.

NEOs can be asteroids or comets, whose motions can bring them into the Earth's neighbourhood. Planetary perturbations cause small changes to orbits and, if the initial orbit is well-determined, the future behaviour can be calculated and future collisions predicted. Thus, the initial goal of the Spaceguard project in 1992 was to discover, and

obtain orbits of, 90% of all NEOs greater than 1 km. Excellent progress has been made towards achieving this goal.

The IAU is not directly involved in any search program, though of course individual members of the Union are. However, to be valuable, the orbital data for all discoveries have to be verified, confirmed and catalogued. It is on this aspect that the IAU plays a vital role. When an NEO is discovered, the information is sent to the IAU Minor Planet Center (MPC) at the Smithsonian Astrophysical Observatory in Cambridge, MA, USA. This information must give the position of the body in the sky and the time for each observation made. The NEO orbit that is made public comes from calculations made at the MPC.

Naturally, NEOs are far easier to detect when close to the Earth and thus appear to move very fast against the background, and, unless additional observations are obtained very quickly, the body may be lost. In this event, the MPC may become pro-active and solicit observations from known observers, or release a preliminary orbit, so that other observers can conduct a search for it. Sometimes it is found in archival records. At the completion of this process the object and its orbit are then archived by the MPC, and the orbit improved when new observations emerge.

This is a big task that is increasing with time. For example in the mid-nineties, about 20 Apollo-type asteroids per year were recorded. By the turn of the century, this had increased to 150 per year, and the current number is 300 per year, while this family represents only a small fraction of the total number of discoveries. Archiving and updating the data is an area that needs serious international consideration, and coordination by the IAU.

Near Earth Objects will be discussed further under item 11 of the agenda of this Subcommittee session.

Preservation of the Space Environment: Protection of Astronomical Observations

The concern of international astronomy for the preservation of the space environment is well known to this Subcommittee, and the IAU appreciates the attention it gives to all aspects of this problem.

Light pollution is a growing concern for astronomers and all human beings alike. Man-made orbital debris is a significant issue for all people on Earth on a roughly 50-year timescale, as natural twilight and dawn will brighten from reflected sunlight. "Advances" in lighting technology become an issue on a 10-year timescale unless attitudes can be changed. Laser communications become an issue for astronomy on a 5-10 year timescale. Light pollution is a world-wide problem, involving literally billions of dollars per year worth of precious light energy wasted uselessly into the sky and space, while gradually removing mankind's view of the stars. As a result, a large fraction of the world population can no longer see the Milky Way from their homes and observational astronomy is suffering enormously from this man-made phenomenon.

Active measures by the IAU aimed at preserving observing conditions for ground-based observatories are covered at the web pages of IAU Commission 50 on "Protection of Existing & Potential Observatory Sites", notably its Working Group for "Controlling Light Pollution", those of the International Dark-Sky Association (IDA), and those of the Scientific Committee on Problems of the Environment (SCOPE). It is gratifying to see awareness and progress in measures by local authorities at some major observatory sites:

Chile: Much progress has recently been made in the application of the so-called "Decreto Supremo 686", which is the legal norm that controls the outdoor lighting in the 2nd, 3rd,

and 4th regions of northern Chile, where major astronomical observatories are located. DS686 was promulgated in 1998 and became a law in 1999, with a grace period of five years for commercial and private outdoor lighting, and six years for public lighting. In October 2005 that period ran out and, in principle, all outdoor lightings should now comply with this legislation. In practice, about 70% of all fixtures have now been replaced by units that comply with the present legislation.

Argentina: In Malargue, in the south of the province of Mendoza, an ordinance was adopted on April 14, 2005, to protect the sky from pollution.

Spain: Since 1988 the "Ley del Cielo" (Law of Heavens) protects the astronomical observatories on the Canary Islands from excess light pollution. In April 2005, the autonomous government of the Balearic Islands approved the law "Protection against light pollution" with the stated aims of: (i) maintaining as much as possible the natural night time environment; (ii) to promote energy efficient street lighting; (iii) to avoid obtrusive light in the domestic environment; and (iv) to prevent and reduce the negative effects of light pollution on the view of the night sky. The autonomous governments of Andalucia, Cantabria, and Cataluna are working on similar legislation.

United Kingdom: The UK now has legislation that makes light pollution a "Statutory Nuisance", bringing it into the same category as other accepted nuisances, such as noise and chemical pollution. The UK-based Institution of Lighting Engineers (ILE) has updated its Guidance Notes for the Reduction of Obtrusive Light 2005".

USA: A high-resolution night-time image of the island of Hawaii was obtained by astronaut Ed Lu on the International Space Station (ISS). This image has allowed the major light sources on the Big Island to be identified, and allowed quantitative measures of the amount of light emitted at all locations across the island. The brightest sources of light included airports, ports, and car sales areas. Efforts are underway at the Federal, State and County level to improve shielding of lights on the island of Hawaii.

The radio spectrum is a finite, and increasingly precious, resource for astronomical and space research. In order to obtain data of sufficiently high quality, observations must be free of harmful interference, such as RFI, emitted by other radio spectrum users. In order to attain this goal, regulatory protection measures, such as limits on RFI emission levels, need to be determined and introduced into legislation.

The organization that represents the requirements of the worldwide astronomical community in these regulatory matters is the Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science (IUCAF), which is an interdisciplinary committee of the International Council for Science (ICSU). The IAU, together with COSPAR and the International Union of Radio Science (URSI) are its sponsoring scientific Unions. IUCAF is active at different levels: local, national, regional and global, notably within the International Telecommunication Union (ITU) and the Space Frequencies Coordination Group (SFCG).

Current issues within the brief of IUCAF, that are of particular interest within the COPUOS framework, are the protection of astronomical observations at optical and infrared wavelengths from space-born communication lasers, the protection of astronomical observations at radio wavelengths from space, and the protection of the Shielded Zone of the Moon, the ultimate quiet zone for radio astronomy.

Education and Capacity Building

Education and capacity building are a high priority for the IAU and we support the work of Action Team 17, led by Japan, with enthusiasm. The IAU is also pleased to continue its

co-sponsoring of the series of successful educational workshops in Basic Space Science organized by COSPAR, in addition to its own range of educational initiatives.

The International Heliophysical Year - 2007 (IHY-2007), and the IAU

The International Heliophysical Year (IHY) is an international program of scientific research and collaboration to understand the external drivers of the space environment and climate, being organized for the time period centered on 2007: the 50th anniversary of the International Geophysical Year. The IHY will involve utilizing the existing assets from space and ground as a distributed Great Observatory, the deployment of new instrumentation, new observations from the ground and in space, and public education.

The IHY is being organized through science working groups that coordinate analysis and modelling efforts, and are responsible for planning IHY meetings, symposia and workshops through three major thrusts: scientific observing campaigns known as the Coordinated Investigation Programs (CIPs), data analysis workshops, scientific meetings and publications, and public outreach. The IHY Secretariat, in Washington, D.C., USA, provides international coordination, produces newsletters, maintains the IHY website at <www.ihy2007.org/>, writes articles, coordinates media affairs, and develops outreach products.

Within the IAU, coordination of IHY activities is under IAU Division II on "Sun and Heliosphere". Dr. David Webb, current President of IAU Division II, is also the IAU representative to the IHY. Prof. Hans J. Haubold, Officer-in-Charge of the Space Applications Section of the UN Office for Outer Space Affairs, is leading the IHY effort for the United Nations under the auspices of UN-COPUOS and the UN Basic Space Science (UN-BSS) program. At the 42nd session of this Subcommittee, February 2005, the IAU expressed in its statement support for the IHY program and for proclaiming 2007 as the International Geophysical and Heliophysical Year.

In the ensuing year much progress has been made in planning for IHY activities. Internationally, planning for the IHY is organized into seven regions: North America, South America, Africa, Europe, Western Asia, Russian Federation, and Asia-Pacific. Each of these regions has formed a regional planning committee to coordinate regional IHY participation. Representatives from each of these regions met in Toulouse, France, in July 2005 to begin the joint planning process. The second North American planning meeting was held in Boulder, CO, USA, in February 2005. The European region had its first planning meeting in Paris, France, in January 2006. The Balkan region will have a planning meeting in Turkey in Spring 2006. The Asia-Pacific regional meeting will be held in Beijing, China, in October 2006.

A key aspect of the IHY program is the cooperative initiative with the UN-BSS program. Through this program the IHY is planning to deploy arrays of small instruments to make global measurements. The program provides meaningful participation for developing nations and facilitates contacts between the instrument providers and university groups from potential host nations. The UN-BSS program has a 3-year work plan through 2008, approved by UN-COPUOS and the UN General Assembly, that is providing the IHY links to developing nations. The program has already facilitated over 2000 scientist contacts in almost 200 countries, many of which are eager to participate in international space science activities.

Some of these instrument concepts are mature and ready to be deployed, such as a network of radio telescopes to observe CME-related radio bursts, chains of magnetometer arrays to observed magnetic activity, and hundreds of GPS receivers to observe the ionosphere. These concepts were discussed at the UN/ESA/NASA/UAE Workshop on the International

Heliophysical Year IHY-2007, November 20-23, 2005, in Abu Dhabi and Al-Ain, United Arab Emirates. That Workshop brought together instrument providers and interested IHY participants to discuss facilities and requirements for each of ten instrument concepts that were selected. The IAU was pleased to co-sponsor that Workshop.

The IAU and IHY are involved in using the upcoming March 29, 2006, total solar eclipse for astronomical and IHY scientific and outreach activities. The path of the eclipse starts in Brazil, passes through North-Central Africa, then into Turkey, Georgia, and Russia, before ending in Mongolia. Planned activities include establishing viewing centres in each country along the path of totality via the IHY coordinator for that country, providing each viewing centre with eclipse kits, consisting of posters, eye glasses, and eclipse literature, establishing networks among expeditions to share images, movies, and webcasts, and establishing an IHY eclipse web site. The IAU activities on solar eclipses are coordinated through its Division II Working Group on "Solar Eclipses" with its website <www.totalsolareclipse.net>. Its tasks are to coordinate eclipse efforts, particularly making liaisons with customs and other officials of countries through which the path of totality passes; and to provide educational information about the safe observation of the eclipse for the wide areas where the total or partial eclipse will be visible.

The IAU is sponsoring several scientific eclipse expeditions, and its IAU Symposium No. 233 on "Solar Activity and its Magnetic Origin" <www.iaus233.edu.eg/>, in Cairo March 31 - April 4, 2006, just after the eclipse. Affiliated with this meeting are a conference on Culture and Astronomy in 2006 on March 26, a training course for young astronomers, and various local outreach activities related to the meeting and the eclipse.

In addition, the IHY program will be discussed at the IAU General Assembly in Prague, Czech Republic, August 14-25, 2006, in two fora: in a Special Session on Astronomy for the Developing World, August 21-22; and in a meeting of the IAU Division II Working Group on International Collaboration on Space Weather, August 24, that will focus on IHY and planning of European and other regional IHY activities.

The International Heliophysical Year - 2007 will be discussed further under item 13 of the agenda of this Subcommittee session.

The International Year of Astronomy - 2009 (IYA 2009), and the IAU

At the IAU General Assembly in Sydney, Australia, July 2003, the IAU voted unanimously in favour of a resolution asking the UN to declare the year 2009 as the International Year of Astronomy. This in recognition of the Italian astronomer, physicist and philosopher Galileo Galilei (1564 - 1642), who introduced in 1609 the astronomical telescope. A proclamation was subsequently prepared by the IAU Working Group "2009: Year of Astronomy" and forwarded to the UNESCO Executive Board in 2005.

In October 2005, the UNESCO General Conference recommended to the UN that the UN General Assembly in its 60th session adopts a resolution declaring 2009 as the International Year of Astronomy. In its recommendations to the UN, the General Conference of UNESCO recognizes "... that the study of the universe has led to numerous scientific discoveries that have great influence not only on humankind's understanding of the universe, but also on the technological, social and economic development of society ...", and "... that astronomy proves to have great implications in the study of science, philosophy, religion and culture ...".

The IAU is seeking further support from ICSU and its union members in this respect, as well as from national astronomical societies. The IAU hopes and believes that by declaring 2009 the International Year of Astronomy, universities, schools, musea, observatories,

societies, and others will be encouraged to increase their efforts to reach the public, especially young people, and to enthuse them about astronomy in particular, and about science in general.

In anticipation of the desired adoption of the declaration by the UN, the IAU will coordinate its continued planning of this important event through its Working Group "2009: Year of Astronomy", with assistance of its Working Group on "Communication with the Public", and in close consultation with historians and educators within the IAU.

In conclusion

The IAU is gratified to acknowledge the progress which is being made on several issues that are high on the priority list of astronomers worldwide, but also emphasizes its concern in the fields expressed above, both for the sake of our science and for that of the world in which our descendants will live. This Subcommittee, and other international bodies such as the Organisation for Economic Co-operation and Development (OECD), the International Telecommunication Union (ITU), and ICSU, are contributing to this progress within their respective fields. It will help us all, if Delegates would call the attention of their Governments to this spectrum of parallel activities, and to the value of establishing synergy between them.

Mr. Chairman, I thank you for the opportunity to share these views with you and the distinguished delegates and representatives.

Karel van der Hucht, IAU AGS and Representative to UN-COPUOS, February 2006

6. XXVITH IAU GENERAL ASSEMBLY

6.1. OPENING AND CLOSING SESSIONS

Inaugural Ceremony and First Session: Tuesday, August 15, 2006, 14:00 - 17:30 Prague Congress Center

1. Inaugural Ceremony
2. Opening of the General Assembly
3. Welcome of official Representatives of National Members
4. Admission of new National Members of the Union
 - a. Presentation by new National Members
 - b. Vote on admission of the new National Members
5. Vote on proposed revision of the Statutes and Bye-Laws
6. Appointment of the Finance Committee
7. Appointment of the Nomination Committee
8. Report of the Executive Committee 2003-2006
9. Report of the Special Nominating Committee

Second Session: Thursday, August 24, 14:00 - 17:30 Prague Congress Center

10. Division and Commission Matters
 - a. Election of Division Presidents and Vice Presidents 2006-2009
 - b. Adjustments to the Divisional Structure
 - c. Names of Commission Presidents and Vice-Presidents 2006-2009

11. Individual Membership
 - a. Names of new Individual Members of the Union
 - b. Names of deceased Individual Members of the Union since GA XXV
12. Financial matters
 - a. Report of the Finance Committee on the accounts and the budget 2007-2009
 - b. Vote on proposed budget 2007-2009
 - c. Appointment of a Finance Sub-Committee 2006-2009
13. Resolutions
 - a. Report of the Resolutions Committee
 - b. Presentation of Resolutions of type B by proposers
 - c. Vote on the Resolutions
 - d. Appointment of a Resolutions Committee 2006-2009
14. Appointment of the Special Nominating Committee 2006-2009
15. Promotion of the XXVIIth General Assembly
16. Place and Date of the XXVIIIth General Assembly
17. Election of Executive Committee Members 2006-2009
 - a. President and President-Elect
 - b. Six Vice-Presidents
 - c. General Secretary and Assistant General Secretary
18. Addresses by Incoming and Retiring Officers
19. Closure of the General Assembly

6.2. CHANGES IN STATUTES AND BYE-LAWS

The revised IAU Statutes & Bye-Laws will be submitted to the vote of the National Member Representatives during the first Session of the XXVIth General Assembly in Prague on August 15, 2005. The changes compared to the current Statutes are in bold, either underlined (for additions) or striked out (for deletions).

STATUTES

I. OBJECTIVE

1. The International Astronomical Union (referred to as the Union) is an international non-governmental organisation. Its objective is to promote the science of astronomy in all its aspects.

II. DOMICILE AND INTERNATIONAL RELATIONS

2. The legal domicile of the Union is Paris.
3. The Union adheres to, and co-operates with the body of international scientific organisations through ICSU: The International Council for Science. It supports and applies the policies on the Freedom, Responsibility, and Ethics in the Conduct of Science defined by ICSU.

III. COMPOSITION OF THE UNION

4. The Union is composed of:
 - a. National Members (adhering organisations)
 - b. Individual Members (adhering persons)

IV. NATIONAL MEMBERS

5. An organisation representing a national professional astronomical community, desiring to promote its participation in international astronomy and supporting the

objective of the Union, may adhere to the Union as a National Member. Exceptionally, a National Member may represent the community in the territory of more than one nation, provided that no part of that community is represented by another National Member.

6. An organisation desiring to join the Union as a National Member while developing professional astronomy in the community it represents may do so on an interim basis, on the same conditions as above, for a period of up to nine years. After that time, it will either become a National Member on a permanent basis, or its membership in the Union will terminate.
7. A National Member is admitted to the Union on a permanent or interim basis by the General Assembly. It may resign from the Union by so informing the General Secretary, in writing.
8. A National Member may be either:
 - a. the organisation by which scientists of the corresponding nation or territory adhere to ICSU or:
 - b. an appropriate National Society or Committee for Astronomy, or
 - c. an appropriate institution of higher learning.
9. The adherence of a National Member is suspended if its dues have not been paid for five years; it resumes, upon the approval of the Executive Committee, when the arrears have been paid. After five years of suspension of a National Member, the Executive Committee may recommend to the General Assembly to terminate the membership.
10. A National Member is admitted to the Union in one of the categories specified in the Bye-Laws.

V. INDIVIDUAL MEMBERS

11. A professional scientist who is active in some branch of astronomy may be admitted to the Union by the Executive Committee as an Individual Member. An Individual Member may resign from the Union by so informing the General Secretary, in writing.

VI. GOVERNANCE

12. The governing bodies of the Union are:
 - a. The General Assembly;
 - b. The Executive Committee; and
 - c. The Officers.

VII. GENERAL ASSEMBLY

13. The General Assembly consists of the National Members and of Individual Members. The General Assembly determines the overall policy of the Union.
 - 13.a. The General Assembly approves the Statutes of the Union, including any changes therein.
 - 13.b. The General Assembly approves Bye-Laws specifying the Rules of Procedure to be used in applying the Statutes.
 - 13.c. The General Assembly elects an Executive Committee to implement its decisions and to direct the affairs of the Union between successive ordinary meetings of the General Assembly. The Executive Committee reports to the General Assembly.
 - 13.d. The General Assembly appoints a Finance Committee, consisting of one representative of each National Member having the right to vote on budgetary matters according to Article 14.a., to advise it on the approval of the budget and

accounts of the Union. The General Assembly also appoints a Finance Sub-Committee to advise the Executive Committee on its behalf on budgetary matters between General Assemblies.

- 13.e. The General Assembly appoints a Special Nominating Committee to prepare a suitable slate of candidates for election to the incoming Executive Committee.
- 13.f. The General Assembly appoints a Nominating Committee to advise the Executive Committee on the admission of Individual Members.
14. Voting at the General Assembly **on issues of a primarily scientific nature, as determined by the Executive Committee, is by Individual Members. Voting on all other matters** is by National Member. Each National Member authorises a representative to vote on its behalf.
 - 14.a. On questions involving the budget of the Union, the number of votes for each National Member is one greater than the number of its category, referred to in article 10. National Members with interim status, or which have not paid their dues for years preceding that of the General Assembly, may not participate in the voting.
 - 14.b. On questions concerning the administration of the Union, but not involving its budget, each National Member has one vote, under the same condition of payment of dues as in 14.a.
 - 14.c. National Members may vote by correspondence on questions concerning the agenda for the General Assembly.
 - 14.d. A vote is valid only if at least two thirds of the National Members having the right to vote by virtue of article 14.a. participate in it.
15. The decisions of the General Assembly are taken by an absolute majority of the votes cast. However, a decision to change the Statutes can only be taken with the approval of at least two thirds of the votes of all National Members having the right to vote by virtue of article 14.a. Where there is an equal division of votes, the President determines the issue.
16. Changes in the Statutes or Bye-Laws can only be considered by the General Assembly if a specific proposal has been duly submitted to the National Members and placed on the Agenda of the General Assembly by the procedure and deadlines specified in the Bye-Laws.

VIII. EXECUTIVE COMMITTEE

17. The Executive Committee consists of the President of the Union, the President-Elect, six Vice-Presidents, the General Secretary, and the Assistant General Secretary, elected by the General Assembly on the proposal of the Special Nominating Committee.

IX. OFFICERS

18. The Officers of the Union are the President, the General Secretary, the President-Elect, and the Assistant General Secretary. The Officers decide short-term policy issues within the general policies of the Union as decided by the General Assembly and interpreted by the Executive Committee.

X. SCIENTIFIC DIVISIONS

19. As an effective means to promote progress in the main areas of astronomy, the scientific work of the Union is structured through its Scientific Divisions. Each Division covers a broad, well-defined area of astronomical science, or deals with international matters of an interdisciplinary nature. As far as practicable, Divisions should include comparable fractions of the Individual Members of the Union.

20. Divisions are created or terminated by the General Assembly on the recommendation of the Executive Committee. The activities of a Division are organised by an Organising Committee chaired by a Division President. The Division President and a Vice-President are elected by the General Assembly on the proposal of the Executive Committee, and are ex-officio members of the Organising Committee.

XI. SCIENTIFIC COMMISSIONS

21. Within Divisions, the scientific activities in well-defined disciplines within the subject matter of the Division may be organised through scientific Commissions. In special cases, a Commission may cover a subject common to two or more Divisions and then becomes a Commission of all these Divisions.
22. Commissions are created or terminated by the Executive Committee upon the recommendation of the Organising Committee(s) of the Division(s) desiring to create or terminate them. The activities of a Commission are organised by an Organising Committee chaired by a Commission President. The Commission President and a Vice-President are appointed by the Organising Committee(s) of the corresponding Division(s) upon the proposal of the Organising Committee of the Commission.

XII. BUDGET AND DUES

- 23.a. For each ordinary General Assembly the Executive Committee prepares a budget proposal covering the period to the next ordinary General Assembly, together with the accounts of the Union for the preceding period. It submits these, with the advice of the Finance Sub-Committee, to the Finance Committee for consideration before their submission to the vote of the General Assembly.
- 23.b. The Finance Committee examines the accounts of the Union from the point of view of responsible expenditure within the intent of the previous General Assembly, as interpreted by the Executive Committee. It also considers whether the proposed budget is adequate to implement the policy of the General Assembly. It submits reports on these matters to the General Assembly before its decisions concerning the approval of the accounts and of the budget.
- 23.c. The amount of the unit of contribution is decided by the General Assembly as part of the budget approval process.
- 23.d. Each National Member pays annually a number of units of contribution corresponding to its category. The number of units of contribution for each category shall be specified in the Bye-Laws.
- 23.e. National Members having interim status pay annually one half unit of contribution.
- 23.f. The payment of contributions is the responsibility of the National Members. The liability of each National Member in respect of the Union is limited to the amount of contributions due through the current year.

XIII. EMERGENCY POWERS

24. If, through events outside the control of the Union, circumstances arise in which it is impracticable to comply fully with the provisions of the Statutes and Bye-Laws of the Union, the Executive Committee and Officers, in the order specified below, shall take such actions as they deem necessary for the continued operation of the Union. Such action shall be reported to all National Members as soon as this becomes practicable, until an ordinary or extraordinary General Assembly can be convened.

The following is the order of authority: The Executive Committee in meeting or by correspondence; the President of the Union; the General Secretary; or failing the practicability or availability of any of the above, one of the Vice-Presidents.

XIV. DISSOLUTION OF THE UNION

25. A decision to dissolve the Union is only valid if taken by the General Assembly with the approval of three quarters of the National Members having the right to vote by virtue of article 14.a. Such a decision shall specify a procedure for settling any debts and disposing of any assets of the Union.

XV. FINAL CLAUSES

26. These Statutes enter into force on August 15, 2006.
27. The present Statutes are published in French and English versions. In case of doubt, the French version is the only authority.

BYE-LAWS

I. MEMBERSHIP

1. An application for admission to the Union as a National Member shall be submitted to the General Secretary by the proposing organisation at least eighteen months before the next ordinary General Assembly.
2. The Executive Committee shall examine the application and resolve any outstanding issues concerning the nature of the proposed National Member and the category of membership. Subsequently, the Executive Committee shall forward the application to the General Assembly for decision, with its recommendation as to its approval or rejection.
3. The Executive Committee shall examine any proposal by a National Member to change its category of adherence to a more appropriate level. If the Executive Committee is unable to approve the request, either party may refer the matter to the next General Assembly.
4. Individual Members are admitted by the Executive Committee upon the nomination of a National Member or, ~~if the individual in question is not represented by a National Member,~~ by the President of a Division. The Executive Committee shall publish the criteria and procedures for membership, and shall consult the Nominating Committee before approving applications for admission as Individual Members.

II. GENERAL ASSEMBLY

5. The ordinary General Assembly meets, as a rule, once every three years. Unless determined by the previous General Assembly, the place and date of the ordinary General Assembly shall be fixed by the Executive Committee and be communicated to the National Members at least one year in advance.
6. The President may summon an extraordinary General Assembly with the consent of the Executive Committee, and must do so at the request of at least one third of the National Members. The date, place, and agenda of business of an extraordinary General Assembly must be communicated to all National Members at least two months before the first day of the Assembly.
7. Matters to be decided upon by the General Assembly shall be submitted for consideration by those concerned as follows, counting from the first day of the General Assembly:

- 7.a. A motion to amend the Statutes or Bye-Laws may be submitted by a National Member or by the Executive Committee. Any such motion shall be submitted to the General Secretary at least nine months in advance and be forwarded, with the recommendation of the Executive Committee as to its adoption or rejection, to the National Members at least six months in advance.
- 7.b. The General Secretary shall distribute the budget prepared by the Executive Committee to the National Members at least eight months in advance. Any motion to modify this budget, or any other matters pertaining to it, shall be submitted to the General Secretary at least six months in advance. Any such motion shall be submitted, with the advice of the Executive Committee as to its adoption or rejection, to the National Members at least four months in advance.
- 7.c. Any motion or proposal concerning the administration of the Union, and not affecting the budget, by a National Member, or by the Organising Committee of a Scientific Division of the Union, shall be placed on the Agenda of the General Assembly, provided it is submitted to the General Secretary, in specific terms, at least six months in advance.
- 7.d. Any motion of a scientific character submitted by a National Member, a Scientific Division of the Union, or by an ICSU Scientific Committee or Programme on which the Union is formally represented, shall be placed on the Agenda of the General Assembly, provided it is submitted to the General Secretary, in specific terms, at least six months in advance.
- 7.e. The complete agenda, including all such motions or proposals, shall be prepared by the Executive Committee and submitted to the National Members at least four months in advance.
- 8. The President may invite representatives of other organisations, scientists in related fields, and young astronomers to participate in the General Assembly. Subject to the agreement of the Executive Committee, the President may authorise the General Secretary to invite representatives of other organisations, and the National Members or other appropriate IAU bodies to invite scientists in related fields and young astronomers.

III. SPECIAL NOMINATING COMMITTEE

- 9. The Special Nominating Committee consists of the President and past President of the Union, a Member proposed by the retiring Executive Committee, and four Members selected by the Nominating Committee from among twelve Members proposed by Presidents of Divisions, with due regard to an appropriate distribution over the major branches of astronomy.
 - 9.a. Except for the President and immediate past President, present and former Members of the Executive Committee shall not serve on the Special Nominating Committee. No two Members of the Special Nominating Committee shall belong to the same nation or National Member.
 - 9.b. The General Secretary and the Assistant General Secretary participate in the work of the Special Nominating Committee in an advisory capacity.
- 10. The Special Nominating Committee is appointed by the General Assembly, to which it reports directly. It assumes its duties immediately after the end of the General Assembly and remains in office until the end of the ordinary General Assembly next following that of its appointment, and it may fill any vacancy occurring among its Members.

IV. OFFICERS AND EXECUTIVE COMMITTEE

- 11.a. The President of the Union remains in office until the end of the ordinary General Assembly next following that of election. The President-Elect succeeds the President at that moment.
- 11.b. The General Secretary and the Assistant General Secretary remain in office until the end of the ordinary General Assembly next following that of their election. Normally the Assistant General Secretary succeeds the General Secretary, but both officers may be re-elected for another term.
- 11.c. The Vice-Presidents remain in office until the end of the ordinary General Assembly following that of their election. They may be immediately re-elected once to the same office.
- 11.d. The elections take place at the last session of the General Assembly, the names of the candidates proposed having been announced at a previous session.
12. The Executive Committee may fill any vacancy occurring among its Members. Any person so appointed remains in office until the end of the next ordinary General Assembly.
13. The past President and General Secretary become advisers to the Executive Committee until the end of the next ordinary General Assembly. They participate in the work of the Executive Committee and attend its meetings without voting rights.
14. The Executive Committee shall formulate Working Rules to clarify the application of the Statutes and Bye-Laws. Such Working Rules shall include the criteria and procedures by which the Executive Committee will review applications for Individual Membership; standard Terms of Reference for the Scientific Commissions of the Union; rules for the administration of the Union's financial affairs by the General Secretary; and procedures by which the Executive Committee may conduct business by electronic or other means of correspondence. The Working Rules shall be published electronically and in the Transactions of the Union.
15. The Executive Committee appoints the Union's official representatives to other scientific organisations.
16. The Officers and Members of the Executive Committee cannot be held individually or personally liable for any legal claims or charges that might be brought against the Union.

V. SCIENTIFIC DIVISIONS

17. The Divisions of the Union shall pursue the scientific objects of the Union within their respective fields of astronomy. Activities by which they do so include the encouragement and organisation of collective investigations, and the discussion of questions relating to international agreements, cooperation, or standardization. They shall report to each General Assembly on the work they have accomplished and such new initiatives as they are undertaking.
18. Each Scientific Division shall consist of:
 - 18.a. An Organising Committee, **normally** of 6-12 persons, including the Division President and Vice-President, and a Division Secretary appointed by the Organising Committee from among its Members.
 - 18.b. Members of the Union appointed by the Organising Committee in recognition of their special experience and interests. The Committee is responsible for conducting the business of the Division.

19. Normally, the Division President is succeeded by the Vice-President at the end of the General Assembly following their election, but both may be re-elected for a second term. Before each General Assembly, the Organising Committee shall organise an election from among the membership, by electronic or other means suited to the Commission structure of the Division, of a new Organising Committee to take office for the following term. Election procedures should, as far as possible, be similar among the Divisions and require the approval of the Executive Committee.
20. Each Scientific Division may structure its scientific activities by creating a number of Commissions. In order to monitor and further the progress of its field of astronomy, the Division shall consider, before each General Assembly, whether its Commission structure serves its purpose in an optimum manner. It shall subsequently present its proposals for the creation, continuation or discontinuation of Commissions to the Executive Committee for approval.
21. With the approval of the Executive Committee, a Division may appoint Working Groups to study well-defined scientific issues and report to the Division. Unless specifically re-appointed by the same procedure, such Working Groups cease to exist at the next following General Assembly.

VI. SCIENTIFIC COMMISSIONS

22. A Scientific Commission shall consist of:
 - 22.a. a President and an Organising Committee consisting of 4-8 persons elected by the Commission membership, subject to the approval of the Organising Committee of the Division;
 - 22.b. Members of the Union, appointed by the Organising Committee, in recognition of their special experience and interests, subject to confirmation by the Organising Committee of the Division.
23. A Commission is initially created for a period of six years. The parent Division may recommend its continuation for additional periods of three years at a time, if sufficient justification for its continued activity is presented to the Division and the Executive Committee. The activities of a Commission is governed by Terms of Reference, which are based on a standard model published by the Executive Committee and are approved by the Division.
24. With the approval of the Division, a Commission may appoint Working Groups to study well-defined scientific issues and report to the Commission. Unless specifically re-appointed by the same procedure, such Working Groups cease to exist at the next following General Assembly.

VII. ADMINISTRATION AND FINANCES

25. Each National Member pays annually to the Union a number of units of contribution corresponding to its category as specified below; National Members with interim status pay annually one half unit of contribution:

Categories as defined in article 10 of the Statutes:

I	II	III	IV	V	VI	VII	VIII	IX	X	<u>XI</u>	<u>XII</u>
1	2	4	6	10	14	20	27	35	45	<u>60</u>	<u>80</u>
<i>Number of units of contribution</i>											

~~If further Categories of Adherence are required in the future, the step in the number of units shall be 10 units/category.~~

26. The income of the Union is to be devoted to its objects, including:
- 26.a. the promotion of scientific initiatives requiring international co-operation;
 - 26.b. the promotion of the education and development of astronomy world-wide;
 - 26.c. the costs of the publications and administration of the Union.
27. Funds derived from donations are reserved for use in accordance with the instructions of the donor(s). Such donations and associated conditions require the approval of the Executive Committee.
28. The General Secretary is the legal representative of the Union. The General Secretary is responsible to the Executive Committee for not incurring expenditure in excess of the amount specified in the budget as approved by the General Assembly.
29. The General Secretary shall consult with the Finance Sub-Committee (Statutes 13.d.) in preparing the accounts and budget proposals of the Union, and on any other matters of major importance for the financial health of the Union.
- The comments and advice of the Finance Sub-Committee shall be made available to the Officers and Executive Committee as specified in the Working Rules.
30. An Administrative office, under the direction of the General Secretary, conducts the correspondence, administers the funds, and preserves the archives of the Union.
31. The Union has copyright to all materials printed in its publications, unless otherwise arranged.

VIII. FINAL CLAUSES

32. These Bye-Laws enter into force on August 15, 2006.

6.3. RESOLUTIONS

The following four Resolutions will be presented for discussion and voting in the second session of the General Assembly:

Last updates: July 25, 2006

RESOLUTION 1

Adoption of the P03 Precession Theory and Definition of the Ecliptic

Proposed by: IAU Division I WG on "Precession and the Ecliptic"

Supported by: IAU Division I

The following persons will be available for consultations and, if necessary, to speak on the above resolution at the General Assembly on August 15 or 24, 2006:

Proposer:	James L. Hilton (USA)	Email: jhilton@aa.usno.navy.mil
Substitute:	Nicole Capitaine (France)	Email: nicole.capitaine@obspm.fr
Seconder:	Patrick Wallace (UK)	Email: ptw@star.rl.ac.uk
Substitute:	Jan Vondrak (Czech Rep.)	Email: vondrak@ig.cas.cz

The XXVIth International Astronomical Union General Assembly,

Noting

1. the need for a precession theory consistent with dynamical theory,
2. that, while the precession portion of the IAU 2000A precession-nutation model, recommended for use beginning on 1 January 2003 by resolution B1.6 of the XXIVth IAU General Assembly, is based on improved precession rates with respect to the IAU 1976 precession, it is not consistent with dynamical theory, and

3. that resolution B1.6 of the XXIVth General Assembly also encourages the development of new exions for precession consistent with the IAU 2000A precession-nutation model, and

Recognizing

1. that the gravitational attraction of the planets make a significant contribution to the motion of the Earth's equator, making the terms *lunisolar precession* and *planetary precession* misleading,
2. the need for a definition of the ecliptic for both astronomical and civil purposes, and
3. that in the past, the ecliptic has been defined both with respect to an observer situated in inertial space (inertial definition) and an observer co-moving with the ecliptic (rotating definition),

Accepts

The conclusion of the IAU Division I Working Group on Precession and the Ecliptic published in Hilton *et al.* 2006, *Celest.Mech.* 94, 351, and

Recommends

1. that the terms *lunisolar precession* and *planetary precession* be replaced by *precession of the equator* and *precession of the ecliptic*, respectively,
2. that, beginning on 1 January 2009, the precession component of the IAU 2000A precession nutation model be replaced by the P03 precession theory, of Capitaine *et al.* (2003, *A&A*, **412**, 567-586) for the precession of the equator (Eqs. 37) and the precession of the ecliptic (Eqs. 38); the same paper provides the polynomial developments for the P03 primary angles and a number of derived quantities for use in both the equinox based and CIO based paradigms,
3. that the choice of precession parameters be left to the user, and
4. that the ecliptic pole should be explicitly defined by the mean orbital angular momentum vector of the Earth-Moon barycenter in an inertial reference frame, and this definition should be explicitly stated to avoid confusion with other, older definitions.

Note

Formulas for constructing the precession matrix using various parameterizations are given in Eqs. 1, 6, 7, 11, 12 and 22 of Hilton et al. (2006). The recommended polynomial developments for the various parameters are given in Table 1 of the same paper, including the P03 exions set out in exions (37) to (41) of Capitaine et al. (2003) and Tables 3-5 of Capitaine et al. (2005).

References

Capitaine, N. Wallace, P.T., & Chapront, J. 2003, *A&A*, **412**, 567

Capitaine, N. Wallace, P.T., & Chapront, J. 2005, *A&A*, **432**, 355

Hilton, J.L., Capitaine, N., Chapront, J., Ferrandiz, J.M., Fienga, A., Fukushima, T., Getino, J., Mathews, P., Simon, J.-L., Soffel, M., Vondrak, J., Wallace, P., & Williams, J. 2006, *Celest. Mech.* 94, 351.

Action to be taken by the General Secretary upon adoption of the Resolution

Adoption of the P03 Precession Theory and Definition of the Ecliptic

The following institutions should receive formal notification of the action:

Her Majesty's Nautical Almanac Office

Institut de mécanique céleste et de calcul des éphémérides

Institute of Applied Astronomy of the Russian Academy of Sciences

International Association of Geodesy (IAG)

International Earth Rotation and Reference Systems Service (IERS)

International Union of Geodesy and Geophysics (IUGG)
 International VLBI Service for Geodesy and Astrometry (IVS)
 Japanese Maritime Safty Agency (JMSA)
 Nautical Astronomical Observatory of Japan (NAOJ)
 Nautical Almanac Office of the United States Naval Observatory

Last updates: July 11, 2006

RESOLUTION 2

Supplement to the IAU 2000 resolutions on reference systems

Proposed by: IAU Division I WG on "Nomenclature for Fundamental Astronomy"

Supported by: IAU Division I

The following persons will be available for consultations and, if necessary, to speak on the above resolution at the General Assembly on August 15 or 24, 2006:

Proposer: Nicole Capitaine (France) Email: nicole.capitaine@obspm.fr

Substitute: Patrick Wallace (UK) Email: ptw@star.rl.ac.uk

Seconder: Dennis D. McCarthy (USA) Email: mccarthy.dennis@usno.navy.mil

Substitute: Sergei Klioner (Germany) Email: klioner@rcs.urz.tu-dresden.de

Recommendation 1: Harmonizing the name of the pole and origin to "intermediate"

The XXVIth International Astronomical Union General Assembly,

Noting

1. the adoption of resolutions IAU B1.1 through B1.9 by the IAU General Assembly of 2000,
2. that the International Earth Rotation and Reference Systems Service (IERS) and the Standards Of Fundamental Astronomy (SOFA) activity have made available the models, procedures, data and software to implement these resolutions operationally, and that the Almanac Offices have begun to implement them beginning with their 2006 editions, and
3. the recommendations of the IAU Working Group on "Nomenclature for Fundamental Astronomy" (IAU Transactions XXVIA, 2005), and

Recognizing

1. that using the designation "intermediate" to refer to both the pole and the origin of the new systems linked to the Celestial Intermediate Pole and the Celestial or Terrestrial Ephemeris origins, defined in Resolutions B1.7 and B1.8, respectively would improve the consistency of the nomenclature, and
2. that the name "Conventional International Origin" with the potentially conflicting acronym CIO is no longer commonly used to refer to the reference pole for measuring polar motion as it was in the past by the International Latitude Service,

Recommends

1. that, the designation "intermediate" be used to describe the moving celestial and terrestrial reference systems defined in the 2000 IAU Resolutions and the various related entities, and
2. that the terminology "Celestial Intermediate Origin" (CIO) and "Terrestrial Intermediate Origin" (TIO) be used in place of the previously introduced "Celestial Ephemeris Origin" (CEO) and "Terrestrial Ephemeris Origin" (TEO), and
3. that authors carefully define acronyms used to designate entities of astronomical reference systems to avoid possible confusion.

Recommendation 2: Default orientation of the Barycentric Celestial Reference System (BCRS) and Geocentric Celestial Reference System (GCRS)

The XXVIth International Astronomical Union General Assembly,

Noting

1. the adoption of resolutions IAU B1.1 through B1.9 by the IAU General Assembly of 2000,
2. that the International Earth Rotation and Reference Systems Service (IERS) and the Standards Of Fundamental Astronomy (SOFA) activity have made available the models, procedures, data and software to implement these resolutions operationally, and that the Almanac Offices have begun to implement them beginning with their 2006 editions,
3. that, in particular, the systems of space-time coordinates defined by IAU 2000 Resolution B1.3 for (a) the solar system (called the Barycentric Celestial Reference System, BCRS) and (b) the Earth (called the Geocentric Celestial Reference System, GCRS) have begun to come into use,
4. the recommendations of the IAU Working Group on "Nomenclature for Fundamental Astronomy" (IAU Transactions XXVIA, 2005), and
5. a recommendation from the IAU Working Group on "Relativity in Celestial Mechanics, Astrometry and Metrology",

Recognizing

1. that the BCRS definition does not determine the orientation of the spatial coordinates,
2. that the natural choice of orientation for typical applications is that of the ICRS, and
3. that the GCRS is defined such that its spatial coordinates are kinematically non-rotating with respect to those of the BCRS,

Recommends

that the BCRS definition is completed with the following: "For all practical applications, unless otherwise stated, the BCRS is assumed to be oriented according to the ICRS axes. The orientation of the GCRS is derived from the ICRS-oriented BCRS".

Action to be taken by the General Secretary upon adoption of the Resolution

Supplement to the IAU 2000 resolutions on reference systems

The following institutions should receive formal notification of the action:

International Union of Geodesy and Geophysics (IUGG)
 International Association of Geodesy (IAG)
 International Earth Rotation and Reference Systems Service (IERS)
 International VLBI Service for Geodesy and Astrometry (IVS)
 International Laser Ranging Service (ILRS)
 International GNSS Service (IGS)
 International DORIS Service (IDS)

Last updates: July 11, 2006

RESOLUTION 3

Re-definition of Barycentric Dynamical Time, TDB

Proposed by: IAU Division I WG on "Nomenclature for Fundamental Astronomy"

Supported by: IAU Division I

The following persons will be available for consultations and, if necessary, to speak on the above resolution at the General Assembly on August 15 or 24, 2006:

Proposer: Nicole Capitaine (France) Email: nicole.capitaine@obspm.fr
 Substitute: Patrick Wallace (UK) Email: ptw@star.rl.ac.uk
 Seconder: Dennis D. McCarthy (USA) Email: mccarthy.dennis@usno.navy.mil
 Substitute: Sergei Klioner (Germany) Email: klioner@rcs.urz.tu-dresden.de

The XXVIth International Astronomical Union General Assembly,

Noting

1. that IAU Recommendation 5 of Commissions 4, 8 and 31 (1976) introduced, as a replacement for Ephemeris Time (ET), a family of dynamical time scales for barycentric ephemerides and a unique time scale for apparent geocentric ephemerides,
2. that IAU Resolution 5 of Commissions 4, 19 and 31 (1979) designated these time scales as Barycentric Dynamical Time (TDB) and Terrestrial Dynamical Time (TDT) respectively, the latter subsequently renamed Terrestrial Time (TT), in IAU Resolution A4, 1991,
3. that the difference between TDB and TDT was stipulated to comprise only periodic terms, and
4. that Recommendations III and V of IAU Resolution A4 (1991) (i) introduced the coordinate time scale Barycentric Coordinate Time (TCB) to supersede TDB, (ii) recognized that TDB was a linear transformation of TCB, and (iii) acknowledged that, where discontinuity with previous work was deemed to be undesirable, TDB could be used, and

Recognizing

1. that TCB is the coordinate time scale for use in the Barycentric Celestial Reference System,
2. the possibility of multiple realizations of TDB as defined currently,
3. the practical utility of an unambiguously defined coordinate time scale that has a linear relationship with TCB chosen so that this coordinate time scale remains close to Terrestrial Time (TT) at the geocenter for an extended time span,
4. the desirability for consistency with the Teph time scales used in the Jet Propulsion Laboratory (JPL) solar-system ephemerides and existing TDB implementations such as that of Fairhead & Bretagnon (*A&A* **229**, 240, 1990), and
5. the 2006 recommendations of the IAU Working Group on "Nomenclature for Fundamental Astronomy" (IAU Transactions XXVIB, 2006),

Recommends

that, in situations calling for the use of a coordinate time scale that is linearly related to Barycentric Coordinate Time (TCB) and remains close to Terrestrial Time (TT) at the geocenter for an extended time span, TDB be defined as the following linear transformation of TCB:

$$\text{TDB} = \text{TCB} - L_B \times (\text{JD}_{\text{TCB}} - T_0) \times 86400 + \text{TDB}_0,$$

$$\text{where } T_0 = 2443144.5003725,$$

$$\text{and } L_B = 1.550519768 \times 10^{-8} \text{ and } \text{TDB}_0 = -6.55 \times 10^{-5} \text{ s are defining constants.}$$

Notes

1. JD_{TCB} is the TCB Julian date. Its value is $T_0 = 2443144.5003725$ for the event 1977 January 1 00h 00m 00s TAI at the geocenter, and it increases by one for each 86400s of TCB.

2. The value L_B is equal to $L_C + L_G - L_C \times L_G$, where L_G is given in IAU Resolution B1.9 (2000) and L_C has been determined (Irwin & Fukushima, 1999, *A&A* **348**, 642) using the JPL ephemeris DE405. When using the JPL Planetary Ephemeris DE405, the defining L_B value effectively eliminates a linear drift between TDB and TT at the geocenter. When realizing TCB using other ephemerides, the difference between TDB and TT at the geocenter may include some linear drift which is not expected to exceed 1 ns per year.
3. The difference between TDB and TT at the surface of the Earth remains under 2 ms for several millennia around the present epoch.
4. The independent time argument of the JPL ephemeris DE405, which is called Teph (Standish, *A&A*, **336**, 381, 1998), is for practical purposes the same as TDB defined in this Resolution.
5. The constant term TDB_0 is chosen to provide reasonable consistency with the widely used TDB - TT formula of Fairhead & Bretagnon (1990). n.b. The presence of TDB_0 means that TDB is not synchronized with TT, TCG and TCB at 1977 Jan 1.0 TAI at the geocenter.
6. For solar system ephemerides development the use of TCB is encouraged.

Action to be taken by the General Secretary upon adoption of the Resolution
Re-definition of Barycentric Dynamical Time, TDB

The following institutions should receive formal notification of the action:

International Union of Geodesy and Geophysics (IUGG)
 International Association of Geodesy (IAG)
 International Earth Rotation and Reference Systems Service (IERS)
 International VLBI Service for Geodesy and Astrometry (IVS)
 International Laser Ranging Service (ILRS)
 International GNSS Service (IGS)
 International DORIS Service (IDS)

Last updates: July 11, 2006

RESOLUTION 4

Endorsement of the Washington Charter for Communicating Astronomy with the Public

Proposed by: Ian Robson (Co-Chair of the IAU WG on "Communicating Astronomy with the Public")

The Washington Charter was one of the outcomes of the 2nd International Conference on Communicating Astronomy with the Public held in Washington DC in October 2003. Council endorsed the Washington Charter in March 2004. Nineteen other societies, organizations and facilities have endorsed the Charter, including the BAA and PPARC.

At the Communicating Astronomy with the Public 2005 meeting in Garching last June a revised version of the Charter was proposed. This softened the language and also tidied up some of the phraseology. This was endorsed by the attendees and accepted by the IAU Working Group. The revised version is appended.

The IAU General Assembly is requested to confirm endorsement of the Revised Washington Charter.

The Washington Charter for Communicating Astronomy with the Public

As our world grows ever more complex and the pace of scientific discovery and technological change quickens, the global community of professional astronomers needs to communicate more effectively with the public. Astronomy enriches our culture, nourishes a scientific outlook in society, and addresses important questions about humanity's place in the universe. It contributes to areas of immediate practicality, including industry, medicine, and security, and it introduces young people to quantitative reasoning and attracts them to scientific and technical careers. Sharing what we learn about the universe is an investment in our fellow citizens, our institutions, and our future. Individuals and organizations that conduct astronomical research - especially those receiving public funding for this research - have a responsibility to communicate their results and efforts with the public for the benefit of all.

Recommendations

For Funding Agencies:

Encourage and support public outreach and communication in projects and grant programs.

Develop infrastructure and linkages to assist with the organization and dissemination of outreach results. Emphasize the importance of such efforts to project and research managers.

Recognize public outreach and communication plans and efforts through proposal selection criteria and decisions and annual performance awards.

Encourage international collaboration on public outreach and communication activities.

For Professional Astronomical Societies:

Endorse standards for public outreach and communication.

Assemble best practices, formats, and tools to aid effective public outreach and communication. Promote professional respect and recognition of public outreach and communication.

Make public outreach and communication a visible and integral part of the activities and operations of the respective societies.

Encourage greater linkages with successful ongoing efforts of amateur astronomy groups and others.

For Universities, Laboratories, Research Organizations, and Other Institutions:

Acknowledge the importance of public outreach and communication.

Recognize public outreach and communication efforts when making decisions on hiring, tenure, compensation and awards.

Provide institutional support to enable and assist with public outreach and communication efforts. Collaborate with funding agencies and other organizations to help ensure that public outreach and communication efforts have the greatest possible impact.

Make available formal public outreach and communication training for researchers.

Offer communication training in academic courses of study for the next generation of researchers.

For Individual Researchers:

Support efforts to communicate the results and benefits of astronomical research to the public, convey the importance of public outreach and communication to team members. Instill this sense of responsibility in the next generation of researchers

Authored by CCAP. Washington DC, October 2003 - Revised by CAP 2005, Garching bei München. June 2005.

6.4. IAU GRANTS FOR THE XXVITH GENERAL ASSEMBLY

The objective of IAU Grants is to provide partial financial support of expenses associated with participation in IAU meetings. For all IAU meetings within the scope of General Assemblies all grant applications are directed to the IAU Secretariat. All grants, including those for Symposia are distributed by the IAU Secretariat, upon recommendation by the organizers of the scientific events, in strict accordance with IAU's rules for Grants to IAU meetings:

http://www.iau.org/Rules_Guidelines.200.0.html#Grants

A total of close to 900 applications were received from 71 countries worldwide, out of which 17 are not IAU National Member. No applications were received from 7 of the present 62 National Members. Thanks to generous donations from European Southern Observatory (ESO), United Nations Office for Outer Space Affairs (UNOOSA), and Office of Naval Research – Global, the IAU was able to distribute grants to 470 participants, of which 128 are students. In addition, the Academy of Sciences of the Czech Republic offered free accommodation and grant to cover living expenses for 62 participants of the GA.

Oddbjørn Engvold, General Secretary, June 2006.

6.5. OTHER EVENTS IN CONJUNCTION WITH THE IAU GENERAL ASSEMBLY

EAS: JENAM 2006

The JENAM (Joint European and National Astronomical Meeting) 2006 of the European Astronomical Society (EAS) will take place in conjunction with the IAU General Assembly in Prague. Although no specific scientific session will be organized in addition to the IAU events, a special day will be reserved to deal with European matters (Initiatives from the EU Commission, Actions from the EAS, reports from various EU Networks and Integrated Infrastructure Initiatives, possibly a Job Market, and, of course, the EAS General Assembly).

The date for this European day has been fixed on Monday August 21 (afternoon), Meeting Room 1.1. of the Convention Center. Reserve your day, and check regularly the EAS website for more information: <http://www2.iap.fr/eas/>

Michel Dennefeld, November 5, 2005

ESA: GAIA

Monday 21 August, 16:00 - 17:30, in the Chamber Room

The Gaia astrometric and spectrophotometric survey mission.

Gaia is an all sky astrometric and photometric survey mission of the European Space Agency (ESA) due for launch in late 2011. Its primary goal is to study the composition, formation and evolution of our Galaxy. During its five year mission Gaia will observe every object in the sky brighter than visual magnitude 20, amounting to about 109 stars, galaxies, quasars and solar system objects. It will achieve an astrometric accuracy of 12-25 μ s at G=15 (corresponding to a distance accuracy of 1-2 % at 1 kpc) and 100-300 μ s at G=20. Gaia will be equipped with a high resolution ($\lambda/\Delta\lambda \sim 10,000$) spectrograph to measure radial velocities to a precision of 1-10 km/s down to $V \sim 17$, thus providing full six-dimensional phase space information for the brighter sources. To characterize the objects (which are detected in real time) each object is observed with low dispersion (4-30 nm/pixel) spectrophotometry between 330 nm and 1000 nm from which we determine intrinsic stellar parameters (T_{eff} , $\log g$, [Fe/H] and line-of-sight interstellar extinction). Using the kinematics and 3D positions of large numbers of stars across the whole Galaxy we will map large and small scale structures and thus unravel the formation and evolution of our Galaxy through, for example, a chronology of its merger history. The gravitational

potential of the Galaxy and the stellar luminosity function will be determined from which the distribution of dark matter can be accurately mapped on small scales (< 1 Mpc) for the first time. Gaia will detect tens of millions of binary systems to permit a calibration of the Mass-Luminosity relation over a wide range of masses to much high precision. In the same way, Gaia will determine orbits for thousands of exoplanetary systems around stars across the whole HR diagram. Accurate distances to thousands of globular and open clusters will significantly improve models of stellar structure and evolution. Gaia will discover and determine the orbits of thousands of asteroids and Near-Earth objects and will provide accurate tests of General Relativity. Beyond the Galaxy, Gaia will measure distances to the Galactic satellites, calibrate the distance ladder and provide a new astrometric reference frame.

Gaia is a fully funded mission. The prime contractor, EADS Astrium, provides both the satellite and the scientific instruments. The data processing is the responsibility of the scientific community. This is a very significant challenge, involving numerous complex, iterative and interdependent tasks.

Following several years of studies, the community efforts have been assembled into the pan-European Data Processing and Analysis Consortium (DPAC) which will undertake all of the data processing.

During this fringe session, short presentations will be given by members of the DPAC and Gaia Science Team (GST) covering the scientific objectives, satellite design, data processing, ground-based support data and plans for scientific follow-up. In the remainder of the session several GST and DPAC members will be available for discussions.

For more information: <http://www.rssd.esa.int/Gaia/>

Karen O'Flaherty, June 2006

ESO: ALMA

Thursday August 24, 09:00 -12:30, in Dressing Room 225

The Atacama Large Millimeter Array (ALMA) is a large international project which will be finished by 2012 in northern Chile on a site at 5 km elevation. The site provides excellent atmospheric transmission in the millimeter and sub-millimeter wavelength ranges. The project consists of two parts: (1) the 12m Array, composed of between fifty (present construction plan) to sixty-four (project plan) 12-meter antennas that can be placed on 175 different stations for baselines up to 14.5 km and (2) the "Atacama Compact Array", or ACA, that consists of twelve 7 meter telescopes placed in a compact configuration, and four 12 meter telescopes for measuring source total power. In addition to high sensitivity, frequency coverage and dynamic range, ALMA will record both interferometric and the complete source flux density. At the shortest planned wavelength, $\lambda=0.3$ mm, and longest baseline, the angular resolution will be $0''.005$. ALMA will be able to image dust enshrouded or cold material. As such, it is the appropriate complement to 8-10 meter optical/near-IR telescopes namely the Very Large Telescope (VLT), Gemini, Subaru, LBT and Keck, and to the Hubble Space Telescope and its successor, the James Webb Space Telescope, matching or exceeding the angular resolution of any of these facilities.

Thomas Wilson, March 2006.

IUCAF

The (radio) spectrum is a finite, and increasingly precious, resource for astronomical research. In order to obtain astronomical data of sufficiently high quality, our observations must be free of harmful interference emitted by other spectrum users. To attain this goal, regulatory protection measures (such as limits on interference levels) need to be determined and introduced into legislation. The IAU-sponsored organization that represents the requirements of the worldwide astronomical community in these regulatory matters is IUCAF, the Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science. The 11 IUCAF members are active at different levels local, national, regional and global (at the International Telecommunication Union, ITU). At the open IUCAF meeting scheduled Friday August 18 first session in the morning, an overview will be given of its various activities and current and future issues in frequency protection, and the list of IAU representatives will be reviewed. More information at:

<http://www.iucsf.org/>

Wim van Driel, Chair, November 9, 2005.

7. EDUCATIONAL ACTIVITIES

7.1. PG ON INTERNATIONAL SCHOOL FOR YOUNG ASTRONOMERS (ISYAs)

In 2006, the year of the venue of the General Assembly no ISYA is taking Place. New events for the Young Astronomers will, however, take place during the GA. This will be structured as a lunch-debate followed by a consulting service with the aim to stimulate networking opportunities between young astronomers and more experienced astronomers of the community who are willing to foster young researchers. The corresponding URLs are:

<http://astro.cas.cz/yae/lunch-debate.php>

http://astro.cas.cz/yae/consulting_service.php

The latest ISYA, the 28th, was hosted by the Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE) in Tonantzintla, Puebla, Mexico, from the 25th of July till the 12th of August 2005. A report about this ISYA is printed in IAU IB97.

ISYA in 2007, March 6-24, Kuala Lumpur and at Langkawi Island, Malaysia

The 29th International School for Young Astronomers will be held in Malaysia (Kuala Lumpur and Langkawi) from 6 to 24 March 2007.

The language of the School will be English.

Among the topics to be covered are: Physics of the Sun, Stellar astrophysics, Physics of galaxies, Radio astronomy, Spectroscopy and images, Astronomical Databases and Virtual Observatories.

Applications should include the achieved level of studies in physics and astronomy and any topic of special interest. Two letters of recommendation are required. Grants will be available.

Applications and letters of reference should arrive by October 20th, 2006 and should be sent, by e-mail, to both:

Michèle Gerbaldi, Chairperson of the ISYA programme (E-mail: gerbaldi@iap.fr), and

Fairos Asillam, Secretary of the Malaysian National Committee for the ISYA 2007 (E-mails: fairos@angkasa.gov.my / mhdfairos@gmail.com)

URL for this ISYA , with application form:

<http://www.angkasa.gov.my/isya2007/index.html>

The organizers can be contacted at the above Emails.

Michèle Gerbaldi, Chairperson for the ISYA programme (IAU), Paris, June 2006

7.2. PG ON WORLD WIDE DEVELOPMENT OF ASTRONOMY (PGWWDA)

Report on the activities of this IAU Commission 46 Program Group for the triennium 2003 to 2006

7.2.1. Introduction

The Program Group for the World-wide Development of Astronomy (PGWWDA) is one of nine Commission 46 program groups engaged with various aspects of astronomical education or development of astronomy education and research in the developing world. In the case of PGWWDA, its goals are to promote astronomy education and research in the developing world through a variety of activities, including visiting astronomers in developing countries and interacting with them by way of giving encouragement and support.

7.2.2. Members of the Program Group

From July 2003 the following has been the membership of PGWWDA:

John Hearnshaw (chair) (New Zealand)
 Don Wentzel (USA)
 Alan Batten (Canada)
 Hakim Malasan (Indonesia)
 Jay White (USA)
 Mary Kay Hemenway (USA)
 Yoshihide Kozai (Japan)
 Athem Alsabti (UK/Iraq)
 Peter Martinez (South Africa)
 Richard Gray (USA)
 Jayant Narlikar (India)
 Julieta Fierro (Mexico)
 Hugo Levato (Argentina) (from Sept. 2003)

7.2.3. Aims and objectives of PGWWDA

The principal aims and objectives of PGWWDA are: (a) To visit developing countries (often IAU non-member states) with some limited astronomical expertise, and which would welcome some development of their capabilities in astronomy; (b) To give encouragement, and to explore the possible assistance of the IAU in developing astronomy in these countries; (c) To discuss with astronomers in developing countries the available resources for astronomical teaching or research, and to promote international contacts and exchanges between astronomers in these countries and those elsewhere;

(d) To write reports on the state of astronomy in developing countries for the Commission 46 president and to send these reports to the IAU Executive Committee; (e) If the conditions were deemed favourable, then to follow-up any report with involvement by TAD or other program groups of Comm. 46, as may be appropriate.

7.2.4. *Visit to Mongolia*

John Hearnshaw spent a week in Mongolia from 11-18 March 2004 on behalf of PGWWDA. His visit was hosted by Prof G. Batsukh in the Geophysics department of the National University of Mongolia (NUM) in Ulaanbaatar. Four academics in this department were teaching undergraduate astronomy. Further astronomers were employed by the Mongolian Technical University as well as by the Mongolian Academy of Sciences at the Research Center of Astronomy and Geophysics (RCAG) and the associated Khurel Togoot Observatory, both being part of the Academy. Visits were made to the observatory and to the Academy, where a meeting with Dr T. Galbaatar, the Acting President of the Mongolian Academy of Sciences, took place on 17 March. About a dozen astronomers are employed in Mongolian universities or at RCAG, and they would benefit greatly if Mongolia were to adhere to the IAU. A subsequent application for membership resulted from these discussions. A series of four lectures was presented at NUM by Hearnshaw during this visit.

7.2.5. *Visit to Kenya*

Peter Martinez (South African Astronomical Observatory) made a visit to Kenya

15-17 June 2004. His visit was hosted by the Physics Department of the University of Nairobi, where Dr Paul Baki is an active astronomer teaching in the department. Four other academics in the department have some interests in astronomy. Work and advice on an undergraduate astronomy syllabus was undertaken during this visit and Dr Martinez gave a series of lectures. Plans for Kenya to acquire a small telescope (about aperture 0.5 m) were discussed and it was proposed that Dr Baki be nominated for individual membership of the IAU. Dr Baki has been invited to make a presentation at the special session #5 Astronomy for the developing world at the 26th General Assembly in Prague.

7.2.6. *Contact with Thai astronomers*

John Hearnshaw has maintained contact with Thai astronomers, notably at Chiang Mai University (CMU) in northern Thailand. This has partly been through a Thai astronomy PhD student he is supervising in New Zealand, but also through Boonrucksar Soonthornthum, a Thai astronomer who was formerly an MSc student in New Zealand. Boonrucksar was until 2005 Dean of Science at CMU. He is now Director of the new Thai National Astronomical Research Institute (NARI). He visited New Zealand to meet with this writer in September 2005.

There is substantial astronomical activity in Thailand, both at CMU and at least five other Thai universities. At NARI a 2.5-m telescope should be installed on Inthanon, Thailand's highest mountain near Chiang Mai, by late 2007 or 2008. Thailand had considered joining the IAU a few years ago, but without a successful outcome. The decision to found and equip NARI with substantial capital expenditure has now made a re-consideration of this proposal very favourable, and a new application by Thailand to join the IAU in 2006 has been made. This is a logical decision, as of all the IAU non-member countries in the world, Thailand probably has more professional astronomical activity than any other.

Hearnshaw has tentative plans to visit CMU and NARI in late 2006 or early 2007.

7.2.7. *Visit to Iraq*

Athem Alsabti, a member of PGWWDA, visited Iraq in April 2004 to investigate the state of astronomy in that country and to explore the possibility of rehabilitating the Mt Korek Observatory in northern Iraq, which had been damaged in the Iran-Iraq war in 1989, before becoming operational. A 3.5-m Zeiss telescope had been installed there, as well as a 1.25-m RC reflector, and a 30-m radio telescope for mm wavelengths.

His visit took him to Baghdad University, the Ministry of Higher Education in Baghdad, the Iraqi National Academy of Science, Salahaddin University in Erbil in Kurdish Iraq and then to Mt Korek. He met with vice-chancellors of most Iraqi universities while in Baghdad.

Dr Alsabti reported after this visit that: "There is a very strong support from the Kurdish scientists and authorities (a) to rebuild the Observatory and (b) to start astronomical studies in the Kurdish region based at Erbil".

7.2.8. *Visit to Cuba*

John Hearnshaw and Julieta Fierro visited Cuba for a week in January 2005 on behalf of PGWWDA. The visit was hosted by the Instituto de Geofísica y Astronomía (IGA) in Havana. IGA is a part of the Ministry of Science, Technology and the Environment (CITMA). During our time there we had discussions with Dr Lourdes Palacio Suárez and Prof. Jorge Pérez Doval at IGA. They are respectively director of IGA and head of the astronomy section of IGA. We also had meetings with Dr Lilliam Álvarez Díaz, Director for Science at CITMA and with Dr. Oscar Álvarez (CITMA), astronomer, attached as specialist in science in that ministry. Between us we presented seven talks, seminars or public lectures, all in different venues, and J. Fierro gave a television interview. We visited all the astronomical facilities of IGA, including Arroyo Naranjo Observatory and 60-cm Cassegrain telescope (in outskirts of Havana) and the Cacahual solar observatory with its solar telescope and spectrograph.

Cuba is an interim member of the IAU, but since the break-up of the Soviet Union its astronomers have been very isolated by political events and it was clear that astronomy is not a high priority for the present Cuban government. Nevertheless there are a few contacts between Cuban astronomers and those in developed countries. One Cuban astronomer is doing a PhD in Spain in observational astronomy and theoretical cosmologists (led by Dr Rolando Cárdenas Ortiz) from the University Central de Las Villas, Santa Clara, in central Cuba have contacts with those in the U.K. We discussed ways of improving international contacts between astronomers in Cuba and those in the international community.

7.2.9. *Visit to Trinidad and Tobago*

John Hearnshaw visited the St Augustine campus of the University of the West Indies (UWI) in Trinidad and Tobago for a week in December 2005. His host was Dr Shirin Haque, an astronomer who is the acting head of the Physics Department of UWI. Although she is the only professional astronomer in Trinidad, she heads a small group of active students in the department, and she has established an organization called CARINA (the Caribbean Institute of Astronomy) whose aim is to promote the development of astronomy in the Caribbean region.

During the week in Trinidad, Hearnshaw gave three lectures or seminars, met with astronomy graduate students, visited the National Science Centre, gave radio and television interviews, visited the Trinidad and Tobago Astronomical Society and its observatory, and visited a private observatory on the island of Tobago to which UWI astronomers have regular access. As a result of this visit, Dr Haque, who was trained in astronomy at the University of Virginia in the US, has been nominated for individual membership of the IAU. Trinidad and Tobago does not adhere to the IAU. Such a step could come at a later date, if astronomical activity continues to grow at UWI, as is hoped.

7.2.10. *Future plans for PGWWDA*

PGWWDA has had a successful three years since we last met in person at the Sydney General Assembly. We have made contacts with astronomers in a number of developing

countries, and as a result of these contacts follow-up work is in progress in many of these places.

We note that of these non-adhering countries, the People's Democratic Republic of Korea has 20 IAU individual members who are virtually isolated politically and hence also scientifically from the rest of the world. In addition there are seven IAU members in Kazakstan. Neither of these countries adheres to the Union, and both must be future places where PGWWDA might fruitfully explore contacts.

The highlights for the last three years must be the success in bringing both Mongolia and Thailand to the point of making applications to join the IAU as adhering countries. Significant pockets of astronomers were operating in isolation in both these places.

In the future, apart from North Korea and Kazakstan mentioned above, we see Colombia (which is a non-member country) as another important place to visit. We are also looking at Jordan, Uzbekistan, Mauritius, Laos, and perhaps several other countries in Latin America, Africa and south-east Asia. We feel it is productive to concentrate on helping countries where a few astronomers are already active and need to make contacts with the international community to grow further.

Often, as in Iraq, the current political situation prevents any major continuing efforts on the ground by PGWWDA, and the same is true in North Korea. However we note that 19 non-adhering countries have one or more IAU members with presumably few international contacts, a further approximately 20 developing countries do adhere to the union, but the astronomers resident in them still have limited access to international science, and some 115 countries essentially have no professional astronomical activity at all. In these circumstances it is clear that PGWWDA has plenty of work to do to help astronomers, no matter where they live, to participate in the global international scientific community.

John Hearnshaw, Chair of PGWWDA, Univ. of Canterbury, New Zealand, March 2006.

8. PETER GRUBER FOUNDATION

8.1. PETER GRUBER FOUNDATION COSMOLOGY PRIZE

The 2006 Cosmology Prize of the Peter Gruber Foundation will be announced at the Opening Ceremony of the General Assembly in Prague. The Prize Winner lecture will be held at the venue of the General Assembly, August 16, 2006.

8.2. PETER GRUBER FOUNDATION FELLOWSHIPS

The two research fellowships with funding from the Peter Gruber Foundation for the year 2006, each of USD 37,500, are offered to

Dr. Inma Martinez-Valpuesta, Spain, and

Dr. Hum Chand, India.

Dr. Martinez-Valpuesta will be working at Laboratoire d'Astrophysique de Marseille, France on evolution of barred galaxies. Dr. Chand's research project on the physical state of the IGM will be conducted at Institute d'Astrophysique de Paris, France. We congratulate Drs. Martinez-Valpuesta and Chand and wish them success in their research at their host institutions.

Oddbjørn Engvold, IAU General Secretary, June 2006.

9. MEMBERSHIP

9.1. NATIONAL MEMBERSHIP

The IAU Secretariat has received applications for interim membership for Mongolia, Thailand and Lebanon from, respectively, the Mongolian Academy of Sciences, the Thai Ministry of Science and Technology and from the Lebanese Conseil National de la Recherche Scientifique (CNRS). We are very pleased to welcome these three applications which all are highly recommended by the IAU Program Groups on World Wide Development of Astronomy (PGWWDA) and International School for Young Astronomers (ISYAs).

9.2. INDIVIDUAL MEMBERSHIP

The General Secretary regrets to report the names of former and current IAU Members and Consultants whose death has been communicated to the Secretariat since the previous list published in IB 97:

Last updates: june 12, 2006

John G. Ables *	S. I. Gopasyuk *	Sergij Musatenko *
James Gilbert Baker *	Anton Hajduk *	Saken O. Obashev *
Vassilios Barbanis	Hartmut Holweger	Mikhail Orlov *
Arvind Bhatnagar	Wulff D. Heintz	John Polygiannakis *
J. G. Bolton *	Mihkel Jõeveer	Neil A. Porter *
Nina M. Bronnikova *	Boris L. Kashscheev	Tamara B. Pyatunina *
Bruno Caccin *	I. G. Kolchinskij *	Brian J. Robinson *
John H. Carver *	N. S. Komarov *	Arnold A. Stepanian *
Vittorio Castellani	L. Kresak *	Gerard A. Stevens
G. Colombo *	Per E. Maltby	Winardi Sutantyo *
N. Dallaporta *	Cornell H. Mayer *	J. T.l. Tavares *
T. de Groot	Marie-Odile Mennessier *	Seppo I. Urpo *
Nikolai Dzubenko *	Harry C. Minnet *	J. van Nieuwkoop
Mikhail S. Frolov *	Andreas B. Muller *	Franco Verniani *
Daniel Gerbal		Jean-Pierre Vigier *

* Death announced in IB97's web version, after its paper issue.

10. PUBLICATIONS

10.1. IAU PUBLICATIONS

IAU HIGHLIGHTS OF ASTRONOMY

Highlights of Astronomy, Volume 13

As Presented at the XXVth General Assembly of the IAU

Sydney, Australia, July 13-26, 2003

Ed.: Oddbjørn Engvold

San Francisco: ASP, ISBN: 1-58381-189-3, due June 2006

SYMPOSIA

As of 2004, starting with IAUS 222, the IAU Symposium Proceedings Series is being published by Cambridge University Press (CUP), Cambridge, UK

For e-version, see:

<http://journals.cambridge.org/action/displayJournal?jid=IAU>

For hardback volumes, see:

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IAUS 201 New Cosmological Data and the Values of the Fundamental Parameters

Manchester, United Kingdom, August 7-11, 2000

Eds. A.N. Lasenby & A. Wilkinson

San Francisco: ASP, ISBN: 1-58381-212-1, February 2006

IAUS 202 Planetary Systems in the Universe - Observation, Formation and Evolution

Manchester, United Kingdom, August 7-10, 2000

Eds. A.J. Penny, P. Artymowicz, A.-M. Lagrange & S.S. Russell

San Francisco: ASP, ISBN: 1-58381-176-1, February 2005

IAUS 229 Asteroids, Comets, Meteors - ACM 2005

Búzios, Rio de Janeiro, Brasil, August 7-12, 2005

Eds. D. Lazzaro, S. Ferraz-Mello & J.A. Fernández

Cambridge: CUP, ISBN: 0-521-85200-5, March 2006

IAUS 230 Populations of High-Energy Sources in Galaxies

Dublin, Ireland, August 15-19, 2005

Eds. E.J.A. Meurs & G. Fabbiano

Cambridge: CUP, ISBN: 0-521-85201-3, May 2006

IAUS 231 Astrochemistry throughout the Universe: Recent Successes & Current Challenges

Monterey, CA, USA, August 29-September 2, 2005

Eds. D.C. Lis, G.A. Blake & E. Herbst

Cambridge: CUP, ISBN: 0-521-85202-1, March 2006

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Cape Town, South Africa, 14-18 November 2005

Eds. P.A. Whitelock, M. Dennefeld & B. Leibundgut

Cambridge: CUP, ISBN: 0-521-85608-6, May 2006

IAUS 233 Solar Activity and its Magnetic Origin

Cairo, Egypt, March 31-April 3, 2006

Eds. V. Bothmer, A.A. Hady & M.A.M. Shaltout

Cambridge: CUP, ISBN: 0-521-86342-0, due October 2006

IAUS 234 Planetary Nebulae in our Galaxy and Beyond

Waikoloa Beach, HI, USA, April 3-7, 2006

Eds. M.J. Barlow & R.H. Mendez

Cambridge: CUP, ISBN: 0-521-86343-0, due October 2006

For a complete list of IAU Symposium Proceedings and updates, please check:

http://www.iau.org/Symposia_Colloquia.122.0.html

COLLOQUIA

As of 2004, starting with IAUC 195, the IAU Colloquium Proceedings Series is being published by Cambridge University Press (CUP), Cambridge, UK.

For e-version, see:

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For hardback volumes, see:

http://www.cambridge.org/uk/browse/browse_highlights.asp?subjectid=318

IAUC 200 Direct Imaging of Exoplanets: Science and Techniques

Nice, France, October 3-7, 2005

Eds. C. Aime & F. Vakili

Cambridge: CUP, ISBN: 0-521-85607-8, April 2006

The IAU Colloquium Series is terminated after IAUC 200, for the benefit of the IAU Symposium Series.

For a complete list of IAU Colloquium Proceedings and updates, please check:

http://www.iau.org/Symposia_Colloquia.122.0.html

REGIONAL MEETINGS

APRIM 2005 - 9th Asian-Pacific Regional IAU Meeting

Nusa Dua, Bali, Indonesia, July 26-29, 2005

Eds. W. Sutantyo, P.W. Premadi, P. Mahasena, T. Hidayat & S. Mineshige

Bandung: ITB Press, ISBN: 979-3507-63-2, March 2006

LARIM 2005 - 11th Latin-American Regional IAU Meeting

Pucón, Chile, December 12-16, 2005

Eds. Mónica Rubio, L. Infante & S. Torres-Peimbert

Mexico: UNAM, RevMexAA-SC, due June 2006

For a complete list of IAU Regional Meeting Proceedings and updates, please check:

http://www.iau.org/Regional_Meetings.121.0.html

OTHER IAU PUBLICATIONS

Dictionary of Minor Planet Names, Addendum to 5th Edition: 2003 - 2005

Ed. L.D. Schmadel

Springer-Verlag, ISBN: 3-540-34360-1

For a complete list of Other IAU Publications and updates, please check:

http://www.iau.org/Other_IAU_Publications.119.0.html

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<i>Online + Print</i>				
Institution	\$900	\$995	\$1,045	\$1,119
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Average Exchange Rate	1.72	1.69	1.72	1.76

10.3. OTHER PUBLICATIONS RECEIVED

ASP Conference Series: <http://www.aspbooks.org/>

- 333 Tidal Evolution and Oscillations in Binary Stars. Third Granada Workshop on Stellar Structure**
Granada, Spain, May 26-28, 2004
Eds. A. Claret, A. Giménez & J.-P. Zahn
ISBN: 1-58381-196-6
- 334 14th European Workshop on White Dwarf**
Kiel, Germany, July 19-23, 2004
Eds. D. Koester & S. Moehler
ISBN: 1-58381-197-4
- 338 Astrometry in the Age of the Next Generation of Large Telescopes**
Lowell Observatory, Flagstaff, Arizona, USA, October 18-20, 2004
Eds. P. Kenneth Seidelmann & A.K.B. Monet
ISBN: 1-58381-205-9
- 340 Future Directions in High Resolution Astronomy**
Socorro, NM, USA, June 8-12, 2003
Eds. J. D. Romney & M. J. Reid
ISBN: 1-58381-207-5
- 342 1604-2004: Supernovae as Cosmological Lighthouses**
Padua, Italy, June 15-19, 2004
Eds. M. Turatto, S. Benetti, L. Zampieri & W. Shea
ISBN: 1-58381-209-1
- 343 Astronomical Polarimetry: Current Status and Future Directions**
Waikoloa, HI, USA, March 15-19, 2004
Eds. A. Adamson, C. Aspin, C.J. Davis & T. Fujiyoshi
ISBN: 1-58381-210-5
- 344 The Cool Universe: Observing Cosmic Dawn**
Valparaiso, Chile, October 4-8, 2004
Eds. C. Lidman & D. Alloin
ISBN: 1-58381-211-3
- 346 Large-Scale Structures and their Role in Solar Activity**
Ntl Solar Observatory, Sacramento Peak, Sunspot, NM, USA, October 18-22, 2004
Eds. K. Sankarasubramanian, M. Penn & A. Pevtsov
ISBN: 1-58381-214-8
- 347 Astronomical Data Analysis Software and Systems XIV**
Pasadena, California, USA, October 24-27, 2004
Eds. P.L. Shopbell, M.C. Britton & R. Ebert
ISBN: 1-58381-215-6
- 349 Astrophysics of Variable Stars**
Pécs, Hungary, Sept. 5-10, 2005
Eds. C. Sterken & C. Aerts
ISBN 1-58381-217-2

10.4. "FREE" COPIES OF IAU PROCEEDINGS

The IAU and Cambridge University Press (CUP) have agreed to provide up to 25 copies to the IAU for free distribution to developing countries. Based on advice from Program Groups of IAU Commission 46 (PGWWDA and ISYA) a total of 18 libraries in developing countries are currently receiving copies of IAU Proceedings, free of charge. The mailing of these books is done from CUP.

Oddbjørn Engvold, IAU General Secretary, June 2006.

11. OTHER MEETINGS ON ASTRONOMICAL TOPICS

please see:

http://www.iau.org/OTHER_MEETINGS_OF_INTEREST.108.0.html

and

<http://cadwww.hia.nrc.ca/meetings/>

The IAU Divisions

DIVISION I

Fundamental Astronomy

Toshio Fukushima

Public Relation Center

NAOJ

2 21 1 Osawa Mitaka

JP - Tokyo 181 8588

Japan

Tel: +81 42 234 3613

Fax: +81 42 234 3810

Toshio.Fukushima@nao.ac.jp

DIVISION II

Sun and Heliosphere

David F. Webb

AFRL Space Vehicles

Directorate/ VSBXS

Boston College

29 Randolph Rd

US - Hanscom AFB

MA 01731 3010

USA

Tel: +1 781 377 3086

Fax: +1 781 377 3160

david.webb@hanscom.af.mil

DIVISION III

Planetary Systems Sciences

Iwan P. Williams

Astronomy Unit

Queen Mary

University of London

Mile End Rd

GB - London E1 4NS

United Kingdom

Tel: +44 207 882 5452

Fax: +44 208 983 3522

i.p.williams@qmul.ac.uk

DIVISION IV

Stars

Dainis Dravins

Lund Observatory

Lund University

Box 43

SE - 221 00 Lund

Sweden

Tel: +46 222 7297

Fax: +46 222 4614

dainis@astro.lu.se

DIVISION V

Variable Stars

Jørgen Christensen-Dalsgaard

Inst. for Fysik og Astronomi

Århus Universitet

Ny Munkegade

Bldg 520

DK - 8000 Århus C

Denmark

Tel: +45 89 42 36 14

Fax: +45 86 12 07 40

jcd@phys.au.dk

DIVISION VI

Interstellar Matter

John E. Dyson

Dept of Physics & Astronomy

University of Leeds

GB - Leeds LS2 9JT

United Kingdom

Tel: +44 113 343 3869

Fax: +44 113 343 3869

jed@ast.leeds.ac.uk

DIVISION VII

Galactic System

Patricia A. Whitelock

SAAO

PO Box 9

ZA - 7935 Observatory

South Africa

Tel: +27 21 447 0025

Fax: +27 21 447 3639

paw@sao.ac.za

DIVISION VIII

Galaxies and the Universe

Francesco Bertola

Dpt di Astronomia

Università di Padova

Vic d Osservatorio 2

IT - 35122 Padova

Italy

Tel: +39 049 827 8225

Fax: +39 049 827 8212

bertola@pd.astro.it

DIVISION IX

Optical and Infrared Techniques

Christiaan L. Sterken

Astronomy Group

Vrije Universiteit Brussel

Pleinlaan 2

BE - 1050 Brussels

Belgium

Tel: +32 2 629 34 69/70

Fax: +32 2 629 31 74

csterken@vub.ac.be

DIVISION X

Radio Astronomy

Luis F. Rodriguez

Centro de Radioastronomía

y Astrofísica

UNAM

Apt Postal 3-72

MX - Morelia 58089

México

Tel: +52 443 322 2726

Fax: +52 443 322 2742

l.rodriguez@astrosmo.unam.mx

DIVISION XI

Space and High Energy Astrophysics

Haruyuki Okuda

Gunma Astronomical

Observatory

6860-86 Nakayama

Takayama-mura

JP - Agatsuma-gun,

Gunma-ken 377 0702

Japan

Tel: +81 27 970 5300

Fax: +81 27 970 5544

okuda@astron.pref.gunma.jp

DIVISION XII

Union-Wide Activities

Virginia Trimble

Dept of Physics & Astronomy

University of California

4129 Reines Hall

US - Irvine CA 92697 4575

USA

Tel: +1 949 824 6948

Fax: +1 949 824 2174

vtrimble@uci.edu

INTERNATIONAL ASTRONOMICAL UNION UNION ASTRONOMIQUE INTERNATIONALE

The mission of the International Astronomical Union (IAU), founded in 1919, is to promote and safeguard the science of astronomy in all its aspects through international co-operation. The IAU, through its 12 scientific Divisions and 37 Commissions covering the full spectrum of astronomy, continues to play a key role in promoting and coordinating worldwide co-operation in astronomy. Strong emphasis is placed on the personal involvement of its close to 9,000 Individual Members in 84 different countries worldwide out of which 61 are National Members. The IAU is integrated into the international Community through its membership in the International Council for Science (ICSU)

The tasks of the IAU range from the definition of fundamental astronomical and physical constants and unambiguous astronomical nomenclature, rapid dissemination of new discoveries, organization of international observing campaigns, and promotion of educational activities in astronomy, to early informal discussions of possible future international large-scale facilities.

The IAU is also the sole internationally recognized authority for giving designations and names to celestial bodies and their surface features.

The organization of scientific meetings is a key activity. The triennial General Assemblies feature a rich scientific program, recorded in the Highlights of Astronomy, whereas administrative business is documented in the IAU Transactions. In addition, the IAU sponsors about nine carefully selected, high-profile Symposia each year. Proceedings of these meetings are published under the auspices of the IAU as important records of the status of their scientific fields.

The IAU works to promote astronomical education and research in developing countries through the International Schools for Young Astronomers and Teaching for Astronomy Development programs, and through joint initiatives with other ICSU and UN organizations.

Contact with the membership is maintained through this Bulletin, published twice a year and available on the IAU Website. Nevertheless, for the time being, a paper version is sent to those who have not access to the web. In addition to the Information Bulletin, an electronic IAU Newsletter will be issued at semi-regular intervals. The IAU Website provides on-line information about and news from the Union and direct links to Divisions, Commissions, Working Groups, and related organizations.

Contact address:

IAU – UAI Secretariat

98bis, bd Arago, FR – 75014 Paris, France

Tel: + 33 (1) 43 25 83 58 – Fax: +33 (1) 43 25 26 16

E-mail: iau@iap.fr – WWW URL: <http://www.iau.org/>



Cover Image: Image of an Active Region on the solar limb taken on 21 April 2002 by the Transition Region and Coronal Explorer (TRACE) in the EUV at wavelength 195Å. The loops and the unusually hazy, striated background features represent gas at temperatures from 1.5 to 10 million degrees.

Credit: Karel Schrijver and Alan Title (Stanford-Lockheed Institute for Space Research)