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ASTRONOMICAL  
UNION

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## FAITS DIVERS

While the many impressive events of the IAU XXVI General Assembly in Prague are still vividly on our minds, its reports, proceedings and repercussions are keeping many of us busy today.

We cannot repeat often enough that the IAU owes very much to the chairman of the National Organizing Committee, Jan Palous, the Chairperson of the Local Organizing Committee, Cyril Ron, and the editor of the daily GA newspaper *Dissertatio cum Nuncio Sidereo III*, Jiri George Grygar, and their respective staffs, for a very efficient organization of the IAU XXVI GA and hosting us 2412 participants and 208 accompanying guests. Last but not least, I wish to thank my predecessor, Oddbjorn Engvold, IAU past-president Ronald D. Ekers, and the staff of the IAU Secretariat, Monique Orine and Mary Noel-Giraud, for their outstanding efforts during the preparation and realization of the GA.

Reports on the GA have appeared in the literature (e.g., Peter Shaver, *The Messenger* 125, 51, 2006). Apart from important scientific meetings, exciting social events and fundamental new resolutions, the GA has seen, *inter alia*: - the nomination of 923 new IAU members (a warm welcome!); - the discontinuation of one IAU Commission and 13 IAU Working Groups; - the creation of four new IAU Commissions and 11 new Working Groups; - the creation of 3 new EC Working Groups; and - the first Union-wide preparations for the International Year of Astronomy 2009.

The planet definition issue moved from draft resolution in the *Dissertatio-3* of 16 August to GA-approved resolution in the *Dissertatio-10* of 25 August. The "Pluto debate", as the planet definition resolution process has been referred to, has drawn much comment and attracted world-wide public attention to astronomy and the IAU. The "debate", however, overshadowed numerous other important scientific issues discussed at the GA in the six Symposia, the 17 Joint Discussions, the 7 Special Sessions and the many other exciting science sessions in Division/Commission/Working Group business meetings. The upcoming *Highlights of Astronomy* Volume 14 and *IAU Transactions XXVIB* will provide due testimony of that.

The General Assembly has been honored; memories are alive; gratitude expressed; achievements acknowledged; regrets of what we might have done better openly expressed. Was it worth doing? By all means. Can we do better next time? We'll try. There will always be room for improvement. And, with changing times, we will have to cope with changing demands.

Important events are ahead of us, all needing proper attention and careful preparation.

The year 2007 will see the light of nine new IAU Symposia: S242 through S250, and the 12th Latin-American Regional IAU Meeting (LARIM 2007) in Venezuela, 22-26 October 2007 (section 5.2).

By the time this Information Bulletin is being issued, the IAU Division Presidents are acting as recommendation committee for the selection of nine IAU symposia in 2008. That year will also see the 10th Asian-Pacific Regional IAU Meeting (APRIM 2008) in Kunming, China Nanjing, 1-4 August 2008.

Preparations for the IAU XXVII GA in 2009 in Rio de Janeiro, Brazil, are in the hands of the able NOC headed by Daniela Lazarro and Beatriz Barbuy. Proposals for the scientific program of the Rio GA will have to be submitted to the IAU proposal server before 1 December 2007. The IAU membership better starts thinking about proposals. The year 2009 will also be the International Year of Astronomy (section 3.5.3). Moreover, 2009 will provide an occasion to celebrate the 90th birthday of the IAU. Ideas for that celebration are welcome.

In the meantime, our Chinese colleagues are studying preparations for the IAU XXVIII GA in 2012 in Beijing, China Nanjing.

To achieve all of the above, the IAU members, in the IAU Working Groups and Program Groups, in the IAU Commissions, and in the IAU Divisions, are doing the real work. It is only through their support and efforts that the above mentioned events can succeed. Therefore, to paraphrase an historic saying, “... *don't ask what the IAU can do for you, but ask yourself what you can do for the IAU ...*”, as the world's largest international organization for communication in astronomy.

Above the entrance of the Musée de l'Homme in Paris is written: *Il depend de celui qui entre, que je sois tombe ou trésor*. And further it says: *n'entrez pas sans désir*. One could write these sentences also above the entrance of our offices. To survive, there is only one adagio: carry on.

With my best wishes of the Season, I convey to you my support for all your good intentions for a scientifically productive, constructive, and gratifying 2007.

*Karel A. van der Hucht, General Secretary  
Paris, 1 December 2006*



## 1. EVENTS AND DEADLINES

\*\*\*\*\*

**Proposals for IAU scientific meetings in 2009: Symposia,  
GA Symposia, GA Joint Discussions and GA Special Sessions,  
should reach the Assistant General Secretary  
via the IAU Proposal Web Server  
<<http://solarphys.uio.no/IAU/>>  
before 15 December 2007**

**Letters-of-Intent should be submitted to the AGS  
before 15 September 2007**

**See: <<http://www.iau.org/MEETINGS.6.0.html>>**

\*\*\*\*\*

### 2007

|              |   |
|--------------|---|
| Jan 30-Feb 1 | IAU Officers' Meeting, Paris (France)   |
| Mar 5-24     | ISYA 2007, Kuala Lumpur and Langkawi (Malaysia)   |
| Mar 12-16    | IAU S242, Astrophysical Masers and their Environments (Australia)   |
| Mar 15       | Due date for agenda items for EC83 (May 15-17, 2006)  |
| May 15-17    | Executive Committee Meeting EC83, Cape Town (South Africa)  |
| May 21-25    | IAU S243, Star-Disk Interaction in Young Stars (France)   |
| May 25       | Due date for documents for IAU IB-100   |
| June 25-29   | IAU S244, Dark Galaxies and Lost Baryons (UK)   |
| July 16-20   | IAU S245, Formation and Evolution of Galaxy Bulges (UK)   |
| July         | Mini-ISYA, Beirut (Lebanon)   |
| Sept 5-9     | IAU S246, Dynamical Evolution of Dense Stellar Systems (Italy)  |
| Sept 15      | Due date for Letters-of-Intent proposing IAU scientific meetings in 2009: Symposia, GA Symposia, GA Joint Discussions and GA Special Sessions |
| Sept 17-21   | IAU S247, Waves and Oscillations in the Solar Atmosphere: Heating and Magneto-Seismology (Venezuela)  |
| Oct 8-12     | CAP 2007, Communicating Astronomy with the Public 2007 (Greece)   |

- Oct 15-19 IAU S248, A Giant Step: from Milli- to Micro-arcsecond  
Astrometry (China Nanjing)
- Oct 22-26 IAU S249, Exoplanets: Detection, Formation and Dynamics  
(China Nanjing)
- Oct 22-26 LARIM 2007, 12th Latin-American Regional IAU Meeting  
(Venezuela)
- Dec 10-14 IAU S250, Massive Stars as Cosmic Engines (USA)
- Dec 15 Deadline for proposals for IAU scientific meetings in 2009  
Symposia, GA Symposia, GA Joint Discussions  
and GA Special Sessions
- Dec 31 Deadline for nominations for the 2008 Cosmology Prize of the  
Peter Gruber Foundation

**2008**

- Aug 1-4 APRIM 2008, 10th Asian-Pacific Regional IAU Meeting  
(China Nanjing)
- Nov 1 Due date for Letters-of-Intent proposing to host the IAU  
XXIX General Assembly in 2015

**2009**

- Apr 1 Deadline for proposals to host the IAU XXIX General  
Assembly in 2015
- Aug 3-14 IAU XXVII General Assembly, Rio de Janeiro (Brazil)

**2012**

- Aug 20-31 IAU XXVIII General Assembly, Beijing (China Nanjing)

## 2. IAU GENERAL ASSEMBLIES

### 2.1. IAU XXVI General Assembly, Prague, Czech Republic, 14-25 August 2006

#### 2.1.1. *Brief Report*

The IAU XXVI General Assembly of the International Astronomical Union was held in the Prague Congress Centre in Prague, Czech Republic, 14-25 August 2006. 2412 participants and 208 accompanying guests, from most of the IAU National Members and beyond, took part.

The scientific program consisted of four Invited Discourses, six Symposia (IAU S235 through S240), 17 Joint Discussions, and seven Special Sessions. The Divisions, Commissions and Working Groups held some 97 Business Meetings, many of them also hosting scientific sessions. The Representatives of the National Members, the Finance Committee, and the Nominating Committee held their customary meetings. The Executive Committee held its 81st and 82nd meeting before and during the GA.

The National Organizing Committee, under the chairmanship of Jan Palous, and the Local Organizing Committee chaired by Cyril Ron were instrumental in preparing and running a very smooth organization, which made this GA to a highly successful and very enjoyable scientific event.

The Proceedings of the IAU XXVI GA will be published as the IAU Transactions Vol. XXVIB. Included will be the addresses presented at the Opening Ceremony, the report of the General Assembly, the report of the Executive Committee 2003-2006, the summary of the Union's Finances, the report of the Finance Committee, the reports of the Business Meetings of the Divisions, Commissions and Working Groups, and the report on the Union membership.

The Proceedings of the four Invited Discourses, 17 joint Discussions, and the seven Special Sessions will be published in the Highlights of Astronomy, Vol. 14.

The Proceedings of the six IAU Symposia held during the GA (IAU S235 through S240) will be published individually in the IAU Symposium Proceedings' Series.

IAU Transactions, Highlights of Astronomy and Symposium Proceedings are all published by Cambridge University Press.

The General assembly welcomed three new national Members: Jordan, Mongolia and Thailand. Moreover, 923 new individual members were admitted. On 1 September 2006 the total membership was 9783.

The IAU XXVI General Assembly approved the budget for the triennium 2006-2009, the unit of contribution being CHF 3685 for 2007, CHF 3800 for 2008, and CHF 3900 for 2009.

The composition of the IAU Executive Committee 2006-2009, as elected by the IAU XXVI General Assembly is given on the inside front cover of this IAU Information Bulletin. The names of the twelve new IAU Division Presidents are given on the inside back cover of this bulletin.

### **2.1.2. Revisions of IAU Statutes, Bye-Laws and Working Rules**

The IAU XXVI General Assembly has approved the changes of the IAU Statutes and Bye-Laws as proposed by the Executive Committee in IAU IB97, pp. 41-49. The full texts of IAU Statutes, Bye-Laws and Working Rules are given at

<[http://www.iau.org/Statutes\\_in\\_English.72.0.html](http://www.iau.org/Statutes_in_English.72.0.html)>,

<[http://www.iau.org/Bye-Laws\\_in\\_English.70.0.html](http://www.iau.org/Bye-Laws_in_English.70.0.html)>, and

<[http://www.iau.org/Working\\_Rules\\_in\\_English.68.0.html](http://www.iau.org/Working_Rules_in_English.68.0.html)>.

### **2.1.3. Resolutions adopted by the IAU XXVI General Assembly**

#### **2.1.3.1. RESOLUTION B 1**

#### **Adoption of the P03 Precession Theory and Definition of the Ecliptic**

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 expressions 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 comoving with the ecliptic (rotating definition),

Accepts

the conclusions 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 the Barycentric Celestial Reference System (BCRS), and this definition should be explicitly stated to avoid confusion with other, older definitions.

## Notes

1. 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 expressions set out in expressions (37) to (41) of Capitaine et al. (2003) and Tables 3-5 of Capitaine et al. (2005).
2. The time rate of change in the dynamical form factor in P03 is  

$$dJ_2/dt = 0.3001 \times 10^{-9} \text{ century}^{-1}$$

## 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

Actions 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, Institute 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), Japan Coast Guard (JCG), National

Astronomical Observatory of Japan (NAOJ), Nautical Almanac Office of the United States Naval Observatory.

2.1.3.2. **RESOLUTION B 2**

**Supplement to the IAU 2000 Resolutions on reference systems**

*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.”

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*Note on Resolution B2:*

Resolution 2, adopted by the XXVIth IAU General Assembly states in its "Noting" 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 the IAU 2000 resolutions operationally, and that the almanac offices have begun to implement them beginning with their 2006 editions.

2006 is the year of the edition for which most of the worldwide-accessible almanacs have implemented the IAU 2000 resolutions. However, it should be noted that the Polish Almanac of the Institute of Geodesy and Cartography (Warsaw, Poland), began implementing the IAU 2000 resolutions in their 2004 edition. We are pleased to acknowledge the efforts that our Polish colleagues made to implement the changes with so little delay.

*Nicole Capitaine, Chair of the IAU Division 1 Working Group on Nomenclature for Fundamental Astronomy (NFA) (2003-2006)*

### 2.1.3.3. **RESOLUTION B 3**

#### **Re-definition of Barycentric Dynamical Time, TDB**

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 at the geocenter the difference between this coordinate time scale and Terrestrial Time (TT) remains small 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, at the geocenter, remains close to Terrestrial Time (TT) for an extended time span, TDB be defined as the following linear transformation of TCB:

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

where  $T_0 = 2443144.5003725$ , and

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

Notes

1.  $\text{JD}_{\text{TCB}}$  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 fixed value that this definition assigns to  $L_B$  is a current estimate of  $L_C + L_G - L_C \times L_G$ , 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, evaluated at the geocenter. When realizing TCB using other ephemerides, the difference between TDB and TT, evaluated at the geocenter, may include some linear drift, not expected to exceed 1 ns per year.
3. The difference between TDB and TT, evaluated 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  $\text{TDB}_0$  is chosen to provide reasonable consistency with the widely used TDB TT formula of Fairhead & Bretagnon (1990).  
n.b. The presence of  $\text{TDB}_0$  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.

#### 2.1.3.4. **RESOLUTION B4**

***Endorsement of the Washington Charter for 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 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*

#### 2.1.3.5. **RESOLUTION B 5**

##### ***Definition of a Planet in the Solar System***

Contemporary observations are changing our understanding of planetary systems, and it is important that our nomenclature for objects reflect our current understanding. This applies, in particular, to the designation "planets". The word "planet" originally described "wanderers" that were known only as moving lights in the sky. Recent discoveries lead us to create a new definition, which we can make using currently available scientific information.

The IAU therefore resolves that planets and other bodies, except satellites, in our Solar System be defined into three distinct categories in the following way:

1. A planet<sup>(1)</sup> is a celestial body that
  - a. is in orbit around the Sun,
  - b. has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, and
  - c. has cleared the neighbourhood around its orbit.
2. A "dwarf planet" is a celestial body that
  - a. is in orbit around the Sun,

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##### ***Footnotes Resolution B 5***

<sup>(1)</sup> *The eight planets are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.*

<sup>(2)</sup> *An IAU process will be established to assign borderline objects to the dwarf planet or to another category.*

- b. has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape<sup>(2)</sup>,
  - c. has not cleared the neighbourhood around its orbit, and
  - d. is not a satellite.
3. All other objects<sup>(3)</sup>, except satellites, orbiting the Sun shall be referred to collectively as "Small Solar System Bodies".

*2.1.3.6. RESOLUTION B 6*

*Pluto*

The IAU further resolves:

Pluto is a "dwarf planet" by the above definition and is recognized as the prototype of a new category of Trans-Neptunian Objects<sup>(1)</sup>.

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**Footnotes Resolution B 5 (Continued)**

<sup>(3)</sup> *These currently include most of the Solar System asteroids, most Trans-Neptunian Objects (TNOs), comets, and other small bodies.*

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**Footnote Resolution B 6**

<sup>(1)</sup> *An IAU process will be established to select a name for this category.*

**2.1.4. IAU Budget 2007-2009**

| <b>INCOME</b>                      | <b>2007</b>   | <b>2008</b>    | <b>2009</b>    | <b>2007-09</b> |
|------------------------------------|---------------|----------------|----------------|----------------|
| Adhering Organizations             | 965470        | 995600         | 1021800        | 2982870        |
| Publications: Royalties            | 20000         | 20000          | 20000          | 60000          |
| Bank Interests                     | 10000         | 10000          | 10000          | 30000          |
| Gains Transfers/Exchange           | 10000         | 10000          | 10000          | 30000          |
| <b>Total Income</b>                | <b>995470</b> | <b>1025600</b> | <b>1051800</b> | <b>3102870</b> |
| <b>EXPENDITURE</b>                 | <b>2007</b>   | <b>2008</b>    | <b>2009</b>    | <b>2007-09</b> |
| <b>SCIENTIFIC ACTIVITIES</b>       |               |                |                |                |
| <b>General Assemblies</b>          |               |                |                |                |
| Grants                             | -             | -              | 235000         | 235000         |
| Operations                         | 4000          | 8000           | 50000          | 62000          |
| <i>Sub-total General Assembly</i>  | <i>4000</i>   | <i>8000</i>    | <i>285000</i>  | <i>297000</i>  |
| <b>Meetings</b>                    |               |                |                |                |
| Symposia/Colloquia                 | 225000        | 225000         | 225000         | 675000         |
| Regional Meetings                  | 30000         | 30000          |                | 60000          |
| <i>Sub-total Meetings</i>          | <i>255000</i> | <i>255000</i>  | <i>226000</i>  | <i>735000</i>  |
| <b>Commissions/Working Groups</b>  |               |                |                |                |
| Telegram Bureau                    | 4000          | 4000           | 4000           | 12000          |
| Minor Planet Center                | 12000         | 12000          | 12000          | 36000          |
| Meteor Data Center                 | 2000          | 2000           | 2000           | 6000           |
| EC WGs                             | 5000          | 5000           | 5000           | 15000          |
| Commission WGs                     | 5000          | 5000           | 5000           | 15000          |
| <i>Sub-total Commissions/WGs</i>   | <i>28000</i>  | <i>28000</i>   | <i>28000</i>   | <i>84000</i>   |
| <b>Total SCIENTIFIC ACTIVITIES</b> | <b>287000</b> | <b>291000</b>  | <b>538000</b>  | <b>1116000</b> |
| <b>EDUCATIONAL ACTIVITIES</b>      |               |                |                |                |
| ISYA                               | 45000         | 45000          | -              | 90000          |
| TAD                                | 45000         | 45000          | 45000          | 135000         |
| Exchange of Astronomers            | 15000         | 15000          | 15000          | 45000          |
| Other Activities                   | 15000         | 15000          | 15000          | 45000          |
| <b>Total EDUCATION</b>             | <b>120000</b> | <b>120000</b>  | <b>75000</b>   | <b>315000</b>  |
| <b>DELEG. TO OTHER UNIONS</b>      | <b>12000</b>  | <b>12000</b>   | <b>12000</b>   | <b>36000</b>   |
| <b>DUES TO OTHER UNIONS</b>        |               |                |                |                |
| ICSU                               | 7500          | 7500           | 7500           | 22500          |
| ERS/FAGS                           | 10000         | 10000          | 10000          | 30000          |
| IUCAF                              | 7500          | 7500           | 7500           | 22500          |
| <b>Total DUES TO OTHER UNIONS</b>  | <b>25000</b>  | <b>25000</b>   | <b>25000</b>   | <b>75000</b>   |

***EXECUTIVE COMMITTEE***

|   |                     |                      |                      |                      |
|---|---------------------|----------------------|----------------------|----------------------|
| Executive Committee meetings            | 45000               | 80000                | 80000                | 205000               |
| Officers meetings                       | 12000               | 12000                | 12000                | 36000                |
| General Secretary                       | 30000               | 30000                | 30000                | 90000                |
| Asst General Secretary                  | 2000                | 2000                 | 2000                 | 6000                 |
| Year of Astronomy                       | 2000                | 2000                 | 8000                 | 12000                |
| <b><i>Total EXECUTIVE COMMITTEE</i></b> | <b><i>91000</i></b> | <b><i>126000</i></b> | <b><i>132000</i></b> | <b><i>349000</i></b> |
| <b><i>PUBLICATIONS</i></b>              | <b><i>10000</i></b> | <b><i>10000</i></b>  | <b><i>10000</i></b>  | <b><i>30000</i></b>  |

***ADMINISTRATION***

|  |                      |                      |                      |                       |
|--|----------------------|----------------------|----------------------|-----------------------|
| Salaries & Charges                       | 286790               | 286790               | 286790               | 860370                |
| Training courses                         | 5000                 | 5000                 | 5000                 | 15000                 |
| General office expenses                  | 82000                | 85000                | 90000                | 257000                |
| Audit fee                                | 2500                 | 2500                 | 2500                 | 7500                  |
| Bank charges                             | 4000                 | 4000                 | 4000                 | 12000                 |
| <b><i>Total ADMINISTRATION</i></b>       | <b><i>380290</i></b> | <b><i>383290</i></b> | <b><i>388290</i></b> | <b><i>1151870</i></b> |
| <b>TOTAL EXPENDITURE</b>                 | <b>925290</b>        | <b>967290</b>        | <b>1180290</b>       | <b>3072870</b>        |
| <b>Excess of Income over Expenditure</b> | <b>80180</b>         | <b>68310</b>         | <b>-118490</b>       | <b>30000</b>          |

***2.1.5. Report on the Young Astronomers Events***

This year at General Assembly of the IAU, two new initiatives for young astronomers were established. They were the lunch-debate and the consulting service. The purpose of these events was to mediate contact between young astronomers and experienced astronomers from various countries and institutions like ESA, NASA, ESO, etc.

The lunch debate was organized as a buffet with discussions of young astronomers with the guest astronomers at the round tables. There were 20 round tables, each with 11 participants - 9 were young astronomers and 2 were guest astronomers. At each round table 2 to 3 themes, chosen according to suggestions and votes of young astronomers through web interface before the General Assembly, were discussed. The themes touched three main areas - first on institutions like ESA, NASA and possibilities of young astronomers there, second on CV, applications for postdocs and job opportunities and third on what it means to be a scientist. In total 177 young astronomers from 45 different countries and 41 guest astronomers participated in the lunch debate. There were 11 undergraduated or graduated students without Ph.D. and 145 had PhD degree out of whom 39 were in postdoc positions, 11 participants did not fill in the questionnaire. The participants were distributed in the following age-groups: below 20 years (3); 20-24 years (30); 25-29 years (82); 30-35 years (47) and above 35 years (4).

An assessment questionnaire was filled by the participants after the event with the following results:

1. Has the YA event increased your sense of participation at the IAU GA? Yes: 85 %
2. Effectiveness of providing interaction between young astronomers: Effective: 74 %
3. Effectiveness of providing interaction with senior astronomers: Effective: 89 %
4. How well were the topics covered at your table? Well: 80 %
5. Will you attend the GA in 2009 and if so would you attend another YA-LD? Yes: 93 %
6. Do you think the event was a success? Yes: 98 %
7. Comments: YA were impressed by the possibility to talk with "high ranked" astronomers.

We must therefore conclude that this event was really very successful and it should be organized in a similar form at the next GA as well.

The other initiative for young astronomers the *Young Astronomers' Consulting Service* was running during the whole General Assembly. There was a clearly identified office in the Prague Congress Center (where the GA took place) where Young Astronomers could, by arranged appointments, meet with more experienced astronomers to seek advice on their CV, thesis, jobs, etc. during one-to-one discussions. Many young astronomers used this possibility and according to their comments they thought this initiative was very useful. These events could have been set up thanks to the creativity and enthusiasm of Michael Dovciak.

*Michèle Gerbaldi, chair Young Astronomers Events, Paris, France, September 2006.*

### **2.1.6. Report on Women in Astronomy Luncheon Meeting, 21 August 2006**

The Women in Astronomy lunch was held on Monday 21 August. The Lunch Meeting was preceded by a business meeting of the IAU EC Working Group for Women in Astronomy. The Women in Astronomy lunch was attended by the current president of the IAU Ronald D. Ekers, the incoming President Catherine J. Cesarsky, the first woman to hold this position, the General Secretary and Vice-Presidents, many senior astronomers, as well as young astronomers and students. The total number of participants was 301 coming from 49 countries. The geographical distribution was adequate, ranging from large, developed countries (United States, Russian Federation, Germany, Italy, France, United Kingdom) to developing countries (Armenia, Honduras, Indonesia, Iran, Macedonia, Philippines, Trinidad & Tobago, VietNam). The large majority, 92 percent of participants, consisted of women. The meeting was hosted by the EC Working Group for Women in Astronomy and was chaired by the co-chair of this WG, Anne Green.

The focus of this meeting was on changes in the status of women in astronomy since the 2003 General Assembly in Sydney and on formulation of strategies that will improve the environment for all astronomers.

All participants received a copy of "The Baltimore Charter for Women in Astronomy".

Keynote speakers were Prof. Sunetra Giridhar (Indian Institute of Astronomy, Bangalore, India) and Dr. Patricia Knezek (WYIN Observatory, Arizona, USA). The subject of the meeting was "Career Development for Women".

Sunetra Giridhar started her talk with information about women literacy in India. It is 54 % and it is increasing (for both genders), but very different in different parts of India. The proportion of women in astronomy is increasing in India in the last few decades, also in senior positions, but only in states where the women literacy increases (for example in Maharashtra, West Bengal). Some of Indian women in astronomy are working abroad. There is a plan prepared by the departments of science and Technology SERC named "Women Scientist Scheme" - three year grants for women to obtain sufficient results helping them to get a good positions.

Patricia Knezek spoke about "Women in astronomy in the AAS community: Past + Present = Plan for the Future". She presented various statistics showing the position of women in astronomy in the past and during recent years. There are a lot of young women interested in astronomy during their student years (The 60% Cohort in the U.S.). If the female proportion in astronomy declines with age, being highest for students and smallest in permanent positions, then the main question is: where do these women go? Why women still seem to be either slow or leave their careers? The first step is a more detailed statistical survey in the astronomical community, although the background could vary between countries. The situation also varies widely from institution to institution. There is a substantial need to establish reliable, well understood statistics. As a second step we need to answer the question why. The AAS/AIP is working on The Longitudinal Study of Astronomical Career Path. There is not only the traditional view of success, but there are another alternative career ways. The astronomical land is changing now. Large collaborative efforts are increasing; demand for education is increasing as well as roles in science and university management, public outreach, science policy, programming, instrumentation. In this way many varied fields are opening for "career" in astronomy. The main point is that full participation of men and women in astronomy will maximize the excellence in the field.

These two presentations were followed by discussions in breakout groups of 10 on five most important issues over lunch:

- Unequal opportunity: has discrimination gone underground?
- Mentoring and self-confidence: does women network work effectively or are our discussions supportive but not constructive? How can we upwardly manage our careers better? Do young women astronomers need more role



models? Who makes an effective mentor? Suggestions and strategies for building self-confidence; are women more reluctant to promote themselves? Anecdotal evidence suggests that women base their application on past achievements rather than on their potentials for a job, which men do. Do you agree?

- Family responsibilities: is there an easier time to manage having children? What kind of provision for childcare is critical at workplaces and conferences? After a career interruption, is your re-entry at a lower level, which then makes the path to senior position a longer one? Since women are still (generally) the primary caregivers, is there a greater vulnerability for research disruption and exclusion from time critical projects?
- Dual careers: equal advancement of two careers is extremely difficult. Lack of mobility often affects women more than men. How can we mitigate this? How can we encourage greater consideration of options for partners? Can we make a paradigm shift so that a non-standard career path is not a disadvantage?
- What do recent statistics tell us? Now that the gender imbalance at school and university has largely disappeared, how do we ensure this translates into greater representation for women in permanent and senior appointments, in positions that carry decision-making responsibilities and prestige?

Members of these randomly created table-groups could exchange and share various points of views coming from different countries and various types of institutions. These discussions were very interesting, deep and detailed, and women in astronomy were very active in them.

Then results of these groups were reported back to the plenary session at the end of meeting.

The following action items were submitted to the incoming IAU Executive: ensure adequate representation for women in IAU bodies, on Science Organizing Committees and as invited speakers for Symposia, make the provision of childcare at meetings, either supplied or paid for, a priority. By the way, this General Assembly of the IAU has started a new era with the first woman elected for the IAU president, Catherine J. Cesarsky. It was also mentioned that the IAU gender statistics gives an incomplete picture because younger astronomers, both men and women, are not usually members of the IAU.

This Women in Astronomy meeting was an excellent opportunity to exchange ideas and experience. Organizers hope to prepare such meeting again for the next GA IAU in Rio de Janeiro in 2009 and next such meeting would be very helpful to improve the environment for women in astronomy.

*Jana Tichá, Ceske Budejovice, Czech Republic, 5 October 2006*

## **2.2. IAU XXVII General Assembly, Rio de Janeiro, Brazil, 3-14 August 2009**

The city of Rio de Janeiro is well-known for its breath taking scenery, surrounded by a lush forest and awesome granite mountains, complemented by beautiful beaches and a deep blue sea. The weather is hot and tropical nearly all year round and slightly cooler during the months of June through August, when typical temperatures range from a chilly 19°C to a warmer 28°C. In addition, Rio is considered one of the world's prime destinations, particularly because of its exotic and vibrant culture and the warm hospitality of the "Carioca"(Rio people).

Rio, however, is not only a prime tourist destination. The great concentration of scientific and technological activities also characterizes Rio as one of the most important centers in Brazil and Latin America. It is the place where the first Brazilian national observatory was established by Emperor Don Pedro I, in 1827, and continues to host a wide spectrum of Brazilian creative thinking and development. In the last decade, astronomy in Brazil has experienced major growth and development, together with significant participation in international astronomical projects, such as Gemini and SOAR.

On behalf of the Brazilian astronomical community, the National Organizing Committee of the IAU XXVII General Assembly warmly invites the IAU membership to take part of this coming Assembly in Rio de Janeiro, August 2009.

## **2.3. IAU XXVIII General Assembly, Beijing, China Nanjing, 20-31 August 2012**

During its 81st meeting, the IAU Executive Committee voted in favor of the proposal of the Chinese Astronomical Society to host the IAU XXVIII General Assembly, in August 2012, in Beijing, China Nanjing.

## **2.4. Deadline for proposals to host the IAU XXIX General Assembly in 2015**

The IAU Executive Committee solicits proposals for hosting the IAU XXIX General Assembly in August 2015. Letters-of-Intent are welcome before 1 November 2008. Complete bid-books should reach the EC before the deadline of 1 April 2009. Rules and Guidelines are available at: <[http://www.iau.org/Instructions\\_for\\_Hosting\\_GAs.322.0.html](http://www.iau.org/Instructions_for_Hosting_GAs.322.0.html)>.

### 3. EXECUTIVE COMMITTEE

#### 3.1. EC81, Prague, Czech Republic, 13, 14, 15, and 23 August 2006

##### 3.1.1. *Brief report*

The 81st meeting of the IAU Executive Committee took place during the IAU XXVI General Assembly In Prague, Czech Republic, on 13 August 2006 in the headquarters of the Academy of Sciences of the Czech Republic, and on 14, 15, 23 and 24 August 2006 in the Prague Congress Centre. The sessions were partly joined by the IAU Division Presidents.

Much time has been devoted to discuss procedures of informing the IAU membership of the recommendations of the ad hoc EC Planet Definition Committee (membership: Owen Gingerich (USA, chair), Richard P. Binzel (USA), André Brahic (France), Catherine J. Cesarsky (IAU, ex officio), Dava Sobel (USA), Jun-ichi Watanabe (Japan), and Iwan P. Williams (UK)). The IAU EC has done the utmost to make sure to inform the IAU membership before the press was informed.

Apart from the regular agenda items, decisions were *inter alia* (most of which are reported on further in this IB):

The EC appointed an EC Advisory Committee on Hazards of Near-Earth Objects, chaired by David Morrison (USA).

The EC agreed with the appointment of a Press Officer for GA XXVI: Lars Lindberg Christensen (Germany).

The EC took note of all new Division, Commission, Working Group and Program Group presidents, chair persons, and organizing committees.

The EC was pleased to note that a Memorandum of Agreement for continued operation of the IAU Minor Planet Center had recently been signed by the Director of the Harvard-Smithsonian Center for Astrophysics and the IAU General Secretary. Drs. Michael F. A'Hearn (USA), Steven R. Chesley (USA), Hans Rickman (Sweden) and Giovanni Valsecchi (Italy), who have assisted the IAU GS in the negotiations with the SAO Director that led to the MoA, will constitute the MPC Advisory Committee. The EC took note of the fact that Dr. Brian G. Marsden stepped down as MCP Director after 28 years of impeccable service to the IAU and to the astronomical community at large, and that Dr. Timothy B. Spahr is appointed interim MPC Director, till a new Director is in appointed.

The EC appointed IAU representatives to scientific organizations and unions for the period 2006-2009.

Past-President Franco Pacini reviewed the status of the *International Year of Astronomy 2009*, as approved by UNESCO in 2005. The GA plenary session on 18 August 2006 provided ideas and recommendations.

The EC selected by vote the offer by the Chinese Astronomical Society to host the IAU XXVIII GA in Beijing (China Nanjing), 20-31 August 2012. The EC is always very appreciative to organizers of such major events.

### ***3.1.2. Executive Committee 2006-2009***

The chairman of the Special Nominating Committee informed the EC of the constitution of the EC for the period 2006-2009:

|                              |  |
|------------------------------|--|
| President:                   | Catherine J. Cesarsky (Germany)  |
| President-Elect:             | Robert Williams (USA)  |
| General Secretary:           | Karel A. van der Hucht (the Netherlands)   |
| Assistant General Secretary: | Ian F. Corbett (UK)  |
| Vice-Presidents:             | Beatriz L.S. Barbuy (Brazil),<br>Cheng Fang (China Nanjing),<br>Martha P. Haynes (USA),<br>George K. Miley (the Netherlands),<br>Giancarlo Setti (Italy),<br>Brian Warner (South Africa) |
| Advisers:                    | Ronald D. Ekers, Past-President (Australia) and<br>Oddbjorn Engvold, Past-GS (Norway)  |

### ***3.1.3. Special Nominating Committee 2006-2009***

The constitution of the IAU Special Nomination Committee 2006-2009, as approved by the GA is:

Chair: Catherine J. Cesarsky (IAU President).

Members: Philip A. Charles (South Africa), Ronald D. Ekers (Australia), Julieta Fierro (Mexico), Eva K. Grebel (Switzerland), Sadanori Okamura (Japan), and Grazina Tautvaisiene (Lithuania).

Advisers: K.A. van der Hucht (IAU GS), and Ian F. Corbett (IAU AGS).

### ***3.1.4. Finance Sub-Committee 2006-2009***

The constitution of the IAU Finance Sub-Committee 2006-2009, as approved by the GA is:

Chair: Paul G. Murdin (UK).

Members: Xiangqun Cui (China Nanjing), Kevin B. Marvel (USA), Birgitta Nordström (Denmark), John W. O'Byrne (Australia), and Cyril Ron (Czech Republic).

### ***3.1.5. Resolutions Committee 2006-2009***

The constitution of the IAU Resolution Committee 2006-2009, as approved by the GA is:

Chair: Jocelyn S. Bell Burnell (UK).

Members: Michel Dennefeld (France), Brian Warner (South Africa), and Rachel L. Webster (Australia).

### **3.2. EC82, Prague, Czech Republic, 25 August 2006 - *Brief report***

The 82nd meeting of the IAU Executive Committee took place during the IAU XXVI General Assembly in Prague, Czech Republic, on 25 August 2006 in the Prague Congress Centre, the day after the Closing Ceremony of the GA. The meeting was joined by the new IAU Division Presidents.

Agenda items and decisions were, *inter alia*:

The Chair of the IAU XXVI GA National Organizing Committee, Jan Palous, presented his preliminary report, which was discussed, as well as reports on all other major events by the respective organizers and a report from the IAU XXVI GA Press Officer.

The EC extended the appointment of Lars Lindberg Christensen as IAU Press Officer for the academic year 2006-2007 (see section 3.6).

As a follow-up of the resolutions adopted by the IAU XXVI General Assembly, considering the rejection of the name "plutons" for the category of Pluto-like objects, the EC will initiate a process for finding a better name for this category.

The EC will investigate possibilities for electronic voting on non-scientific issues.

Preparations for IAU XXVII GA in Rio de Janeiro, 3-14 August 2009, are underway. The NOC/LOC was well represented in Prague and continues its preparations with increased zeal.

The EC appointed an EC Working Group on IAU General Assemblies, with as membership representatives of recent and future GAs (see section 3.5.3).

The IAU EC is following with interest the preparations of the *International Heliophysical Year 2007*, as reported by IAU liaison David F. Webb (see section 11).

The EC decided to appoint an EC Working Group on the *International Year of Astronomy 2009*, chaired by Catherine J. Cesarsky (see section 3.5.2).

### **3.3. Officers' Meeting, Paris, 30 January-1 February 2007**

The 2007 IAU Officers' meeting will take place 30 January-1 February 2007 at the IAU Secretariat, Paris, France.

### **3.4. EC83, Cape Town, South Africa, 15-17 May 2007**

The IAU Executive Committee will have its 83<sup>rd</sup> meeting 15-17 May 2007 in Cape Town, South Africa. The due date for agenda items is 15 March 2007.

### 3.5. New EC Advisory Committee & Working Group

#### 3.5.1. *EC Advisory Committee on Hazards of Near-Earth Objects*

The IAU Executive Committee, in its 81<sup>st</sup> meeting, during the IAU XXVI General Assembly, has approved the establishment of an *EC Advisory Committee on Hazards of Near-Earth Objects*.

Chairperson: David Morrison (USA) <david.morrison@arc.nasa.gov>.

Members: Richard P. Binzel (USA), Andrea Carusi (Italy), Andrea Milani (Italy), Donald K. Yeomans (USA), and the Director of IAU Minor Planet Center, Timothy B. Spahr (USA).

Rationale: the IAU Role

One knows currently close to 850 Near Earth Asteroids (NEAs) with diameters 1 km and larger, and one estimates that there may be of the order of 100,000 NEAs with diameters exceeding 140 m. Land and water impacts of NEAs with diameters between 100 m and 500 m will cause major damages. Governments and international organizations are becoming increasingly concerned with natural hazards and disasters. The International Council for Science (ICSU) is developing a new program on “Natural and human-induced hazards and disasters” with participation from a large number of its scientific Unions. An adequate survey of Near Earth Objects (NEOs) is of notable interest and importance in such an initiative. A rapid development of NEOs survey programs illustrates the increased interest for detecting, tracking, characterizing and cataloging this family of bodies in our solar system. The first of four 2-m telescopes for such a survey program, the University of Hawaii Panoramic Survey Telescope and Rapid Response System (Pan-STARRS), will be operative in 2007. The planned Large Synoptic Survey Telescope (LSST) in Cerro Pachon, Chile, will further enhance the discovery rate of NEOs. One may also note that NASA has recently modified its charter to stress its increased responsibility for discovery and characterization of NEOs. The discoveries of NEAs that will be “interesting” to the public and media may increase from about one per year to very possibly one per week. Based on preliminary orbit calculations, as much as a dozen of these may initially appear to pose a potential threat. The IAU has been and will continue to be the primary international scientific organization with expertise on NEOs.

The greatly increased discovery rate of NEAs will inevitably lead to an increased interest in characterization and studies of them. Calculation of precise orbits and determination of impact probabilities for potentially hazardous NEAs will in the very near future require a matching attention and augmentation in support. The IAU has the obligation to encourage its National Members to support and safeguard these important scientific activities. The IAU has for several decades assumed responsibility for the IAU Minor Planet Center, hosted at the Smithsonian Astrophysical Observatory (SAO), with the important task of recording and maintaining the inventory of small bodies in the solar system,

which constitutes an important service to our community at large. A new Memorandum of Agreement between the IAU and SAO was signed in June 2006, which will ensure continued operation of the MPC with funding from NASA.

The IAU is pleased to note SAO's willingness and intention to revise and upgrade the operations of the MPC, in order to meet the need to cope with up to a hundred-fold increase in incoming data. One byproduct of the increasingly improved NEO surveys will be the finding of many new faint comets which concerns the IAU through their scientific value and interest.

With its responsibility for safeguarding and coordination of the science of astronomy in all its aspects, the IAU is the obvious organization and authority to be undertaking a sober and quality controlled information, on the matter of potential NEA threats to the Earth, to the public, to media and to governments. Therefore, the IAU Executive Committee has created an EC Advisory Committee on Hazards of Near-Earth Objects, to enable 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. This Committee will conduct its duties in accordance with the following rules and restrictions:

- Committee members will keep each other informed and will share information.
- Non-urgent communications to the IAU will be based on committee consensus.
- Urgent communications should represent a committee consensus, but can be initiated by a minimum of 2 (two) committee members.
- The committee will establish a public web page to be used for both general and urgent information.

The site will cross-link to the official IAU web site and to the primary CEO web site (JPL, Pisa, MPC, etc.).

- Urgent statements on behalf of the IAU can be posted by a minimum of 2 committee members. All urgent messages will also be sent by e-mail to the IAU President and General Secretary.
- The NEO web page will provide a historical record of IAU statements, including, for example, both original statements and subsequent modifications.
- The Committee will not issue IAU press releases or hold press conferences, but it will assist IAU in press issues, if requested.
- Interaction with governments on issues of impact threats is under the sole control of the IAU President and General Secretary.

*Oddbjørn Engvold, IAU past-GS (adapted from article in Proceedings IAU Symposium 236), Oslo, Norway, October 2006*

### 3.5.2. *EC Working Group on the International Year of Astronomy 2009*

The IAU Executive Committee, in its 81<sup>st</sup> meeting, during the IAU XXVI General Assembly, has approved the establishment of an *EC Working Group on the International Year of Astronomy 2009*.

President: Catherine J. Cesarsky (IAU President) <ccesarsk@eso.org>.

Members: E. Ian Robson (UK), Dennis Crabtree (Canada), Lars Lindberg Christensen (Denmark, ESA/ESO), Claus Madsen (ESO), Norio Kaifu (Japan), Tim Slater (USA).

URL: <<http://www.astronomy2009.org>>

Rationale: see section 3.5.2.1. below

3.5.2.1. *IAU Press Release, 27 October 2006*

<<http://www.iau2006.org/news/iau0606.html>>

*‘The International Astronomical Union announces the International Year of Astronomy 2009*

*27-October-2006, Munich: The International Astronomical Union will be coordinating the International Year of Astronomy in 2009. This initiative is an opportunity for the citizens of Earth to gain a deeper insight into astronomy’s role in enriching all human cultures. Moreover, it will serve as a platform for informing the public about the latest astronomy discoveries while emphasizing the essential role of astronomy in science education.*

In 1609, Galileo Galilei first turned one of his telescopes to the night sky and made astounding discoveries that changed mankind’s conception of the world forever: mountains and craters on the Moon, a plethora of stars invisible to the naked eye and moons around Jupiter. Astronomical observatories around the world promise to reveal how planets and stars are formed, how galaxies assemble and evolve, and what the structure and shape of our Universe actually are. Today, humans are in the middle of a new age of discovery, one as profound as the one Galileo ushered in when he turned his telescope on those glorious star-filled nights 400 years ago.

Astronomy, the oldest science in history, has played an important role in most, if not all, cultures over the ages. Thanks to advanced telescopes and space probes, astronomy continues to be a trailblazer, enhancing our knowledge by delivering breathtaking discoveries almost on a weekly basis. The International Year of Astronomy 2009 (IYA2009) will be a global celebration of astronomy and its contributions to society and culture, stimulating worldwide interest not only in astronomy, but in science in general, with a particular slant towards young people. The IYA2009 is deemed to mark the monumental leap forward that followed Galileo’s first use of the telescope for astronomical observations, and portray astronomy as a peaceful global scientific endeavour that unites astronomers in an international, multicultural family of scientists working together to find answers to some of the most fundamental questions that humankind has ever asked.



The vast majority of IYA2009 activities will span local, regional and national levels. Several countries have already formed National Nodes to work on the planning and preparation of activities for 2009. These committees are collaborations between professional and amateur astronomers, science centres and science communicators. Individual countries will be undertaking their own initiatives as well as assessing their own national needs, while the IAU will be acting as the event's coordinator and catalyst on a global scale. The IAU plans to liaise with, and involve, as many as possible of the ongoing outreach and education efforts throughout the world, including those organized by amateur astronomers.

Despite the IYA2009 being still in its early planning stages, a number of very exciting ideas have already been put forward. One of the core ideas is to bring Astronomy closer to all citizens of planet Earth by giving them the opportunity to interact with amateur and professional astronomers, as well as to participate in "sidewalk astronomy" events in planetariums and public observatories where several different activities, such as looking through a telescope and observing our Universe, will be held.

As important an objective is to ensure that less well-established organizations from the developing world can become involved with larger organizations and deliver their contributions, linked via a huge global network. Aiming at awakening the public awareness of astronomy and science in the developing countries, the IYA will, based on a resolution adopted by the UNESCO General Conference in 2005, be launching the Universe Awareness (UNAWE) program in 2009. Such a scheme has been designed to broaden the minds of economically disadvantaged young children across the globe, enhance their understanding of the world and demonstrate the power of rational thought.

The IYA2009 is, first and foremost, an activity for the citizens of Planet Earth, which will convey the excitement of personal discovery, the pleasure of sharing fundamental knowledge about the Universe and our place in it and ultimately, the value of the scientific culture.

Contact:

*Catherine Cesarsky, President; Karel A. van der Hucht, General Secretary; and Lars Lindberg Christensen, IAU Press Officer, <lars@eso.org>."*

### 3.5.2.2. Universe Awareness for Young Children (UNAWE)

Steering Committee: Claus Madsen (ESO), George K. Miley (the Netherlands), Carolina J. Ödman (the Netherlands), and Cecilia Scorza (Germany).

UNAWE is an activity designed to expose economically disadvantaged young children, aged between 4 and 10 years, to inspirational aspects of astronomy. By conveying a feeling for the scale and beauty of the Universe the main goal of UNAWE is to broaden the minds of young children, thereby helping to form tolerant and internationally minded adults. Additional goals of UNAWE are to enhance the children's understanding of the world and to demonstrate the power of rational thought.

## 2

From the dawn of history, the beauty of the sky and its intimate connection with the development of human civilization have inspired countless generations with a sense of wonderment. Modern astronomy continues to play a unique role in conveying the excitement of science to the general public. In recent years considerable resources have been devoted to astronomical outreach in developed countries, aided by the spectacular images produced by modern astronomical facilities and the continuing list of major astronomical discoveries that have changed our views of the Universe. Universe Awareness is targeted at a group that has often been neglected by such outreach programs, namely children from 4 years upwards.

Astronomy is a unique discipline for inspiring very young children and imbuing them with an appreciation of both science and culture. Not only does astronomy involve the natural sciences and cutting-edge technology, it also has strong links to philosophy, the arts and human development.

UNAWE is motivated by the premise that access to simple knowledge about the Universe is a birth right and that the formative ages of 4 to 10 years play a crucial role in the development of our human value system. This is also the age range in which children can readily appreciate and enjoy the beauty of astronomical objects and can learn to develop a 'feeling' for the vastness of the Universe. Moreover, the effect of background-dependant disparities on educational development increases with age. We decided to focus on economically disadvantaged children, because they are less likely to gain knowledge of the Universe by other formal or informal means and are therefore most needy.

UNAWE is being developed as a bottom-up programme. We shall carry out or participate in projects in several countries starting in 2009, proclaimed as the *International Year of Astronomy 2009* by the IAU and UNESCO. Ingredients of the programme include the development of country-specific materials, the provision of training and the initiation of an international network for communication by teachers and others involved in the programme. The emphasis of UNAWE is on inspiration and entertainment rather than on imparting dry facts. Songs, games, toys and animation films will play a key role in the UNAWE programmes. These will be developed by professionals, with experience of children's needs. Where appropriate we shall exploit possibilities of school twinning to reinforce the goals of the programme.

Young disadvantaged children, the target group for Universe Awareness, live in diverse environments, including isolated rural villages and the centres of large cities. Different materials and methods and approaches will be developed for the disparate environments. UNAWE will proceed according to the needs of teachers and others in the various UNAWE participating countries and the demands of active coordinators in these countries. We shall work towards integrating Universe Awareness into other relevant programmes that already exist.

Universe Awareness was initiated in early 2004 and launched officially at the IAU General Assembly at Prague in August 2006. At present UNAWE has contacts, collaborators and contributors in the following countries: Chile, Colombia, Denmark, France, Germany, India, Indonesia, Ireland, Italy, the Netherlands, South Africa, Spain, Sweden, Tunisia, Ukraine, the United Kingdom, the United States of America and Venezuela. During 2006 successful pilot projects were carried out to investigate the feasibility of UNAWE in Venezuela and Tunisia. These projects were enthusiastically received. Logistics and funding will limit UNAWE programmes initially to a limited number of languages and target-regions. In 2009 we plan to implement full UNAWE programmes in at least four emerging countries and several disadvantaged regions (e.g., inner cities) of EU member states.

The development phase of the programme is being supported by several organizations, including ESO and the Dutch Ministry for Education, Culture and Science. The Ministry has recently provided funding for three years to support an International UNAWE Office at Leiden, consisting of a project manager and a media development coordinator. We envisage that the implementation of UNAWE will be funded by a combination of international and national sources and various possibilities are presently being investigated.

The IAU has designated Universe Awareness as an important activity for the International Year of Astronomy. UNAWE has been endorsed by several distinguished scientists and international personalities, including several Nobel Prize winners. Universe Awareness will contribute to the development of a world scientific culture and correlate with the United Nations Millennium Development Goals (MDGs) in promoting universal primary education and gender equality in schools. Furthermore, we are working towards the adoption of UNAWE as a “flagship programme” by UNESCO.

We would welcome contact with people throughout the world who are involved in astronomical outreach to very young children, or who might be interested in Universe Awareness activities. All those interested please contact the UNAWE Programme Manager/ Coordinator, Dr. Carolina J. Ödman, Sterrewacht, Leiden University, the Netherlands <odman@strw.leidenuniv.nl>. For further information see <www.universeawareness.org>.

#### References

- [1] Miley, G.K., et al. 2005, Universe Awareness for Young Children, *The Messenger*, 121, September 2005, ISSN 0722-6691
- [2] Vosniadou, S., Brewer, W.F. 1992, Mental models of the earth: A study of conceptual change in childhood, *Cognitive Psychology*, 24, 535 – 585.

*George K. Miley, on behalf of the Universe Awareness International Steering Committee  
Leiden, the Netherlands, 10 November 2006*

### **3.5.3. EC Working Group on IAU General Assemblies**

The IAU Executive Committee, in its 82nd meeting, during the IAU XXVI General Assembly, has approved the establishment of an *EC Working Group on IAU General Assemblies*.

President: Jan Palous (XXVI GA Czech Rep. 2006) <palous@ig.cas.cz>.

Members: Richard N. Manchester (XXV GA Australia 2003), Daniela Lazzaro (XXVII GA Brazil 2009), Gang Zhao (XXVIII GA China Nanjing 2012), and Karel A. van der Hucht (IAU GS, ex officio).

Rationale:

In order to retain and share experience in the organization of IAU General Assemblies by National and Local Organizing Committees, and to be available for advice to the NOC/LOC of the next IAU General Assembly, the EC has established as advisory body an EC Working Group on IAU General Assemblies.

One of the tasks of the EC-WG will be to prepare and maintain a *cook book* for the organization of IAU General Assemblies. The EC-WG will have access to all relevant documentation of past IAU General Assemblies, as far as available at the IAU Secretariat.

The membership of the EC Working Group on IAU General Assemblies will consist of one representative of each NOC/LOC of recent past and future IAU General Assemblies. The chair should be from the most recent IAU GA.

### **3.6. IAU Press Office and Press Officer**

The IAU Executive Committee, in its 82nd meeting, during the IAU XXVI General Assembly, has approved the establishment of an IAU Press Office and the appointment of an IAU Press Officer, in order to assist the IAU President and IAU General Secretary with urgent press issues.

The first IAU Press Officer, Lars Lindberg Christen <lars@eso.org>, appointed preliminary for the year 2006/2007, started his work in this function right before the IAU XXVI General Assembly in Prague, and made himself most useful during and after the GA, notably in the planet definition press issues, and currently in press issues for the International Year of Astronomy 2009 (see section 3.5.2.1).

## 4. DIVISIONS, COMMISSIONS, WORKING GROUPS AND PROGRAM GROUPS

### 4.1. Presidents, Vice-Presidents and Organizing Committees 2006-2009

#### 4.1.1. *DIVISION I - Fundamental Astronomy*

URL: <astro.cas.cz/iaudiv1>

##### **PRESIDENT**

##### **Jan Vondrák**

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Academy of Sciences  
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##### **VICE-PRESIDENT**

##### **Dennis D. McCarthy**

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3450 Massachusetts Avenue NW  
US-Washington, DC 20392-5420  
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Fax: +1 202 762 1563  
Email: <dmc@maia.usno.navy.mil>

##### MEMBERS DIVISION I ORGANIZING COMMITTEE

Aleksander Brzezinski, P-C19 (Poland), Joseph A. Burns, P-C7 (USA), Pascale Defraigne, P-C31 (Belgium), Dafydd Wyn Evans, VP-C8 (UK), Toshio Fukushima, P-C4, PP (Japan), George H. Kaplan, VP-C4 (USA), Sergei A. Klioner, P-C52 (Germany), Zoran Knezevic, VP-C7 (Serbia) Irina I. Kumkova, P-C8 (Russian Federation), Chopo Ma, VP-C19 (USA), Richard N. Manchester, VP-C31 (Australia), and Gérard Petit, VP-C52 (France).

##### PARTICIPATING COMMISSIONS

##### **Div. I/Comm. 4 *Ephemerides***

P: Toshio Fukushima, PP, (Japan), <Toshio.Fukushima@nao.ac.jp>.

VP: George H. Kaplan, (USA), <gkaplan@usno.navy.mil>.

OC: Jan Vondrak (Czech Rep.), Catherine Hohenkerk (UK), John A. Bangert (USA), Sean E. Urban (USA), Jean-Eudes Arlot (France), Martin Lara (Spain), and Elena V. Pitjeva (Russian Federation).

URL: <http://iau-comm4.jpl.nasa.gov/>

##### **Div. I/Comm. 7 *Celestial Mechanics and Dynamical Astronomy***

P: Joseph A. Burns (USA), <jab16@cornell.edu>.

VP: Zoran Knezevic (Serbia), <zoran@aob.bg.ac.yu>.

S: David Vokrouhlicky (Czech Rep.), <vokrouhl@mbox.cesnet.cz>

OC: Evangelia Athanassoula (France), C. Beauge (Argentina), B. Erdi (Hungary), A. Maciejewski (Poland), R. Malhotra (USA), Andrea

Milani, PP (Italia), A. Morbidelli (France), S.J. Peale (USA), and Ji-Lin Zhou (China Nanjing).

URL: <<http://copernico.dm.unipi.it/comm7>>

**Div. I/Comm. 8 *Astrometry***

P: Irina I. Kumkova (Russian Federation), <[kumkova@iperas.nw.ru](mailto:kumkova@iperas.nw.ru)>.

VP: Dafydd Wyn Evans (UK), <[dwe@ast.cam.ac.uk](mailto:dwe@ast.cam.ac.uk)>.

OC: Alexandre H. Andrei (Brazil), Alain Fresneau (France), Imants Platais (USA), Petre P. Popescu (Romania), Ralf-Dieter Scholz (Germany), Mitsuru Soma (Japan), Norbert Zacharias (USA), and Zi Zhu (China Nanjing).

URL: <[http://www.ast.cam.ac.uk/iau\\_comm8/](http://www.ast.cam.ac.uk/iau_comm8/)>

**Div. I/Comm. 19 *Rotation of the Earth***

P: Aleksander Brzezinski (Poland), <[alek@cbk.waw.pl](mailto:alek@cbk.waw.pl)>.

VP: Chopo Ma (USA), <[cma@virgo.gsfc.nasa.gov](mailto:cma@virgo.gsfc.nasa.gov)>.

OC: Patrick Charlot (France), Pascale Defraigne (Belgium), Véronique Dehant (Belgium), Jean O. Dickey (USA), Chengji Juang (China Nanjing), Jean Souchay (France), and Jan Vondrák (Czech Rep).

URL: <<http://www.astro.oma.be/IAU/>> (tbd)

**Div. I/Comm. 31 *Time***

P: Pascale Defraigne (Belgium), <[Pascale.Defraigne@oma.be](mailto:Pascale.Defraigne@oma.be)>.

VP: Richard N. Manchester (Australia), <[Dick.Manchester@csiro.au](mailto:Dick.Manchester@csiro.au)>.

OC: Mizuhiko Hosokawa (Japan), Sigfrido Leschiutta (Italia), Demetrios Matsakis (USA), Gérard Petit (France), and Zhai ZaoCheng (China Nanjing).

URL: <<http://www.astro.oma.be/IAU/COM31/>>

**Div. I/Comm. 52 *Relativity in Fundamental Astronomy***

P: Sergei A. Klioner (Germany), <[Sergei.Klioner@tu-dresden.de](mailto:Sergei.Klioner@tu-dresden.de)>.

VP: Gérard Petit (France), <[gpetit@bipm.org](mailto:gpetit@bipm.org)>.

OC: Viktor A. Brumberg (Russian Federation), Nicole Capitaine (France), Agnès Fienga (France), Toshio Fukushima (Japan), Bernard R. Guinot (France), Cheng Huang (China Nanjing), Francois Mignard (France), Kenneth P. Seidelmann (USA), Michael H. Soffel (Germany), and Patrick T. Wallace (UK).

URL: <<http://astro.geo.tu-dresden.de/RIFA>>.

DIVISION I WORKING GROUPS

**Div. I/WG *Second Realization of International Celestial Reference Frame***

Chair: Chopo Ma (USA), <[cma@gemini.gsfc.nasa.gov](mailto:cma@gemini.gsfc.nasa.gov)>

URL: <tbd>

**Div. I/WG *Numerical Standards in Fundamental Astronomy***

Chair: Brian J. Luzum (USA), <[bjl@maia.usno.navy.mil](mailto:bjl@maia.usno.navy.mil)>

URL: <<http://maia.usno.navy.mil/NSFA.html>>.

**Div. I/WG Astrometry by Small Ground-Based Telescopes**

Chair: William Thuillot (France) &lt;thuillot@imcce.fr&gt;

URL: <[http://www.imcce.fr/hosted\\_sites/iau\\_wgnps/astrom.html](http://www.imcce.fr/hosted_sites/iau_wgnps/astrom.html)>

## DIVISION I INTER-DIVISION WORKING GROUPS

**Div. I-III/WG Cartographic Coordinates and Rotational Elements**

Chair: Brent A. Archinal (USA), &lt;barchinal@usgs.gov&gt;

URL: <<http://astrogeology.usgs.gov/Projects/WGCCRE/>>**Div. I-III/WG Natural Satellites**

Chair: Jean-Eudes Arlot (France), &lt;Jean-Eudes.Arlot@obspm.fr&gt;

URL: <[http://www.imcce.fr/host/iau\\_wgnps/iauwg.html](http://www.imcce.fr/host/iau_wgnps/iauwg.html)>

## DIVISION I COMMISSION WORKING GROUPS

**Div. I/Comm. 8/WG Densification of the Optical Reference Frame**

Chair: Norbert Zacharias (USA), &lt;nz@usno.navy.mil&gt;

URL: <[http://ad.usno.navy.mil/dens\\_wg/dens.html](http://ad.usno.navy.mil/dens_wg/dens.html)>**Div. I/Comm. 19/WG High-frequency and Sudden Variations in Earth Orientation**

Chair: Markus Rothacher (BRD), &lt;rothacher@bv.tum.de&gt;

URL: <<http://www.astro.oma.be/IAU/>>**4.1.2. DIVISION II -Sun and Heliosphere**URL: <<http://www2.bc.edu/~haganmp/IAUDivII.htm>>**PRESIDENT****Donald B. Melrose**

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&lt;melrose@physics.usyd.edu.au&gt;

**VICE-PRESIDENT****Valentin Martinez Pillet**

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**SECRETARY**

Lidia van Driel-Gesztelyi, VP-C10 (France),

&lt;Lidia.vanDriel@obspm.fr&gt;

**MEMBERS DIVISION II ORGANIZING COMMITTEE**

David F. Webb, PP (USA), James A. Klimchuk, P-C10 (USA),

Alexander Kosovichev, VP-C12 (USA), Jean-Louis Bougeret, P-C49

(France), and Rudolf von Steiger VP-C49 (Switzerland).

## PARTICIPATING COMMISSIONS

**Div. II/Comm. 10 *Solar Activity***

P: James A. Klimchuk (USA), <james.klimchuk@nrl.navy.mil>.  
 VP: Lidia van Driel-Gesztelyi (France), <Lidia.vanDriel@obspm.fr>.  
 S: Karel J. Schrijver (USA), <schryver@lmsal.com>. OC: Donald B. Melrose, PP (Australia), Lyndsay Fletcher (UK), Nat Gopalswamy (USA), Richard A. Harrison (UK), Cristina H. Mandrini (Argentina), Hardi Peter (Germany), Saku Tsuneta (Japan), Bojan Vrsnak (Croatia), and Jingxiu Wang (China Nanjing).  
 URL: <tbd>

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URL: <<http://www.iap.fr/SitesHeberges/com45uai/index.html>>

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URL: <[http://www.ari.uni-](http://www.ari.uni-heidelberg.de/interessantes/iaucommission37/IAUComm37.html)[heidelberg.de/interessantes/iaucommission37/IAUComm37.html](http://www.ari.uni-heidelberg.de/interessantes/iaucommission37/IAUComm37.html)>**DIVISION VII WORKING GROUP****Div. VII/WG Galactic Center**

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URL: &lt;tbd&gt;

#### 4.1.8. *DIVISION VIII - Galaxies and the Universe*

URL: <<http://www.star.bris.ac.uk/iau/>>

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##### PARTICIPATING COMMISSIONS

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OC: Avishai Dekel (Israel), Marijn Franx (Netherlands), John S. Gallagher (USA), Naomasa Nakai (Japan), Monica Rubio (Chile), Valentina Karachentseva (Ukraine), Gillian R. Knapp (USA), Renée C. Kraan-Korteweg (South Africa), Bruno Leibundgut (Germany), Jayant V. Narlikar (India), and Elaine M. Sadler (Australia).

URL: <<http://aramis.obspm.fr/IAU28/index.php>>

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OC: (tbd)

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##### DIVISION VIII WORKING GROUP

###### **Div. VIII/WG *Supernovae***

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URL: <[http://www.star.bris.ac.uk/iau/news/sn\\_wg\\_ga\\_26.pdf](http://www.star.bris.ac.uk/iau/news/sn_wg_ga_26.pdf)>

#### 4.1.9. *DIVISION IX - Optical and Infrared Techniques*

URL: <<http://www.ifa.hawaii.edu/users/kud/iau/DivIX.htm>>

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CONSULTANTS: Christiaan L. Sterken (Belgium) and Michel Dennefeld (France).

##### PARTICIPATING COMMISSIONS

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URL: <<http://www.vub.ac.be/STER/IAU/IAUComm25.html>>

##### **Div. IX/Comm. 30 *Radial Velocities***

P: Stephane Udry (Switzerland), <[stephane.udry@obs.unige.ch](mailto:stephane.udry@obs.unige.ch)>.

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OC: Francis C. Fekel (USA), Kenneth C. Freeman (Australia), Elena V. Glushkova (Russian Federation), Geoffrey W. Marcy (USA), Robert D. Mathieu (USA), Birgitta Nordström, PP (Denmark), Dimitri Pourbaix (Belgium), Catherine Turon (France), and Tomaz Zwitter (Slovenia).

URL: <<http://www.ctio.noao.edu/science/iauc30/iauc30.html>>

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OC: Gilles Duvert (France), Reinhard Genzel (Germany), Christopher Haniff (UK), Christian A. Hummel (Germany), Peter R. Lawson

(USA), John D. Monnier (USA), Didier Queloz (Switzerland), Peter G. Tuthill (Australia), and Farrokh Vakili (France).

URL: <<http://olbin.jpl.nasa.gov/iau/2006/commission.html>>

#### DIVISION IX WORKING GROUPS

##### **Div. IX/WG Adaptive Optics**

Chair: (tbd)

URL: <tbd>

##### **Div. IX/WG Site Testing Instruments**

Chair: Andrei A. Tokovinin (Chile), <[atokovinin@ctio.noao.edu](mailto:atokovinin@ctio.noao.edu)>

URL: <tbd>

##### **Div. IX/WG Large Telescope Projects**

Chair: (tbd)

URL: <tbd>

##### **Div. IX/WG Small Telescope Projects**

Chair: (tbd)>

URL: <tbd>

##### **Div. IX/WG *Detectors***

Chair: Tim Abbott (USA), <[tabbott@ctio.noao.edu](mailto:tabbott@ctio.noao.edu)>

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##### **Div. IX/WG *Sky Surveys***

Chair: Quentin Parker (Australia), <[qap@ics.mq.edu.au](mailto:qap@ics.mq.edu.au)>

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#### INTER-DIVISION WORKING GROUPS

##### **Div. IX-X/WG *Encouraging the International Development of Antarctic Astronomy***

Chair: Michael G. Burton (Australia), <[mgb@phys.unsw.edu.au](mailto:mgb@phys.unsw.edu.au)>

URL: <[www.phys.unsw.edu.au/jacara/iau](http://www.phys.unsw.edu.au/jacara/iau)>

##### **Div. IX-X/WG *Astronomy from the Moon***

Chair: Sallie L. Baliunas (USA), <[baliunas@cfa.harvard.edu](mailto:baliunas@cfa.harvard.edu)>

vice-Chair: Yoji Kondo (USA), <[kondo@stars.gsfc.nasa.gov](mailto:kondo@stars.gsfc.nasa.gov)>

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#### DIVISION IX COMMISSION WORKING GROUPS

##### **Div. IX/Comm. 25 WG *Infrared Astronomy***

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URL: <<http://www.ucalgary.ca/~milone/IRWG/>>

##### **Div. IX/Comm. 30 WG *Radial-Velocity Standard Stars***

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URL: <<http://obswww.unige.ch/~udry/std/std.html>>

**Div. IX/Comm. 30 WG Stellar Radial Velocity Bibliography**

Chair: Hugo Levato (Argentina), &lt;hlevato@casleo.gov.ar&gt;

URL: &lt;www.casleo.gov.ar/indexingles.htm&gt;

**Div. IX/Comm. 30 WG Catalog of Orbital Elements of Spectroscopic Binary Systems**

Chair: Dimitri Pourbaix (Belgium), &lt;pourbaix@astro.ulb.ac.be&gt;

URL: &lt;http://sb9.astro.ulb.ac.be/&gt;

**4.1.10. DIVISION X - Radio Astronomy**

URL: &lt;http://www.bao.ac.cn/IAU\_COM40/&gt;

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**PARTICIPATING COMMISSION****Div. X/Comm. 40 Radio Astronomy**

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VP: VP-DX (Canada), Russell A. Taylor

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**DIVISION X WORKING GROUPS****Div. X/WG Global VLBI**

Chair: Jonathan D. Romney (USA), &lt;jromney@nrao.edu&gt;

URL: &lt;http://www.bao.ac.cn/IAU\_COM40/WG/WgVLBI.html&gt;

**Div. X/WG Interference Mitigation**

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URL: <[http://www.bao.ac.cn/IAU\\_COM40/WG/WgRF.html](http://www.bao.ac.cn/IAU_COM40/WG/WgRF.html)>**Div. X/WG Astrophysically Important Spectral Lines**

Chair: Masatoshi Ohishi (Japan), &lt;ohishi@nao.ac.jp&gt;

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## DIVISION X INTER-DIVISION WORKING GROUPS

**Div. IX-X/WG Encouraging the International Development of Antarctic Astronomy**

Chair: Michael G. Burton (Australia), &lt;mgb@phys.unsw.edu.au&gt;

URL: <[http://www.bao.ac.cn/IAU\\_COM40/WG/WgAntarc.html](http://www.bao.ac.cn/IAU_COM40/WG/WgAntarc.html)>**Div. IX-X WG Astronomy from the Moon**

Chair: Sallie Baliunas (USA), &lt;baliunas@cfa.harvard.edu&gt;

vice-Chair: Yoji Kondo (USA), &lt;kondo@stars.gsfc.nasa.gov&gt;

URL: <<http://www.cfa.harvard.edu/moon/>>Div. X-XII/WG *Historic Radio Astronomy*

Chair: Wayne Orchiston (Australia), &lt;Wayne.Orchiston@jcu.edu.au&gt;

URL: <[http://www.bao.ac.cn/IAU\\_COM40/WG/WgHistRA.html](http://www.bao.ac.cn/IAU_COM40/WG/WgHistRA.html)>**4.1.11. DIVISION XI - Space and High Energy Astrophysics**URL: <[http://www.mpe.mpg.de/IAU\\_DivXI/](http://www.mpe.mpg.de/IAU_DivXI/)>**PRESIDENT****Günther Hasinger**

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URL: &lt;http://www.cfa.harvard.edu/moon/&gt;

**4.1.12. DIVISION XII - Union-Wide Activities**

URL: &lt;http://www.iaudivisionxii.org/&gt;

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(Korea R), Magda G. Stavinschi, P-C46 (Romania), Richard J. Wainscoat, VP-C50 (USA), and Virginia L. Trimble, PP (USA).

#### PARTICIPATING COMMISSIONS

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URL: <<http://www.atnf.csiro.au/people/rnorris/IAUC5/>>

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OC: Brian G. Marsden (USA), Daniel W.E. Green (USA), Syuichi Nakano (Japan), Elizabeth Roemer (USA), Jana Ticha (Czech Rep.), Hitoshi Yamaoka (Japan), and Kaare Aksnes (Norway).

URL: <<http://cfa-www.harvard.edu/iau/Commission6.html>>

##### **Div. XII/Comm. 14 *Atomic and Molecular Data***

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URL: <<http://www.astro.lu.se/Research/astrophys/iau/>>

##### **Div. XII/Comm. 41 *History of Astronomy***

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URL: <<http://physics.open.ac.uk/IAU46/>>

**Div. XII/Comm. 50 *Protection of Existing and Potential Observatory Sites***

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(\*) Richard J. Wainscoat has been elected in replacement of Hugo Schwarz (Chile) who recently passed away (see 9.3. hereafter).

VP: (tbd).

OC: Carlo Blanco (Italy), Jim Cohen, PP (UK, † 2006), David L. Crawford (USA), Syuzo Isobe (Japan), Magarita Metaxa (Greece), and Woodruff T. Sullivan, PP (USA).

URL: <<http://www.ctio.noao.edu/cgi-bin/iau50.pl>>

URL: <<http://www.ctio.noao.edu/cgi-bin/iau50.pl>>

**Div. XII/Comm. 55 *Communicating Astronomy with the Public***

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OC: Augusto Damineli Neto (Brazil), Richard T. Fienberg (USA), Anne Green (Australia), Ajit K. Kembhavi (India), Birgitta Nordström (Denmark), Oscar Alvarez-Pomares (Cuba), Kazuhiro Sekiguchi (Japan), Patricia A. Whitelock (South Africa), and Jin Zhu (China Nanjing).

URL: <<http://www.communicatingastronomy.org/>>

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**Div. X-XII/WG *Historic Radio Astronomy***

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DIVISION XII COMMISSION WORKING GROUPS /  
PROGRAM GROUPS / TASK FORCE / SERVICE

**Div. XII/Comm. 5/WG *Astronomical Data***

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**Div. XII/Comm. 5/WG *Nomenclature***

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**Div. XII/Comm. 5/WG *Libraries***

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**Div. XII/Comm. 5/ *WG FITS***

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vice-Chair: François Ochsenbein (France), <[francois@astro.u-strasbg.fr](mailto:francois@astro.u-strasbg.fr)>

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**Div. XII/Comm. 5/WG *Virtual Observatories, Data Centers and Networks***

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**Div. XII/Comm. 5/TF *Preservation and Digitization of Photographic Plates***

Chair: Elizabeth Griffin (Canada), <Elizabeth.Griffin@hia-ih.nrc-cnrc.gc.ca>

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**Div. XII/Comm. 41/WG *Historical Instruments***

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URL:

<[http://www.oapd.inaf.it/museo/PagineInglese/History%20of%20astronomy/HI\\_WG/hi\\_wgroup.htm](http://www.oapd.inaf.it/museo/PagineInglese/History%20of%20astronomy/HI_WG/hi_wgroup.htm)>

**Div. XII/Comm. 41/WG *Transits of Venus***

Chair: Steven J. Dick (USA), <steven.j.dick@nasa.gov>

URL: <<http://www.le.ac.uk/has/c41/wgtov.html>>

**Div. XII/Comm. 46/PG *World Wide Development of Astronomy (PG-WWDA)***

Chair: John Hearnshaw (New Zealand),

<john.hearnshaw@canterbury.ac.nz>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#PGWWDA>>

**Div. XII/Comm. 46/PG *Teaching for Astronomy Development (PG-TAD)***

co-Chair: Laurence A. Marshall (USA), <marshall@gettysburg.edu>

co-Chair: Edward F. Guinan (USA), <edward.guinan@villanova.edu>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#TAD>>

<<http://physics.open.ac.uk/IAU46/guidelines.html>>

**Div. XII/Comm. 46/PG *International Schools for Young Astronomers (PG-ISYA)***

Chair: Jean-Pierre de Greve (Belgium), <jpdgreve@vub.ac.be>

vice-Chair: Kam-Ching Leung (USA), <kleung@unlserve.unl.edu>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#ISYA>>

**Div. XII/Comm. 46/PG *Collaborative Programs***

Chair: Hans Haubold (Austria), <haubold@kph.tuwien.ac.at>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#CP>>

**Div. XII/Comm. 46/PG *Exchange of Astronomers***

Chair: John R. Percy (Canada), <jpercy@credit.erin.utoronto.ca>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#EoA>>

**Div. XII/Comm. 46/PG *National Liaison on Astronomy Education***

Chair: Barrie W. Jones (UK), <b.w.jones@open.ac.uk>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#NL>>

**Div. XII/Comm. 46/PG *Commission Newsletter***

Chair: Barrie W. Jones (UK), <b.w.jones@open.ac.uk>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#News>>

**Div. XII/Comm. 46/PG *Public Education on the Occasions of Solar Eclipses***

Chair: Jay M. Pasachoff (USA), <jay.m.pasachoff@williams.edu>

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#PGSE>>

**Div. XII/Comm. 46/PG *Exchange of Books and Journals***

Chair: Susana E. Deustua (USA), &lt;deustua@aaas.org&gt;

URL:

<<http://physics.open.ac.uk/IAU46/programme%20groups.html#Ex>>**Div. XII/Comm. 50/WG *Controlling Light Pollution***

Chair: Richard J. Wainscoat (USA), &lt;rjw@ifa.hawaii.edu&gt;

URL: <[http://www.ctio.noao.edu/light\\_pollution/iau50/](http://www.ctio.noao.edu/light_pollution/iau50/)>**4.2. DISCONTINUED COMMISSION AND WORKING GROUPS**

According to the IAU Working Rules, IAU Commissions and Working Groups can be discontinued when their goals have been achieved and/or tasks completed. Therefore, discontinuation is a sign of accomplishment. It can even be followed by upgrading to a higher level, e.g., from Working Group to Commission. We list the discontinuation of the following scientific bodies.

Div. I/WG *General Relativity in Celestial Mechanics, Astrometry & Metrology* (upgraded to Div. I/Commission 52 *Relativity in Fundamental Astronomy*)

Div. I/WG *Re-definition of Universal Time Coordinated (UTC)*

Div. I/WG *Precession and the Ecliptic*

Div. I/WG *Nomenclature for Fundamental Astronomy (NFA)*

Div. I/WG *Future Development of Ground-Based Astrometry (FDGBA)*

Div. I-III/WG *Near Earth Objects*

(upgraded to EC - Working Group *Hazards of near-Earth Objects*)

Div. I/Comm. 8/WG *Astrographic Catalogue and Carte du Ciel*

Div. III/WG *Extrasolar Planets*

(upgraded to Div. III/Commission 53 *Extrasolar Planets*)

Div. V/WG *Variable and Binary Stars in Galaxies*

Div. V/Comm. 42/WG *Accretion Physics in Interacting Binaries*

Div. IX/Comm. 9 *Instrumentation and Techniques*

Div. IX WG *Optical and Infrared Interferometry*

(upgraded to Div. IX/Commission 54 *Optical and Infrared Interferometry*)

Div. XII WG *Communicating Astronomy with the Public*

(upgraded to Div. XII/Commission 55 *Communicating Astronomy with the Public*)

Div. XII/Comm. 14/WG *Atomic Spectra and Wavelengths*

Div. XII/Comm. 14/WG *Atomic Transition Probabilities*

Div. XII/Comm. 14/WG *Line Broadening*

Div. XII/Comm. 14/WG *Molecular Structure*

Div. XII/Comm. 14/WG *Molecular Reactions on Solid Surfaces*

Div. XII/Comm. 14/WG *Optical Properties of Solids*

Div. XII/Comm. 14/WG *Gas Phase Reactions*

### 4.3 NEW IAU COMMISSIONS AND WORKING GROUPS

(for details see above, section 4.1)

Div. I/Comm. 52 *Relativity in Fundamental Astronomy*

Div. I/WG *Second Realization of International Celestial Reference Frame*

Div. I/WG *Numerical Standards in Fundamental Astronomy*

Div. I/WG *Astrometry by Small Ground-Based Telescopes*

Div. III/Comm. 53 *Extrasolar Planets*

Div. VII/WG *Galactic Center*

Div. IX/Comm. 54 *Optical and Infrared Interferometry*

Div. IX/WG *Adaptive Optics*

Div. IX/WG *Site Testing Instruments*

Div. IX/WG *Large Telescope Projects*

Div. IX/WG *Small Telescope Projects*

Div. XII/Comm. 55 *Communicating Astronomy with the Public*

Div. XII/Comm. 14/WG *Atomic Data*

Div. XII/Comm. 14/WG *Molecular Data*

Div. XII/Comm. 14/WG *Solids and Their Surfaces*

### **! CALL FOR MEMBERSHIP OF THE NEW IAU COMMISSIONS !**

The four new IAU Commissions 52, 53, 54, and 55 are inviting IAU members to apply for membership of these Commissions. Those interested, please contact the Presidents of the four new IAU Commissions, see section 4.1.

### 4.4. NEWS FROM DIVISIONS

#### 4.4.1. News from Division I

The composition of Division I changed substantially after the 26th IAU General Assembly. First of all, the former Working Group *Relativity in Celestial Mechanics, Astrometry and Metrology* was upgraded to the new IAU Commission 52 *Relativity in Fundamental Astronomy* (president: Sergei Klioner, TU Dresden, Germany; vice-president: Gérard Petit, BIPM Sèvres, France). Here is a short description of its role and goals:

Relativity has been becoming increasingly important for modeling and interpretation of high accuracy astronomical observations during at least last 20 years. Since various relativistic questions played an important role in the work of several IAU Commissions and Working Groups for an extended period of time, the 26th General Assembly of the IAU has decided to establish a new IAU

Commission, Commission 52 "Relativity in Fundamental Astronomy" (RIFA). The general scientific goals of the new Commission are:

- clarify geometric and dynamical concepts of Fundamental Astronomy within relativistic framework;
- provide practical mathematical and physical formulations to be used in Fundamental Astronomy;
- deepen understandings of the above results among astronomers and students in astronomy;
- promote research needed to accomplish these tasks.

Along with these long-term goals of the Commission it seems to be reasonable that the following important issues are actively addressed by the Commission within the next three years: "units of measurements" for astronomical quantities in the relativistic framework (this also includes the system of astronomical units), clarification of some concepts needed for Earth rotation theories (e.g., time-dependent ecliptic in the local GCRS coordinates). The new Commission hopes that its creation will also help to make relativity an integral part of the world view of astronomers working in the field of fundamental astronomy. Members of the IAU are cordially invited to join the new Commission 52. Requests to join should be sent by e-mail to the President of the Commission 52: <Sergei.Klioner@tu-dresden.de>.

Working Groups:

Several Working Groups of Division I have accomplished their tasks and were discontinued: *WG Precession and the Ecliptic*, *WG Nomenclature for Fundamental Astronomy*, *WG Re-definition of Universal Time Coordinated (UTC)*, and *WG Future Development of Ground-Based Astrometry*; the former two concluded their work by proposing IAU Resolutions that were approved by the General Assembly (Resolutions 1-3).

On the other hand, three new Working Groups of Division I have been created:

- WG Second Realization of International Celestial Reference Frame (chair Chopo Ma, NASA GSFC);
- WG Numerical Standards in Fundamental Astronomy (chair Brian Luzum, USNO);
- WG Astrometry by Small Ground-based Telescopes (chair William Thuillot, IMCCE, Observatoire de Paris).

There were also changes made in Inter-Division Working Groups, common to Division I and III. The *WG Near Earth Objects* was upgraded to an Executive Committee *WG Hazards of Near Earth Objects*; *WG Cartographic Coordinates and Rotational Elements* has a new chair (Brent Archinal, US Geological Survey); and a new WG was created: *WG Natural Satellites* (chair Jean-Eudes Arlot, IMCCE, Observatoire de Paris).

The Organizing Committee of Division I now consists of the Presidents and Vice-Presidents of all Commissions pertaining to the Division.

All these changes are reflected at the new Division I website (<http://astro.cas.cz/iaudiv1>), where more details can be found.

*Jan Vondrák, president LAU Division I, Prague, Czech Republic, 7 November 2006*

#### **4.4.2. News from Division IX**

The Organizing Committee of Division IX met during the General Assembly and made the following decisions. The former Division Working Group on Optical and Infrared Interferometry will be transformed into a new participating Commission of the Division. Commission 25 (Stellar Photometry and Polarimetry) and Commission 30 (Radial Velocities) will continue in their status as commissions. Commission 9 (Instrumentation and Techniques) will be discontinued. Members of this commission become automatically members of the Division.

The OC discussed the formation of new Division Working Groups. It was agreed that new WGs can be proposed and approved throughout the whole period until the next General Assembly. Members of the Division are asked to make proposals for new WGs within the next months. The OC will then decide about these proposals. Chairs of the new WGs can become members of the OC. The following WGs were tentatively discussed: Extremely Large Telescopes, Small Telescopes, Adaptive Optics, Site Testing Instrumentation, Sky Surveys, Optical/IR Instrumentation, Scientific Data Analysis Algorithms. A initiative to form a WG for Site Testing Instrumentation has since then been started by A. Tokovinin (Chile). The former Commission 9 WG on Detectors continues as a Division WG.

A new Inter-Division Working Group on "Astronomy from the Moon" has been formed under Divisions IX, X, and XI. The Inter-Division Working Group "Encouraging the International Development of Antarctic Astronomy" continues under Divisions IX and X.

For the new OC of Division IX and the URL of its website, see section 4.1.

*Rolf-Peter Kudritzki, president Division IX, Honolulu, HI, USA, 14 November 2006*

### **4.5. NEWS FROM COMMISSIONS**

#### **4.5.1. IAU Div. I Commission 52**

Relativity has been becoming increasingly important for modeling and interpretation of high accuracy astronomical observations during at least the last 20 years. Since various relativistic questions have been playing an important role in the work of several IAU Commissions and Working Groups for an extended period of time, the IAU XXVI General Assembly held in Prague in August 2006, has decided to establish IAU Commission 52 Relativity in Fundamental Astronomy (RIFA). The goals of the Commission and further information can be found at <http://astro.geo.tu-dresden.de/RIFA..>

Members of the IAU are cordially invited to join the new Commission 52. Requests to join should be sent by e-mail to the President of the Commission 52: <Sergei.Klioner@tu-dresden.de>.

*Sergei Klioner, president IAU Commission 52, Dresden, Germany, 15 November 2006.*

#### **4.5.2. IAU Div. XII/Commission 46**

Less than two months ago a new triennium for IAU Commission 41 has started. During its Business Meeting at the GA in Prague new ideas were presented, as Jay Pasachoff, the retiring president wrote us, as nor I nor new vice-president Rosa Ros were able to attend this meeting.

The possibility of a new Program Group for planetariums is to be added to the PG for Collaborative Programs. Maybe Martin George, the president of the International Planetarium Society will chair it. A new Program Group for K-12 education was set up: the Program Group for Nonformal Education and Outreach.

A very active group continues to be that of the Worldwide Development of Astronomy (PG-WWDA) chaired by John Hearnshaw. We are expecting its new travels, projected for Thailand and Laos.

The same for the WG Teaching Astronomy for Development TAD, the grants offered by it helping students to improve their academic work. Larry Marshall and Ed Guinan will be co-chairs of TAD.

The very successful ISYA programs, directed until now by Michele Gerbaldi, will have new chairs: Jean-Pierre De Greve (Belgium) and Kam Ching-Leung (Nebraska).

An interesting proposal was to discuss the definition of "planet" in terms of the educational efforts.

A new EAS Special Session devoted to the astronomy will be organized during JENAM 2007 in Yerevan (Armenia) from August 20 to 25, 2007.

A very ambitious program of IAU and of the Commission 46 too will be the *International Year of Astronomy 2009*. Kala Perkins asked to be added to the *Collaborative Programs*, to work on it. A special program will started soon.

A cooperation with IUPAP Commission 19 (*Astrophysics*) intending to lead-up the IYA 2009 will benefit for the education. Their proposals (communicated by Virginia Trimble) are:

1. A world-wide open-house night at observatories and planetariums that have any sort of visitors' program, ideally on a night that is somehow connected with Galileo and falls near spring or autumn equinox so that weather might be decent in both hemispheres (his birth/death dates are unfortunately January and February).
2. A correlated "wave of darkness" the same evening, as was eventually proposed to precede the "ring of light" for WYP.
3. Things for teachers: (a) Materials (which must be paper and correct) for developing countries at about the middle school or early secondary school



level; (b) Recognition for good teachers where they exist – prizes of some kind, which need not be expensive, but would tell them and their head teachers/principals that they are valued.

4. Support things that are going to happen anyway, especially the UNawe (*Universe Awareness*) program for children 4-10. Website <[www.UniverseAwareness.org](http://www.UniverseAwareness.org)>. This already has a number of prestigious institutions and well-known scientists and policy leaders behind it. Comm. 19 voted its support and this was notified to George Miley, co-chair of the Steering Committee, who expressed due appreciation.

Plans for some event in 2007 to commemorate the 1957 launch of Sputnik in Kazakhstan, where the launch took place. Coordinator Emmanuel Vilkoviskis has been told that our support will almost certainly have to be limited to advice and good wishes, not money, but was pleased nevertheless.

5. Higher-level education: (a) Encourage use of astronomy to teach physics at secondary and college levels. Defend astronomy curricula at the university level in places where it is being phased out; (b) Try to collect data on the extent to which people who end up in other areas of science were initially attracted by stars and comets and planets and all.
6. Make sure Galileo isn't lost from the program, though because others made and used astronomical telescopes at the same time or even perhaps a bit earlier, and anticipated some of his discoveries, he should not be the exclusive focus (indeed Einstein vs. WYP, which perhaps ended up as too much Einstein and too little physics is a useful example).
7. Find out what the national professional and amateur (important!) societies in our countries are planning and try to be useful.

*Magda Stavinschi, president IAU Commission 46, Bucharest, Romania, 16 October 2006*

## **4.6. NEWS FROM WORKING GROUPS**

### **4.6.1. Div. II/WG on Solar Eclipses**

The Division II Working Group on Solar Eclipses tries to help solar astronomers make arrangements for observations of total solar eclipses. Sample assistance includes requesting the appointment of National Liaisons and getting information about eclipse sites and customs clearance as well as trying to arrange duty-free temporary importation of scientific equipment. We also try to make sure that officials and newspapers in countries from which partial, annular, or total phases will be visible are aware of the forthcoming event so they can undertake suitable publicity.

The Working Group maintains a homepage at <<http://www.totalsolareclipse.net>> (which links to <[http://www.williams.edu/astronomy/IAU\\_eclipses](http://www.williams.edu/astronomy/IAU_eclipses)>, coordinated with the homepage <<http://www.eclipses.info>> of the Div. XII/Comm. 46/PG on Public Education on the Occasions of Solar Eclipses. The site provides links to maps, information about observing eclipses, and information about eye safety at eclipses, including filter evaluations by

Ralph Chou, Fred Espenak and Jay Anderson, authors of the NASA Reference Publications for each eclipse, are members of the PG, see.

<<http://sunearth.gsfc.nasa.gov/eclipse/SEpubs/bulletin.html>> or use the link through <<http://www.eclipses.info>>. See maps of eclipses at <<http://sunearth.gsfc.nasa.gov/eclipse/solar.html>>.

In 2007, the 19 March partial eclipse will be visible through most of Asia. The 11 September partial eclipse will be visible in southern South America and over part of Antarctica. Annularity of the 7 February 2008 eclipse will be visible only over Antarctica. People in southwestern Australia and in New Zealand will be able to see a partial eclipse. The 1 August 2008 total solar eclipse will be visible from northern Canadian islands and part of Greenland; then the path heads south through Siberia, crossing Novosibirsk. It then passes Western Mongolia and part of China, winding up near Shanghai. Partial phases will be visible from Europe as far south of mid-France and mid-Italy, most of Asia though omitting Japan and the southern parts of Malaysia and Indonesia. The 22 July 2009 eclipse, the return of the eclipses of 1973 and 1991 as the longest in the saros, will be visible from parts of India, the eastern tip of Nepal, Bangladesh, Sikkim, Bhutan, northernmost Myanmar, China including Shanghai and Hangzhou, and the southernmost islands of Japan, peaking at about six and a half minutes over the Pacific Ocean. Totality over 5 min 40 seconds are available between Shanghai and Hangzhou and totality over 5 minutes will be available within those cities. The partial phases will be widely visible in China, western Russia, and through southern Asia and Papua New Guinea to the northern tip of Australia's Cape York. Maps for future eclipses are available through links at <<http://www.eclipses.info>>.

*Jay M. Pasachoff, chair Div. II/WG on Solar Eclipses, Williamstown, MA, USA, November 2006*

#### **4.6.2. Div. III/Comm. 20/WG Task Group for Meteor Shower Nomenclature**

The commission has established a Task Group for Meteor Shower Nomenclature with the objective to formulate a descriptive list of established meteor showers that can receive official names during the XXVII IAU General Assembly in 2009. This task aims to uniquely identify all existing meteor showers and establish unique names: as an example of the value of such a definitive catalogue would be to facilitate the establishment of associations between meteor showers and parent bodies among the many Near-Earth Objects that are being discovered.

The Task Group for Meteor Shower Nomenclature will work from a working list of ~230 showers compiled from past publications. Each proposed shower was given a name, as well as a unique number and a three-letter code to be used in future publications. Many of these showers need further study to establish whether or not they represent streams of meteoroids from a single parent body. This working list will be posted at the website of the IAU Meteor Orbit Data Center: <http://www.astro.sk/~ne/IAUMDC/>. The working list can be

extended with newly identified meteor showers. A subset of these showers will be selected for inclusion in the list of established meteor showers.

The following nomenclature rules are adopted for meteor showers, keeping in mind that it is not always known precisely during discovery when is the peak of a meteor shower and what is the position of the radiant at that time. For known showers, the Task Group may choose a traditionally accepted name (e.g., alpha-Monocerotids) over the more correct name after a radiant has been established (which would have suggested the name of delta-Canis Minorids).

The general rule is that a meteor shower (and a meteoroid stream) should be named after the then current constellation that contain the radiant, specifically using the possessive Latin form. The possessive Latin name for the constellations end in one of seven declensions: -ae (e.g., Lyrae), -is (e.g., Leonis), -i (e.g., Ophiuchi), -us (e.g., Doradus), -ei (e.g., Equulei), -ium (e.g., Piscium), or -orum (e.g., Geminorum).

Custom is to replace the final suffix for "-id", or plural "-ids". Meteors from Aquarius (Aquarii) are Aquariids, not Aquarids. An exception is made for meteors from the constellation of Hydrus, which will be called "Hydrusids", in order not to confuse with meteors from the constellation of Hydra.

When the constellation name has two parts, only the second declension is to be replaced by "id". Hence, meteors from Canes Venatici (Canum Venaticorum) would be "Canum Venaticids". When two constellations are grouped together, a bracket is used and both constellation names will have "id". Hence, Puppids-Velids.

If a higher precision is needed, then the shower is named after the nearest (if in doubt: brightest) star with a Greek letter assigned, as first introduced in the Uranometria atlas by Johann Bayer (1603), or one with a later introduced Roman letter. If in doubt, the radiant position at the time of the peak of the shower (in the year of discovery) should be taken. Hence, the meteors of comet IRAS-Araki-Alcock would be named "eta-Lyrids".

Following existing custom, one may add the name of the month to distinguish among showers from the same constellation. In this case, one could call the shower from comet IRAS-Araki-Alcock the "May Lyrids", in order to differentiate from the more familiar "April Lyrids".

For daytime showers, it is custom to add "Daytime", hence the name for the "Daytime Arietids" in June as opposed to the Arietids in October.

South and North refer to "branches" of a shower south and north of the ecliptic plane (strictly the orbital plane of Jupiter), resulting from meteoroids of the same (original) parent body. Because they have nearly the same longitude of perihelion at a given solar longitude (the argument of perihelion and longitude of ascending node differing by 180 degrees between South and North), the two branches are active over about the same time period.

If the meteoroid stream is encountered at the other node, it is customary to speak of "twin showers". The Orionids and eta-Aquariids are twin showers, even though each represent dust deposited at different times and are now in quite different orbits. As a matter of custom, twin showers and the north and south branches of a stream carry different names.

Meteor showers are not to be named after their parent bodies (e.g., Giacobinids, IRAS-Araki-Alcockids). The names of comets tend not to be Latin, making the naming not unique. Also, comet names can change when they get lost and are recovered.

The Task Group for Meteor Shower Nomenclature will choose among possible alternative proposed names for newly identified meteor showers, in order to establish a unique name for each meteor shower (e.g., eta-Lyrids, not May Lyrids).

The list of established meteor showers will also be posted at the IAU Meteor Orbit Data Center website: <http://www.astro.sk/~ne/IAUMDC/>.

*Petrus M.M. Jenniskens, chair Div. III/Comm. 20 / TG MSN  
Mountain View, CA, USA, 16 November 2006*

#### **4.6.3. Div. IV/Comm. 45/WG Standard Stars**

The Working Group on Standard Stars (WGSS) invites all people involved in standardization in Astronomy, especially those working on the new large-scale surveys, to more actively utilize the Standard Star Newsletter (SSN) and the Standard Star discussion group (both sponsored by the WGSS) to communicate with your colleagues on issues associated with standardization.

Please check the WGSS website: <<http://stellar.phys.appstate.edu/ssn>> to pick up the latest issue of the SSN, to submit abstracts or reports on work in progress to the SSN, and to sign up for the web-based Standard Star discussion group, newly instituted, which will discuss vital issues in stellar standardization. All topics of standardization are covered by these instruments, including spectroscopy, radial velocities, photometry, polarization, etc. If you wish to be placed on the mailing list for the SSN, please contact the editor, Richard Gray, at <[grayro@appstate.edu](mailto:grayro@appstate.edu)>.

*Sunetra Giridhar, president IAU Commission 45, Bangalore, India, 17 October 2006*

#### **4.6.4. Div. XII/Comm. 5/TF Preservation and Digitization of Photographic Plates**

During the Prague GA the Task Force for the Preservation and Digitization of Photographic Plates (PDPP) held an open two-session meeting, during which a formal merger between the AC/CdC WG (Commission 8) and the PDPP was confirmed. A dominant fraction of the members already belonged to both groups, and the nature of the merger is such that the activities of the IAU Div. I/Comm. 8 Working Group on the Astrographic Catalogue and Carte du Ciel Plates are now performed by the PDPP. It was also agreed to

pursue actively a joint European project to digitize collections of direct plates. The project UDAPAC, formed in 2000 at the Royal Observatory Belgium by a consortium of astronomers from nine countries, would become the cradle for the new collaboration, and funding would be sought collectively from the European Union and/or other likely sources. A short video of the new Harvard scanner, demonstrating the speed with which a new-technology plate scanner could operate, convinced the community of the feasibility of digitizing large numbers of plates in a reasonable space of time.

*R. Elizabeth Griffin, chair Div. XII/Comm. 5/TF PDPP  
Victoria, Canada, 13 October 2006*

#### **4.6.5. Div. XII/Comm. 50/WG Controlling Light Pollution**

News from the UK

Artificial Light has on 5 April 2006 passed into English law as a "Statutory Nuisance" which means that government must act if complaints received from the public that suggest that the light is prejudicial to health, or a nuisance. It becomes law in Wales, 1 January 2007. Scotland: no plans as yet. Work has also started on an Annex on Light Pollution to be added to UK Planning Law.

*Nigel Pollard, <nigelpollard@neplightingconsultancy.co.uk>  
Bath, UK, 13 October 2006*

## 5. SCIENTIFIC MEETINGS

### 5.1. IAU SYMPOSIA in 2007

Details of the nine 2007 IAU Symposia have been given in IB98.

In summary:

#### **IAU S242**

*Astrophysical Masers and their Environments*

12-16 March 2007, Alice Springs, Australia

SOC chair: Jessica M. Chapman and Philip J. Diamond

LOC chair: Jessica M. Chapman

Editors: Jessica M. Chapman & Willem A. Baan

Contact: Jessica M. Chapman <Jessica.Chapman@csiro.au>

URL: <<http://www.atnf.csiro.au/research/masermeeeting>>

#### **IAU S243**

*Star-Disk Interaction in Young Stars*

21-25 May 2007, Grenoble, France

SOC chair: Jérôme Bouvier

LOC chair: Jérôme Bouvier

Editors: Jérôme Bouvier & Immo Appenzeller

Contact: Jérôme Bouvier <jbouvier@laog.obs.ujf-grenoble.fr>

URL: <<http://www.iaus243.org/>>

#### **IAU S244**

*Dark Galaxies and Lost Baryons*

25-29 June 2007, Cardiff, UK

SOC chair: Jonathan I. Davies and Kenneth C. Freeman

LOC chair: Jonathan I. Davies

Editors: Jonathan I. Davies & Michael D. Disney

Contact: Jonathan I. Davies <jid@astro.cf.ac.uk>

URL: <<http://www.astro.cf.ac.uk/iau244/>>

#### **IAU S245**

*Formation and Evolution of Galaxy Bulges*

16-20 July 2007, Oxford, UK

SOC chair: Martin Bureau

LOC chair: Martin Bureau

Editors: Martin Bureau, Evangelia Athanassoula & Beatriz Barbuy

Contact: Martin Bureau <bureau@astro.ox.ac.uk>

URL: <<http://www-astro.physics.ox.ac.uk/~iaus245/>>

#### **IAU S246**

*Dynamical Evolution of Dense Stellar Systems*

5-9 September 2007, Capri, Italy

SOC chair: Enrico Vesperini

LOC chair: Anna Pecoraro

Editors: Enrico Vesperini, Miroslav Giersz & Alison I. Sils  
 Contact: Enrico Vesperini <vesperin@physics.drexel.edu>  
 URL: <<http://www.physics.drexel.edu/~iaus246/>>

**IAU S247**

*Waves and Oscillations in the Solar Atmosphere: Heating and Magneto-Seismology*  
 17-21 September 2007, Porlamar, Isla de Margarita, Venezuela  
 SOC chair: César A. Mendoza-Briceño and Robert Erdelyi  
 LOC chair: César A. Mendoza-Briceño  
 Editors: César A. Mendoza-Briceño & Robert Erdelyi  
 Contact: César A. Mendoza-Briceño <cesar@ula.ve>  
 URL: <<http://www.iaus247.org/>>

**IAU S248**

*A Giant Step: from Milli- to Micro-arcsecond Astrometry*  
 15-19 October 2007, Shanghai, China Nanjing  
 SOC chair: Michael A.C. Perryman and Shuhua Ye  
 LOC chair: Cheng Huang  
 Editors: Wenjing Jin, Imants Platais & Michael A.C. Perryman  
 Contact: Imants Platais <imants@pha.jhu.edu>  
 URL: <<http://www.shao.ac.cn/iaus248>>

**IAU S249**

*Exoplanets: Detection, Formation and Dynamics*  
 22-26 October 2007, Suzhou, China Nanjing  
 SOC chair: Sylvio Ferraz Mello and Yi-Sui Sun  
 LOC chair: Ji-Lin Zhou  
 Editors: Sylvio Ferraz Mello, Yi-Sui Sun & Ji-Lin Zhou  
 Contact: Ji-Lin Zhou <zhoujl@nju.edu.cn>  
 URL: <<http://iaus249.nju.edu.cn/>>

**IAU S250**

*Massive Stars as Cosmic Engines*  
 10-14 December 2007, Kauai, Hawaii, USA  
 SOC chair: Paul A. Crowther and Joachim Puls  
 LOC chair: Fabio Bresolin  
 Editors: Fabio Bresolin, Paul A. Crowther & Joachim Puls  
 Contact: Paul A. Crowther <Paul.Crowther@sheffield.ac.uk>  
 URL: <<http://www.ifa.hawaii.edu/iau250/>>

For a complete list of IAU scientific meetings, see:  
 <[http://www.iau.org/IAU\\_MEETINGS.110.0.html](http://www.iau.org/IAU_MEETINGS.110.0.html)>.

**5.2. REGIONAL IAU MEETINGS IN 2007 AND 2008**

**LARIM 2007**

*12th Latin-American Regional IAU Meeting*  
 22-26 October 2007, Isla Margarita, Venezuela  
 SOC chair: Gustavo A. Bruzual and César Briceño

LOC chair: Anna Katherina Vivas  
 Editors: Gustavo A. Bruzual, Gladis Magris & Leticia Carigi  
 Contact: Gustavo A. Bruzual <bruzual@cida.ve>  
 URL: <<http://www.margarita2007.org>>

### ***APRIM 2008***

*10th Asian-Pacific Regional IAU Meeting*  
 1-4 August 2008, Kunming, China Nanjing  
 SOC chair: Gang Zhao  
 LOC chair: Yan Li  
 Editors: Shuang Nan Zhang, Yan Li & Qing Juan Yu  
 Contact: Jiancheng Wang <j.c.wang@public.km.yn.cn>  
 URL: <tbid>

### **5.3. POST MEETING REPORTS 2006**

Post Meeting Reports, to be posted at  
 <[http://www.iau.org/Post\\\_Meeting\\\_Reports.326.0.html](http://www.iau.org/Post\_Meeting\_Reports.326.0.html)>,  
 are temporarily available at  
 <<ftp://ftp.sron.nl/pub/karelh/UPLOADS/IAUPostMeetReports.dir/>>.

### **5.4. OTHER MEETINGS OF ASTROPHYSICAL INTEREST**

#### ***COSPAR Capacity Building Workshop***

*Regional Workshop for Space Physicists from Central and Eastern Europe*, Sinaia, Romania, June 4-16, 2007, Solar-Terrestrial Interactions: Instrumentation and Techniques (STINTE)

The sixth in the series of COSPAR Capacity Building Workshops will address practical aspects of Cluster-II and other spacecraft missions to the magnetosphere. After a concise introduction to the measurement principles of field and particle instruments, the participants will focus on data analysis techniques for single-spacecraft missions and also for multipoint measurements. Selected modeling approaches will be discussed to facilitate the physical interpretation of analysis results. The workshop will be held in Sinaia, Romania, from June 4-16, 2007.

Target participants are postgraduate students and postdoctoral researchers from Central and Eastern Europe, in particular, from Romania, Bulgaria, Poland, Hungary, Slovakia, Ukraine and the Czech Republic. In order to make sure that all potential participants have the chance to attend the Workshop, the expenses for accommodation and board will be covered, and travel support can also be made available at a level depending on need and status of applicants. Financial constraints and a limited number of hotel rooms introduce an upper limit to the possible number of students and call for an application and a selection procedure. There will be some opportunity for students from more developed countries to attend, but they should be prepared to support a significant part of



their expenses. Applications are required by Feb 28th, 2007. For further details see <<http://www.cosparhq.org/Meetings/Workshops.htm>> or <<http://www.faculty.iu-bremen.de/jvogt/cospar/cbw6/>>.

*Peter Willmore*, <[apw@star.sr.bham.ac.uk](mailto:apw@star.sr.bham.ac.uk)> , <[apwillmore@gmail.com](mailto:apwillmore@gmail.com)>  
Birmingham, UK, 15 October 2006

***Future Professional Communication in Astronomy (and its impact on evaluation)***

10-13 June 2007, Royal Academies, Brussels, Belgium

Contact: André Heck <[heck\\_at\\_astro.u-strasbg.fr](mailto:heck_at_astro.u-strasbg.fr)>

URL: <<http://vizier.u-strasbg.fr/~heck/epub2007.htm>>

***CAP 2007 - Communicating Astronomy with the Public 2007***

an ESO/ESA/IAU Conference

8-12 October 2007, Athens, Greece

Contact: Lars Lindberg Christensen <[lchriste@eso.org](mailto:lchriste@eso.org)>

URL: <<http://www.communicatingastronomy.org/cap2007/>>

***Astronomy at the Telescope 1609-2009***

1-4 January 2009, Makaha Resort, Waianae, Oahu, Hawaii, USA

Contact: Russell M. Genet <[russmgenet@aol.com](mailto:russmgenet@aol.com)>

For all other meetings of astrophysical interest, see the International Astronomy Meetings List, maintained by Liz Bryson of the Canada-France-Hawaii Telescope Corporation, at

<<http://cadwww.dao.nrc.ca/meetings/meetings.html>>.

## 6. IAU PUBLICATIONS

### 6.1. IAU HIGHLIGHTS OF ASTRONOMY

***HIGHLIGHTS OF ASTRONOMY***, Volume 13  
 AS PRESENTED AT THE XXVth GENERAL ASSEMBLY OF THE IAU  
 Sydney, Australia, 13-26 July 2003  
 Ed. Oddbjorn Engvold  
 (San Francisco: ASP) ISBN: 1-58381-189-3, August 2006

***HIGHLIGHTS OF ASTRONOMY***, Volume 14  
 AS PRESENTED AT THE XXVth GENERAL ASSEMBLY OF THE IAU  
 Prague, Czech Republic, 14-25 August 2006  
 Ed. Karel A. van der Hucht  
 (Cambridge: CUP) (due June 2007)

### 6.2. IAU TRANSACTIONS

***TRANSACTIONS OF THE IAU***, Volume XXVB  
 PROCEEDINGS OF THE XXVth GENERAL ASSEMBLY OF THE IAU  
 Sydney, Australia, 13-26 July 2003  
 Ed. Oddbjorn Engvold  
 (San Francisco: ASP) (in preparation)

***TRANSACTIONS OF THE IAU***, Volume XXVIA  
 REPORTS ON ASTRONOMY 2003-2006  
 Ed. Oddbjorn Engvold  
 (Cambridge: CUP) (due March 2007)

***TRANSACTIONS OF THE IAU***, Volume XXVIB  
 PROCEEDINGS OF THE XXVth GENERAL ASSEMBLY OF THE IAU  
 Prague, Czech Republic, 14-25 August 2006  
 Ed.: Karel A. van der Hucht  
 (Cambridge: CUP) (due September 2007)

### 6.3. IAU SYMPOSIUM PROCEEDINGS (published in 2006)

As of 2004, starting at IAU S222, the IAU Symposium Series is being published by Cambridge University Press, Cambridge, UK (CUP).

For e-version, see:

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

For hardback volumes, see:

<<http://www.cambridge.org/uk/series/sSeries.asp?code=IAUP>>.

#### ***IAU S229***

*Asteroids, Comets, Meteors*

7-12 August 2005, Búzios, Rio de Janeiro, Brasil  
 Eds. D. Lazzaro, S. Ferraz-Mello & J.A. Fernández  
 (Cambridge:CUP) ISBN: 0-521-85200-5, March 2006

**IAU S230***Populations of High-Energy Sources in Galaxies*

15-19 August 2005, Dublin, Ireland

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

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

**IAU S231***Astrochemistry throughout the Universe: Recent Successes and Current Challenges*

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

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

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

**IAU S232***Scientific Requirements for Extremely Large Telescopes*

14-18 November 2005, Cape Town, South Africa

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

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

**IAU S233***Solar Activity and its Magnetic Origin*

31 March - 3 April 2006, Cairo, Egypt

Eds. V. Bothmer &amp; A.A. Hady

(Cambridge: CUP) ISBN: 0-521-86342-2, November 2006

**IAU S234***Planetary Nebulae in our Galaxy and Beyond*

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

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

(Cambridge: CUP) ISBN: 0-521-86343-0 (due December 2006)

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

<[http://www.iau.org/Symposia\\_Colloquia.122.0.html](http://www.iau.org/Symposia_Colloquia.122.0.html)>**6.4. IAU EDITORIAL BOARD**

The IAU Editorial Board advisers Karel A. van der Hucht (chair, ex officio), Oddbjorn Engvold (ex officio) and Patricia A. Whitelock will rotate off at the end of 2006. Karel A. van der Hucht has been succeeded by the new AGS; Oddbjorn Engvold has been succeeded by the new GS. The EC appointed Mrs. Uta Grothkopf (ESO Librarian) as adviser for the period 2007-2009. Therefore, as of 2007 the members of the EB are: Ian F. Corbett (chair 2006-2009); Eugène J. de Geus (adviser 2004-2007); Uta Grothkopf (adviser 2007-2009); Karel A. van der Hucht (ex officio, adviser 2007-2009); Michelle C. Storey (adviser 2004-2008); and, as working members, the chief editors of the IAU Symposia for the year of their symposium.

## 6.5. PROCEEDINGS REGIONAL IAU MEETINGS

### ***Proc. 9th Asian-Pacific Regional IAU Meeting (APRIM 2005)***

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

Eds. W. Sutantyo, P.W. Premadi, P. Mahasena, T. Hidayat & S. Mineshige  
(Bandung: ITB Press) ISBN: 979-3507-63-2, March 2006

### ***Proc. 11th Latin-American Regional IAU Meeting (LARIM 2005)***

12-16 December 2005, Pucón, Chile

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

Revista Mexicana de Astronomía y Astrofísica - Serie de Conferencias, Volume  
26 (August 2006).

E-version, see <<http://www.astroscu.unam.mx/~rmaa/rmaa.html>>

For a complete list of Proceedings of Regional IAU Meetings, see:

<[http://www.iau.org/Regional\\_Meetings.121.0.html](http://www.iau.org/Regional_Meetings.121.0.html)>

## 7. EDUCATIONAL ACTIVITIES

### 7.1. Div. XII/Comm. 46/PG on International Schools for Young Astronomers (ISYA)

#### *29th ISYA in Malaysia, 5-24 March 2007*

The 29th International School for Young Astronomers is taking place in Malaysia (March 5-24, 2007) at the Malaya University, Kuala Lumpur, and then at Langkawi Island. The applications are closed.

Among the topics to be covered, the emphasize will be put on: astronomical instrumentation, solar physics and radio astronomy; also included is a session on the Virtual observatory. Practical activities using computers will be organized. More information are at the URL:

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

The organizers can be contacted:

- Michele Gerbaldi, chairperson of the ISYA2007 programme:  
<[gerbaldi@iap.fr](mailto:gerbaldi@iap.fr)>.
- Fairos Asillam, Secretary of the Malaysian National Committee for the ISYA-2007, <[fairos@angkasa.gov.my](mailto:fairos@angkasa.gov.my)> , and <[mhdfairos@gmail.com](mailto:mhdfairos@gmail.com)>.

*Michèle Gerbaldi, past-chair PG-ISYA, chair ISYA-2007,  
Paris, France, 15 November 2006*

### 7.2. Div. XII/Comm. 46/PG on World wide Development in Astronomy (WWDA)

#### *Program for 2006 to 2009.*

At the Prague General Assembly of the IAU, the PG-WWDA membership was renewed. Several members of the previous committee left the committee, while several new members were co-opted for the coming triennium.

The following is the new PG-WWDA membership: John Hearnshaw (New Zealand, chair), Athem Alsabti (UK/Iraq), Julieta Fierro (Mexico), Ed Guinan (USA, co-chair TAD)\*, Yoshihide Kozai (Japan), Hugo Levato (Argentina), Hakim Malasan (Indonesia), Larry Marshall (USA, co-chair TAD)\*, Peter Martinez (South Africa), Jayant Narlikar (India), Pereira Osorio (Portugal)\*, Jay Pasachoff (USA)\*, Kala Perkins (USA)\*, and Jhu Zin (China Nanjing)\*. Members serving on the program group for the first time from August 2006 are indicated with an asterisk.

The role of PG-WWDA is to visit developing countries, where professional astronomers engaged in teaching and/or research would welcome closer contacts with the IAU and the international community of astronomers. Generally, such visits result in a report to the Commission 46 president and IAU Executive, and recommendations for follow-up contacts through other

Commission 46 Program Groups, such as PG-TAD (Teaching for Astronomy Development), PG-ISYA (International School for Young Astronomers) and PG-EA (Exchange of Astronomers).

One key target of PG-WWDA is to foster astronomical development in the 22 nations which do not adhere to the IAU, but which have individual IAU members actively working in them. In addition, of the 65 member countries adhering to the IAU, about a third of them may be classed as developing countries, and they may wish to seek IAU support for astronomy in their countries. PG-WWDA is willing to promote such support or contacts.

PG-WWDA members have had some discussions on the program for the 2006-09 triennium. We are interested especially in helping countries with active astronomers working in relative isolation. As a result, we are planning programs in Latin America, Africa, central Asia and Far East Asia over the next few years. Plans are already underway for John Hearnshaw to visit Thailand and Laos early in 2007.

Another goal of PG-WWDA is also to campaign for the establishment of a third-world institute of astronomy, or to have a number of nodes to such an institute distributed through several geographical locations.

From time to time, PG-WWDA sponsors conferences on astronomy in developing countries. The most recent such conference was a two-day special session (SpS5) of the IAU XXVIth General Assembly on Astronomy for the Developing world (Eds. J.B. Hearnshaw & P. Martinez, CUP, in preparation, 2007).

Contact with PG-WWDA is through the chair at email: <john.hearnshaw@canterbury.ac.nz>. Proposals for PG-WWDA activities in any part of the developing world are always welcome. However, please note that PG-WWDA does not give development grants directly to astronomers in developing countries. More details on IAU Commission 46 and its Program Groups are at the website: <<http://physics.open.ac.uk/IAU46/>>.

*John B. Hearnshaw, chair IAU Div. XII/Comm. 46/PG-WWDA  
University of Canterbury, New Zealand, 15 October 2006*

### **7.3. COSPAR-IAU Capacity Building Workshop**

***Regional Workshop for Planetary Scientists from Latin America***  
23 July 23–3 August 2007, Montevideo, Uruguay

This meeting is part of a series of workshops organized by COSPAR and co-sponsored by the IAU, in collaboration with other international bodies and with scientists mainly in under development countries. The workshops are intended to enhance the scientific capability of developing countries by showing the access to public archives of space data and practical learning the methodology to use them. Since there is a growing planetary science community in Latin America, it was foreseen that they would be an important number of students and researchers interested in this topic. The Workshop will be held in

the Faculty of Science (Montevideo, Uruguay). It will be an intensive training workshop, where the participants will spend a great part of the time working with the actual data of planetary missions. The Workshop will deal with missions to Comets, Asteroids, the Sun, Satellites and Rings of the Giant Planets and the Moon. Teachers from NASA, ESA and JAXA are already confirmed to participate in the Workshop.

Contact: *Gonzalo Tancredi* <[gonzalo@fisica.edu.uy](mailto:gonzalo@fisica.edu.uy)>

Further information can be obtained at:

<<http://www.astronomia.edu.uy/cospar>>.

*Ricardo Gil-Hutton, chair Div. III/Comm. 15/WG on Physical Studies of Minor Planets  
San Juan, Argentina, 13 November 2006*

## 8. THE IAU AND THE PETER GRUBER FOUNDATION

### 8.1. PGF Cosmology Prize 2006

During the Open Ceremony of the IAU XXVI General Assembly, on 15 August 2006 in Prague, Czech Republic, the Peter Gruber Foundation Cosmology Prize 2006 has been awarded to IAU member John C. Mather (USA) and the Cosmic Background Explorer (COBE) Team, for their ground-breaking studies confirming that our universe was born in a hot Big Bang. On 16 August 2006 John Mather delivered an Invited Discourse on the subject for a full plenary meeting at the GA.

The members of the PGF Cosmology Prize Advisory Board 2006 are to be congratulated with their excellent choice, which has been confirmed by the Nobel Foundation's decision to award The Nobel Prize in Physics 2006 to the astronomers John C. Mather and George F. Smoot.

For nominations of candidates for future PGF awards, see  
<[http://www.iau.org/PETER\\_GRUBER\\_FOUNDATION.98.0.html](http://www.iau.org/PETER_GRUBER_FOUNDATION.98.0.html)>.

### 8.2. PGF Fellowships 2006

See IAU IB98, p. 74.



## 9. IAU MEMBERSHIP

### 9.1. NEW NATIONAL MEMBERS

The IAU Executive Committee received applications for interim National Membership from Lebanon and Mongolia, and for full membership from Thailand. All three applications were recommended by the IAU Program Group on World Wide Development of Astronomy. These nominations have been accepted by the General Assembly. As of 1 September 2006, the total number of National Members is 65.

### 9.2. NEW INDIVIDUAL MEMBERS

The IAU Executive Committee, in its 81<sup>st</sup> meeting, during the IAU XXVI General Assembly, having accepted the recommendations of the IAU Nominating Committee, was pleased to welcome 923 nominations for Individual Membership of the Union. These nominations have been accepted by the General Assembly. As of 1 September 2006, the total number of Individual Members was 9783.

### 9.3. DECEASED MEMBERS

The Union is saddened to learn of the deaths of the following members and former members:

Jim Cohen, UK (1948-2006), past-president IAU Commission 50

S.M. Hassan, Egypt (1937-2006), chairman Egyptian NCA

Vladimir Kourganoff, France (1912-2006)

Hugo E. Schwarz, Chile (1953-2006), president IAU Commission 50

### 9.4. OBITUARY: Hugo E. Schwarz (1953-2006)

It was with profound shock that the international astronomy community (in the widest sense, including educators and many schoolchildren) learned of Hugo's fatal accident on the evening of Friday, October 20th, 2006. Characteristically, Hugo had just given a marvelous talk to a combined audience of schoolchildren and university students from the city of Talca – who had traveled overnight on 19th to hear his talk and then to visit Cerro Tololo on 20th October. The last they all saw of him was as he got onto his motorbike, waved cheerfully, called out “adios” and took the longer route home to his family – he loved to ride his motorbike. It was Hugo who recommended to me a re-read of Robert Pirsig's books, including “Zen and the Art of Motorcycle Maintenance” with its lesser-known subtitle “An Inquiry into Values”. That re-read helped me understand better Hugo's energetic philosophy of life, which he followed to the last second – and stimulated many friendships and much enjoyment for many along the way (see, e.g., <<http://www.subjectivelens.com/Hugo/>>).

His e-mails were always countersigned “astroperson”. He was truly an international “astroperson”. Born in Holland, he went to high school in

Alkmaar and to university in Glasgow, Scotland. He was a Postdoctoral Research Assistant at MSSL, UCL, from 1982-1986. He worked as a staff astronomer from 1986-1995 at ESO's La Silla observatory in Chile, before returning to Europe to become the first Astronomer-in-Charge (AIC) of the Nordic Optical Telescope (NOT), on La Palma, Canary Islands. His work there (1995-2000) took the telescope to an international level. Two senior colleagues from the NOT - Tim Abbott, who took over from Hugo as AIC, and Johannes Andersen, the current director - have shared some of their grief and marvelous memories of Hugo in that period (Tim also organized the web log at <http://www.subjectivelens.com/Hugo/>) while Johannes sent me a copy of his interview with Hugo on page 21 of the NOT Annual Report for 2004 ([http://www.not.iac.es/news/reports/annual/NOT\\_AnnRep04.pdf](http://www.not.iac.es/news/reports/annual/NOT_AnnRep04.pdf)). Hugo moved back to Chile in the year 2000 to take up a position as a staff astronomer at the Cerro Tololo Interamerican Observatory (whose director, Alistair Walker has written a tribute at [http://www.ctio.noao.edu/diroff/Hugo\\_Schwarz.htm](http://www.ctio.noao.edu/diroff/Hugo_Schwarz.htm)). Hugo proved the natural choice to be the NOAO scientist at the SOAR Telescope (<http://www.soar-telescope.org/>) and effectively director Steve Heathcote's "right-hand man".

Characteristically, Hugo shared the fun of doing research (into "the fatally late stages of stellar evolution" <http://www.ctio.noao.edu/~emond/>) with students from several different countries (<http://www.subjectivelens.com/Hugo/>).

Hugo shared with many of us a passionate conviction that astronomy has a duty to lead the way in the effort to educate and change mankind's attitude toward the night-time environment (see, e.g., <http://www.britelitesout.com/> for a crash course in this area). He is a *two-time* recipient of the International Dark-Sky Association's Executive Director's Special Award (2003 and 2004, see <http://www.darksky.org>) and was elected president of IAU Commission 50 at the recent IAU General Assembly in Prague (<http://www.ctio.noao.edu/iau50/>). He loved Chile and La Palma and integrated totally into both cultures - speaking Spanish, as well as Dutch, English, French and German as needed - with complete fluency.

At this time the hearts of astronomers and friends from all over the world go out to Hugo's wife Claudia and her children Maria Josefina and Diego, and Hugo's children by his first marriage, Tamar and Jouke.

Other obituaries are being written - for the NOAO Newsletter, for the IDA Newsletter and for other organizations for which Hugo has worked. None of us can, single-handedly, cover such a varied and wonderful life - which Hugo lived internationally and to the full.

*Malcolm G. Smith, AURA, president IAU Division XII  
La Serena, Chile, 15 November 2006*

## 10. IAU REPRESENTATIVES TO INTERNATIONAL ORGANIZATIONS 2006-2009

The IAU Executive Committee, in its 81<sup>st</sup> meeting, during the IAU XXVI General Assembly, appointed the following IAU representatives to other scientific organizations for the triennium 2006-2009.

| <b>ORGANIZATION</b>   | <b>IAU REPRESENTATIVE(S)</b>  |
|---|---|
| <p><i>International Council for Science (ICSU)</i><br/>&lt;<a href="http://www.icsu.org/index.php">http://www.icsu.org/index.php</a>&gt;</p>  | <p><i>Ian F. Corbett</i><br/>&lt;<a href="mailto:icorbett@eso.org">icorbett@eso.org</a>&gt;</p>   |
| <p><i>Bureau International des Poids &amp; Mesures (BIPM)</i><br/>&lt;<a href="http://www.bipm.fr/">http://www.bipm.fr/</a>&gt;</p> <p>Consultative Committee for Time and Frequency (CCTF)<br/>&lt;<a href="http://www.bipm.fr/cc/CCTF/Allowed/16/cctf04-15.pdf">http://www.bipm.fr/cc/CCTF/Allowed/16/cctf04-15.pdf</a>&gt;</p> <p>Consultative Committee for Units (CCU)<br/>&lt;<a href="http://www.bipm.fr/en/committees/cc/ccu/">http://www.bipm.fr/en/committees/cc/ccu/</a>&gt;</p> | <p><i>Toshio Fukushima</i><br/>&lt;<a href="mailto:Toshio.Fukushima@nao.ac.jp">Toshio.Fukushima@nao.ac.jp</a>&gt;</p> <p><i>Nicole Capitaine</i><br/>&lt;<a href="mailto:nicole.capitaine@obspm.fr">nicole.capitaine@obspm.fr</a>&gt;</p>   |
| <p><i>Compagnie Internationale de l'Eclairage (CIE)</i><br/>&lt;<a href="http://www.cie.co.at/cie/">http://www.cie.co.at/cie/</a>&gt;</p>   | <p><i>Syuzo Isobe</i><br/>&lt;<a href="mailto:isobesz@cc.nao.ac.jp">isobesz@cc.nao.ac.jp</a>&gt;</p>  |
| <p><i>Committee on Data for Science &amp; Technology (CODATA)</i><br/>&lt;<a href="http://www.codata.org/">http://www.codata.org/</a>&gt;</p>   | <p><i>Raymond P. Norris</i><br/>&lt;<a href="mailto:Ray.Norris@csiro.au">Ray.Norris@csiro.au</a>&gt;</p>  |
| <p><i>Committee on Space Research (COSPAR)</i><br/>&lt;<a href="http://www.cosparhq.org/">http://www.cosparhq.org/</a>&gt;</p> <p>Council</p> <p>SC-B: Space Studies of the Earth-Moon System, Planets &amp; Small Bodies of the Solar System</p> <p>SC-D: Space Plasmas in the Solar System, including Planetary Magnetospheres</p> <p>SC-E Research in Astrophysics from Space</p> <p>- SC-E1 Galactic and Extragalactic Astrophysics</p>   | <p><i>Jean-Claude Vial</i><br/>&lt;<a href="mailto:jean-claude.vial@ias.u-psud.fr">jean-claude.vial@ias.u-psud.fr</a>&gt;</p> <p><i>Mikhail Ya. Marov</i><br/>&lt;<a href="mailto:marov@spp.keldysh.ru">marov@spp.keldysh.ru</a>&gt;</p> <p><i>Marek Vandas</i><br/>&lt;<a href="mailto:vandas@ig.cas.cz">vandas@ig.cas.cz</a>&gt;</p> <p><i>Mariano Mendez</i><br/>&lt;<a href="mailto:m.memdez@sron.nl">m.memdez@sron.nl</a>&gt;</p> <p><i>G. Srinivasan</i><br/>&lt;<a href="mailto:srini@rri.ernet.in">srini@rri.ernet.in</a>&gt;</p> |

- SC-E2 The Sun as a Star

**Federation of Astronomical and  
Geophysical Services (FAGS)**

<http://www.kms.dk/fags/>

**International Astronautical Federation  
(IAF)**

<http://www.iafastro.com/>

**International Earth Rotation and  
Reference Systems Service (IERS)**

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

**International Geosphere-Biosphere  
Programme (IGBP)**

<http://www.igbp.kva.se/>

**International Heliophysical Year (IHY)**

<http://ihy2007.org/>

**International Space Environment  
Service (ISES)**

<http://www.ises-spaceweather.org/>

**International Telecommunication Union  
(ITU)**

<http://www.itu.int/home/index.html>

ITU-R Radiocommunication Bureau

<http://www.itu.int/ITU-R/>

**Scientific Committee on Frequency  
Allocations for Radio Astronomy  
and Space Science (IUCAF)**

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

**International Union of Pure  
and Applied Physics (IUPAP)**

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

Commission 4 on Cosmic Rays

Commission 19 on Astrophysics

<http://www.iupap.org/commissions/iupap-commissions.html>

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## **11. IAU ACTIVITIES RELATED TO THE INTERNATIONAL HELIOPHYSICAL YEAR 2007 PROGRAM**

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 organized for 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 and the deployment of new instrumentation, new observations from the ground and in space, and public education. The “kick-off” ceremonies will be in Vienna next February.

IHY science is organized through science working groups that coordinate analysis and modeling 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. provides international coordination, produces newsletters, maintains the IHY website at <http://www.ihy2007.org/>, writes articles, coordinates media affairs, and develops outreach products.

Within the IAU, coordination of IHY activities is within the Solar and Heliosphere Division (II), with Donald B. Melrose (Australia) as the current President. David F. Webb (USA) is the IAU representative to the IHY and Nat Gopalswamy (USA) is the chair of the IHY subgroup within the IAU Working Group for International Collaboration on Space Weather (ICSW). Hans J. Haubold (Austria) leads the IHY effort for the United Nations under the auspices of COPUOS and the U.N. Basic Space Science program.

This year much progress has been made in planning for IHY activities. Internationally IHY is organized into eight regions: North America, Latin America, Africa, Western Europe, Eastern Europe/Asia, Balkan/Black Sea, Western Asia, and Asia-Pacific. Each region has a regional planning committee and coordinates regional IHY activities. Planning meetings have now been held in each of the regions. In addition, more than 65 countries have national IHY committees or activities, including many developing nations.

The IHY science activities are centered on the CIPs, and involve focused topics of heliophysical interest involving international cooperation. There are currently about 50 CIPs that have been proposed.

A key aspect of the IHY program is the cooperative initiative with the UNBSS program. Through this program the IHY is assisting in deploying 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 UNBSS program has a 3-year work plan through 2008, approved by COPUOS and the U.N. General Assembly, that is providing the IHY links to developing nations. The program has already facilitated over 2000 scientist contacts in almost 200 countries.

Eleven instrument concepts have been developed and ~5 of these are mature enough 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 first IHY-U.N. UNBSS workshop in November 2005 in the United Arab Emirates. The second IHY-U.N. workshop will be in Bangalore, IN, 27-30 November 2006, and the third is planned for Japan late in 2007. Two more are planned for 2008 and 2009 and the IAU cosponsors all these meetings.

The IHY Gold History initiative has the goals of identifying and recognizing participants in the first IGY, preserving memoirs, etc. of historical significance for the IGY, making them available to historians and researchers, spreading awareness of the history of geophysics, and planning special events. An IHY Calendar will be printed in 2007 with current and historical events in heliophysics, the IUGG will have a "IGY+50" Celebration in 2007 in Perugia, Italy, IGY historical recognitions will occur such as a commemorative plaque at the Van Allen House in Silver Spring, MD, transcriptions of historical recordings to digital media are being made, and we are planning for a stamp or stamp series to commemorate the IHY and the 50<sup>th</sup> anniversary of IGY.

IHY Outreach activities include the spreading knowledge of space science and exploration to the public and inspiring the next generation of space scientists, and these are led by Cristina Rabello-Soares. There are now outreach coordinators in 18 countries. A resource CD is being developed and IHY-related materials are being translated into various languages. Outreach activities were practiced during the March 2006 eclipse, and will be employed during eclipses in 2007-09. The IAU activities on solar eclipses are coordinated through the Working Group on Eclipses in Division II with the website: <[www.totalsolareclipse.net](http://www.totalsolareclipse.net)>.

IHY Outreach also includes the IHY Schools program being led by David F. Webb. There are four major schools planned in 2007: North America; Europe/Africa (Italy), Latin America (Brazil), and Asia-Pacific (China, Japan, or India). The purpose of the schools is to educate students about universal processes and the objectives of the IHY science themes. We are developing a general curriculum as a model for all four IHY schools and will support schools in other countries. We also hope to link the IAU ISYA (International School for Young Astronomers) and IHY programs, at least for 2007-08, any possibly also to collaborate with educational efforts in COSPAR.

The IHY program was discussed at the IAU General Assembly in Prague in August 2006 in two forums, in Special Session 5, "Astronomy for the Developing World", on 21-22 August, and in the meeting of the Div. II ICSW Working Group on 24 August that focused on IHY and planning of European, Latin American, Asian and other regional IHY activities.

*David F. Webb, IAU representative to for the IHY  
Hanscom, MA, USA, 20 November 2006*



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# 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 cooperation. The IAU, through its scientific bodies -- 12 Divisions, 40 Commissions and some 76 Working and Program Groups, which cover the whole spectrum of astronomy -- wishes to promote and coordinate international cooperation in astronomy. As of September 2006, the IAU has 9783 individual members in 87 countries. Of those, 64 countries are National Member. The IAU is member of the International Council for Science (ICSU).

The organization of scientific meetings is the IAU's key activity. Every year the IAU sponsors nine international Symposia. The *IAU Symposium Proceedings* series is the flagship of the IAU publications. Every three years the IAU has its General Assembly, during which six of the IAU Symposia of that year are incorporated in the scientific programme of that GA. A GA further offers some 25 Joint Discussions and Special Sessions, the proceedings of which are published in the *Highlights of Astronomy* series. The reports of the GA Business Meetings are published in the *Transactions of the IAU - B* series. All these proceedings are published by Cambridge University Press.

Among the other tasks of the IAU are the definition of fundamental astronomical and physical constants; unambiguous astronomical nomenclature; promotion of educational activities in astronomy; and early informal discussions on the possibilities for future international large-scale facilities. Furthermore, the IAU is the sole internationally recognized authority for giving designations and names to celestial bodies and their surface features.

The IAU works to promote astronomical education and research in developing countries through its Program Groups on International Schools for Young Astronomers (ISYA), on Teaching for Astronomy Development (TAD), and on World Wide Development of Astronomy (WWDA), as well as through joint educational activities with COSPAR and UNESCO.

The IAU web site provides on-line information on the Union's activities and links to the web sites of the IAU Divisions, Commissions, Working Groups, and Program Groups. Contact with the IAU membership is maintained through this Information Bulletin, published twice per year, with a paper version and an e-version available via the IAU web site.

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Cover legend: Cosmic Christmas Ghost. ESO - PR Photo 42a/05. This image shows the area surrounding the stellar cluster NGC 2467, located in the southern constellation of Puppis ("The Stern"). With an age of a few million years at most, it is a very active stellar nursery, where new stars are born continuously from large clouds of dust and gas. Shown by the Wide-Field Imager camera at the 2.2m MPG/ESO telescope located at La Silla, in Chile.

