

# INTERNATIONAL ASTRONOMICAL UNION

## XXVI<sup>th</sup> GENERAL ASSEMBLY

August 14-25, 2006

Prague, Czech Republic

### PROGRAM BOOK

Prague Congress Centre

5 května 65, Prague 4





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**Union Astronomique Internationale**

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## INVITATION FROM RON EKERS, IAU PRESIDENT

After 39 years the IAU returns to Prague and it is my great pleasure to invite you to attend this twenty-sixth General Assembly which will be taking place from August 14 to 25, 2006. 39 years is only a brief moment in Prague's great astronomical history but it's half the lifetime of the IAU. If you look at the reproductions of stories in the 1967 IAU GA newspaper *Dissertatio cum Nuncio Sidereo II* on the GA www pages you can appreciate the extraordinary developments that have occurred in astronomy over this short period.

Following the now established pattern we will have an extensive scientific program of Symposia, Joint Discussions and seven Special Sessions, as well as four Invited Discourses, on essentially all topics of contemporary Astronomy. A new feature in the Prague GA will be the "hot topics" sessions to capture the excitement of the most recent astronomical activities.

This scientific program has been selected by the Division Presidents and so reflects the scientific interests of the membership. Whether your interest is the solar system, stellar or interstellar, galactic or extragalactic, there is something for you. The IAU General Assemblies are unique in offering not only a large variety of specialized scientific meetings, but also the freedom to attend meetings in other fields to gain new perspectives on our science. The General Assembly will give you the opportunity to meet with astronomers and colleagues from around the world to discuss common interests, to organize co-operative ventures and to renew old friendships.

The organization of such an important event would not have been possible without the generous contributions from donors which I am pleased to list hereafter: the European Southern Observatory (ESO), the United Nations Office for Outer Space Affairs (UNOOSA), the Office of Naval Research Global under grant No. FY06 1054, and the Academy of Sciences of the Czech Republic, for financial support of the scientific meetings and also the National Science Foundation for their invaluable support to the Young Astronomers and the Women in Astronomy Meetings under Grant No. MPS 0342208. My most grateful thanks go to all these organizations.

I take also this opportunity to thank all the IAU National Members for their continuous support to the Union.

I am looking forward to meeting you in Prague.

## IAU EXECUTIVE COMMITTEE

|                             |                        |
|-----------------------------|------------------------|
| President                   | Ronald D. Ekers        |
| President-Elect             | Catherine Cesarsky     |
| General Secretary           | Oddbjørn Engvold       |
| Assistant General Secretary | Karel A. van der Hucht |

### Vice-Presidents

|                   |                        |
|-------------------|------------------------|
| Beatriz Barbuy    | Silvia Torres-Peimbert |
| Chen Fang         | Brian Warner           |
| Kenneth A. Pounds | Robert E Williams      |

### Advisers

|               |              |
|---------------|--------------|
| Franco Pacini | Hans Rickman |
|---------------|--------------|

## NATIONAL ORGANIZING COMMITTEE (NOC)

Jan Palouš, Chairman & Jan Vondrák, Vice-Chairman

|                  |                  |
|------------------|------------------|
| Jiří Bičák       | Vladimír Karas   |
| Soňa Ehlerová    | Marian Karlický  |
| František Fárník | Zdeněk Mikulášek |
| Jiří Grygar      | Martin Šolc      |
| Petr Hadrava     | Jana Tichá       |
| Petr Harmanec    | Marek Wolf       |
| Petr Heinzl      |                  |

## LOCAL ORGANIZING COMMITTEE (LOC)

At a meeting in October 2004, the NOC appointed the LOC for the XXVI<sup>th</sup> General Assembly of the IAU. It consists of the following persons:

Cyril Ron, Chairman

|                            |                        |
|----------------------------|------------------------|
| Ladislav Červinka (Icaris) | Monika Šenderová (CBT) |
| Zuzana Dienstbierová       | Zuzana Tesařová (CBT)  |
| Jan Palouš                 | Jana Tichá             |
| Zina Pecková (CBT)         | Jan Vondrák            |
| Richard Plaček             | Marek Wolf             |
| Pavel Suchan               |                        |

## HOST ORGANIZATIONS

The National Committee for Astronomy of the Czech Republic  
The Astronomical Institute of the Academy of Sciences of the Czech Republic  
The Academy of Sciences of the Czech Republic

## SPONSORS

The National Organizing Committee is pleased to acknowledge the generous support of the following sponsors:

|                               |   |
|-------------------------------|---|
| American Astronomical Society | Sponsor of Program Book   |
| Astronomy & Astrophysics      | Sponsor of Posters  |
| Auroton                       | Sponsor of Internet Room  |
| MediaStream                   | Sponsor of the High Speed Internet Connection & Web Video Streaming |
| Peter Gruber Foundation       | Sponsor of Inaugural Ceremony                                       |
| T-Mobile                      | Sponsor of Wireless Internet Access                                 |

## AUSPICES OF THE XXVIth GENERAL ASSEMBLY

|                 |  |
|-----------------|--|
| Václav Klaus    | President of the Czech Republic                        |
| Václav Havel    | Former President of the Czech Republic                 |
| Pavel Bém       | Lord Mayor of Prague                                   |
| Václav Pačes    | President of the Academy of Sciences of Czech Republic |
| Petr Fiala      | Rector of the Masaryk University in Brno               |
| Václav Hampl    | Rector of the Charles University in Prague             |
| Václav Havlíček | Rector of the Czech Technical University in Prague     |

## WELCOME ADDRESS

The National Organizing Committee of the XXVIth General Assembly of the International Astronomical Union welcomes all the participants and their guests to Prague, the capital of the Czech Republic. We wish you all fruitful scientific discussions, interesting cultural experiences and a wonderful time during your stay in Prague. We hope that you will find the scientific program stimulating and that you will have productive meetings. We believe that the top-level astronomy, which is returning to Prague again after 39 years when the XIIIth GA IAU was organized here in 1967, will benefit from this event and that the Czech astronomers can contribute to it again

## GENERAL INFORMATION

### GENERAL INFORMATION

This booklet contains information on various aspects of the XXVIth GA IAU program. Further information can be found at the following web- site:

[www.astronomy2006.com](http://www.astronomy2006.com)

The XXVIth General Assembly is held at the Prague Congress Centre. The scientific meetings, invited discourses, conference exhibition, internet room, poster areas, coffee break areas etc. are located from ground floor to the third floor.

The registration & information area are to be found on the ground floor. They will offer services ranging from registration, accommodation, tourist program, individual mailboxes, message boards to photocopying, proceeding orders, gift shop and general tourist information-

The exhibition area is located on the second floor whereas the poster areas (I-III) are located on the second and third floors. Detailed maps of the Congress Centre are to be found in the conference kit. These maps can be also accessed from the General Assembly website: [www.astronomy2006.com](http://www.astronomy2006.com).

Entry into the Congress Centre during the GA IAU will only be permitted to registered participants and invited guests, the building being closed to public. All delegates are kindly asked to wear the Conference badge at all times. The Congress Centre is open to participants daily on weekdays from 08.00 to 18.00 (the Congress Hall is open till 19:30 for Invited Discourses) whereas the registration area will be opened with limited offer of services also on Saturday & Sunday.

In the Congress Centre, the wireless connection will be available to all GA participants. The instruction how to connect your computer including the password will be distributed at the registration.

Conference information and updates (Invited Discourses, Symposia, Joint Discussions, Special Sessions, Divisions/Commissions and Working Groups), the organizational and the administrative meetings will be published daily in the conference newspaper "*Dissertatio cum Nuncio Sidereo III*".

If you need any sort of assistance during the General Assembly, the National Organizing Committee Members and Support Staff are available. NOC/LOC Members are wearing red badges whereas Support Staff is easily recognized by wearing orange T-shirts. The NOC/LOC is located in Room No. 248 on the second floor of the building.

### VENUE

The General Assembly of IAU takes place in the

#### **Prague Congress Centre**

5 května 65, Prague 4 (Access from the metro line "C", station "Vyšehrad")

GENERAL INFORMATION

Phone: +420 261 177 050/+420 261 177 051  
Fax: +420 261 177 058  
E-mail: astro2006@cbttravel.cz

Please note that these phone/fax numbers are intended only for receiving urgent messages for participants.

E-mail messages sent or forwarded to astro2006@cbttravel.cz will be printed and placed in the participant's mailbox located in the Registration Area.

OFFICIAL CONFERENCE SERVICE AGENCY/ GA Secretariat



**CBT Astro Ltd (Congress Business Travel)**

Lidická 43/66, Prague 5 - Andel 150 00, Czech Republic

Phone: +420 224 942 575  
Fax: +420 224 942 550  
E-mail: astro2006@cbttravel.cz  
Web: www.astronomy2006.com/www.cbttravel.cz

CONFERENCE CO-PARTNER



**ICARIS Ltd. (Conference Management)**

Namesti dr. Holeho 8, Praha 8 - Libeň 180 00, Czech Republic

Phone: +420 284 823 250, +420 284 828 481  
Fax: +420 266 312 113  
E-mail: icaris@icaris.cz  
Web: www.icaris.cz, www.icaris.info

**REGISTRATION DESK OPENING HOURS**

The central registration desk (including the on-site registration), located on the ground floor of the Prague Congress Centre, will be open as follows:

|                                   |           |             |
|-----------------------------------|-----------|-------------|
| Saturday                          | August 12 | 12:00-18:00 |
| Sunday                            | August 13 | 10:00-20:00 |
| Monday                            | August 14 | 08:00-18:00 |
| Tuesday                           | August 15 | d°          |
| Wednesday                         | August 16 | d°          |
| Thursday                          | August 17 | d°          |
| Friday                            | August 18 | d°          |
| Saturday (urgent assistance only) | August 19 | 09:00-13:00 |
| Sunday (urgent assistance only)   | August 20 | 16:00-20:00 |

## GENERAL INFORMATION

|           |           |             |
|-----------|-----------|-------------|
| Monday    | August 21 | 08:00–18:00 |
| Tuesday   | August 22 | d°          |
| Wednesday | August 23 | d°          |
| Thursday  | August 24 | d°          |
| Friday    | August 25 | 08:00–12:00 |

### REGISTRATION FEES

|   |     |                |
|---|-----|----------------|
| IAU Member/Invited Participants                       | CZK | 20 500         |
| Students  | CZK | 5 500          |
| Seniors (above 70 years)                              | CZK | 5 500          |
| Registered Guests (including Children above 11 years) | CZK | 6 000          |
| Children up to 11 years                               |     | free of charge |

Registration fee for IAU Members, Invited Participants, Students & Seniors includes:

- Admission to all scientific sessions
- Admission to exhibition
- Concert on August 18
- Coffee/Tea Breaks
- Discount for Farewell Reception ticket on August 23
- Closing Ceremony on August 24
- Personal message box by the registration desk
- Free access to Wi-Fi
- Ticket for Conference Kit

Conference kit includes:

Conference badge cover, Program book, Abstract book, Floor plan, Participant list, Exhibitor list, Astronomical Prague Booklet, Pencil, Notepad, Map of Prague, Promotional Leaflets, List of recommended restaurants, Password for Wi-Fi connection, Instruction for speakers

Registration fee for Registered Guests and Children includes:

- Inaugural Ceremony & Cocktail on August 15
- Conference badge
- Concert on August 18
- Closing Ceremony on August 24
- Discount for Farewell Reception ticket on August 23
- Prague Sightseeing Tour

### BADGES

For security reasons, delegates and exhibitors must wear their Conference badges at all times during the General Assembly.

The colour codes for the badges are:

|                     |            |
|---------------------|------------|
| IAU Member          | dark blue  |
| Invited Participant | green      |
| Registered Guest    | yellow     |
| Exhibitor           | light blue |

## GENERAL INFORMATION

|                                 |        |
|---------------------------------|--------|
| Media/Press                     | orange |
| Special Category                | black  |
| Visitor                         | pink   |
| NOC/LOC                         | red    |
| Executive Committee & IAU Staff | gold   |
| CBT Staff (Organizing Agency)   | brown  |
| Icaris Staff (Co-Partner)       | grey   |

### STANDARD DAILY SCHEDULE OF MEETINGS

|             |              |             |                    |
|-------------|--------------|-------------|--------------------|
| 09:00–10:30 | 1st session  | 14:00–15:30 | 3rd session        |
| 10:30–11:00 | coffee break | 15:30–16:00 | coffee break       |
| 11:00–12:30 | 2nd session  | 16:00–17:30 | 4th session        |
| 12:30–14:00 | lunch break  | 18:15–19:30 | Invited Discourses |

There might be some exceptions from this schedule. Please check the individual programs.

### CLOAKROOM

The cloakroom is located on the 1st floor of the Congress Centre and is open from 08:00 through 19:30 on weekdays. It will be closed on Saturday and Sunday.

### MESSAGE BOXES

Personal message boxes will be arranged in the registration area. Message boxes will be labelled by the name of the participants and arranged in alphabetical order. We recommend an inspection of the message boxes area at least twice a day and, in any case, before leaving the Congress Centre.

### TELEPHONES/MOBILE PHONES

There are no public pay-phones available in the venue. For convenience of all delegates please ensure that your mobile phone is turned off during the conference sessions.

### INTERNET ROOM

In addition to the wireless Wi-Fi connection (see below), an Internet Room with 15 PCs will be available for conference participants in the North Hall (2<sup>nd</sup> floor of the Congress Centre), providing complementary access to Internet and e-mail. Moreover, there will be possible to attach laptops using a wire connection. This arrangement will be available throughout the General Assembly. Opening times will be from 08:00-19:30 during weekdays.

Please be considerate of other conference participants and restrict your use of the Internet Room to a maximum of 15 minutes at busy times.

### WI-FI CONNECTION

In most areas of the Prague Congress Centre, an 802.11b (Wi-Fi) wireless network will be available. Your wireless card should be able to detect the wireless network

## GENERAL INFORMATION

automatically and you will have to use the username: *G-astronomy.TM@t-mobile.cz* and the password: *astronomy*. The capacity of the wireless network is 500 simultaneous connections.

### CATERING

The coffee/tea breaks will be organized on weekdays from 10:30 to 11:00 and from 15:30 to 16:00. The coffee areas are located in the foyer from the ground floor up to the third floor. Participants can use also the open-air terrace on the second floor of the Congress Centre.

Lunchtime is from 12:30 to 14:00. We would recommend to the delegates to make use of the offer to buy a "lunch ticket" which can be purchased in front of the Zoom Restaurant (second floor) at the price of EUR 11. This entitles you to a buffet lunch at the "ZOOM restaurant" on the 2nd floor of the Congress Centre (limited capacity).

Within the Congress Centre small refreshments may also be purchased in the "Buffet" on the 1st floor of the Congress Centre or use the hospitality of "Melody Restaurant" or "Cafe-Cafe" on the ground floor.

Another possibility for lunch is to visit the nearest hotel restaurants at Holiday Inn, opposite to PCC, or in the Corinthia Towers. For both of them we recommend an advanced reservation (ask at the Information Desk).

The list of the restaurants located in the neighbourhood of the Congress Centre is available in the conference kit; however the number of suitable facilities is limited.

### INFORMATION DESK/PHOTOCOPYING/FAX TRANSMISSION/SHOP

The Information Desk staff will be happy to assist you during the General Assembly. A photocopy machine will be available for participants' use as well. There will be a small charge for this service. A fax transmission service is available for a charge at the Information Desk.

### GENERAL ASSEMBLY NEWSPAPER

The General Assembly Newspaper "*Dissertatio Cum Nuncio Sidereo III*" will be published during the congress in 10 editions. The extent of the newspaper will be 4 or 8 pages of an A3 format. The editorial board welcomes contributions from all participants on congress topics and/or other interesting events and meetings during the congress. The editorial board has its headquarters in Congress Hall Meeting Rooms No. 222 and 223 (second floor). Those wanting to submit contributions may send them to [nuncius@ig.cas.cz](mailto:nuncius@ig.cas.cz).

### PRESS CONFERENCES

There will be four official press conferences held before and during the General Assembly:

- The first one will take place on *Thursday, August 10, 2006, at 10:00 a.m.* in the room No. 205 in the building of the Academy of Sciences of the Czech Republic, Národní třída 3, Praha 1.

## GENERAL INFORMATION

- The second one will take place on *Tuesday, August 15, 2006, at 10:30* in the Meeting room 3.3 of the Prague Congress Centre just before the beginning of the Opening Ceremony and first session of the IAU General Assembly.
- The third one will take place on *Monday, August 21, 2006, at 10:00 a.m.* in the Meeting room 3.3 of the Prague Congress Centre.
- The final one will take place on *Thursday, August 24, 2006, at 18:00* in the Meeting room 3.3 of the Prague Congress Centre just after the Closing Ceremony.

### PROCEEDINGS

Participants may order the Proceedings of the General Assembly at special rates until August 25. These proceedings may be ordered at the Proceedings Desk in the Registration Area, where payment will be collected by CBT. However, for those who need a tax invoice, please contact Cambridge University Press (Commissioning Editor, Journals Department, Cambridge University Press, Shaftesbury Road, Cambridge CB2 2RU, UK, Tel: +44 (0)1223 326487; Fax: +44 (0)1223 315052; Email: [aflower@cambridge.org](mailto:aflower@cambridge.org)).

### EXHIBITION

The Exhibition area is situated on the 2<sup>nd</sup> floor at the Congress Hall Foyer 2. The Exhibitor List is provided with the Conference kit.

#### Exhibition Hours:

|           |           |               |
|-----------|-----------|---------------|
| Tuesday   | August 15 | 16:00 – 19:00 |
| Wednesday | August 16 | 09:00 – 17:30 |
| Thursday  | August 17 | 09:00 – 17:30 |
| Friday    | August 18 | 09:00 – 17:30 |
| Saturday  | August 19 | closed        |
| Sunday    | August 20 | closed        |
| Monday    | August 21 | 09:00 – 17:30 |
| Tuesday   | August 22 | 09:00 – 17:30 |
| Wednesday | August 23 | 09:00 – 17:30 |
| Thursday  | August 24 | 09:00 – 17:30 |

### ACCOMMODATION/HOTELS & DORMITORIES

The Accommodation and Information Desks are located by the Registration Desk, ground floor of the Congress Centre.

CBT staff is available during registration hours to assist the delegates with their hotel reservations. For those who did not make advance bookings (or did not prepay the requested deposits), accommodation will be reserved on site within the possibilities offered by hotels/hostels on that respective day, but cannot be guaranteed.

## GENERAL INFORMATION

### PRAGUE TRANSPORTATION

Public transportation tickets are available from ticket vending machines or at selected metro stations, in newspaper kiosks, hotels, department stores, etc.

Tickets are valid for the specific period from the moment of validation exclusively within the capital. It is necessary to validate your ticket after getting on bus, tram or at Metro entrance.

Week-valid or 15-day valid tickets for public transportation (including metro, bus and tram) can be bought from the Information Desk in the Registration Area of the Congress Centre. The price of such tickets is 280 CZK/ 320 CZK.

#### **Metro**

The Prague Metro network consists of 3 lines designated by letters and distinguished by different colours:

- **A** - green: Depo Hostivař-Dejvická stations,
- **B** - yellow: Černý most-Zličín stations,
- **C** - red: Ládví-Háje stations

Transfers are possible as follows:

- Lines A and C: Museum station
- Lines A and B: Můstek station
- Lines B and C: Florenc station

Metro operates daily from 05:00 a.m. to 12:00 p.m. Time interval between trains is approximately 2 to 3 minutes during workday rush hours and 4 to 10 minutes during off-peak hours. Prague metro is safe day and night.

#### **Trams**

Daytime operation is from 4:30 a.m. to 12 p.m. Night time operation is from 00:30 a.m. to 4:30 a.m. with traffic intervals 30 minutes. Tram schedules are located at individual stops.

#### **Buses**

Daytime and night time operation of buses are similar to tram's ones. Bus schedules are located at individual stops.

#### **Taxi**

Taxis are safe and comfortable. We recommend you always to ask for the receipt. Credit cards are usually not accepted. You can contact the Information Desk at the Registration Area to provide the taxi service.

## GENERAL INFORMATION

### AIRPORT

There are several options when travelling to the airport:

#### Taxi

The Congress Centre can be reached from Prague Airport (Ruzyně) by taxi within 45 minutes. Please make allowances for rush times (cost: ~ 700-800 CZK; for assistance contact the Information Desk at the Registration Area)

#### Public transportation

The journey may take 1 to 1,5 hours to get there (for details kindly ask at the Information Desk in the Registration Area)

#### Airport Shuttle Bus

Please inquire at your hotel.

### PARKING & CAR RENTAL

Garage parking is available directly at the Congress Centre. The price is 35 CZK/hour with payment upon departure.

Car rental can be organized at the Information Desk or arranged through your hotel.

### PLANE TICKETS

To reconfirm your return flight(s) kindly contact your hotel reception desk. If you require any changes with your plane ticket please note that it has to be done personally at the respective airlines.

Useful phone numbers:

|                       |               |  |
|-----------------------|---------------|--|
| Aeroflot              | 227 020 121-3 | <a href="http://www.aeroflot.cz">www.aeroflot.cz</a>                 |
| Air France            | 221 662 662   | <a href="http://www.airfrance.com">www.airfrance.com</a>             |
| Alitalia              | 224 194 150   | <a href="http://www.alitalia-az.cz">www.alitalia-az.cz</a>           |
| American Airlines     | 224 234 985   | <a href="http://www.americanairlines.cz">www.americanairlines.cz</a> |
| Austrian Airlines     | 220 116 272   | <a href="http://www.austrianairlines.cz">www.austrianairlines.cz</a> |
| British Airways       | 239 000 299   | <a href="http://www.ba.com">www.ba.com</a>                           |
| Continental Airlines  | 221 665 133   | <a href="http://www.continental.com">www.continental.com</a>         |
| Czech Airlines        | 239 007 007   | <a href="http://www.csa.cz">www.csa.cz</a>                           |
| Delta Airlines        | 224 946 733   | <a href="http://www.delta-air.cz">www.delta-air.cz</a>               |
| El Al Israel Airlines | 224 226 624   | <a href="http://www.elal.tnet.cz">www.elal.tnet.cz</a>               |
| Emirates Airlines     | 224 810 261   | <a href="http://www.globair.cz">www.globair.cz</a>                   |
| Finnair               | 222 252 448   | <a href="http://www.finnair.cz">www.finnair.cz</a>                   |
| Iberia                | 224 234 989   | <a href="http://www.iberia.cz">www.iberia.cz</a>                     |
| KLM                   | 233 090 933   | <a href="http://www.klm.com">www.klm.com</a>                         |
| Lufthansa             | 234 008 234   | <a href="http://www.lufthansa.cz">www.lufthansa.cz</a>               |
| SAS                   | 220 116 031   | <a href="http://www.flysas.com">www.flysas.com</a>                   |
| Singapore Airlines    | 224 235 491   | <a href="http://www.singaporeair.com">www.singaporeair.com</a>       |
| SWISS                 | 221 990 444   | <a href="http://www.swiss.com">www.swiss.com</a>                     |

## GENERAL INFORMATION

### BANKS & CURRENCY

A branch of "Komerční banka" is located on the ground floor of the Prague Congress Centre. The ATM (cash machine) "bankomat" can be found next to Entrance IV of Prague Congress Centre.

Opening times of all major Czech banks are generally 09:00-17:00 from Monday to Friday. Nearly every hotel, store, restaurant, shop, petrol station accepts credit cards (Visa, MasterCard/EuroCard, American Express, Diners). ATM's can be found throughout the city.

The official currency is Czech Crown (CZK). The exchange rates (June 3, 2006) were:

1 EUR = 27,50 CZK                      1 USD = 21,60 CZK                      1 CHF = 17,60 CZK

There is no possibility to exchange money at the General Assembly Registration Desk.

Traveller's cheques can be cashed at banks only.

VAT (Value Added Tax) = DPH (in Czech) is a standard tax that is included in all purchases made in the Czech Republic. All prices are shown in Czech Crowns and include VAT at the current rate of 5% for the accommodation and some take-out food and 19% for other items and services.

### CHILDCARE

No child care facilities are officially available at any of the General Assembly venues. However, the Conference Secretariat is ready to arrange childcare on request. Please visit the ICARIS Desk in the Registration area for help.

### FIRST AID & MEDICAL ASSISTANCE

Please contact the Registration Desk if you require First Aid or medical assistance.

### MEDICAL ISSUES

Participants should ensure that they have adequate health insurance to cover medical expenses.

### SECURITY

All delegates, including registered guests, are asked to wear their badges at all times. Access to the General Assembly will be denied by hostess/security staff to those not wearing a badge.

### LOST & FOUND

Please take any found articles to the Registration Area (Ground floor of the Congress centre), or inquire there for lost articles. We advise you to mark your conference kit.

### INSURANCE

The General Assembly conference organizer will not accept liability for personal injuries sustained or for loss of (or damage to) personal belongings of participants or their guests either during or as a result of the General Assembly.

## GENERAL INFORMATION

### SMOKING

There are special smoking areas on each floor of the Congress Centre. Kindly follow the floor plan. No smoking is allowed except in these areas.

### ELECTRICITY

220 Volt 50 Hz system, with sockets of European standard, and three-pronged grounded plugs are used in the Czech Republic. Travel adapters can be purchased at electronic stores or borrowed from the reception desk in some hotels.

### WEATHER & CLOTHING

Prague weather in August is usually sunny (average daytime temperature 22C, getting down to 12C at night). The Congress Centre is air-conditioned.

### USEFUL WEB LINKS

|                               |   |
|-------------------------------|---|
| IAU General Assembly website: | <a href="http://www.astronomy2006.com">http://www.astronomy2006.com</a> |
| Prague Information Service:   | <a href="http://www.pis.cz">http://www.pis.cz</a>                       |
| Prague Congress Centre:       | <a href="http://www.kcp.cz">http://www.kcp.cz</a>                       |
| Public Transportation:        | <a href="http://www.dp-praha.cz/en/">http://www.dp-praha.cz/en/</a>     |
| Prague Airport:               | <a href="http://www.prg.aero/en/">http://www.prg.aero/en/</a>           |
| Currency Information:         | <a href="http://www.csas.cz">http://www.csas.cz</a>                     |

## SOCIAL PROGRAM/TOURS

The Tour Desk & Social Program Information is available in the Registration area on the ground floor of the Congress Centre. Tickets for all ordered tours and social events are to be collected there. Opening times are the same as for Registration.

### SOCIAL PROGRAM & FAREWELL RECEPTION

**Tuesday, August 15** (included in registration fee)

***Inaugural Ceremony, 14:00–15:35***

***Congress Hall of the Congress Centre***

*(The hall will be opened from 13:30, entrances from the 1<sup>st</sup> floor)*

- Introduction of the Honorary Board
- Anthem of the Czech Republic
- Official Welcome Addresses
- Performance of Children's Traditional Ensemble "Rosénka"
- Peter Gruber Foundation – Cosmology Prize Award
- Lesser Town Singers (the performance has been underwritten by a generous contribution from the Peter Gruber Foundation)
- Lecture "Astronomy in Prague : From the Past to the Present"

***General Assembly - First Session, 15:45-17:30***

*Congress Hall of the Congress Centre*

*(details given below)*

***Welcome Cocktail, 17:30–19:00***

*Foyer of the Congress Hall & Exhibition Area, 2<sup>nd</sup> Floor*

**Friday, August 18** (included in registration fee)

***Concert of Prague Philharmonia, 18:30-19:45***

*Congress Hall of the Congress Centre*

**Wednesday, August 23**

*(discounted price -50%: EUR 30, discount applies to registered participants)*

***Farewell Reception, 20:00-24:00***

*Industrial Palace /Area of Prague Exhibition Grounds:*

*"Back to the Thirties - Welcome to the Kingdom of Swing"*

**Thursday, August 24** (included in registration fee)

***General Assembly - Second Session 14:00–17:30***

*Congress Hall of the Congress Centre*

*(details given below), followed by the **Closing Ceremony***

## SOCIAL PROGRAM

### TOURS

Prepaid tickets can be collected at the Social Program & Tour desk (Registration area, Ground Floor).

Buses always depart from and return to the Prague Congress Centre (if not otherwise indicated) and all tours will be accompanied by an English speaking guide. The time indicated is the departure time, so please come at the Meeting Point (in the Registration Area, Ground Floor) at least 10 minutes prior to the advised departure time.

Tours will only take place with 15+ participants and the organizers reserve the right to cancel a tour should there be insufficient interest. (An alternative program will be offered. If it this in not an acceptable alternative the organizers will provide a full refund.)

#### **Tours in order of dates (See important remark at the end of this section)**

##### ***Monday, August 14***

14:00–18:00 Grand City Tour with Visit to Prague Castle 28 EUR

##### ***Tuesday, August 15***

09:00–13:00 Grand City Tour with Visit to Prague Castle 28 EUR

##### ***Wednesday, August 16***

09:00–13:00 Jewish Ghetto and Old Town Square 42 EUR

09:00 (all day) Trip to Castle Karlstejn & Nizbor Glass Factory 64 EUR

14:00–18:00 Palaces and Gardens in the Lesser Town 15 EUR

##### ***Thursday, August 17***

09:00–15:00 Trip to Konopiste Chateau 56 EUR

08:30 (all day) Visit to the Pilsner Urquell Brewery & Kozel Chateau 60 EUR

14:00–18:00 Lesser Town & Charles Bridge, Old Town 18 EUR

19:30–23:00 A Cosmic Celebration of Czech Beer, brewery tour & dinner 32 EUR

19:30–22:30 A Cosmic Celebration of Czech Beer (dinner only) 29 EUR

##### ***Friday, August 18***

09:00–13:00 Grand City Tour with Visit to Prague Castle 28 EUR

09:00–15:00 Trip to Melnik Chateau with Wine Tasting 53 EUR

09:00 (all day) Cesky Sternberk and Caesar Bohemia Glass Factory 59 EUR

##### ***Saturday, August 19***

08:30–13:00 Excursion to Ondrejov Observatory/Astron. Institution 15 EUR

08:30 (all day) West Bohemian Spas 63 EUR

09:00–16:00 Trip to Kokorin Castle 47 EUR

12:00–14:00 Prague Boat Trip with Lunch 25 EUR

12:00–16:30 Excursion to Ondrejov Observatory/Astron. Institution 15 EUR

14:00–18:00 Palaces and Gardens in the Lesser Town 15 EUR

16:00–20:30 Excursion to Ondrejov Observatory/Astron. Institution 15 EUR

19:00–22:00 Prague Boat Trip with Dinner & Music 29 EUR

## SOCIAL PROGRAM

### *Sunday, August 20*

|             |   |        |
|-------------|---|--------|
| 08:30-13:00 | Excursion to Ondrejov Observatory/Astron. Institution | 15 EUR |
| 09:00-15:00 | Medieval Town of Kutna Hora                           | 48 EUR |
| 09:00-13:00 | Lesser Town & Charles Bridge, Old Town                | 18 EUR |
| 09:00-15:00 | Trip to Konopiste Chateau                             | 56 EUR |
| 12:00-16:30 | Excursion to Ondrejov Observatory/Astron. Institution | 15 EUR |
| 16:00-20:30 | Excursion to Ondrejov Observatory/Astron. Institution | 15 EUR |

### *Monday, August 21*

|                 |   |        |
|-----------------|---|--------|
| 08:30 (all day) | West Bohemian Spas                          | 63 EUR |
| 09:00-13:00     | Grand City Tour with Visit to Prague Castle | 28 EUR |
| 12:00-14:00     | Prague Boat Trip with Lunch                 | 25 EUR |
| 14:00-18:00     | Jewish Ghetto and Old Town Square           | 42 EUR |
| 19:00-22:00     | Prague Boat Trip with Dinner & Music        | 29 EUR |

### *Tuesday, August 22*

|                 |  |        |
|-----------------|--|--------|
| 09:00-13:00     | Palaces and Gardens in the Lesser Town               | 15 EUR |
| 09:00 (all day) | Trip to Castle Karlstejn & Nizbor Glass Factory      | 64 EUR |
| 09:00 (all day) | Visit to the Pilsner Urquell Brewery + Kozel Chateau | 60 EUR |

### *Wednesday, August 23*

|             |                                   |        |
|-------------|-----------------------------------|--------|
| 09:00-13:00 | Jewish Ghetto and Old Town Square | 42 EUR |
| 09:00-15:00 | Trip to Konopiste Chateau         | 56 EUR |
| 09:00-15:00 | Medieval Town of Kutna Hora       | 48 EUR |

### *Thursday, August 24*

|                 |  |        |
|-----------------|--|--------|
| 09:00 (all day) | Cesky Sternberk and Caesar Bohemia Glass Factory | 59 EUR |
| 09:00-15:00     | Trip to Melnik Chateau with Wine Tasting         | 53 EUR |

### *Friday, August 25*

|                 |                    |        |
|-----------------|--------------------|--------|
| 08:30 (all day) | West Bohemian Spas | 63 EUR |
|-----------------|--------------------|--------|

### **Tours by destination** (see important remark at the end of this section)

#### *Grand City Tour with Visit to Prague Castle*

28 EUR

|                    |             |
|--------------------|-------------|
| Monday, August 14  | 14:00-18:00 |
| Tuesday, August 15 | 09:00-13:00 |
| Friday, August 18  | 09:00-13:00 |
| Monday, August 21  | 09:00-13:00 |

#### *Jewish Ghetto and Old Town Square*

42 EUR

|                      |             |
|----------------------|-------------|
| Wednesday, August 16 | 09:00-13:00 |
| Monday, August 21    | 14:00-18:00 |
| Wednesday, August 23 | 09:00-13:00 |

#### *Trip to Castle Karlstejn & Nizbor Glass Factory* (all day)

64 EUR

|                      |                 |
|----------------------|-----------------|
| Wednesday, August 16 | Departure 09:00 |
| Tuesday, August 22   | Departure 09:00 |

## SOCIAL PROGRAM

|  |                 |        |
|--|-----------------|--------|
| <b><i>Palaces and Gardens in the Lesser Town</i></b>                             |                 | 15 EUR |
| Wednesday, August 16   | 14:00–18:00     |        |
| Saturday, August 19  | 14:00–18:00     |        |
| Tuesday, August 22   | 09:00–13:00     |        |
| <b><i>Trip to Konopiste Chateau</i></b>  |                 | 56 EUR |
| Thursday, August 17  | 09:00–15:00     |        |
| Sunday, August 20  | 09:00–15:00     |        |
| Wednesday, August 23   | 09:00–15:00     |        |
| <b><i>Visit to the Pilsner Urquell Brewery &amp; Kozel Chateau (all day)</i></b> |                 | 60 EUR |
| Thursday, August 17  | Departure 08:30 |        |
| Tuesday, August 22   | Departure 09:00 |        |
| <b><i>Lesser Town &amp; Charles Bridge, Old Town</i></b>                         |                 | 18 EUR |
| Thursday, August 17  | 14:00–18:00     |        |
| Sunday, August 20  | 09:00–13:00     |        |
| <b><i>A Cosmic Celebration of Czech Beer &amp; brewery tour &amp; dinner</i></b> |                 | 32 EUR |
| Thursday, August 17  | 19:30–23:00     |        |
| <b><i>A Cosmic Celebration of Czech Beer - dinner only</i></b>                   |                 | 29 EUR |
| Thursday, August 17  | 19:30–23:00     |        |
| <b><i>Trip to Melnik Chateau with Wine Tasting</i></b>                           |                 | 53 EUR |
| Friday, August 18  | 09:00–15:00     |        |
| Thursday, August 24  | 09:00–15:00     |        |
| <b><i>Cesky Sternberk &amp; Caesar Bohemia Glass Factory (all day)</i></b>       |                 | 59 EUR |
| Friday, August 18  | Departure 09:00 |        |
| Thursday, August 24  | Departure 09:00 |        |
| <b><i>Excursion to Ondrejov Observatory/Astron. Institution</i></b>              |                 | 15 EUR |
| Saturday, August 19  | 08:30–13:00     |        |
|  | 12:00–16:30     |        |
|  | 16:00–20:30     |        |
| Sunday, August 20  | 08:30–13:00     |        |
|  | 12:00–16:30     |        |
|  | 16:00–20:30     |        |
| <b><i>West Bohemian Spas (all day)</i></b>                                       |                 | 63 EUR |
| Saturday, August 19  | Departure 08:30 |        |
| Monday, August 21  | Departure 08:30 |        |
| Friday, August 25  | Departure 08:30 |        |
| <b><i>Trip to Kokorin Castle</i></b>   |                 | 47 EUR |
| Saturday, August 19  | 09:00–16:00     |        |
| <b><i>Prague Boat Trip with Lunch</i></b>  |                 | 25 EUR |
| Saturday, August 19  | 12:00–14:00     |        |
| Monday, August 21  | 12:00–14:00     |        |

## SOCIAL PROGRAM

|  |             |         |
|--|-------------|---------|
| <b><i>Prague Boat Trip with Dinner &amp; Music</i></b> |             | 29 EUR  |
| Saturday, August 19                                    | 19:00–22:00 |         |
| Monday, August 21                                      | 19:00–22:00 |         |
| <b><i>Medieval Town of Kutna Hora</i></b>              |             | 15 EUR  |
| Sunday, August 20                                      | 09:00–15:00 |         |
| Wednesday, August 23                                   | 09:00 15:00 |         |
| <b>Post Congress Tours</b>                             |             |         |
| <b><i>Bohemian Paradise</i></b>                        |             | 175 EUR |
| Friday & Saturday, August 25 & 26                      | 08:30       |         |
| <b><i>Southern Bohemia</i></b>                         |             | 190 EUR |
| Friday & Saturday, August 25 & 26                      | 08:30       |         |

**Remark:** All prices given are calculated per person. Tours include English speaking guide, transportation (if not specified otherwise), entrances, lunch (only for specific tours).

For detailed information, kindly contact the Social Program & Tour desk where you can also purchased the tickets.

## ADDITIONAL EVENTS

### **Colloquium "Astronomy in Prague in the Mirror of Centuries"**

on the history of astronomy in and around Prague. This supplementary program to the IAU General Assembly will be organized during the weekend August 19-20.

The aim of the colloquium is to expose monuments of the history of astronomy in Prague to the General Assembly participants interested in the roots and evolution of the field of astronomy and to provide a space for discussion on related problems.

The program is as follows:

#### ***Saturday, August 19***

09:30-12:00 Review on Prague astronomical monuments  
(The Academy of Sciences of the Czech Republic, Narodni 3, Praha 1)

14:00-17:30 Walking through Astronomical Prague - Old Town  
(Meeting point: Astronomical clock on Old Town Square)

#### ***Sunday, August 20***

Trip "Astronomy in East-Bohemia"  
to visit the towns Jaromer-Josefov, Zamberk and Litomysl in traces of astronomers Wilhelm von Biela, Theodor Brorsen, August Seydler and Zdenek Kopal (One-day bus trip, meals and refreshment in each town included; Maximum capacity is 40 participants. The price is: 16 EUR..

## SOCIAL PROGRAM

### *Alternatively:*

- 09:30-11:00 Discussion  
(Main Building of the Academy of Sciences of the Czech Republic,  
Narodni 3, Praha 1)
- 11:00-14:00 Walk through Astronomical Prague - Lesser Town  
Maximum capacity is 150 participants. Free of charge. For tickets,  
please, contact the registration desk.

### **Astronomy, Physics, and Mathematics in the Streets of Prague, Guided Tours**

*Part 1: Old Town (Meeting point: in front of the Powder Tower (near Metro Station  
Náměstí Republiky, line B)*

|                      |             |        |
|----------------------|-------------|--------|
| Monday, August 9     | 09:00-11:30 | Part 1 |
| Wednesday, August 16 | 08:30-11:00 | Part 1 |
| Sunday, August 20    | 08:30-11:00 | Part 1 |
| Monday, August 21    | 09:00-11:30 | Part 1 |

*Part 2: Around the Castle to the Lesser Town (Meeting point: at the statue of Tycho Brahe  
and Johannes Kepler, (Tram No. 22, stop "Pohořelec")*

|                     |             |        |
|---------------------|-------------|--------|
| Tuesday, August 14  | 14:00-16:30 | Part 2 |
| Saturday, August 19 | 14:00-16:30 | Part 2 |
| Tuesday, August 22  | 14:00-16.30 | Part 2 |
| Tuesday, August 24  | 14:00-16:30 | Part 2 |

To attend these tours (free of charge), please kindly register on board next to the  
Registration Desk.

Maximum capacity per tour is 20 participants.

### **Public Lecture on Astronomy** (lectures will be translated to Czech)

R. Genzel: Black Holes in Galaxies

Entrance is free of charge.

Monday, August 21 19:00-20:30

Academy of Sciences of the Czech Republic, Narodni 3, Praha 1

## POSTERS - AUDIO VISUAL EQUIPMENT - SPEAKER ASSISTANCE

### POSTER PAPERS

Poster papers are displayed in Terrace I, Terrace II (2<sup>nd</sup> floor) and in the South Hall (3<sup>rd</sup> floor). In the Abstract book each abstract is assigned by a reference number. The instruction where to mount it will be given at the registration and at the poster areas.

There is a total of 1070 poster boards with a portrait format of an effective area 97 cm (width) x 180 cm (height). This effective area is covered by a carpet-like surface and the posters can be fixed only with pins. Pins will be available in sufficient quantity in all the poster areas. The authors are responsible for mounting and dismounting their own posters. However student volunteers will be available to assist.

### AUDIO-VISUAL EQUIPMENT

**Audio-visual equipment available in every meeting/session room includes:**

- overhead projector
- data projector + computer
- microphone for speaker
- microphones for discussion
- laser pointer

If you require additional facilities for your meeting, please inquire at least 6 hours before your presentation the Speaker Preparation Room.

If required, student volunteers/technicians can provide additional assistance.

### **On-Site Computer Specification:**

- Laptop design
- Pentium M Processor
- Windows XP Professional SP2
- 512 MB RAM

The supplied computers will include:

- Microsoft Office 2003 (PowerPoint)
- OpenOffice 2 (Impress)
- Adobe Acrobat Reader 7
- Windows Media Player 10
- QuickTime and Gsview 4.8 (postscript viewer)

Other presentation software will not be available.

***Please be advised that using the PC supplied in the session rooms is the most preferable solution.***

If you are using the computer data that are not compatible with the supplied PC (special animations, MAC data) it is possible to bring **your own laptop** to be connected with the data projector.

In this case, please note that this is your responsibility and it is *strongly recommended to check the compatibility of your equipment in the Speaker Preparation Room (at least 4 hours) prior to your presentation.*

Student volunteers will be available to provide assistance.

**How to save your presentation:**

Save your presentation either to the

- CD-ROM (CD-R/RW) or
- DVD-ROM (DVD±R/RW) (please note that DVD-RAM is not available) or
- USB flash disc

Floppy disc is not preferable, but we can copy it on a USB flash disc in the Speaker Preparation Room (*ask for help at least 4 hours prior your presentation*)

- Save all files associated with your presentation (PowerPoint file, movie/video files, etc.) to one folder
- In case you are giving more than one presentation during the General Assembly, save different presentations to different folders and name them clearly to avoid on-site misunderstandings and problems
- We recommend you to make a backup copy of your presentation and save it on a different portable disc than the original presentation

**SPEAKER ASSISTANCE: PREPARATION ROOM/REHEARSAL ROOM**

The purpose of this room is to assist speakers with technical details of their presentations and to check the compatibility of the presentation.

The Speaker Preparation Room is located on the 3<sup>rd</sup> floor at the Forum Hall Foyer and will be open at the same hours as the Registration Desk.

**How to verify compatibility of your presentation**

*It is strongly advised that all speakers report to the Speaker Preparation Room well before (3-4 hours in minimum) their talk*

- The computers used there are exactly the same (hardware and software) as those used in the session rooms
- For those using their own laptop, a few extra LCDs will be available to check if the video-signal output to the data projector is working flawlessly
- Student volunteers/technicians will be available there to provide you with assistance for your presentation

### **How to deliver your presentation**

- Following on from the visit to the Speaker Preparation Room, all speakers are requested to visit their session room during any break before their session starts and contact the technician to upload and check with him that the presentation is ready in the computer (the session rooms will be opened on weekdays from 08:00 through 18:00)
- Speakers with their own laptop will be given full assistance with connecting to the audio-visual equipment in the meeting/session room
- Once your session is over, your presentation will be deleted from all computers, no copies or backups will be made.

If you have other queries regarding the audio-visual facilities for your meeting, please discuss this with these audio-visual specialist who can be contacted through the Speaker Preparation Room.

## LOCATION FOR VENUES, SERVICES & OFFICES

### VENUES

#### *Ground Floor*

|                       |            |
|-----------------------|------------|
| Small Hall            | S Hall     |
| Small Theater         | S Th.      |
| Congress Hall Foyer A | C Hall F A |
| Congress Hall Foyer B | C Hall F B |

#### *First Floor*

|                   |         |
|-------------------|---------|
| Congress Hall     | C Hall  |
| Panorama Hall     | P Hall  |
| Meeting Hall I    | MH 1    |
| Club A            | Club A  |
| Club B            | Club B  |
| Club C            | Club C  |
| Club D            | Club D  |
| Club E            | Club E  |
| Club H            |         |
| Meeting Room 1.1  | MR 1.1. |
| Meeting Room 1.2. | MR 1.2. |

#### *Second Floor*

|                          |           |
|--------------------------|-----------|
| Forum Hall               | F Hall    |
| Meeting Hall IV          | MH IV     |
| Meeting Hall V           | MH V      |
| Meeting Room 2.1.        | MR 2.1.   |
| Meeting Room 2.2.        | MR 2.2.   |
| Meeting Room 2.3         | MR 2.3.   |
| C Hall Dressing Room 225 | DR 225    |
| Congress Hall Foyer 2    | C Hall F2 |
| Terrace 1 & 2            | TER 1/2   |
| North Hall               | N Hall    |

#### Foyer Hall:

|                       |        |
|-----------------------|--------|
| Dressing Room 241     | DR 241 |
| Dressing Room 242     | DR 242 |
| Dressing Room 243     | DR 243 |
| Dressing Room 244     | DR 244 |
| Dressing Room 245     | DR 245 |
| Dressing Room 246     | DR 246 |
| Dressing Room 247     | DR 247 |
| Dressing Room 248     | DR 248 |
| <b>Congress Hall:</b> |        |
| Dressing Room 220     | DR 220 |
| Dressing Room 222     | DR 222 |
| Dressing Room 223     | DR 223 |
| Dressing Room 224     | DR 224 |

#### *Third Floor*

|                    |           |
|--------------------|-----------|
| Chamber Hall       | Ch. Hall  |
| Forum Hall Foyer 3 | F Hall F3 |
| Meeting Room 3.2.  | MR 3.2.   |
| Meeting Room 3.3.  | MR 3.3.   |
| South Hall         | Sth Hall  |

**SERVICES**

|  |                       |
|--|-----------------------|
| Registration, Information, Hotel & Travel Desk           | C Hall F A            |
| Cloak Room   | 1 <sup>ST</sup> Floor |
| Exhibition   | C Hall F2             |
| Internet Room  | N. Hall               |
| Mail Boxes   | C Hall F B            |
| Fax, Photocopying  | C Hall F A            |
| Speaker Preparation Room                                 | F Hall F3             |
| Posters  | TER 1&2, Sth Hall     |
| <i>"Dissertatio cum Nuncio Sidereo III"</i> GA Newspaper | DR 222/ 223           |
| Press Conference Room                                    | MR 3.3                |
| Press Room Office  | MR 3.2                |
| CBT  | DR 220                |
| ICARIS   | DR 224                |

**OFFICES**

|   |         |
|---|---------|
| IAU Officers:                                       |         |
| Ron Ekers, President                                | DR 244  |
| Catherine Cesarsky, President-Elect                 | DR 245  |
| Oddbjørn Engvold, General Secretary                 | DR 241  |
| Karel A. van der Hucht, Assistant General Secretary | DR 246  |
| IAU Secretariat                                     |         |
| Monique Orine                                       | DR 242  |
| Mary Noel-Giraud                                    | DR 243  |
| Grant Room  | d°      |
| IAU Executive Committee                             | DR 241  |
| IAU Press Officer                                   | MR 3.2. |
| Resolutions Committee                               | MR 2.3. |
| Finance Sub-Committee                               | MR 2.3. |
| National & Local Organizing Committees              | DR 248  |

## **IAU XXVI<sup>th</sup> GENERAL ASSEMBLY**

Prague Congress Centre

### **INAUGURAL CEREMONY**

*Tuesday August 15, 2006, 14:00-15:35, Congress Hall*

### **GENERAL ASSEMBLY**

#### **FIRST SESSION**

*Tuesday, August 15, 2006, 15:45-17:30, Congress Hall*

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

#### **SECOND SESSION**

*Thursday, August 24, 14:00- 17:30, , Congress Hall*

10. Division and Commission Matters
- 10.a. Election of Division Presidents and Vice Presidents 2006-2009
- 10.b. Adjustments to the Divisional Structure
- 10.c. Names of Commission Presidents and Vice-Presidents 2006-2009
11. Individual Membership
- 11.a. Names of new Individual Members of the Union
- 11.b. Names of deceased Individual Members of the Union since GA XXV
12. Financial matters
- 12.a. Report of the Finance Committee on the accounts 2003-2005 and the budget 2007-2009
- 12.b. Vote on proposed budget 2007-2009
- 12.c. Appointment of a Finance Sub-Committee 2006-2009

13. Resolutions
  - 13.a. Report of the Resolutions Committee
  - 13.b. Presentation of Resolutions of type B by proposers
  - 13.c. Vote on the Resolutions
  - 13.d. Appointment of a Resolutions Committee 2006-2009
14. Appointment of the Special Nominating Committee 2006-2009
15. Promotion of the XVII<sup>th</sup> General Assembly
16. Place and Date of the XXVIII<sup>th</sup> General Assembly
17. Election of Executive Committee Members 2006-2009
  - 17.a. President and President-Elect
  - 17.b. Six Vice-Presidents
  - 17.c. General Secretary and Assistant General Secretary
18. Addresses by Retiring and Incoming and Officers
19. Closure of the General Assembly

## TIME TABLE OF ADMINISTRATIVE MEETINGS

### ***Sunday August 13, 2006***

|             |                        |   |    |
|-------------|------------------------|---|----|
| 09:00-10:30 | EC 81                  | Academy of Sciences of the Czech Republic |    |
| 11:00-17:30 | EC81 with DPs (Cont'd) |   | d° |

### ***Monday August 14, 2006***

|             |                                 |  |        |
|-------------|---------------------------------|--|--------|
| 09:00-12:30 | EC 81 (Cont'd)                  |  | DR 241 |
| 14:00-14:45 | National Representative Meeting |  | Club A |
| 15:00-15:45 | Finance Committee Meeting       |  | d°     |
| 16:00-16.45 | Nominating Committee Meeting    |  | d°     |

### ***Tuesday August 15, 2006***

|             |   |  |               |
|-------------|---|--|---------------|
| 09:00:10:30 | EC 81 (Cont'd)  |  | DR 241        |
| 14:00-17.30 | Opening Ceremony followed by the<br>General Assembly, Session 1 |  | Congress Hall |

### ***Wednesday August 23, 2006***

|             |                                 |  |        |
|-------------|---------------------------------|--|--------|
| 09:00-12:30 | EC81 with DPs (Cont'd)          |  | DR 241 |
| 14:00-14:45 | Nominating Committee Meeting    |  | Club A |
| 15:00-15:45 | Finance Committee Meeting       |  | d°     |
| 16:00-16:45 | National Representative Meeting |  | d°     |

### ***Thursday August 24, 2006***

|             |   |  |               |
|-------------|---|--|---------------|
| 14:00-17.30 | General Assembly, Session 2<br>Followed by Closing Ceremony |  | Congress Hall |
|-------------|---|--|---------------|

### ***Friday August 25, 2006***

|             |       |  |        |
|-------------|-------|--|--------|
| 09:00-17:30 | EC 82 |  | DR 241 |
|-------------|-------|--|--------|

**TIME TABLE OF DIVISION, COMMISSION, WORKING GROUP  
& MISCELLANEOUS MEETINGS**

|   |                        |                |
|---|------------------------|----------------|
| <b>D I - FUNDAMENTAL ASTRONOMY</b>  | <b>18 - 1,2</b>        | <b>Club E</b>  |
| &   | <b>23 - 3, 4</b>       | <b>Club H</b>  |
| WG Cartographic Coordinates & Rotational Elements                                   | <b>17 - 3, 4</b>       | <b>DR 225</b>  |
| WG Nomenclature for Fundamental Astronomy (NFA)                                     | <b>16 - 4</b>          | <b>MR 2.1.</b> |
| ICRF  | <b>21 - 4</b>          | <b>Club D</b>  |
| <i>C 04 - Ephemerides</i>   | <b>21 - 4</b>          | <b>Club C</b>  |
| <i>C 07 - Celestial Mechanics &amp; Dynamical Astronomy</i>                         | <b>22 - 1, 2</b>       | <b>Club B</b>  |
| <i>C 08 - Astrometry</i>  | <b>21 - 1,2, 3</b>     | <b>Club D</b>  |
| WG Astrographic Catalogue & Carte du Ciel   | <b>17 - 3, 4</b>       | <b>MR 2.1.</b> |
| <i>C 19 - Rotation of the Earth</i>   | <b>18 - 3, 4</b>       | <b>Club E</b>  |
| <i>C 31 - Time</i>  | <b>21 - 1, 2, 3</b>    | <b>P Hall</b>  |
| <br>  |                        |                |
| <b>D II - SUN &amp; HELIOSPHERE</b>   | <b>21 - 1, 2, 3</b>    | <b>Club E</b>  |
| WG Solar Eclipses   | <b>21 - 4</b>          | <b>Club E</b>  |
| WG International Collaboration on Space Weather                                     | <b>24 - 1, 2</b>       | <b>S Th.</b>   |
| <i>C 10 - Solar Activity</i>  | <b>22 - 3, 4</b>       | <b>DR 225</b>  |
| <i>C 12 - Solar Radiation &amp; Structure</i>                                       | <b>22 - 1, 2</b>       | <b>Club D</b>  |
| <br>  |                        |                |
| <b>D III - PLANETARY SYSTEMS SCIENCES</b>   | <b>18 - 2, 3, 4</b>    | <b>Club B</b>  |
| &   | <b>22 - 3</b>          | <b>Clu C</b>   |
| WG Cartographic Coordinates & Rotational Elements<br>of Planets & Satellites        | <b>17 - 3, 4</b>       | <b>DR 225</b>  |
| Committee on Small Bodies Nomenclature (CSBN)                                       | <b>23 - 3</b>          | <b>Club D</b>  |
| WG Planetary System Nomenclature (WGPSN)  | <b>23 - 1, 2</b>       | <b>Club D</b>  |
| WG Extrasolar Planets (WGESP)   | <b>23 - 4</b>          | <b>Club D</b>  |
| <i>C 15 - Physical Studies of Comets &amp; Minor Planets</i>                        | <b>22 - 1, 2</b>       | <b>Club C</b>  |
| WG Physical Studies of Comets   | <b>18 - 3</b>          | <b>MR 1.1.</b> |
| WG Physical Studies of Minor Planets  | <b>24 - 1, 2</b>       | <b>Club D</b>  |
| <i>C 16 - Physical Study of Planets &amp; Satellites</i>                            | <b>23 - 3</b>          | <b>DR 225</b>  |
| <i>C 20 - Positions &amp; Motions of Minor Planets,<br/>Comets &amp; Satellites</i> | <b>22 - 3, 4</b>       | <b>MR 2.1.</b> |
| WG Natural Satellites   | <b>21 - 4</b>          | <b>MR 2.1.</b> |
| <i>C 21 - Light of the Night Sky</i>  | <b>21 - 3</b>          | <b>MR 2.1.</b> |
| <i>C 22- Meteors, Meteorites &amp; Interplanetary Dust</i>                          | <b>24 - 1, 2</b>       | <b>Club A</b>  |
| <i>C 51- Bioastronomy: Search for Extraterrestrial Life</i>                         | <b>18 - 1</b>          | <b>Club B</b>  |
| <br>  |                        |                |
| <b>D IV - STARS</b>   | <b>21 - 1, 2</b>       | <b>Club C</b>  |
| WG Abundances in Red Giants   | <b>22 - 4</b>          | <b>Club C</b>  |
| WG Active B Stars   | <b>18 - 1, 2</b>       | <b>Club C</b>  |
| WG Ap & Related Stars   | <b>17 - 1, 2, 3, 4</b> | <b>Club C</b>  |
| <i>C 26 - Double &amp; Multiple Stars</i>   | <b>17 - 1, 2, 3</b>    | <b>MR 1.1.</b> |
| <i>C 29 - Stellar Spectra</i>   | <b>16 - 3</b>          | <b>MR 1.1.</b> |
| <i>C 35 - Stellar Constitution</i>  | <b>16 - 1</b>          | <b>Club B</b>  |

TIME TABLE OF DIVISION, COMMISSION, WORKING GROUP

& MISCELLANEOUS MEETINGS

|  |                 |                |
|--|-----------------|----------------|
| <i>C 36 - Theory of Stellar Atmospheres</i>                        | 16 - 2          | Club B         |
| <i>C 45 - Stellar Classification</i>                               | 16 - 3          | Club B         |
| WG Standard Stars  | 16 - 4          | Club B         |
| <b>D V - VARIABLE STARS</b>  | 16 - 2          | Club D         |
| &  | 17 - 1, 2, 3    | Club D         |
| WG Active B Stars  | 18 - 1, 2       | Club C         |
| WG Ap & Related Stars  | 17 - 1, 2, 3, 4 | Club C         |
| <i>C 27 - Variable Stars</i>                                       | 16 - 4          | Club D         |
| <i>C 42 - Close Binary Stars</i>                                   | 16 - 3          | Club D         |
| <b>D VI - INTERSTELLAR MATTER</b>                                  | 23 - 3, 4       | Club C         |
| WG Star Formation  | 23 - 2          | MR 1.1.        |
| <i>C 34 - Interstellar Matter</i>                                  | 23 - 2          | d <sup>o</sup> |
| <b>D VII - GALACTIC SYSTEM</b>                                     | 21 - 1, 2, 3, 4 | Club B         |
| <i>C 37 - Star Clusters &amp; Associations</i>                     | 17 - 4          | MR 1.1.        |
| <b>VIII - GALAXIES &amp; THE UNIVERSE</b>                          | 18 - 1, 2       | Club D         |
| WG Supernovae  | 21 - 1          | DR 225         |
| <i>C 28 Galaxies</i>   | 18 - 3          | Club D         |
| <i>C 47 Cosmology</i>  | 18 - 4          | Club D         |
| <b>D IX - OPTICAL &amp; INFRARED TECHNIQUES</b>                    | 18 - 3          | MR 2.1.        |
| WG Encouraging International Development<br>of Antarctic Astronomy | 17 - 4          | Club E         |
| WG Optical & Infrared Interferometry                               | 21 - 1, 2       | MR 1.1.        |
| <i>C 09 - Instrumentation &amp; Techniques</i>                     | 18 - 1          | MR 1.1.        |
| WG Detectors with  | 18 - 2          | MR 1.1.        |
| WG Sky Surveys   | 18 - 2          | d <sup>o</sup> |
| <i>C 25 - Stellar Photometry &amp; Polarimetry</i>                 | 18 - 2 & 4      | MR 2.1.        |
| WG Infrared Astronomy  | 22 - 3, 4       | Club B         |
| <i>C 30 - Radial Velocities</i>                                    | 18 - 1          | MR 2.1.        |
| WG Radial-Velocity Standard Stars with                             | 21 - 1          | MR 2.1.        |
| WG Stellar Radial Velocity Bibliography with                       | d <sup>o</sup>  | d <sup>o</sup> |
| WG Catalog Orbital Elements of Spectroscopic<br>Binary Systems     | d <sup>o</sup>  | d <sup>o</sup> |
| <b>X - RADIO ASTRONOMY</b>   | 18 - 3, 4       | Club C         |
| WG Encouraging International Development<br>of Antarctic Astronomy | 17 - 4          | Club E         |
| WG Historic Radio Astronomy  | 17 - 1, 2, 3    | Ch. Hall       |
| &  | 23 - 3, 4       | Ch. Hall       |
| WG Astrophysically Important Spectral Lines                        | 18 - 2          | DR 225         |
| IUCAF - Spectrum Management  | 18 - 1          | DR 225         |
| ESO - ALMA   | 24 - 1,2        | DR 225         |

TIME TABLE OF DIVISION, COMMISSION, WORKING GROUP

& MISCELLANEOUS MEETINGS

|   |                        |          |
|---|------------------------|----------|
| <b>D XI - SPACE &amp; HIGH ENERGY ASTROPHYSICS</b>    | <b>17 - 4</b>          | Club D   |
| WG Astronomy from the Moon                            | <b>23 - 3, 4</b>       | MR 1.1.  |
| WG Particle Astrophysics                              | <b>24 - 1, 2</b>       | MR 1.1.  |
| <b>XII - UNION-WIDE ACTIVITIES</b>                    | <b>23 - 1, 2</b>       | Club C   |
| WG Historic Radio Astronomy                           | <b>17 - 1, 2, 3</b>    | Ch. Hall |
| &   | <b>23 - 3, 4</b>       | Ch. Hall |
| WG Communicating Astronomy with the Public            | <b>16 - 1, 2, 3</b>    | MR 2.1.  |
| <b>C 05 - Documentation &amp; Astronomical Data</b>   | <b>23 - 1</b>          | MR 2.1.  |
| WG Astronomical Data                                  | <b>16 - 2, 3, 4</b>    | Club E   |
| WG Libraries  | <b>18 - 4</b>          | DR 225   |
| WG FITS   | <b>17 - 1</b>          | Club B   |
| WG Designations                                       | <b>24 - 1, 2</b>       | MH V     |
| WG Virtual Observatories, Data Centers & Networks     | <b>16 - 1</b>          | Club E   |
| TF Preservation & Digitization of Photographic Plates | <b>17 - 3, 4</b>       | MR 2.1.  |
| <b>C 06 - Astronomical Telegrams</b>                  | <b>16 - 4</b>          | MR 1.1.  |
| <b>C 14 - Atomic &amp; Molecular Data</b>             | <b>17 - 2, 3, 4</b>    | Club B   |
| <b>C 41 - History of Astronomy</b>                    | <b>22 - 1, 2, 3</b>    | Ch. Hall |
| WG Archives   | <b>23 - 1, 2</b>       | Club B   |
| WG Astronomical Chronology                            | <b>22 - 4</b>          | MR 1.1.  |
| WG Historical Instruments                             | <b>23 - 3, 4</b>       | Club B   |
| WG Transits of Venus                                  | <b>17 - 1, 2</b>       | Club E   |
| <b>C 46 - Astronomy Education &amp; Developmen</b>    | <b>16 - 1, 2, 3, 4</b> | Club C   |
| &   | <b>24 - 1, 2</b>       | Club C   |
| <b>C 50 - Protection of Existing</b>                  | <b>23 - 1, 2, 3, 4</b> | MH V     |
| <b>&amp; Potential Observatory Sites</b>              |                        |          |

OTHER SCIENTIFIC MEETINGS ORGANIZED IN CONJUNCTION

WITH THE GENERAL ASSEMBLY

|                             |                      |          |
|-----------------------------|----------------------|----------|
| EAS                         | <b>21 - 3, 4</b>     | MR 1.1.  |
| ESA - Gaia                  | <b>21 - 4, .....</b> | Ch. Hall |
| ESO - ALMA                  | <b>24 - 1, 2</b>     | DR 225   |
| IUCAF - Spectrum Management | <b>18 - 1</b>        | DR 225   |

## IAU EVENTS OF GENERAL INTEREST

### YOUNG-ASTRONOMERS LUNCH-DEBATE

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

Tuesday August 15, 11:00–13:30

Small Hall, Ground Floor of the Congress Centre

*Scientific Organizing Committee:* O. Engvold (IAU ex officio, Norway), M. Gerbaldi (chair, France), J.-P. De Greve (Belgium), E. Guinan (USA), J. Hearnshaw (New Zealand), M. Johnston-Hollitt (Australia), J. Pasachoff (USA), J. Percy (Canada), I. Ribas (Spain), & J. White (USA)

*Chair, Local Organizing Committee:* M. Dovčiak (Czech Republic), R. Goosmann (Germany), T. Pecháček (Czech Republic) & I. Stoklasová (Czech Republic)

For late registration to this event contact the LOC via the mailbox labelled “Young Astronomers Events”.

11:00 *Taking place at threespective tables as labeled at the entrance of the Small Hall*

11:15 Welcome address (IAU President) R.D. Ekers

11:30 Presentation of the Young Astronomers Events M. Gerbaldi

11:45 Practical Information about Young Astronomers Events M. Dovčiak

#### ***Lunch and Debate***

13:10 Concluding address (IAU General Secretary) O. Engvold

13:20 Practical information concerning the reports M. Johnston-Hollitt

13:30 Closure of the Lunch-Debate

Young Astronomers' Events are primarily intended to young astronomers who are enrolled in PhD programs or who have received their Doctorate degrees within 3 years before the General Assembly.

### YOUNG-ASTRONOMERS CONSULTING SERVICE

[http://astro.cas.cz/yae/consulting\\_service.php](http://astro.cas.cz/yae/consulting_service.php)

**Wednesday 16 August, 9:00 through Friday 25 17:30**

Meeting Hall 2.2 on the second floor of the Congress Centre

*Scientific Organizing Committee:* O. Engvold (IAU ex officio, Norway), M. Gerbaldi (chair, France), J.-P. De Greve (Belgium), E. Guinan (USA), J. Hearnshaw (New Zealand), M. Johnston-Hollitt (Australia), J. Pasachoff (USA), J. Percy (Canada), I. Ribas (Spain), & J. White (USA)

*Chair, Local Organizing Committee:* M. Dovciak (Czech Republic), R. Goosmann (Germany), T. Pecháček (Czech Republic), I. Stoklasová (Czech Republic)

## IAU EVENTS OF GENERAL INTEREST

In Meeting Hall 2.2, Young Astronomers may, by arranged appointments, meet with more experienced astronomers to seek advice on their CV, thesis, jobs, etc. during one-to-one discussions.

This facility will be run during all the General Assembly duration.

To arrange an appointment, a questionnaire has to be filled in. This can be done at the Meeting hall 2.2 or directly at the following address:

[https://astro.cas.cz/yae/php/questionary\\_cs.php](https://astro.cas.cz/yae/php/questionary_cs.php)

The list of the Consultants can be viewed at the page :

[https://astro.cas.cz/yae/php/cs\\_consultants.php](https://astro.cas.cz/yae/php/cs_consultants.php)

Young Astronomers' Events are primarily intended to young astronomers who are enrolled in PhD programs or who have received their Doctorate degrees within 3 years before the General Assembly.

### **PETER GRUBER FOUNDATION COSMOLOGY PRIZE WINNER LECTURE**

*Wednesday August 16, 12:45-13:30, Forum Hall*

**"2009 - INTERNATIONAL YEAR OF ASTRONOMY"**

*Friday August 18, 11:00-13:30, Panorama Hall*

The IAU's initiative to have 2009 proclaimed the International Year of Astronomy is awaiting United Nation's endorsement this fall. The UNESCO General Conference recommended in October, 2005, that the proclamation be accepted by the UN while recognizing "that the study of the universe has led to numerous scientific discoveries that have great influence not only on humankind's understanding of the universe but also on the technological, social and economic development of society" and "that astronomy proves to have great implications in the study of science, philosophy, religion and culture"

In preparation of the IAU's programs for this big event we invite participants of this General Assembly to attend this plenary session.

Chair: Ian Robson

- Franco Pacini: Introduction
- Ron Ekers: The decision process
- Dennis Crabtree/Lars Lindberg Christensen: Ideas and suggestions for IAU's role in the 2009 IYA
- TBD: Lessons learned from 2005 Year of Physics
- Claus Madsen: The Universe Awareness project
- Suggestions from the floor and Panel discussion
- Catherine Cesarsky: Summary and conclusion

## IAU EVENTS OF GENERAL INTEREST

### WOMEN IN ASTRONOMY (WAM) LUNCH-DEBATE

*Monday August 21, 11:00-12:30, MR 2.1. & 12:30-14:00, Small Hall*

*Scientific Organizing Committee:* Johannes Andersen (Denmark), Olga Dluzhnevskaya (Russian Federation), Gloria Dubner (Argentina), Andrea Dupree (US), Miller Goss (USA), Anne Green (Australia, Co-Chair), Elizabeth Griffin (Canada), Mary Kontizas (Greece), Sarah Maddison (USA, Co-Chair), Birgitta Nordstrom (Denmark), Francesca Primas (Germany), Sylvia Torres Peimbert (Mexico), Yiping Wang (China, Nanjing) & Shahinaz Yousef (Egypt)

The format of the WAM will be similar to the 2003 meeting, with keynote speakers Pat Knezek of the National Optical Astronomy Observatory and Sunetra Giridhar of the Indian Institute of Astrophysics, followed by break out groups of 10-12 will discuss various issues over lunch and then report back to the group over coffee. The focus will be on the current status of women in astronomy and to recommend future actions that will improve the environment for all astronomers.

### PLANET DEFINITION

*Tuesday August 22, 12:45-13:45, Forum Hall*

This session will allow a presentation of the Executive Committee Recommendation on Planet Definition.

### TIME-TABLE OF IAU EVENTS OF GENERAL INTEREST

|  | Day - Session        | Room              |
|--|----------------------|-------------------|
| Young Astronomers Meeting followed by<br>a Lunch Debate      | 15 - 2<br>15 - lunch | S Hall<br>d°      |
| Peter Gruber Foundation Cosmology Prize Winner Lecture       | 16 - 12:45           | F Hall            |
| Young-Astronomers Consulting Service                         | 16-25                | MH 2.2.           |
| WG 2009 - International Year of Astronomy                    | 18 - 2               | P Hall            |
| WG Women in Astronomy Meeting followed by<br>a Lunch Debate  | 18 - 2<br>18 - lunch | MR 2.1.<br>S Hall |
| WG 2009: The International Year of Astronomy                 | 21 - 2               | P Hall            |
| WG Publishing,<br>jointly with Commission 05 WG on Libraries | 21 - 4               | DR 225            |

## THE XXVI<sup>th</sup> GENERAL ASSEMBLY DAY BY DAY

| <i>Time</i>  | <i>Event</i>   | <i>Room</i>                         |
|--|--|-------------------------------------|
| <b>Sunday, August 13</b>                             |  |                                     |
| <b>09:00-11:00</b>                                   | <b><i>81<sup>st</sup> Executive Committee Meeting</i></b>                                      | <b><i>Academy of Sciences</i></b>   |
| <b>11:00-17:30</b>                                   | <b><i>81<sup>st</sup> Executive Committee Meeting<br/>with current Division Presidents</i></b> | <b><i>of the Czech Republic</i></b> |
| <b>Monday August 14</b>                              |  |                                     |
| <i>Session 1</i>                                     |  |                                     |
| <i>EC</i>  | <i>81<sup>st</sup> Executive Committee Meeting</i>   | <i>DR 241</i>                       |
| S235   | Galaxy Evolution across the Hubble Time  | F Hall                              |
| <i>Session 2</i>                                     |  |                                     |
| <i>EC</i>  | <i>81<sup>st</sup> Executive Committee Meeting</i>   | <i>DR 241</i>                       |
| S235   | Galaxy Evolution across the Hubble Time  | F Hall                              |
| S236   | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                           | P Hall                              |
| <i>Administrative Meetings with National Members</i> |  |                                     |
| <b>14:00-14:45</b>                                   | <b><i>National Representatives</i></b>   | <b><i>Club A</i></b>                |
| <b>15:00-15:45</b>                                   | <b><i>Finance Committee</i></b>  | <b><i>Club A</i></b>                |
| <b>16:00-16:45</b>                                   | <b><i>Nominating Committee</i></b>   | <b><i>Club A</i></b>                |
| <i>Session 3</i>                                     |  |                                     |
| S235   | Galaxy Evolution across the Hubble Time  | F Hall                              |
| S236   | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                           | P Hall                              |
| <b>17:00</b>   | <b><i>Current Commission President Meeting</i></b>   | <b><i>Club A</i></b>                |
| <i>Session 4</i>                                     |  |                                     |
| S235   | Galaxy Evolution across the Hubble Time  | F Hall                              |
| S236   | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                           | P Hall                              |
| S237   | Triggered Star Formation in a Turbulent ISM  | MH 1                                |
| <b>Tuesday August 15</b>                             |  |                                     |
| <i>Session 1</i>                                     |  |                                     |
| <i>EC</i>  | <i>81<sup>st</sup> Executive Committee Meeting</i>   | <i>DR 241</i>                       |
| S235   | Galaxy Evolution across the Hubble Time  | F Hall                              |
| S236   | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                           | P Hall                              |
| S237   | Triggered Star Formation in a Turbulent ISM  | MH 1                                |

THE GENERAL ASSEMBLY DAY BY DAY

*Session 2*

|                    |  |  |
|--------------------|--|--|
| <i>EC</i>          | <i>Young Astronomer meeting</i>  | <i>S Hall</i>  |
| S235               | Galaxy Evolution across the Hubble Time  | F Hall   |
| S236               | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk             | P Hall   |
| S237               | Triggered Star Formation in a Turbulent ISM                                      | MH 1   |
| <i>Lunch</i>       | <i>Young Astronomer lunch debate</i>   | <i>S Hall</i>  |
| <i>14:00-17:30</i> | <i>Opening Ceremony<br/>&amp; 1<sup>st</sup> session of the General Assembly</i> | <i>Congress Hall</i>                                 |
| <i>17:30-19:00</i> | <i>Welcome Cocktail</i>  | <i>Foyer Congress Hall &amp;<br/>Exhibition Area</i> |

**Wednesday August 16**

*Session 1*

|          |  |         |
|----------|--|---------|
| S235     | Galaxy Evolution across the Hubble Time                              | F Hall  |
| S236     | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall  |
| S237     | Triggered Star Formation in a Turbulent ISM                          | MH 1    |
| JD01     | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall  |
| JD02     | On the Present and Future of Pulsar Astronomy                        | MH IV   |
| JD03     | Solar Active Regions and 3D Magnetic Structure                       | Club A  |
| JD04     | The Ultraviolet Universe: Stars from Birth to Death                  | Club H  |
| JD05     | Calibrating the Top of the Stellar M-L Relation                      | MH V    |
| SPS1     | Astronomical Facilities of the Next Decade                           | S Th.   |
| D XII WG | Communicating Astronomy with the Public                              | MR 2.1. |
| C 05 WG  | Virtual Observatories, Data Centers & Networks                       | Club E  |
| C 35     | Stellar Constitution   | Club B  |
| C 46     | Astronomy Education & Development                                    | Club C  |

*Session 2*

|          |  |         |
|----------|--|---------|
| S235     | Galaxy Evolution across the Hubble Time                              | F Hall  |
| S236     | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall  |
| S237     | Triggered Star Formation in a Turbulent ISM                          | MH 1    |
| JD01     | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall  |
| JD02     | On the Present and Future of Pulsar Astronomy                        | MH IV   |
| JD03     | Solar Active Regions and 3D Magnetic Structure                       | Club A  |
| JD04     | The Ultraviolet Universe: Stars from Birth to Death                  | Club H  |
| JD05     | Calibrating the Top of the Stellar M-L Relation                      | MH V    |
| SPS1     | Astronomical Facilities of the Next Decade                           | S Th.   |
| D V      | Variable Stars, Business   | Club D  |
| D XII WG | Communicating Astronomy with the Public                              | MR 2.1. |
| C 05 WG  | Astronomical Data  | Club E  |

THE GENERAL ASSEMBLY DAY BY DAY

|      |                                   |        |
|------|-----------------------------------|--------|
| C36  | Theory of Stellar Atmospheres     | Club B |
| C 46 | Astronomy Education & Development | Club C |

**12:45**      *Peter Gruber Foundation Cosmology Prize Winner Lecture*      **F Hall**

**Session 3**

|          |  |         |
|----------|--|---------|
| S235     | Galaxy Evolution across the Hubble Time                              | F Hall  |
| S236     | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall  |
| S237     | Triggered Star Formation in a Turbulent ISM                          | MH 1    |
| JD01     | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall  |
| JD02     | On the Present and Future of Pulsar Astronomy                        | MH IV   |
| JD03     | Solar Active Regions and 3D Magnetic Structure                       | Club A  |
| JD04     | The Ultraviolet Universe: Stars from Birth to Death                  | Club H  |
| JD05     | Calibrating the Top of the Stellar M-L Relation                      | MH V    |
| SPS1     | Astronomical Facilities of the Next Decade                           | S Th.   |
| D XII WG | Communicating Astronomy with the Public                              | MR 2.1. |
| C 05 WG  | Astronomical Data  | Club E  |
| C 29     | Stellar Spectra  | MR 1.1. |
| C 42     | Close Binary Stars   | Club D  |
| C 45     | Stellar Classification   | Club B  |
| C 46     | Astronomy Education & Development                                    | Club C  |

**Session 4**

|         |  |         |
|---------|--|---------|
| S235    | Galaxy Evolution across the Hubble Time                              | F Hall  |
| S236    | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall  |
| S237    | Triggered Star Formation in a Turbulent ISM                          | MH 1    |
| JD01    | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall  |
| JD02    | On the Present and Future of Pulsar Astronomy                        | MH IV   |
| JD03    | Solar Active Regions and 3D Magnetic Structure                       | Club A  |
| JD04    | The Ultraviolet Universe: Stars from Birth to Death                  | Club H  |
| JD05    | Calibrating the Top of the Stellar M-L Relation                      | MH V    |
| SPS1    | Astronomical Facilities of the Next Decade                           | S Th.   |
| D I WG  | Nomenclature for Fundamental Astronomy                               | MR 2.1. |
| C 05 WG | Astronomical Data  | Club E  |
| C 06    | Astronomical Telegrams   | MR 1.1. |
| C 27    | Variable Stars   | Club D  |
| C 45 WG | Standard Stars   | Club B  |
| C 46    | Astronomy Education & Development                                    | Club C  |

**18:15**      *Invited Discourse, Jill Tarter*      **Congress Hall**

THE GENERAL ASSEMBLY DAY BY DAY

Thursday August 17

*Session 1*

|              |  |          |
|--------------|--|----------|
| S235         | Galaxy Evolution across the Hubble Time                              | F Hall   |
| S236         | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall   |
| S237         | Triggered Star Formation in a Turbulent ISM                          | MH 1     |
| JD01         | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall   |
| JD02         | On the Present and Future of Pulsar Astronomy                        | MH IV    |
| JD03         | Solar Active Regions and 3D Magnetic Structure                       | Club A   |
| JD04         | The Ultraviolet Universe: Stars from Birth to Death                  | Club H   |
| SPS1         | Astronomical Facilities of the Next Decade                           | S Th.    |
| SPS2         | Innovation in Teaching/Learning Astronomy Method                     | MH V     |
| D IV/V WG    | Ap & Related Stars   | Club C   |
| D V/D IV WG  | Ap & Related Stars   | d°       |
| D V          | Variable Stars - Science   | Club D   |
| D X/D XII WG | Historic Radio Astronomy   | Ch. Hall |
| D XII/D X WG | Historic Radio Astronomy   | do       |
| C 05 WG      | FITS   | Club B   |
| C 26         | Double & Multiple Stars  | MR 1.1.  |
| C 41 WG      | Transits of Venus  | Club E   |

*Session 2*

|              |  |          |
|--------------|--|----------|
| S235         | Galaxy Evolution across the Hubble Time                              | F Hall   |
| S236         | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall   |
| S237         | Triggered Star Formation in a Turbulent ISM                          | MH 1     |
| JD01         | Cosmic Particle Acceleration: from Solar System to AGN               | S Hall   |
| JD02         | On the Present and Future of Pulsar Astronomy                        | MH IV    |
| JD03         | Solar Active Regions and 3D Magnetic Structure                       | Club A   |
| JD04         | The Ultraviolet Universe: Stars from Birth to Death                  | Club H   |
| SPS1         | Astronomical Facilities of the Next Decade                           | S Th.    |
| SPS2         | Innovation in Teaching/Learning Astronomy Method                     | MH V     |
| D IV/V WG    | Ap & Related Stars   | Club C   |
| D V/D IV WG  | Ap & Related Stars   | Club C   |
| D V          | Variable Stars - Science   | Club D   |
| D X/D XII WG | Historic Radio Astronomy   | Ch. Hall |
| D XII/D X WG | Historic Radio Astronomy   | d°       |
| C 14         | Atomic & Molecular Data  | Club B   |
| C 26         | Double & Multiple Stars  | MR 1.1.  |
| C 41 WG      | Transits of Venus  | Club E   |

*Session 3*

|      |  |        |
|------|--|--------|
| S235 | Galaxy Evolution across the Hubble Time                              | F Hall |
| S236 | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk | P Hall |

THE GENERAL ASSEMBLY DAY BY DAY

|              |   |          |
|--------------|---|----------|
| S237         | Triggered Star Formation in a Turbulent ISM   | MH 1     |
| JD06         | Neutron Stars and Black Holes in Star Clusters  | S Hall   |
| JD07         | The Universe at $z > 6$   | MH IV    |
| JD08         | Solar and Stellar Activity Cycles   | Club A   |
| JD09         | Supernovae: One Millennium after SN1006   | Club H   |
| SPS2         | Innovation in Teaching/Learning Astronomy Method  | MH V     |
| SPS3a        | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.    |
| D I/III WG   | Cartographic Coordinates & Rotational Elements  | DR 225   |
| D III/I WG   | Cartographic Coordinates & Rotational Elements  | d°       |
| D IV/V WG    | Ap & Related Stars  | Club C   |
| D V/IV WG    | Ap & Related Stars  | d°       |
| V            | Variable Stars - Science  | Club D   |
| D X/D XII WG | Historic Radio Astronomy  | Ch. Hall |
| D XII/D X WG | Historic Radio Astronomy  | d°       |
| C 05 TF      | Preservation & Digitization of<br>Photographic Plates, with                                       | MR 2.1.  |
| C08 WG       | Astrographic Catalogue & Carte du Ciel  | do       |
| C 14         | Atomic & Molecular Data   | Club B   |
| C 26         | Double & Multiple Stars   | MR 1.1.  |

**Session 4**

|            |   |        |
|------------|---|--------|
| S235       | Galaxy Evolution across the Hubble Time   | F Hall |
| S236       | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                              | P Hall |
| S237       | Triggered Star Formation in a Turbulent ISM   | MH 1   |
| JD06       | Neutron Stars and Black Holes in Star Clusters  | S Hall |
| JD07       | The Universe at $z > 6$   | MH IV  |
| JD08       | Solar and Stellar Activity Cycles   | Club A |
| JD09       | Supernovae: One Millennium after SN1006   | Club H |
| SPS2       | Innovation in Teaching/Learning Astronomy Method  | MH V   |
| SPS3a      | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.  |
| D I/III WG | Cartographic Coordinates & Rotational Elements  | DR 225 |
| D III/I WG | Cartographic Coordinates & Rotational Elements  | d°     |
| D IV/V WG  | Ap & Related Stars  | Club C |
| D V/IV WG  | Ap & Related Stars  | d°     |
| D IX/X WG  | Encouraging the International Development<br>of Antarctic Astronomy                               | Club E |
| D X/IX WG  | Encouraging the International Development<br>of Antarctic Astronomy                               | d°     |
| D XI       | Space & High Energy Astrophysics  | Club D |

THE GENERAL ASSEMBLY DAY BY DAY

|         |   |         |
|---------|---|---------|
| C 05 TF | Preservation & Digitization of<br>Photographic Plates, with | MR 2.1. |
| C08 WG  | Astrographic Catalogue & Carte du Ciel                      | d°      |
| C 14    | Atomic & Molecular Data                                     | Club B  |
| C 37    | Star Clusters & Associations                                | MR 1.1. |

**18:15**      *Invited Discourse, Alan Title*      **Congress Hall**

**Friday August 18**

*Session 1*

|             |   |         |
|-------------|---|---------|
| S236        | Near Earth Objects, our Celestial Neighbors:<br>Opportunity and Risk                              | P Hall  |
| S237        | Triggered Star Formation in a Turbulent ISM   | MH 1    |
| JD06        | Neutron Stars and Black Holes in Star Clusters  | S Hall  |
| JD07        | The Universe at $z > 6$   | MH IV   |
| JD08        | Solar and Stellar Activity Cycles   | Club A  |
| JD09        | Supernovae: One Millennium after SN1006   | Club H  |
| SPS2        | Innovation in Teaching/Learning Astronomy Method  | MH V    |
| SPS3a       | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.   |
| D I         | Fundamental Astronomy - Business  | Club E  |
| D IV/D V WG | Active B Stars  | Club C  |
| D V/D IV WG | Active B Stars  | d°      |
| D VIII      | Galaxies & the Universe   | Club D  |
| C 09        | Instrumentation & Techniques  | MR 1.1. |
| C 30        | Radial Velocities   | MR 2.1. |
| C 51        | Bioastronomy: Search for Extraterrestrial Life  | Club B  |
| IUCAF       | Spectrum Management   | DR 225  |

*Session 2*

|             |   |        |
|-------------|---|--------|
| EC WG       | 2009 - International Year of Astronomy  | P Hall |
| S237        | Triggered Star Formation in a Turbulent ISM   | MH 1   |
| JD06        | Neutron Stars and Black Holes in Star Clusters  | S Hall |
| JD07        | The Universe at $z > 6$   | MH IV  |
| JD08        | Solar and Stellar Activity Cycles   | Club A |
| JD09        | Supernovae: One Millennium after SN1006   | Club H |
| SPS2        | Innovation in Teaching/Learning Astronomy Method  | MH V   |
| SPS3a       | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.  |
| D I         | Fundamental Astronomy - Business  | Club E |
| D III       | Planetary Systems Sciences  | Club B |
| D IV/D V WG | Active B Stars  | Club C |
| D V/D IV WG | Active B Stars  | d°     |
| D VIII      | Galaxies & the Universe   | Club D |

THE GENERAL ASSEMBLY DAY BY DAY

|         |  |                  |
|---------|--|------------------|
| D X WG  | Astrophysically Important Spectral Lines | DR 225           |
| C 09 WG | Detectors with                           | MR 1.1           |
| C 09 WG | Sky Surveys                              | d <sup>o</sup> . |
| C 25    | Stellar Photometry & Polarimetry         | MR 2.1.          |

**Session 3**

|         |   |         |
|---------|---|---------|
| JD06    | Neutron Stars and Black Holes in Star Clusters  | S Hall  |
| JD07    | The Universe at $z > 6$   | MH IV   |
| JD08    | Solar and Stellar Activity Cycles   | Club A  |
| JD09    | Supernovae: One Millennium after SN1006   | Club H  |
| SPS2    | Innovation in Teaching/Learning Astronomy Method  | MH V    |
| SPS3a   | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.   |
| D III   | Planetary Systems Sciences  | Club B  |
| D IX    | Optical & Infrared Techniques   | MR 2.1. |
| D X     | Radio Astronomy   | Club C  |
| C 15 WG | Physical Studies of Comets  | MR 1.1. |
| C 19    | Rotation of the Earth   | Club E  |
| C 28    | Galaxies  | Club D  |

**Session 4**

|         |   |         |
|---------|---|---------|
| JD06    | Neutron Stars and Black Holes in Star Clusters  | S Hall  |
| JD07    | The Universe at $z > 6$   | MH IV   |
| JD08    | Solar and Stellar Activity Cycles   | Club A  |
| JD09    | Supernovae: One Millennium after SN1006   | Club H  |
| SPS2    | Innovation in Teaching/Learning Astronomy Method  | MH V    |
| SPS3a   | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.   |
| EC WG   | Publishing, jointly with C 05 WG Libraries  | DR 225  |
| D III   | Planetary Systems Sciences  | Club B  |
| D X     | Radio Astronomy   | Club C  |
| C 05 WG | Libraries, jointly with EC WG Publishing  | DR 225  |
| C 09    | Instrumentation & Techniques  | MR 1.1. |
| C 19    | Rotation of the Earth   | Club E  |
| C 25    | Stellar Photometry & Polarimetry  | MR 2.1. |
| C 47    | Cosmology   | Club D  |

**18:15**                      **Concert**    **Congress Hall**

**Monday August 21**

**Session 1**

|      |  |        |
|------|--|--------|
| JD10 | Progress in Planetary Exploration Missions | MH IV  |
| JD11 | Pre-Solar Grains as Astrophysical Tools    | Club A |
| JD12 | Long Wavelength Astrophysics               | Club H |

THE GENERAL ASSEMBLY DAY BY DAY

|                  |  |                |
|------------------|--|----------------|
| SPS3b            | The Virtual Observatory in Action: New Science, New Technology, and Next Generation Facilities | S Th.          |
| SPS5             | Astronomy for Developing World   | MH V           |
| D II             | Sun & Heliosphere  | Club E         |
| D IV             | Stars  | Club C         |
| D V WG           | Variable & Binary Stars in Galaxies  | DR 225         |
| D VII            | Galactic System - Science & Business   | Club B         |
| D VIII WG        | Supernovae   | DR 225         |
| D IX WG          | Optical & Infrared Interferometry  | MR 1.1.        |
| C 08             | Astrometry - Business  | Club D         |
| C 30 WG          | Radial-Velocity Standard Stars, with   | MR 2.1.        |
| C 30 WG          | Stellar Radial Velocity Bibliography, and  | d°             |
| C 30 WG          | Catalog of Orbital Elements  | d°             |
| C 31             | Time - Business & Science  | P Hall         |
| <b>Session 2</b> |  |                |
| <b>EC WG</b>     | <b>Woment in Astronomy</b>   | <b>MR 2.1.</b> |
| JD10             | Progress in Planetary Exploration Missions   | MH IV          |
| JD11             | Pre-Solar Grains as Astrophysical Tools  | Club A         |
| JD12             | Long Wavelength Astrophysics   | Club H         |
| SPS3b            | The Virtual Observatory in Action: New Science, New Technology, and Next Generation Facilities | S Th.          |
| SPS5             | Astronomy for Developing World   | MH V           |
| D II             | Sun & Heliosphere  | Club E         |
| D IV             | Stars  | Club C         |
| D VII            | Galactic System  | Club B         |
| D IX WG          | Optical & Infrared Interferometry  | MR 1.1.        |
| DX WG            | Astrophysically Important Spectral Lines   | DR 225         |
| C 08             | Astrometry   | Club D         |
| C 31             | Time   | P Hall         |
| <b>Lunch</b>     | <b>EC WG Women in Astronomy - Lunch debate</b>   | <b>S Hall</b>  |
| <b>Session 3</b> |  |                |
| S238             | Black Holes: from Stars to Galaxies - across the Range of Masses                               | F Hall         |
| JD10             | Progress in Planetary Exploration Missions   | MH IV          |
| JD11             | Pre-Solar Grains as Astrophysical Tools  | Club A         |
| JD12             | Long Wavelength Astrophysics   | Club H         |
| SPS3b            | The Virtual Observatory in Action: New Science, New Technology, and Next Generation Facilities | S Th.          |
| SPS5             | Astronomy for Developing World   | MH V           |
| D II             | Sun & Heliosphere  | Club E         |
| D VII            | Galactic System - Science  | Club B         |
| C 08             | Astrometry - Science   | Club D         |

THE GENERAL ASSEMBLY DAY BY DAY

|      |                        |         |
|------|------------------------|---------|
| C 21 | Light of the Night Sky | MR 2.1. |
| C 31 | Time - Science         | P Hall  |
| EAS  |                        | MR 1.1. |

**Session 4**

|         |   |          |
|---------|---|----------|
| S238    | Black Holes: from Stars to Galaxies -<br>across the Range of Masses                               | F Hall   |
| S239    | Convection in Astrophysics  | P Hall   |
| JD10    | Progress in Planetary Exploration Missions  | MH IV    |
| JD11    | Pre-Solar Grains as Astrophysical Tools   | Club A   |
| JD12    | Long Wavelength Astrophysics  | Club H   |
| SPS3b   | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.    |
| SPS5    | Astronomy for Developing World  | MH V     |
| D I     | Session on ICRF   | Club D   |
| D II WG | Solar Eclipses  | Club E   |
| D VII   | Galactic System - Science   | Club B   |
| C 04    | Ephemerides   | Club C   |
| C 20 WG | Natural Satellites  | MR 2.1.  |
| EAS     |   | MR 1.1.  |
| ESA     | Gaia  | Ch. Hall |

**18:15 Invited Discourse, Shuang Nan Zhang**

**Congress Hall**

**Tuesday August 22**

**Session 1**

|       |   |        |
|-------|---|--------|
| S238  | Black Holes: from Stars to Galaxies -<br>across the Range of Masses                               | F Hall |
| S239  | Convection in Astrophysics  | P Hall |
| S240  | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                          | MH I   |
| JD10  | Progress in Planetary Exploration Missions  | MH IV  |
| JD13  | Exploiting Large Surveys for Galactic Astronomy   | Club A |
| JD15  | New Cosmology: Results from the Spitzer Space Telescope   | S Hall |
| JD16  | Nomenclature, Precession and New Models<br>in Fundamental Astronomy                               | Club H |
| PS3b  | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.  |
| SPS4b | Hot Topic   | Club E |
| SPS5  | Astronomy for Developing World  | MH V   |
| C 07  | Celestial Mechanics & Dynamical Astronomy   | Club B |
| C 12  | Solar Radiation & Structure   | Club D |

THE GENERAL ASSEMBLY DAY BY DAY

|                     |   |                      |
|---------------------|---|----------------------|
| C 15                | Physical Studies of Comets<br>& Minor Planets - Business  | Club C               |
| C 41                | History of Astronomy  | Ch. Hall             |
| <i>Session 2</i>    |   |                      |
| S238                | Black Holes: from Stars to Galaxies -<br>across the Range of Masses                               | F Hall               |
| S239                | Convection in Astrophysics  | P Hall               |
| S240                | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                          | MH I                 |
| JD10                | Progress in Planetary Exploration Missions  | MH IV                |
| JD13                | Exploiting Large Surveys for Galactic Astronomy   | Club A               |
| JD15                | New Cosmology: Results from the Spitzer Space Telescope   | S Hall               |
| JD16                | Nomenclature, Precession and New Models<br>in Fundamental Astronomy                               | Club H               |
| PS3b                | The Virtual Observatory in Action: New Science,<br>New Technology, and Next Generation Facilities | S Th.                |
| SPS4b               | Hot Topic   | Club E               |
| SPS5                | Astronomy for Developing World  | MH V                 |
| C 07                | Celestial Mechanics & Dynamical Astronomy   | Club B               |
| C 12                | Solar Radiation & Structure   | Club D               |
| C 15                | Physical Studies of Comets<br>& Minor Planets - Business  | Club C               |
| C 41                | History of Astronomy  | Ch. Hall             |
| <b>12:45- 13:45</b> | <b><i>Planet Definition information meeting</i></b>   | <b><i>F Hall</i></b> |
| <i>Session 3</i>    |   |                      |
| S238                | Black Holes: from Stars to Galaxies -<br>across the Range of Masses                               | F Hall               |
| S239                | Convection in Astrophysics  | P Hall               |
| S240                | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                          | MH I                 |
| JD13                | Exploiting Large Surveys for Galactic Astronomy   | Club A               |
| JD14                | Modelling Dense Stellar Systems   | MH IV                |
| JD15                | New Cosmology: Results from the Spitzer Space Telescope   | S Hall               |
| JD16                | Nomenclature, Precession and New Models<br>in Fundamental Astronomy                               | Club H               |
| SPS5                | Astronomy for Developing World  | MH V                 |
| SPS6                | Astronomical Data Management  | S Th.                |
| SPS7                | Astronomy in Antarctica   | Club E               |
| D III               | Planetary Systems Sciences  | Club C               |
| C 10                | Solar Activity  | DR 225               |
| C 20                | Positions & Motions of Minor Planets,<br>Comets & Satellites                                      | MR 2.1.              |

THE GENERAL ASSEMBLY DAY BY DAY

|                  |  |                      |
|------------------|--|----------------------|
| C 25 WG          | Infrared Astronomy   | Club B               |
| C 41             | History of Astronomy - Business  | Ch. Hall             |
| <b>Session 4</b> |  |                      |
| S238             | Black Holes: from Stars to Galaxies -<br>across the Range of Masses      | F Hall               |
| S239             | Convection in Astrophysics   | P Hall               |
| S240             | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics | MH I                 |
| JD13             | Exploiting Large Surveys for Galactic Astronomy                          | Club A               |
| JD14             | Modelling Dense Stellar Systems  | MH IV                |
| JD15             | New Cosmology: Results from the Spitzer Space Telescope                  | S Hall               |
| JD16             | Nomenclature, Precession and New Models<br>in Fundamental Astronomy      | Club H               |
| SPS5             | Astronomy for Developing World   | MH V                 |
| SPS6             | Astronomical Data Management   | S Th.                |
| SPS7             | Astronomy in Antarctica  | Club E               |
| D IV WG          | Abundances in Red Giants   | Club C               |
| C 10             | Solar Activity   | DR 225               |
| C 20             | Positions & Motions of Minor Planets,<br>Comets & Satellites             | MR 2.1.              |
| C 25 WG          | Infrared Astronomy<br>of Spectroscopic Binary Systems                    | Club B               |
| C 41 WG          | Astronomical Chronology  | MR 1.1.              |
| 18.15            | <i>Invited Discourse, Reinhard Genzel</i>                                | <i>Congress Hall</i> |

**Wednesday August 23**

**Session 1**

|          |  |        |
|----------|--|--------|
| EC       | 81 <sup>st</sup> Executive Committee Meeting                                     | DR 241 |
| S238     | Black Holes: from Stars to Galaxies -<br>across the Range of Masses              | F Hall |
| S239     | Convection in Astrophysics   | P Hall |
| S240     | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics         | MH I   |
| JD13     | Exploiting Large Surveys for Galactic Astronomy                                  | Club A |
| JD14     | Modelling Dense Stellar Systems  | MH IV  |
| JD15     | New Cosmology: Results from the Spitzer Space Telescope                          | S Hall |
| JD16     | Nomenclature, Precession and New Models<br>in Fundamental Astronomy              | Club H |
| JD17     | Highlights of recent progress in the seismology<br>of the Sun and sun-like stars | S Th.  |
| SPS7     | Astronomy in Antarctica  | Club E |
| D III WG | Planetary System Nomenclature (WGPSN)  | Club D |

THE GENERAL ASSEMBLY DAY BY DAY

|         |  |         |
|---------|--|---------|
| D XII   | Union-Wide Activities                                | Club C  |
| C 05    | Documentation & Astronomical Data                    | MR 2.1. |
| C 41 WG | Archives   | Club B  |
| C 50    | Protection of Existing & Potential Observatory Sites | MH V    |

**Session 2**

|         |  |         |
|---------|--|---------|
| S238    | Black Holes: from Stars to Galaxies -<br>across the Range of Masses              | F Hall  |
| S239    | Convection in Astrophysics   | P Hall  |
| S240    | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics         | MH I    |
| JD13    | Exploiting Large Surveys for Galactic Astronomy                                  | Club A  |
| JD14    | Modelling Dense Stellar Systems  | MH IV   |
| JD15    | New Cosmology: Results from the Spitzer Space Telescope                          | S Hall  |
| JD16    | Nomenclature, Precession and New Models<br>in Fundamental Astronomy              | Club H  |
| JD17    | Highlights of recent progress in the seismology<br>of the Sun and sun-like stars | S Th.   |
| SPS7    | Astronomy in Antarctica  | Club E  |
| D III   | WGPSN  | Club D  |
| D XII   | Union-Wide Activities  | Club C  |
| D VI WG | Star Formation, with   | MR 1.1. |
| C 34    | Interstellar Matter  | d°      |
| C 41 WG | Archives   | Club B  |
| C 50    | Protection of Existing & Potential Observatory Sites                             | MH V    |

***Administrative Meetings with National Members***

|                    |  |                      |
|--------------------|--|----------------------|
| <b>14:00-14:45</b> | <b><i>Nominating Committee</i></b>                 | <b><i>Club A</i></b> |
| <b>15:00-15:45</b> | <b><i>Finance Committee</i></b>                    | <b><i>Club A</i></b> |
| <b>16:00-16:45</b> | <b><i>National Representatives</i></b>             | <b><i>Club A</i></b> |
| <b>17:00</b>       | <b><i>Current Commission President Meeting</i></b> | <b><i>Club A</i></b> |

**Session 3**

|             |  |        |
|-------------|--|--------|
| S238        | Black Holes: from Stars to Galaxies -<br>across the Range of Masses              | F Hall |
| S239        | Convection in Astrophysics   | P Hall |
| S240        | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics         | MH I   |
| JD14        | Modelling Dense Stellar Systems  | MH IV  |
| JD17        | Highlights of recent progress in the seismology<br>of the Sun and sun-like stars | S Th.  |
| SPS7        | Astronomy in Antarctica  | Club E |
| D I         | Science  | Club H |
| D III Cttee | Committee on Small Body Nomenclature (CSBN)                                      | Club D |
| D VI        | Interstellar Matter  | Club C |

THE GENERAL ASSEMBLY DAY BY DAY

|              |  |          |
|--------------|--|----------|
| D X/D XII WG | Historic Radio Astronomy                             | Ch. Hall |
| D XI WG      | Astronomy from the Moon                              | MR 1.1.  |
| D XII/D X WG | Historic Radio Astronomy                             | Ch. Hall |
| C 41 WG      | Historical Instruments                               | Club B   |
| C 16         | Physical Study of Planets & Satellites               | DR 225   |
| C 50         | Protection of Existing & Potential Observatory Sites | MH V     |

**Session 4**

|              |  |          |
|--------------|--|----------|
| S238         | Black Holes: from Stars to Galaxies -<br>across the Range of Masses              | F Hall   |
| S239         | Convection in Astrophysics   | P Hall   |
| S240         | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics         | MH I     |
| JD14         | Modelling Dense Stellar Systems  | MH IV    |
| JD17         | Highlights of recent progress in the seismology<br>of the Sun and sun-like stars | S Th.    |
| SPS7         | Astronomy in Antarctica  | Club E   |
| D I          | Science  | Club H   |
| D VI         | Interstellar Matter  | Club C   |
| D VI WG      | Star Formation   | MR 2.1.  |
| D III WG     | Extrasolar Planets (WGESP)   | Club D   |
| D X/D XII WG | Historic Radio Astronomy   | Ch. Hall |
| D XI WG      | Astronomy from the Moon  | MR 1.1.  |
| D XII/D X WG | Historic Radio Astronomy   | Ch. Hall |
| C 41 WG      | Historical Instruments   | Club B   |
| C 50         | Protection of Existing & Potential Observatory Sites                             | MH V     |

**17:00**      *Incoming Commission President Meeting*      **Club A**

**20:00**      *Farewell Reception*      *Industrial Palace/  
Area of Prague Exhibition Grounds*

**Thursday August 24**

**Session 1**

|         |  |         |
|---------|--|---------|
| S238    | Black Holes: from Stars to Galaxies -<br>across the Range of Masses      | F Hall  |
| S239    | Convection in Astrophysics   | P Hall  |
| S240    | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics | MH I    |
| D II WG | International Collaboration on Space Weather                             | S Th.   |
| D XI WG | Particle Astrophysics - Science  | MR 1.1. |
| C 05 WG | Designations   | MH V    |
| C 15 WG | Physical Studies of Minor Planets - Science                              | Club D  |
| C 22    | Meteors, Meteorites<br>& Interplanetary Dust - Science                   | Club A  |

THE GENERAL ASSEMBLY DAY BY DAY

|                    |   |  |
|--------------------|---|--|
| C 46               | Astronomy Education & Development - Business                                    | Club C                                 |
| ESO                | ALMA  | DR 225                                 |
| <b>Session 2</b>   |   |  |
| S238               | Black Holes: from Stars to Galaxies –<br>across the Range of Masses             | F Hall                                 |
| S239               | Convection in Astrophysics  | P Hall                                 |
| S240               | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics        | MH I                                   |
| EC                 | 81 <sup>st</sup> Executive Committee Meeting                                    | DR 241                                 |
| S238               | Black Holes: from Stars to Galaxies –<br>across the Range of Masses             | MH 1                                   |
| S239               | Convection in Astrophysics  | P Hall                                 |
| S240               | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics        | F Hall                                 |
| D II WG            | International Collaboration on Space Weather                                    | S Th.                                  |
| D XI WG            | Particle Astrophysics   | MR 1.1.                                |
| C 05 WG            | Designations  | MH V                                   |
| C 15 WG            | Physical Studies of Minor Planets – Science                                     | Club D                                 |
| C 22               | Meteors, Meteorites<br>& Interplanetary Dust - Science                          | Club A                                 |
| C 46               | Astronomy Education & Development - Business                                    | Club C                                 |
| ESO                | ALMA  | DR 225                                 |
| <b>14:00-17:30</b> | <b>2<sup>nd</sup> session of the General Assembly<br/>&amp; Closing Session</b> | <b>Congress Hall<br/>Congress Hall</b> |

**Friday August 25**

|                  |   |               |
|------------------|---|---------------|
| <b>Session 1</b> |   |               |
| <b>EC</b>        | <b>82<sup>nd</sup> Executive Committee Meeting,<br/>with incoming Division Presidents</b> | <b>DR 241</b> |
| S238             | Black Holes: from Stars to Galaxies –<br>across the Range of Masses                       | F Hall        |
| S239             | Convection in Astrophysics  | P Hall        |
| S240             | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                  | MH I          |
| <b>Session 2</b> |   |               |
| <b>EC</b>        | <b>82<sup>nd</sup> Executive Committee Meeting,<br/>with incoming Division Presidents</b> | <b>DR 241</b> |
| S238             | Black Holes: from Stars to Galaxies –<br>across the Range of Masses                       | F Hall        |
| S239             | Convection in Astrophysics  | P Hall        |
| S240             | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                  | MH I          |

THE GENERAL ASSEMBLY DAY BY DAY

**Session 3**

|           |  |                      |
|-----------|--|----------------------|
| <b>EC</b> | <b><i>82<sup>nd</sup> Executive Committee Meeting,<br/>with incoming Division Presidents</i></b> | <b><i>DR 241</i></b> |
| S239      | Convection in Astrophysics   | P Hall               |
| S240      | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                         | MH I                 |

**Session 4**

|           |  |                      |
|-----------|--|----------------------|
| <b>EC</b> | <b><i>82<sup>nd</sup> Executive Committee Meeting,<br/>with incoming Division Presidents</i></b> | <b><i>DR 241</i></b> |
| S240      | Binary Stars as Critical Tools and Tests in<br>Contemporary Astrophysics                         | MH I                 |

# SCIENTIFIC PROGRAM

## PROGRAM OVERVIEW

### INVITED DISCOURSES, Congress Hall, 18:15

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|------|---|------------------------|
| ID 1 | Jill Tarter<br>The evolution of life in the Universe  | <i>August 16, 2006</i> |
| ID 2 | Alan Title<br>The magnetic field and its effects on the solar atmosphere as observed at high resolution                               | <i>August 17, 2006</i> |
| ID 3 | Shuang Nan Zhang<br>Similar phenomena at different scales: black holes, sun, supernovae, galaxies and galaxy clusters                 | <i>August 21, 2006</i> |
| ID 4 | Reinhard Genzel<br>The power of new experimental techniques in astronomy: Zooming in on the black hole in the center of the Milky Way | <i>August 22, 2006</i> |

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| S 237 | Triggered Star Formation in a Turbulent ISM .....                          | 57 |
| S 238 | Black Holes: from Stars to Galaxies: .....<br>across the Range of Masses   | 61 |
| S 239 | Convection in Astrophysics .....   | 66 |
| S 240 | Binary Stars as Critical Tools and Tests .....                             | 70 |
|       | in Contemporary Astrophysics   |    |

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| JD 02 | Pulsar Emission and Related Phenomena .....                  | 76 |
| JD 03 | Solar Active Regions and 3D Magnetic Structure .....         | 77 |
| JD 04 | The Ultraviolet Universe: Stars from Birth to Death .....    | 78 |
| JD 05 | Calibrating the Top of the Stellar M-L Relation .....        | 80 |
| JD 06 | Neutron Stars and Black Holes in Star Clusters .....         | 81 |
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## PROGRAM OVERVIEW

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| SPS 5      | Astronomy for the Developing World .....                | 114 |
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## SYMPOSIA

### IAU Symposium 235

#### GALAXY EVOLUTION ACROSS THE HUBBLE TIME

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

*From Monday 14, 09:00 through Thursday August 17, 17:30, Forum Hall*

**Scientific Organizing Committee:** R. Abraham (Canada), R.J. Butta (USA), C.J. Cesarsky (IAU, ex officio), F. Combes (France, Co-Chair), M. Dickinson (USA), M. A. Dopita (Australia), M. Franx (The Netherlands), K.C. Freeman (Australia), U. Fritze von Alvensleben (Germany), M. Fukugita (Japan), G. Hensler (Austria), S.J. Lilly (Switzerland), J. Palous (Czech Republic, Co-Chair), I. Smail (UK) & R. Terlevich (Mexico)

*Monday, August 14*

#### **Session I. Galaxy Building Blocks I**

- 09:00 Galaxy evolution as a function of redshift: *(Invited)* N. Vogt  
disentangling galaxy evolution and selection biases
- 09:25 The Tully-Fischer relation and its evolution *(Invited)* A. Aragon-Salamanca  
with redshift and environment
- 09:50 Spheroids scaling relation over cosmic time *(Invited)* T. Treu
- 10:15 Did bulges form first and disks later? S. Driver
- 10:30 *Coffee*

#### **Session II. Galaxy Building Blocks II**

- 11:00 Secular evolution in galaxies *(Invited)* F. Combes
- 11:20 Building a galactic bulge *(Invited)* D. Pfenniger
- 11:40 Building a galactic disk *(Invited)* I. Schlosman
- 12:00 Building a galactic disk: insights from M33 D. Block
- 12:20 Bulge-to-total mass ratios for the galaxies in  
the Hubble sequence E. Laurikainen
- 12:35 *Lunch*

#### **Session III. Galaxy Building Blocks III**

- 14:00 Spheroids ages, kinematics and BH-relation *(Invited)* E. Emsellem
- 14:20 The relation between galaxy properties and *(Invited)* F. van den Bosch  
dark matter halo
- 14:45 On star formation and the non-existence of dark galaxies E. Taylor
- 15:55 From nuclear clusters to halo globulars: *(Invited)* R. de Grijs  
starclusters as basic galactic building blocks
- 15:15 Evolution of Galaxies' Internal Kinematics and the Tully-Fisher B. Weiner
- 15:30 *Coffee*

**Session IV. Galaxy Building Blocks IV**

- 16:00 Population models (Invited) G. Gilmore  
 16:20 Stellar population models (Invited) C. Maraston  
 16:40 Age-metallicity relation in dwarfs (Invited) E. Skillman  
 17:00 Are the most metal-poor galaxies young? (Invited) D. Kunth  
 17:20 IZw18, or the picture of Dorian Gray: M. Tosi  
 the more you watch it, the older it gets

*Tuesday, August 15*

**Session V. Environment and Interactions I**

- 09:00 Galaxy formation and transformation (Invited) B. Moore  
 by environmental and secular processes  
 09:25 The influence of intergalactic gas on galaxy (Invited) B. Vollmer  
 evolution in the local Universe  
 09:50 Galaxy evolution in compact and (Invited) C. Mendes de Oliveira  
 fossil groups  
 10:15 The ACS IDT investigation of the evolution of H. Ford  
 galaxies and clusters of galaxies from  $z \sim 0.2$  to  $z \sim 7$   
 10:30 *Coffee*

**Session VI. Environment and Interactions II**

- 11:00 The influence of intergalactic gas on galaxy evolution (Invited) J. Kenney  
 11:20 Galaxy evolution and environment: (Invited) A. Zabludoff  
 the critical role of poor groups  
 11:40 New results from the DEEP2 galaxy redshift survey M. Cooper  
 11:55 Galaxy evolution in clusters T. Kodama  
 12:10 Formation and evolution of nucleated galaxies K. Bekki

*Wednesday, August 16*

**Session VII. Environment and Interactions III**

- 09:00 The structure of galaxies at faint light levels (Invited) A. Ferguson  
 09:25 Infrared properties of nearby interacting (Invited) V. Charmandaris  
 galaxies: from spirals to ULIRGs  
 09:50 The dynamical evolution of mergers (Invited) L. Tacconi  
 in the Local Universe  
 10:15 Secular evolution and the morphological transformation X. Zhang  
 of cluster and field galaxies  
 10:30 *Coffee*

**Session VIII. SF Processes and Feedback I**

- 11:00 Quiescent star formation (Invited) M. Dopita  
 11:25 Star-gas cycle in galaxies J. Palous  
 11:40 Simulations of cosmic enrichment: hypernova feedback C. Kobayashi  
 galactic winds, and mass-metallicity relations  
 11:55 Neutral gas and metals from  $z = 4.0$  to  $z = 0.5$  C. Peroux  
 12:10 Chemically consistent evolutionary synthesis U. Fritze  
 modelling of galaxies  
 12:30 Lunch

**Session IX. SF Processes and Feedback II**

- 14:00 The role of luminous infrared galaxies (Invited) C. Cesarsky  
 in galaxy evolution  
 14:25 Starburst feedback C. Martin  
 14:40 Starbursts (Invited) R. Terlevich  
 15:05 Probing galaxy evolution with GALEX UV survey (Invited) C. Martin  
 15:30 Coffee

**Session X. SF Processes and Feedback III**

- 16:00 Evolution of rest-frame optical and infrared colors (Invited) A. van der Wel  
 and M/L of early-type galaxies out to  $z = 1$   
 16:25 Feedback from SF (Invited) G. Hensler  
 16:50 Mutual feedback between star formation and (Invited) G. L. Granato  
 nuclear activity  
 17:15 Gaseous haloes: linking galaxies to the IGM F. Fraternali  
 18:15 *Invited Discourse, Jill Tarter* Congress Hall

Thursday, August 17

**Session XI. The Early Universe I**

- 09:00 The star formation history and stellar assembly (Invited) C. Papovich  
 of high redshift galaxies  
 09:25 The morphological type evolution (Invited) R. Abraham  
 09:50 From mergers to spheroids: the cosmic and (Invited) A. Cimatti  
 morphological evolution of early-type galaxies  
 10:15 CATS: Center for Adaptive Optics Treasury Survey of D. Koo  
 distant galaxies, supernovae, and active galactic nuclei  
 10:30 Coffee

**Session XII. *The Early Universe II***

- 11:00 First galaxies and AGN (Invited) F. Walter  
 11:20 Properties of massive galaxies at  $z > 2$  (Invited) M. Franx  
 11:40 Galaxy formation in protoclusters at high redshift (Invited) A. Shapley  
 12:00 An infrared study of Lyman break galaxies in the Spitzer first H. Shim  
 12:15 The Spitzer-COSMOS survey of the infrared Universe D. B. Sanders  
 12:30 *Lunch*

**Session XIII. *The Early Universe III***

- 14:00 Cosmological formation of galaxy disks (Invited) H. Mo  
 14:25 Cosmic web – simulations (Invited) M. Steinmetz  
 14:50 Massive and old galaxies at  $z > 5$  (Invited) T. Wilkind  
 15:10 Galaxies at  $z > 6$ : evidence for substantial changes G. Illingworth &  
 in luminous galaxies in the 200 Myrs from  $z \sim 7$  to  $z \sim 6$  R. Bouwens  
 15:30 *Coffee*

**Session XIV. *The Early Universe IV***

- 16:00 Observational constraints of galaxy formation (Invited) M. Dickinson  
 16:20 Clumpy galaxies in the early universe (Invited) D. Elmegreen  
 16:40 Galaxy interactions and mergers at high redshift (Invited) Ch. Conselice  
 17:00 The formation of dwarf galaxies and small-scale problems of CDM (Invited) O. Gnedin  
 17:20 Downsizing from the fossil record: ages and M. Hudson  
 metallicities of red galaxies and their dependence  
 on mass and on environment

**Closing Remarks**

- 18:15 *Invited Discourse, Alan Title* *Congress Hall*

## IAU Symposium 236

### NEAR EARTH OBJECTS, OUR CELESTIAL NEIGHBORS:

#### OPPORTUNITY AND RISK

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

*From Monday 14, 11:00 through Friday August 18, 10:30, Panorama Hall*

**Scientific Organizing Committee:** G.J. Consolmagno (Vatican City State), S. Isobe (Japan), Z. Knezevic (Republic of Serbia), I. Mann (Germany), A. Milani (Italy, co-Chair), D. Morrison (USA), P. Pravec (Czech Republic), H. Rickman (IAU, ex officio), H. Scholl (France), T.B. Spahr (USA), E.F. Tedesco (USA), G.B. Valsecchi (Italy, co-Chair), D. Vokrouhlicky (Czech Republic, co-Chair), I.P. Williams (UK), D.K. Yeomans (USA) & J. Zhu (China, Nanjing)

*Monday, August 14*

#### **Session I. Transport from source populations**

- 11:00 Introductory remarks G.B. Valsecchi  
11:15 Transport from TNOs to NEOs (Invited) H. Levison  
11:45 The delivery of meteorites from the Main Belt to Earth (Invited) W.F. Bottke  
12:15 Source Populations of Near-Earth Comets V.V. Emel'yanenko  
12:30 *Lunch*

#### **Session II. Population models**

- 14:00 Asteroid Population Models (Invited) A. Morbidelli  
14:30 Mutual Geometry of Confocal Keplerian Orbits: (Invited) G.F. Gronchi  
Uncertainty of the MOID and Search for Virtual PHAs  
15:00 From Where In The Sky Do They Come? G. Tancredi  
15:15 Occultation of X-rays from Scorpius X-1 by Small H.-K. Chang  
Trans-Neptunian Objects  
15:30 *Coffee*

#### **Session III. Rotation and non-gravitational forces**

- 16:00 Collisional evolution of rotation (Invited) J. Burns  
16:30 The YORP effect (Invited) D. Nesvorny  
17:00 A New Algorithm of the Recurrent Power Series A.S. Saad  
Method for the Non-gravitational Motion of Comets

#### **Shapes and internal structure**

- 17:15 Physical Models of NEAs From Sparse Photometric Data J. Durech  
17:30 Poster Session I

Tuesday, August 15

**Session IV. Shapes and internal structure II (Cont'd)**

- 9:00 Radar Reconnaissance of Near-Earth Asteroids (Invited) S. Ostro  
 9:30 Collision and Impact Simulations Including Porosity (Invited) W. Benz  
 10:00 Radar Images of Asteroid (100085) 1992 UY4 L. Benner  
 10:15 Collisional and Tidal Disruptions of Small Solid Bodies: P. Michel  
 Influence of The Internal Structure and Implications  
 10:30 *Coffee*

**Session V. Surfaces, composition**

- 11:00 Asteroid-Comet-Meteorite Connections for NEOs (Invited) R. P. Binzel  
 11:30 Comet-asteroid transition objects (Invited) J. Licandro  
 12:00 Space Weathering and Tidal Effects among S. Marchi  
 Near-Earth Objects  
 12:15 Near-Earth Asteroids as Principal Impactors of the M. Di Martino  
 Earth: Physical Properties and Sources of Origin

Wednesday, August 16

**Session VI. Rotation, observations**

- 09:00 NEA Rotations and Binaries (Invited) P. Pravec  
 09:30 Inverse Problems of NEO Photometry: (Invited) M. Kaasalainen  
 Imaging the NEO Population  
 10:00 On the rotation of asteroid (99942) Apophis M.A. Smirnov  
 10:15 Observations of binary NEOs at the Wise Observatory N. Brosch  
 10:30 *Coffee*

**Session VII. Binaries**

- 11:00 Forming NEA Binaries: Tidal Disruption (Invited) D.C. Richardson  
 may not be enough  
 11:30 The Dynamics and Evolution of NEO Binary (Invited) D.J. Scheeres  
 Asteroids  
 12:00 Hermes as an Exceptional Case Among Binary J.L. Margot  
 Near-Earth Asteroids  
 12:15 Earth's 2006 Encounter with Comet Z. Sekanina  
 73P/Schwassmann-Wachmann: Products  
 of Nucleus Fragmentation Seen in Closeup  
 12:30 *Lunch*

**Session VIII. Current and future surveys**

- 14:00 Current NEO surveys (Invited) S. Larson  
 14:30 The Next Decade of Solar System Discovery with Pan-STARRS (Invited) R. Jedicke  
 15:00 Spacewatch Preparations for the Era of Deep All-Sky Surveys R.S. McMillan  
 15:15 LSST: Comprehensive NEO Detection, Characterization, and Orbits Z. Ivezić  
 15:30 *Coffee*

**Session IX. Databases and Data Mining**

- 16:00 Near-Earth Object Observations and Observation Handling: Present and Future (Invited) T.B. Spahr  
 16:30 Single and Multiple Solutions Algorithms to Scan Asteroid Databases for Identifications (Invited) M.E. Sansaturio  
 17:00 Near-Earth-Object Identification over Apparitions M. Granvik  
 17:15 Low Solar Elongations For NEOs: A Deep Sky Test and its Implications for Survey Strategies A. Boattini  
 17:30 Poster Session II

18:15 *Invited Discourse, Jill Tarter* *Congress Hall*

*Thursday, August 17*

**Session X. Current missions to NEOs**

- 9:00 The Nature of Asteroid Itokawa Revealed by Hayabusa (Invited) M. Yoshikawa  
 9:30 Deep Impact and NEOs (Invited) M.F. A'Hearn  
 10:00 NEO Sample Return mission M.A. Barucci  
 10:15 NEOCam: The Near-Earth Object Camera A.K. Mainzer  
 10:30 *Coffee*

**Session XI. Current missions to NEOs (Cont'd)**

- 11:00 Interior Structure of Potentially Hazardous Asteroid Itokawa by the Hayabusa Mission S. Abe  
 11:15 Keplerian Consequences of an Impact on an Asteroid and their Relevance for Mid-Term Asteroid Deflection Strategies A. Rathke

***Impact rate and risk estimates***

- 11:30 Impact rate and risk (Invited) A.W. Harris  
 12:00 The Cometary Impactor Flux at the Earth P.R. Weissman  
 12:15 Photometric Calibration of LINEAR and NEA population Statistics J. S. Stuart  
 12:30 *Lunch*

**Session XII. *The meteor/asteroid impact transition***

- 14:00 The Diversity of NEO Fireballs: Detection, Location and Analysis Techniques (Invited) D.O. Revelle  
 14:30 Parent bodies of meteoroids (Invited) J. Borovicka  
 15:00 (Mostly) Dormant Comets In The NEO Population and the Meteoroid Streams that they Crumble into P. Jenniskens  
 15:15 Automation of the Czech Part of the European Fireball Network: Equipment, Methods and First Results P. Spurny  
 15:30 *Coffee*

**Session XIII. *Impact Monitoring***

- 16:00 Asteroid Impact Prediction (Invited) S.R. Chesley  
 16:30 Collision solutions in orbital elements space G.B. Valsecchi  
 16:45 Albedo and Size Determination of (99942) Apophis from Polarimetric Observations A. Cellino  
 17:00 Unveiling the Nature of 2004 VD17 F. De Luise  
 17:15 Physical and Dynamical Properties of Near-Earth Objects from Nordic NEON K. Muinonen  
 17:30 **Poster Session III**

18:15 ***Invited Discourse, Alan Title*** ***Congress Hall***

*Friday, August 18*

**Session XIV. *The IAU role on the NEO problem***

- 9:00 The IAU role (Invited) O. Engvold  
 9:30 The UK Near Earth Object Information Centre I.P. Williams  
 9:45 Deep Near Earth Object Impact Simulation Tool For Supporting the NEO Mitigation Decision Making Process N.J. Bailey  
 10:00 General discussion  
 10:20 Closing remarks A. Milani/D. Vokrouhlicky

**IAU Symposium 237**  
**TRIGGERED STAR**  
**FORMATION IN A TURBULENT ISM**

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

**Monday August 14, 14:00 through Friday 18, 12:30**

**Meeting Hall I**

*Scientific Organizing Committee:* P. Andre (France), L. Blitz (USA), B. G. Elmegreen (USA, Co-Chair), Y. Fukui (Japan), P. Kroupa (Germany), S. Oey (USA), E. C. Ostriker (USA), J. Palous (Czech Republic, Co-Chair), M. Rubio (Chile), S. Shore (Italy), G. Tenorio-Tagle (Mexico), A. P. Whitworth (UK), R. W. Williams (IAU, ex officio) & H. Zinnecker (Germany)

*Monday, August 14*

**Session I. Turbulence and general structure in the ISM**

- 14:00 Observations of turbulence in diffuse ISM of the Milky Way (Invited) J. Dickey
- 14:25 Observations of interstellar turbulence in the molecular ISM (Invited) M. Heyer
- 14:50 Turbulence in high latitude clouds (Invited) S. Shore
- 15:10 Turbulence in local molecular clouds (Invited) E. Falgarone
- 15:30 *Coffee*

**Session II. General ISM in galaxies and Magellanic Clouds**

- 16:00 Atomic and molecular gas (Invited) L. Blitz
- 16:25 CO, HI, and recent Spitzer SAGE results on the LMC (Invited) Y. Fukui
- 16:50 Dense molecular clouds and associated star formation in the Magellanic Clouds (Invited) M. Rubio
- 17:10 Dust emission from the LMC and SMC (Invited) F. Boulanger

*Tuesday August 15*

**Session III. ISM Turbulence**

- 09:00 New results on the distribution of thermal pressure in the diffuse ISM E.B. Jenkins
- 09:15 Dynamical evolution of a supernova-driven ISM (Invited) D. Breitschwerdt
- 09:35 Turbulent structure and star formation in a stratified supernova-driven ISM M. R. Joung
- 09:50 Non-equilibrium ionization simulations of the turbulent interstellar medium M. de Avillez
- 10:05 Non-stellar sources of turbulence in the ISM (Invited) E. Ostriker
- 10:30 *Coffee*

**Session IV. Shells I**

- 11:00 Observations of supershells in the ISM of nearby galaxies (Invited) E. Brinks
- 11:20 Observation of shells, worms and other dynamical structures (Invited) S. Stanimirovic
- 11:40 HI clouds and shells in the LMC (Invited) S. Kim
- 12:00 An automatic identification of HI shells S. Ehlerova
- 12:15 The SMC super-shells as probes of the turbulent dynamics of the ISM I. Goldman

*Wednesday, August 16*

**Session V. Shells II**

- 09:00 Supershells (Invited) S. Oey
- 09:25 Triggering and instabilities in shells and supershells (Invited) J. Palouš
- 09:45 The enigmatic Loop III and the local galactic structure M. Kun
- 10:00 Footprints of trigger in large area surveys of the nearby ISM and YSOs L.V. Toth
- 10:15 NANTEN observations of triggered star formation: from HII regions to galaxy collisions N. Mizuno
- 10:30 *Coffee*

**Session VI. Molecular clouds I**

- 11:00 From pre-stellar cores to protostars: evolution towards the IMF (Invited) P. Andre
- 11:20 Magnetic fields and star formation: observational results (Invited) R.M. Crutcher
- 11:40 Physics/Chemistry of hot molecular cores: impact of massive star-forming regions (Invited) H. Beuther
- 12:00 Dissecting a site of massive star formation M. A. Reid
- 12:15 Anatomy of the S255-S257 complex: triggered high-mass star formation V. Minier
- 12:30 *Lunch*

**Session VII. Molecular clouds II**

- 14:00 Dynamical processes in star forming regions (Invited) J. Bally
- 14:20 Hypersonic swizzle sticks: proto-stellar jets, fossil cavities and turbulence in molecular clouds (Invited) M. A. Cunningham
- 14:40 The newest twists in protostellar outflows (Invited) M. Barsony
- 15:00 Probing turbulence in OMC1 at the star forming scale: observations and simulations M.G. Gustafsson

15:15 Spitzer observations of protostars in dark globules in HII regions W.T. Reach

15:30 *Coffee*

**Session VIII. Molecular clouds III**

16:00 Observations of triggering in the LMC (Invited) Y.-H. Chu

16:20 Star formation in the SMC: the youngest star clusters A. Nota

16:35 Molecular clouds in galaxies from extinction studies (Invited) J. Alves

16:55 Understanding starbursts through molecular clouds in high galactic latitudes E. Rosolowski

17:10 Observation of triggering in the Milky Way L. Deharveng

17:25 S K1: a possible case of triggered SF in Perseus M. Rengel

18:15 *Invited Discourse, Jill Tarter* **Congress Hall**

*Thursday, August 17*

**Session IX. Clusters I**

09:00 The life and death of star clusters: a general framework (Invited) B. Whitmore

09:25 Cluster formation and dissolution (Invited) P. Kroupa

09:45 Theory of formation of SSC G. Tenorio-Tagle

10:00 The Super massive star clusters: from superwinds to a cooling catastrophe and the injected gas re-processing S. Silich

10:15 Triggered star formation in the environment of young massive clusters M. Gritschneder

10:30 *Coffee*

**Session X. Clusters II**

11:00 Theory of molecular core formation (Invited) A. Whitworth

11:20 The formation of massive stars and star clusters (Invited) J. Tan

11:40 Strongly induced collapse model confronts observations P.H. Henebelle

11:55 Triggering in OB associations: evidence for sequential star formation (Invited) T. Preibisch

12:20 Triggered star formation in OB associations W. P. Chen

12:30 *Lunch*

**Session XI. Clusters III**

14:00 The formation of self-gravitating cores in turbulent magnetized clouds (Invited) P. Padoan

14:25 Regulation of star formation efficiency by molecular cloud turbulence (Invited) E. Vazquez-Semadeni

14:50 Simulations of ionization triggering (Invited) C. Clarke

15:15 Protostellar turbulence in cluster forming regions of molecular clouds N.F. Nakamura

15:30 *Coffee*

**Session XII. Galaxies I**

16:00 Star formation on galactic scales (Invited) R. Kennicutt

16:25 Future Star formation in mergers and interacting galaxies (Invited) C. Struck

16:50 Dwarf galaxy formation in tidal tails (Invited) P.-A. Duc

17:15 Star formation law: from dense cores to extreme starbursts Y. Gao

**18:15 *Invited Discourse, Alan Title* Congress Hall**

*Friday, August 18*

**Session XIII. Galaxies II**

09:00 Galactic-scale star formation by gravitational instabilities (Invited) M. Mac Low

09:20 Simulations of spiral wave triggering and turbulence driving (Invited) I. Bonnell

09:40 Cloud formation from large-scale instabilities (Invited) W.-T. Kim

10:00 Turbulence driven by the magnetorotational instability R. Pointek

10:15 Cold HI in turbulent eddies and Galactic spiral shocks S.J. Gibson

10:30 *Coffee*

**Session XIV. Galaxies III**

11:00 Dense molecular gas formation triggered by spiral density wave in M 31 T. Tosaki

11:15 Triggered star formation in Magellanic clouds (triggered SF in LMC collision) K. Bekki

11:30 Theory of SF in galaxies (Invited) C. Norman

11:55 Turbulence, feedback, and slow star formation M. Krumholz

12:10 Conference summary: Star formation in a dynamic ISM B.G. Elmegreen

## IAU Symposium 238

### BLACK HOLES: FROM STARS TO GALAXIES - ACROSS THE RANGE OF MASSES

<http://astro.cas.cz/iaus238>

*From Monday 21 through Friday 25 August 2006, Forum Hall*

**Scientific Organizing Committee:** R.D. Blandford (USA), A. Celotti (Italy), B. Czerny (Poland), P.A. Charles (South Africa), A.C. Fabian (UK), R. Genzel (Germany), G. Hasinger (Germany), V. Karas (Czech Republic, co-Chair), K. Makishima (Japan), G. Matt (Italy, co-Chair), F. Mirabel (Chile), K.A. Pounds (IAU, ex officio), M.J. Rees (UK), J.H. Swank (USA), T. Yaqoob (USA) & S.N. Zhang (China, Nanjing)

*Monday, August 21*

#### **Session I. Stellar-mass black holes**

- 14:00 Observational evidence for stellar-mass black holes (Review) J. Casares  
14:36 X-ray energy spectra of low and high-frequency quasi-periodic oscillations in accreting black holes P. T. Zycki  
14:54 Microquasars: disk-jet coupling in stellar-mass black holes F. Mirabel  
15:12 Suzaku observation of the black hole transient 4U1630-472 A. Kubota  
15:30 *Poster viewing, Coffee*

#### **Session II. Stellar-mass black holes**

- 16:00 Matter accretion and ejection in black-hole systems (Review) A. R. King  
16:36 Formation of rapidly rotating black holes in massive binary stellar systems P. C. Joss  
16:54 Sawtooth-like oscillations of black hole accretion disks R. Matsumoto  
17:12 On the origin of the black hole in the X-ray binary XTE J1118+480 J. I. Gonzalez Hernandez  
17:30 *Poster viewing*

18:15 *Invited Discourse, Shuang Nan Zhang*

*Congress Hall*

Tuesday, August 22

**Session III. Formation and evolution of massive black holes**

- 09:00 Massive black holes (Review) M. J. Rees  
 09:36 The cosmic evolution of black hole accretion G. Hasinger  
 09:54 Statistical analysis of optical emission line properties of 2dF type-1 AGN S. Mateos  
 10:12 Cosmological growth of supermassive black holes: the kinetic luminosity function of AGN A. Merloni  
 10:30 *Poster viewing, Coffee*

**Session IV. Formation and evolution of massive black holes**

- 11:00 Formation and evolution of supermassive black holes, black-hole binary merging (Review) P. Madau  
 11:36 Quasar evolution: black hole mass and accretion rate determination D. Dultzin-Hacyan  
 11:54 X-ray spectral evolution of quasars G. Chartas  
 12:12 Black hole growth in the local universe J. E. Greene  
 12:30 *Lunch*

**Session V. Active galactic nuclei**

- 14:00 Supermassive black holes: accretion and outflows (Review) M. C. Begelman  
 14:36 Hard X-ray spectra of AGN observed with Suzaku H. Kunieda  
 14:54 Mapping the circumnuclear dust in nearby AGN with the mid-infrared interferometric instrument MIDI K. R. W. Tristram  
 15:12 X-ray variability in AGN: implications of magnetic flares R. W. Goosmann  
 15:30 *Poster viewing, Coffee*

**Session VI. Active galactic nuclei**

- 16:00 Cumulative effects of outflows on the X-ray spectra of AGN K. A. Pounds  
 16:18 Uncertainties on the black hole masses in AGN and consequences on the Eddington ratios S. Collin  
 16:36 Warped disks and the Unified Scheme A. Lawrence  
 16:54 An accretion disk laboratory in the Seyfert galaxy NGC 2992 T. Yaqoob  
 17:12 Cosmological evolution of active galactic nuclei X-ray luminosity function Y. Ueda  
 17:30 *Poster viewing*

18:15 *Invited Discourse, Reinhard Genzel*

*Congress Hall*

Wednesday, August 23

**Session VII. Physical processes near black holes**

- 09:00 Strong-gravity effects: X-ray spectra, timing, polarimetry (Review) A. C. Fabian  
 09:36 GRS 1915+105: a near-extreme Kerr black hole R. Narayan  
 09:54 Black holes and magnetic fields J. Bičák  
 10:12 Constraining jet physics in weakly accreting black holes S. B. Markoff  
 10:30 *Poster viewing, Coffee*

**Session VIII. Physical processes near black holes/The Galactic Center**

- 11:00 Black hole accretion: theoretical limits and observational implications D. Heinzeller  
 11:18 Search for the event horizon evidences by means of optical observations with high temporal resolution G. Beskin  
 11:36 Dynamics of radiatively inefficient flows accreting onto radiatively efficient black hole objects D. Proga  
 11:54 The Galactic Center (Review) R. Genzel  
 12:30 *Lunch*

**Session IX. The Galactic Center**

- 14:00 The simultaneous radio to X-ray observations and polarized NIR emission from Sagittarius A\* A. Eckart  
 14:18 The structure of the nuclear stellar cluster of the Milky Way R. Schödel  
 14:36 Variable accretion of stellar winds onto Sagittarius A\* J. Cuadra  
 14:54 The character of the short-term variability of Sagittarius A\* from the radio to the near-infrared M. R. Morris  
 15:12 The Galactic Centre region as seen by H.E.S.S. in very high energy gamma-rays L. Rolland  
 15:30 *Poster viewing, Coffee*

**Session X. Ultraluminous X-ray sources**

- 16:00 Observational evidence for intermediate-mass black holes I. K. Makishima  
 16:36 SS433-type X-ray binaries and the nature of ULXs P. A. Charles  
 16:54 The supercritical accretion disk in SS433 and ultraluminous X-ray sources S. N. Fabrika  
 17:12 The optical counterpart of an ultraluminous X-ray source NGC 6946 X-1 P. Abolmasov  
 17:30 *Poster viewing*

Thursday, August 24

**Session XI. Ultraluminous X-ray sources**

- 09:00 Recipes for ULX formation: necessary ingredients and garnishments R. Soria
- 09:18 Explosion of very massive stars and the origin of intermediate mass black holes S. Tsuruta
- 09:36 Ultraluminous X-ray sources: X-ray binaries in a high/hard state? Z. Kuncic
- 09:54 On the nature of ultraluminous X-ray sources from optical/IR measurements M. Cropper
- 10:12 Variability of ultraluminous X-ray sources in the Cartwheel Ring A. Wolter
- 10:30 *Poster viewing, Coffee*

**Session XII. Supermassive black holes and their galaxies**

- 11:00 The inner workings of early-type galaxies: supermassive black holes and stellar nuclei (Review) L. Ferrarese
- 11:36 Imaging compact binary black holes with VLBI G.B. Taylor
- 11:54 Radiatively inefficient accretion disks in low-luminosity active galactic nuclei F.D. Macchetto
- 12:12 The central 80x200 parsecs of M83, how many black holes and how massive are they? H.A. Dottori
- 12:30 Black holes across the mass spectrum -- from stellar-mass black holes to ultra-luminous X-ray sources and active galactic nuclei (Review) R. Mushotzky
- 13:00 *Lunch*

Friday, August 25

**Session XIII. Supermassive black holes and their galaxies**

- 09:00 Inward bound: following the gas flow from nuclear spirals to the accretion disc T. Storchi-Bergmann
- 09:18 Probing the coevolution of supermassive black holes and galaxies out to  $z \sim 4.5$  using gravitational lensing C.Y. Peng
- 09:36 The smallest black holes in nearby active galactic nuclei A. J. Barth
- 09:54 The evolution of supermassive black holes and galaxies in the COSMOS survey C.D. Impey
- 10:12 Cosmic evolution of black holes and galaxies to  $z=0.4$  J. Woo
- 10:30 *Poster viewing, Coffee*

**Session XIV. *Black holes across the mass spectrum***

- 11:00 The disc instability model for dwarf novae in the AGN context J.M. Hameury
- 11:18 Radiation hydrodynamic simulations of super-Eddington accretion flows K. Ohsuga
- 11:36 Synchrotron outbursts in galactic and extra-galactic jets, any difference? M. Türler
- 11:54 *Closing*

## IAU Symposium 239

### CONVECTION IN ASTROPHYSICS

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

*From Monday 21 through Friday August 25, Panorama Hall*

**Scientific Organizing Committee:** B. Barbuy (IAU, ex officio), K.L. Chan (China, Nanjing), F. D'Antona (Italy), T.L. Duvall (USA), A.P. Ingersoll (USA), J. Kubat (Czech Republic), F. Kupka (Germany, co-chair), A. Nordlund (Denmark), I.W. Roxburgh (UK, co-chair), B. Smalley (UK), S.K. Solanki (Germany), J. Toomre (USA) & S.D. Vauclair (France)

*Monday, August 21*

16:00 Conference Introduction

#### **Session I. Modelling Convection and Radiative Transfer**

16:20 Theoretical Modelling of Convection (Review) V.M. Canuto

16:55 Challenges to the theory of solar convection (Review) F. Cattaneo

**18.15 Invited Discourse, Reinhard Genzel**

**Congress Hall**

*Tuesday, 22 August*

09:00 Radiative hydrodynamics models of stellar convection (Invited) M. Steffen

09:25 Radiative transfer modeling of the Hanle effect in convective atmospheres (Invited) J. Trujillo Bueno

09:50 Dynamic Models of the Sun from the Convection Zone to the Chromosphere S. Wedemeyer-Böhm

10:10 Anisotropy, Inhomogeneity and Inertial Range Scalings in Turbulent Convection F. Rincon

10:30 *Coffee*

11:00 Round Table Discussion

#### **Session II. Observational Probes of Convection**

11:30 Observing Atmospheric Convection in Stars (Review) J.D. Landstreet

12:05 Helioseismic inferences on subsurface solar convection (Invited) A.G. Kosovichev

12:30 *Lunch*

- 14:00 Convection and the solar elemental abundances (Invited) M. Asplund
- 14:25 What can we Learn about Convection from Asteroseismology? H. Kjeldsen
- 14:45 Solar High Resolution Spectral Observations Compared with Numerical Simulations G. Cauzzi
- 15:05 Round table Discussion
- 15:30 *Coffee*

### Session III. Convection in planets and brown dwarfs

- 16:00 Numerical simulations of convection and gravity waves in planets (Review) A. Glatzmaier
- 16:35 Convection-Driven Planetary Dynamos (Invited) U.R. Christensen
- 17:00 Observations of Convection in the Giant Planets: Results of Space Missions (Invited) A. Ingersoll
- 17:25 Discussion
- 18:15 *Invited Discourse, Reinhard Genzel* Congress Hall

*Wednesday, August 23*

- 09:00 The Role of Convection in Brown Dwarfs (Invited) S. Mohanty
- 09:25 Prospects of Using Simulations to Study the Photospheres of Brown Dwarfs H.-G. Ludwig
- 09:45 Convection during the formation of gaseous giants and stars G. Wuchterl
- 10:05 Round Table Discussion
- 10:30 *Coffee*

### Session IV. Stellar evolution, nucleosynthesis, and convective mixing

- 11:00 Convection and mixing in stellar models: theory versus observations (Review) C. Chiosi
- 11:35 Progress in 3D simulations of Stellar Convection (Review) D. Arnett
- 12:10 The DB gap of white dwarfs and semiconvection (OC) H. Shibahashi
- 12:30 *Lunch*
- 14:00 The Role of the Convective Treatment in AGB Modelling (Invited) P. Ventura
- 14:25 Supersonic convection in red- and yellow-giants (Invited) D.R. Xiong/  
L. Deng
- 14:50 Extra-mixing in Extremely Metal-Poor red giants M. Spite
- 15:10 Two Instances of Convection and Mixing in Red Giant Interiors P.P. Eggleton
- 15:30 *Coffee*

16:00 Round Table Discussion

**Session V. Oscillations, mass loss, and convection**

16:30 Applications of Convection Simulations to Oscillation Excitation and Local Helioseismology (Review) R.F. Stein

17:05 The Relation of Convection to Pulsation and Mass Loss in Red Giants (Invited) P.R. Wood

Thursday, August 24

09:00 Solar-like oscillation amplitudes as a probe of turbulent convection in stars (Invited) R.S. Samadi

09:25 Convection in the outer layers of Procyon A: a comparison with the Sun F.J. Robinson

09:45 Acoustic simulations in Spherical Geometry: Can we detect convection in the sun? S.M. Hanasoge

10:05 Round Table Discussion

10:30 Coffee

**Session VI. Convection and rotation**

11:00 Rotation of the Solar Convective Zone from Helioseismology (Review) J. Christensen-Dalsgaard

11:35 Convection in Astrophysical Disks (Review) H. Klahr

12:10 Large-scale Flows and Convection at the Base of Solar Convection Zone E. Tikhomolov

12:30 Lunch

Friday, August 25

09:00 Rotating compressible penetrative Convection and magnetic pumping (Invited) N.H. Brummell

09:25 On the interactions of turbulent convection and rotation in RGB stars A. Palacios

09:45 Effects of Rotation and Input Energy Flux on Convective Overshooting P.J.K. Käpylä

10:05 Round Table Discussion

10:30 Coffee

**Session VII. MHD convection and dynamos**

- |       |   |                         |
|-------|---|-------------------------|
| 11:00 | Prograde patterns in rotating convection and its effect on the dynamo           | (Review) A. Brandenburg |
| 11:35 | Dynamos in Giant Planets  | (Invited) F.H. Busse    |
| 12:00 | Photospheric magnetoconvection  | (Invited) R. Cameron    |
| 12:25 | Discussion  |                         |
| 12:30 | <i>Lunch</i>  |                         |
| 14:00 | Generation of Coupled Global and Local Magnetic Fields by a Cellular MHD Dynamo | A. Getling              |
| 14:20 | Challenges of Magnetism in the Turbulent Sun                                    | S. Brun                 |
| 14:40 | Round Table Discussion  |                         |
| 15:00 | Summary and closing   | J.-P. Zahn              |

**IAU Symposium 240**  
**BINARY STARS AS CRITICAL TOOLS AND TESTS**  
**IN CONTEMPORARY ASTROPHYSICS**

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

**From Tuesday, August 22 09:00 through Friday, August 25 17:30, Meeting Hall I**

**Scientific Organizing Committee:** C. Allen (Mexico), D.V. Bisikalo (Russian Federation), J. Davis (Australia), E.F. Guinan (USA, co-Chair), P. Harmanec (Czech Republic, co-Chair), W.I. Hartkopf (USA, co-Chair), P. Lampens (Belgium), J.F. Ling (Spain), K. Olah (Hungary), T.D. Oswalt (USA), K. Pavlovski (Croatia), G.J. Peters (USA), S.M. Rucinski (Canada), C.D. Scarfe (Canada), B. Warner (IAU, ex officio), M. Wolf (Czech Republic), & H. Zinnecker (Germany)

*Tuesday, August 22*

**Welcome and Introductory address**

09:00 Overview of Binary and Multiple Stars as P. Harmanec & E. Guinan  
Critical Tools & Tests in Contemporary Astrophysics  
- The Dawn of the Century of Discovery

**Session I. Observing with high angular and spectral resolution**

09:30 Overview of Multiple-Aperture Interferometry (Invited) H. McAlister  
Binary Star Results from the Northern Hemisphere

10:10 Overview of Multiple-Aperture Interferometry (Invited) J. Davis  
Binary Star Results from the Southern Hemisphere

10:30 *Coffee*

11:00 Space-based Long Baseline Interferometry (Invited) M. Shao  
for a New Era of Binary Star Research

11:20 Interferometry with single telescopes (Invited) Y. Balega

11:50 High-precision radial-velocity measurements (Invited) A. Hatzes

12:20 Poster highlights

12:30 *Lunch*

**Session II. New possibilities for standard observational techniques**

14:00 The new era of eclipsing binary research (Invited) I. Ribas  
with large telescopes

14:30 Eclipsing Binaries in Local Group Galaxies (Invited) A. Bonanos

15:00 Classical Observations of Visual Binary (Invited) B. Mason  
and Multiple Stars

15:30 *Coffee*

16:00 Toward a common language: W. Hartkopf  
the Washington Multiplicity Catalog

16:15 Poster highlights

**Session III. Improved methods of data analysis**

16:45 Modern Techniques for the Analysis of Spectroscopic Binaries (Invited) H. Hensberge & K. Pavlovski

18:15 *Invited Discourse, Reinhard Genzel*

*Congress Hall*

*Wednesday, August 23*

**Session III. Improved methods of data analysis (Cont'd)**

09:00 Bipolar Jets, Hot Interaction Regions, and Colliding Winds in OB Interacting Binaries (Invited) G. Peters

09:15 Studying Magnetic Activity in Cataclysmic Binaries using Near-IR Spectroscopy (Invited) S. Kafka

09:30 Doppler Tomography of Accretion Disks and Streams in Close Binaries (Invited) M. Richards

10:00 Doppler imaging and eclipse maps of spotted stars (Invited) K. Strassmeier

10:30 *Coffee*

11:00 Reducing data from long-baseline interferometers (Invited) T. ten Brummelaar

11:30 Models of Binary Star Observables over the Triennium (Invited) R. Wilson

12:00 Poster highlights

12:30 *Lunch*

**Session IV. Observing in the Era of Large-Scale Surveys**

14:00 Binaries in Large-Scale Surveys (Invited) D. Pourbaix

14:40 Pipeline Reduction of Binary Light Curves from Large-Scale Surveys (Invited) A. Prsa & T. Zwitter

15:20 Reduction of eclipsing binary data in the Magellanic Clouds (Invited) T. Mazeh

15:30 *Coffee*

16:00 The Kepler Mission and Binary Stars (Invited) D. Koch

16:20 Evaluating with ground-based spectroscopy and Hipparcos photometry the Gaia contribution to the field of Eclipsing Binaries (Invited) P.G. Niarchos, U. Munari & T. Zwitter

16:35 The RADial Velocity Experiment (RAVE) (Invited) T. Zwitter & the RAVE team

16:50 Poster highlights

**Session V. *The need to improve basic calibrations I***

- 17:10 Critical comparison of Hipparcos and earlier trigonometric parallaxes with those derived from astrometry, interferometry + spectroscopy, etc. (Invited) W. van Altena

Thursday, August 24

**Session V. *The need to improve basic calibrations II***

- 09:00 Interferometric Constraints on Gravity Darkening with Application to Modelling Spica A & B (Invited) J. Aufdenberg
- 09:30 The distance to the Pleiades revisited (Invited) D. Valls-Gabaud

**Session VI. *Increasing possibilities of classical methods: a few examples I***

- 09:50 A new look into the apsidal motion test of eclipsing binaries (Invited) A. Gimenez
- 10:20 *Coffee*
- 10:50 The Sun's Smaller Cousins Are Running The Universe: the Masses of Red and Brown Dwarfs (Invited) T. Henry
- 11:20 Recent Developments in Extrasolar Planet Systems (Invited) B. Lane
- 11:50 Fragile Binaries as Observational Leverage on "Difficult Astrophysical Problems" (Invited) T. Oswalt
- 12:10 Poster highlights

Friday, August 25

**Session VI. *Increasing possibilities of classical methods II***

- 09:00 Catalogs of Common Proper Motion Binaries: a Gold Mine for Galactic Studies (Invited) J. Chaname

**Session VII. *Evolutionary models for binary and multiple stars***

- 09:20 Progress in the theories of binary formation (Invited) C. Clarke
- 09:50 Progress in the theories of binary evolution (Invited) L. Kisseleva-Eggleton & P. Eggleton
- 10:20 *Coffee*
- 10:50 Testing and improving the dynamical theory of mass exchange (Invited) D. Bisikalo & T. Matsuda
- 11:30 Young binaries as a test for pre-Main Sequence evolutionary tracks (Invited) H. Zinnecker
- 11:50 Poster highlights

**Session VIII. Binary stars as probes of our Galaxy I**

12:10 Halo Wide Binaries and Moving Clusters as Probes of the Dynamical and Merger History of our Galaxy (Invited) C. Allen

12:30 Observed Orbital Eccentricities (Invited) H. Abt

12:50 *Lunch*

*Friday, August 25*

**Session VIII. Binary stars as probes of our Galaxy II**

09:00 The Frequency Distribution of Semi-major Axis of Wide Binaries. Cosmogony and Dynamical Evolution (Invited) A. Poveda

09:20 Close Pairs as Probes of the Galaxy's Chemical Evolution (Invited) D. Vanbeveren

**Session IX. Asteroseismology; Stellar Activity**

09:50 Asteroseismology of close binary stars (Invited) C. Aerts

10:20 *Coffee*

10:50 The Influence of Binarity on Stellar Activity (Invited) K. Olah

11:20 Poster highlights

**Summaries and Conclusions**

11:40 Summary talk 1: observational aspects (Invited) C. Scarfe

12:00 Summary talk 2: theoretical aspects (Invited) V. Trimble

12:20 Closing comments and thanks W. Hartkopf

# JOINT DISCUSSIONS

## Joint Discussion 01

### COSMIC PARTICLE ACCELERATION: FROM SOLAR SYSTEM TO AGN

<http://wave.asu.cas.cz/iaujd01/>

*From Wednesday 16, 8:50 through Thursday August 17, 12:30, Small Hall*

*Scientific Organizing Committee:* J. Arons (USA), R.D. Blandford (USA), J.C. Brown (UK, co-Chair), M.K. Hudson (USA), M. Karlicky (Czech Republic, co-Chair), J. Kirk (Germany, co-Chair), R.P. Lin (USA), D.B. Melrose (Australia), K. Shibata (Japan), N. Vilmer (France) & A.M. Watson (UK)

*Wednesday, August 16*

#### Introduction

*Chair, J.C. Brown*

08:50 Welcome remarks

09:00 Acceleration: Problems and progress

*(Invited) D.B. Melrose*

#### Session I. *Sun/Heliosphere*

09:35 The solar system: a laboratory for the study of the physics of particle acceleration

*(Invited) R. Lin*

10:10 Evidence for solar shock production of heliospheric near-relativistic and relativistic electron events

S.W. Kahler

10:30 *Coffee/posters*

11:30 Electron acceleration in solar flares: Observations versus numerical simulations

A.O. Benz, P.C. Grigis & M. Battaglia

11:48 Radio and X-ray diagnostics of electrons accelerated in solar flares

M. Barta, M. Karlicky

12:06 Solar flare particle heating via low-beta reconnection

D. Krauss-Varban

12:24 Physical conditions of the acceleration region of a solar flare with an unusually narrow gyrosynchrotron spectrum

C.G.G. Castro, J.E.R. Costa & A.V.R. Silva

12:45 *Lunch*

#### Session II. *Galaxy*

*Chair, A.O. Benz*

14:15 Galactic Acceleration Phenomena

*(Invited) Y. Gallant*

14:50 Particle Acceleration via Converter Mechanism

E.V. Derishev, V.V. Kocharovskiy / VI.V. Kocharovskiy, F.A. Aharonian

15:08 Radio Emission From Shell Type Supernova Remnants

A.I. Asvarov

15:30 *Coffee/posters*

**Session III. Extra-Galactic**

- 16:30 Extragalactic shocks as cosmic accelerators (Invited) M.V. Medvedev  
17:05 Polarization and T.X. Hua, J.H. Fan, Y.X. Wang, Y.W. Zhang, J.B. Su  
relativistic beaming effect for blazars  
17:23 Stochastic particle acceleration in galaxy clusters G. Brunetti, A. Lazarian  
17:41 Jets of energetic particles generated by S. Dalla, P.K. Browning  
magnetic reconnection at a three-dimensional magnetic null

18:15 *Invited Discourse, Jill Tarter* *Congress Hall*

Thursday, August 17

Chair, R. Lin

**Session IV. Theory**

- 9:00 Particle acceleration theory (Invited) R. Blandford  
9:35 Ultra high energy cosmic ray composition: B.I. Hnatyk  
dependence on the mechanism of acceleration  
9:53 Kinetic approaches to nonlinear S. Gabici, E. Amato, P. Blasi  
particle acceleration at shock fronts  
10:11 Particle acceleration by H.T. Takahashi, E.A. Asano/  
relativistic expansion of magnetic arcades R.M. Matsumoto  
10:30 *Coffee/posters*  
11:30 Cosmic particle acceleration in F.M. Rieger, P. Duffy  
astrophysical shear flows

**Conclusions**

11:50 Conference summary (Invited) L. Vlahos

The meeting will be followed by a presentation of posters.

**Joint Discussion 02**  
**PULSAR EMISSION AND RELATED PHENOMENA**

*http://www.mpe.mpg.de/IAU\_JD02*

***From Wednesday 16, 09:00, through Thursday August 17, 12:30, Meeting Hall IV***

*Scientific Organizing Committee:* J. Arons (USA), W. Becker (Germany, co-chair), K.S. Cheng (China, Nanjing), O.C. de Jager (South Africa), J.A. Gil (Poland, co-chair), N. Kawai (Japan), M. Kramer (UK), H.J.M.E. Kuijpers (The Netherlands), R.W. Romani (USA), B. Rudak (Poland), D.J. Thompson (USA) & V.V. Usov (Israel/Russian Federation)

*Wednesday, August 16*

|              |  |                             |
|--------------|--|-----------------------------|
| 09:00        | Radio emission properties of pulsars (observation)                         | D. Manchester               |
| 09:40        | New results from rotating radio transients (RRATs)                         | M. McLaughlin               |
| 10:20        | Optical and X-ray emission properties of pulsars                           | P. Caraveo                  |
| 11:00        | <i>Coffee</i>  |                             |
| 11:20        | Gamma-ray and TeV emission properties of pulsars and pulsar wind nebulae   | O.C. de Jager               |
| 12:00        | Pulsar timing and its future perspective                                   | D. Nice                     |
| 12:30        | <i>Lunch</i>   |                             |
| 14:00        | Radio emission theories of pulsar  | V. Usov                     |
| 14:40        | Theory of high energy emission from pulsars                                | K.S. Cheng                  |
| 15:20        | Poster rapporteur  | D. Lorimer                  |
| 16:00        | <i>Coffee</i>  |                             |
| 16:20        | On the theory of radio and high energy emission from pulsars: Where to go? | J. Arons                    |
| 17:00        | Cooling neutron stars: the present and the future                          | S. Tsuruta                  |
| 17:40        | Poster session   |                             |
| <b>18:15</b> | <b><i>Invited Discourse, Jill Tarter</i></b>                               | <b><i>Congress Hall</i></b> |

*Thursday, August 17*

|       |  |           |
|-------|--|-----------|
| 09:00 | A Decade of Surprises from the Anomalous X-ray Pulsars     | S. Ransom |
| 09:40 | Pulsars and Gravity  | I. Stairs |
| 10:20 | <i>Coffee</i>  |           |
| 10:50 | Future radio observatories for pulsar studies              | M. Kramer |
| 11:30 | Future optical and X-ray observatories for pulsar studies  | W. Becker |
| 12:10 | Future Gamma-ray and TeV observatories for pulsar research | D. Smith  |
| 12:50 | Summary and concluding remark                              | B. Rudak  |

## Joint Discussion 03

### SOLAR ACTIVE REGIONS AND 3D MAGNETIC STRUCTURE

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

**From Wednesday 16, 09:00, through Thursday August 17, 12:30, Club A**

**Scientific Organizing Committee:** S. Ananthkrishnan (India), T.E. Berger (USA), J.M. Davis (USA), O. Engvold (Norway), D.E. Gary (USA), A. Hofmann (Germany), H. Zhong (China, Nanjing), D.B. Melrose (Australia), D.P. Choudhary (USA, co-chair), E.R. Priest (UK), R.J. Rutten (The Netherlands), T. Sakurai (Japan), B. Schmieder (France), M. Sobotka (Czech Republic, co-chair), S. K. Solanki (Germany) & J.O. Stenflo (Switzerland)

*Wednesday, August 16*

09:00 Magnetic Field in the Convection Zone (Invited) D. Nandi  
Followed by 4 short oral presentations

10:30 *Coffee/Posters*

11:00 Photospheric Magnetic Fields (Invited) S. K. Solanki,  
L. Rouppe Van Der Voort &  
R. Schlichenmaier

followed by 2 short Oral presentations

12:30 *Lunch*

14:00 Chromospheric Magnetic Fields (Invited) J. Harvey/  
K. S. Balasubramaniam &  
K. D. Leka

followed by 2 short Oral presentations

15:30 *Coffee/Posters*

16:00 Coronal Magnetic Fields and Radio Observations (Invited) K. Shibasaki  
followed by 4 short Oral presentations

*Thursday, August 17*

09:00 Active Processes and Phenomena I (Invited) J. Linker &  
C. H. Mandrini

followed by 2 short Oral presentations

10:30 *Coffee/Posters*

11:00 Active Processes and Phenomena II  
2 short Oral presentations

**Summary**

J. Klimchuk

## Joint Discussion 04

### THE ULTRAVIOLET UNIVERSE: STARS FROM BIRTH TO DEATH dedicated to Prof. Cornelis de Jager (85), pioneer in UV studies

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

*From Wednesday 16, 09:00, through Thursday August 17, 12:30, Club A*

*Scientific Organizing Committee:* T.R. Ayres (USA), M.A. Barstow (UK, co-chair), W.P. Blair (USA), D. de Martino (Italy), M.A. Dopita (Australia), A.I. Gómez de Castro (Spain, co-chair), J. Grygar (Czech Republic), J.B. Hutchings (Canada), C. Jordan (UK), Y. Kondo (USA), E.M. Leibowitz (Israel), A. Niedzielski (Poland), B.M. Shustov (Russian Federation), J. Sahade (Argentina), W. Wamsteker<sup>††</sup> (Spain, co-chair) & Z.-R. Wang (China, Nanjing)

*Wednesday, August 16:*

09:00 Introductory talk: A brief history to UV astrophysics Y. Kondo

#### **Session I. Star Formation and Young Stellar Objects**

*Chair, E. Guinan*

09:00 The Interstellar Medium F. Bruhweiler  
Young Stellar Objects: accretion and outflow A.I. Gomez de Castro  
High mass stars: Starbursts R. Gonzalez

10:30 *Coffee Break*

#### **Session II. Life on the Main Sequence**

*Chair, F. Bruhweiler*

11:00 Atmospheres and winds in low mass stars I. Pagano  
Evolution of UV emissions of G, K and M stars over their main sequence lifetimes and effects on hosted planets E. Guinan  
Systematic relationships between the optical photospheric and ultraviolet wind spectra of normal and peculiar OB stars N. Walborn  
High mass stars: Stellar Populations L. Bianchi

12:30 *Lunch*

#### **Session III. Star Death**

*Chair, M. Barstow*

14:00 AGB and post-AGB evolution L. Stanghellini  
Planetary nebulae S. Pottasch  
Supernovae and GRB progenitors S. Smartt

15:30 *Coffee Break*

**Session IV. Compact Objects**

Chair, I. Pagano

16:00 White dwarfs  
Interacting binaries  
Black holes

M. Barstow  
K.Long  
A. Fabian (TBC)

18:15 *Invited Discourse, Jill Tarter*

*Congress Hall*

*Thursday, August 17*

**Session V. The impact of stellar astrophysics on Cosmological Evolution**

Chair, A. VidalMadjar

09:00 Galactic Halos and the IGM

F. Nicastro

**Session VI. The impact of stellar astrophysics in understanding  
the formation of life sustainable systems**

Chair, A.I. Gomez de Castro

09:30 Young planetary disks  
Extrasolar planets

A. Lecavelier des Etangs  
A. Vidal-Madjar

10:30 *Coffee Break*

11:00 Discussion on the Future Facilities and their relevance to Astrophysics  
Posters will be displayed through the whole JD.

## Joint Discussion 05

### CALIBRATING THE TOP OF THE STELLAR M-L RELATION

<http://www.stsci.edu/science/starburst/Prague/>

**Wednesday August 16, 09:00-17:00, Meeting Hall V**

**Scientific Organizing Committee:** Norbert Langer (*the Netherlands*), Claus Leitherer (*USA, Chair*), Anthony F.J. Moffat (*Canada*), Stanley P. Owocki (*USA*) & Joachim Puls (*Germany*)

|       |   |                      |
|-------|---|----------------------|
| 09:00 | Welcome and Overview                          | C. Leitherer         |
| 09:10 | Keplerian Masses for the Most Massive Stars   | T. Moffat            |
| 09:35 | Massive Extragalactic Eclipsing Binaries      | A. Bonanos           |
| 10:00 | The Masses of Late-Type WN Stars              | G. Graefener         |
| 10:15 | Inflation of Luminous Metal-Rich WR Stars     | O. Pols              |
| 10:30 | <i>Coffee</i>                                 |                      |
| 11:00 | Spectroscopic versus Evolutionary Masses      | A. Herrero           |
| 11:25 | Mass Loss and the Eddington Limit             | S. Owocki            |
| 11:50 | The Ejecta of $\eta$ Car                      | T. Gull              |
| 12:05 | Extragalactic $\eta$ Car Analogs              | S. Van Dyk           |
| 12:20 | Short Presentations                           | Participants         |
| 12:30 | <i>Lunch</i>                                  |                      |
| 14:00 | Upper Mass Limit in Young Star Clusters       | S. Oey               |
| 14:25 | Massive Stars in the Central pc of the Galaxy | F. Martins           |
| 14:40 | High-Mass IMF in Different Environments       | P. Kroupa            |
| 15:05 | Stellar Evolution with Rotation               | G. Meynet            |
| 15:30 | <i>Coffee</i>                                 |                      |
| 16:00 | Evolutionary Models for Supermassive Stars    | L. Yungelson         |
| 16:15 | Properties of Massive Metal-Free Stars        | D. Schaerer          |
| 16:40 | General Discussion                            | Participants         |
| 18:15 | <i>Invited Discourse, Jill Tarter</i>         | <i>Congress Hall</i> |

## Joint Discussion 06

### NEUTRON STARS AND BLACK HOLES IN STAR CLUSTERS

*From Thursday 17, 14:00 through Friday 18 August, 17:30, Small Hall*

*<http://www.astro.northwestern.edu/IAUJD6/>*

**Scientific Organizing Committee:** T. Bulik (Poland), V.J. Casares (Spain), P.A. Charles (South Africa), M. Colpi (Italy), R.P. Fender (UK), P. Ghosh (India), E. Gourgoulhon (France), J.E. Grindlay (USA), V.M. Kaspi (Canada), A.R. King (UK), R.N. Manchester (Australia), I.F. Mirabel (Chile), F.A. Rasio (USA, co-chair), H. Ritter (Germany), M. Shibata (Japan) & I.H. Stairs (Canada, co-chair)

*Thursday, August 17*

#### **Session I. Modeling Star Clusters**

*Chair, D. Heggie*

14:00 Direct N-body Simulations

P. Hut

14:20 Monte Carlo Simulations

J. Fregeau

14:40 Panel discussion

15:00 *Coffee*

#### **Session II. Stellar and Binary Evolution in Clusters**

*Chair, O. Pols*

15:30 Binary Evolution

F. D'antona

15:50 Population Synthesis with Dynamics

N. Ivanova

16:10 Panel discussion

18:15 *Invited Discourse, Alan Title*

**Congress Hall**

*Friday, August 18*

#### **Session III. Pulsars in Globular Clusters**

*Chair, I. Stairs*

09:00 Parkes Observations of Radio Pulsars in Clusters

M. Burgay

09:20 GBT Observations of Radio Pulsars in Clusters

S. Ransom

09:40 Panel discussion

10:30 *Coffee*

**Session IV. X-Ray Sources in Galactic Clusters**

*Chair, F. Verbunt*

- 11:00 Chandra Observations of X-ray Sources in Clusters C. Heinke  
11:20 XMM-Newton Observations of X-ray Sources in Clusters N. Webb  
11:40 Panel discussion  
12:30 *Lunch*

**Session V. Extragalactic X-ray Sources in Clusters**

*Chair, Craig Sarazin*

- 14:00 Overview of X-ray Binary Observations in other Galaxies P. Fabbiano  
14:20 X-ray Source - Globular Cluster Association in Elliptical Galaxies T. Maccarone  
14:40 Panel discussion  
15:00 *Coffee*

**Session VI. Massive Black Holes in Clusters**

*Chair, Sungsoo Kim*

- 15:30 Observational Evidence for Massive Black Holes in Clusters K. Gebhardt  
15:50 N-body simulations of IMBH Formation H. Baumgardt  
16:10 Panel discussion

**Joint Discussion 07**  
**THE UNIVERSE AT  $Z > 6$**

<http://obswww.unige.ch/sfr/jd07/>

*From Thursday 17, 14:00, through Friday August 18, 17:30, Meeting Hall IV*

*Scientific Organizing Committee:* A. Ferrara (Italia, co-Chair), E.M. Hu (USA), M.D. Lehnert (Germany), R. Pelló (France), D. Schaerer (Switzerland, co-Chair) & Y. Taniguchi (Japan)

*Thursday, August 17*

**Session I. Lyman break galaxies, Lyman-alpha emitters and related objects**

*Chair, D. Schaerer*

- |       |  |                               |
|-------|--|-------------------------------|
| 14:00 | Lyman break galaxies at $z > 6$  | <i>(Invited)</i> R. Bouwens   |
| 14:30 | Subaru observations of the high- $z$ universe  | <i>(Invited)</i> Y. Taniguchi |
| 15:00 | Galaxies in the first billion years: implications for reionization and the star formation history at $z > 6$ | A. Bunker                     |
| 15:20 | A Spitzer/IRS search for the galaxies that reionized the universe  | M. Lacy                       |
| 15:35 | <i>Coffee</i>  |                               |
| 16:00 | High- $z$ lensed galaxies  | <i>(Invited)</i> R. Pelló     |
| 16:30 | New constraints on the comoving star formation rate in the redshift interval $6 < 10$                        | R. Ellis                      |
| 16:50 | Observations of galaxies at $z > 6$ – the properties of large, spectroscopic samples                         | E. Hu                         |
| 17:10 | The properties of faint Lyman-alpha emitters at $z \sim 6$ : results   | C. Martin                     |
| 17:30 | <i>Closing</i>   |                               |
| 18:15 | <i>Invited Discourse, Alan Title</i>   | <b>Congress Hall</b>          |

*Friday August 18*

**Session I. Lyman break galaxies, Lyman-alpha emitters and related objects (Cont'd)**

*Chair, E. Hu*

- |       |  |                              |
|-------|--|------------------------------|
| 09:00 | High-redshift Lyman-alpha galaxies   | <i>(Invited)</i> S. Malhotra |
| 09:35 | An observational pursuit for Population III stars in a Lyman-alpha emitter at $z > 6$ through He II Emission | T. Nagao                     |
| 09:55 | The end of the reionization epoch probed by Lyman-alpha emitters at $z = 6.5$                                | N.K. Kashikawa               |

**Session II. High-z AGN and reionisation**

- 10:15 Metallicity and black hole masses of  $z \sim 6$  QSOs J.D. Kurk
- 10:30 *Coffee*
- 11:00 Populations of candidate black holes at redshift 7 or above A. Koekemoer
- 11:20 Constraining the reionization history with QSO absorption spectra S. Gallerani
- 11:40 Size of HII regions around high redshift Quasars vs intergalactic medium neutral hydrogen fraction at  $z \sim 6$  A. Maselli

**Session III. Dust and GRB at high-z**

- 12:00 Dust at high-z: observations and theory (Invited) R. Maiolino
- 12:35 *Lunch*
- Chair, A.Ferrara
- 14:00 Studying the first galaxies at centimeter and millimeter wavelengths C. Carilli
- 14:20 Spectroscopy of the near infrared afterglow of GRB 050904 at  $z=6.3$  N. Kawai
- 14:35 Implications for the cosmic reionization from the optical afterglow spectrum of the Gamma-Ray Burst 050904 at  $z = 6.3$  T. Totani

**Session IV. Background radiation, reionisation, and modeling**

- 14:55 Cosmic Microwave Background: probing the universe from  $z=6$  -1100 (Invited) D.N. Spergel
- 15:30 *Coffee*
- 16:00 Cosmic infrared background from Population III and spectra of high  $z$  gamma-ray bursts A. Kashlinsky
- 16:20 The first galaxy signatures in the infrared background, cosmic microwave background, and the 21-cm background A. Cooray
- 16:35 Additional sources of ionization in early universe and 21 cm line E. Vasiliev
- 16:50 Assessing the influence of metallicity on the fragmentation of protogalactic gas A.-K. Jappsen
- 17:10 UV radiative feedback on high-redshift proto-galaxies A. Mesinger
- 17:30 *Closing*

**Joint Discussion 08**  
**SOLAR AND STELLAR ACTIVITY CYCLES**

[http://www.aip.de/iau2006\\_jd8/](http://www.aip.de/iau2006_jd8/)

*From Thursday 17, 14:00, through Friday August 18, 17:30, Room "Club A"*

**Scientific Organizing Committee:** A. Kosovichev (USA) (co-chair), K.G. Strassmeier (Germany) (co-chair), P. Ambroz (Czech Republic), M. Asplund (Australia), S.V. Berdygina (Switzerland), A.C. Cameron (UK), D. Dravins (Sweden), L. van Driel-Gesztelyi (France), C. Fang (China, Nanjing), J.D. Landstreet (Canada), V.I. Makarov (Russia), G. Mathys (Chile), R. Pallavicini (Italy), F. Moreno-Insertis (Spain), T. Sakurai (Japan) & P. Venkatakrishnan (India)

*Thursday, August 17*

**Session I. Solar activity cycle in the interior, atmosphere and corona**

*Chair, K. Strassmeier*

- |       |  |                   |
|-------|--|-------------------|
| 14:00 | Solar-cycle variations of the internal structure, rotation, and circulations | J. Toomre         |
| 14:30 | Evolution of the solar magnetic fields                                       | J. Wang           |
| 15:00 | Polar magnetic field reversal  | E. Benevolenskaya |
| 15:30 | <i>Coffee</i>  |                   |
| 16:00 | Flip-flop cycles in solar and stellar activity                               | S. Berdyugina     |
| 16:30 | Large-scale patterns, complexes of solar activity and 'active longitudes'    | P. Ambroz         |
| 17:00 | Variations of solar irradiance   | S. Solanki        |

**18:15**            *Invited Discourse, Alan Title*            **Congress Hall**

*Friday August 18*

**Session II. Observations of stellar magnetic activity and cycles**

*Chair, J. Landstreet*

- |       |   |               |
|-------|---|---------------|
| 09:00 | Decadal and Interdecadal Surface Magnetic Variability of Sunlike and Other Cool Stars | S.L. Baliunas |
| 09:30 | Cyclic variation of differential rotation of active stars                             | P. Petit      |
| 10:00 | "Maunder Minimum" stars revisited   | J.T. Wright   |
| 10:30 | <i>Coffee</i>   |               |
| 11:00 | Photospheric stellar activity cycles  | K. Oláh       |
| 11:30 | Global stellar magnetic fields: the crossover from fossils to dynamos                 | G. Mathys     |
| 12:00 | Recent X-ray observations of stellar cycles and long-term variability                 | G. Peres      |

12:30 *Lunch*

**Session III. *Solar-Stellar Connections and Theories***

*Chair, A.G. Kosovichev*

- |       |   |                  |
|-------|---|------------------|
| 14:00 | Magnetic topology and stellar coronas   | M. Jardine       |
| 14:30 | Why coronal mass ejections are necessary for the dynamo                                 | A. Brandenburg   |
| 15:00 | The many cycles of cool stars   | S. Saar          |
| 15:30 | <i>Coffee</i>   |                  |
| 16:00 | On the role of the dynamo and the tachocline  | G. Rüdiger       |
| 16:30 | Impact of stellar activity on habitable planets   | I. Ribas         |
| 17:00 | Current and future observations of solar and stellar activity from the ground and space | K.G. Strassmeier |

## Joint Discussion 09

### SUPERNOVAE: ONE MILLENNIUM AFTER SN 1006

[http://community.middlebury.edu/~iau\\_jd09/](http://community.middlebury.edu/~iau_jd09/)

*From Thursday August 17, 14:00, through Friday August 18, 17:30, Club H*

**Scientific Organizing Committee:** G. Dubner (Argentina), C. Fransson (Sweden), W. Hillebrandt (Germany, co-Chair), K. Koyama (Japan), K. Nomoto (Japan), R. Petre (USA), P. Ruiz-Lapuente (Spain), B.P. Schmidt (Australia, co-Chair), V.L. Trimble (USA), J.C. Wheeler (USA), and P.F. Winkler (USA, co-Chair)

The oral papers for JD 09 consist primarily of invited talks intended to celebrate the millennium of the 1006 C.E. supernova by reviewing the history of that spectacular event, current research on its remnant, and recent progress in understanding Type Ia supernovae, their remnants, and applications to cosmology.

*Thursday, August 17*

#### **Session I. Introduction, History, and Context**

- |       |   |                 |
|-------|---|-----------------|
| 14:00 | SN 1006: a Thousand-Year Perspective                  | F. Winkler      |
| 14:20 | SN 1006 and other Historical Supernovae               | F.R. Stephenson |
| 14:40 | The 1006 Supernova as observed from China             | X. Sun          |
| 15:00 | SN 1006 in Context: from Type Ia Supernova to Remnant | R. Chevalier    |
| 15:20 | Discussion  |                 |
| 15:30 | <i>Coffee</i>   |                 |

#### **Session II. SN 1006 Today: a Typical SN Ia Remnant?**

- |       |  |             |
|-------|--|-------------|
| 16:00 | Radio Observations of SN 1006                        | E. Reynoso  |
| 16:20 | SN 1006 at Optical and Ultraviolet Wavelengths       | K. Long     |
| 16:40 | X-ray Observations of SN 1006                        | K. Koyama   |
| 17:00 | SN 1006, Diffuse Shock Acceleration, and Cosmic Rays | S. Reynolds |
| 17:20 | Discussion   |             |

**18:15**                    *Invited Discourse, Alan Title*                    **Congress Hall**

*Friday, August 18*

#### **Session III. SN Ia Progenitors, Remnants, and Observational Constraints**

- |       |   |                  |
|-------|---|------------------|
| 09:00 | SN Ia Progenitor Models.                                | K. Nomoto        |
| 09:20 | The Binary Progenitor of Tycho Brahe's Supernova        | P. Ruiz-Lapuente |
| 09:40 | Searching for SN Ia Progenitor Companions in HST images | S.D. Van Dyk     |
| 10:00 | Supernova Remnants and their Progenitors                | J. Dickel        |
| 10:20 | Discussion  |                  |
| 10:30 | <i>Coffee</i>   |                  |

**Session IV. SN Ia: Models, Nucleosynthesis, and Observational Constraints**

- 11:00 On the Road to Consistent Type Ia Supernova Explosion Models F. Röpke
- 11:20 What do Host Galaxies tell us about SN Ia Progenitors P. Garnavitch
- 11:40 Global Properties of Type Ia Supernovae B. Leibudgut
- 12:00 Constraints on SN Ia from their remnants J.P. Hughes
- 12:20 Discussion
- 12:30 *Lunch*

**Session V. SN Ia Light Curves, Spectra, and Connections to SN Physics**

- 14:00 Exploring the Global Properties of SN Ia P. Mazzali
- 14:20 Light Echoes of Ancient Supernovae in the Large Magellanic Cloud Armin Rest
- 14:40 Spectrophotometric Properties of SN Ia: What can we learn? S. Benetti
- 15:00 Infrared Spectroscopy of Thermonuclear Supernovae C.L. Gerardy
- 15:20 Discussion
- 15:30 *Coffee*

**Session VI. Supernova Cosmology, an Accelerating Universe, and Dark Energy**

- 16:00 The Supernova Legacy Survey: Measurement of  $\Omega_m$ ,  $\Omega_\nu$ , and  $w$  from the first-year Data J. Guy
- 16:20 Observing SN Ia at  $z > 1$  with HST and around  $z=0.2$  with the SDSS H. Lampeitl
- 16:40 The ESSENCE of Dark Energy M. Wood-Vasey
- 17:00 Supernova/Acceleration Probe - A Satellite Experiment to Study Dark Energy A. Kim
- 17:00 Concluding Remarks: Supernovae - Yesterday, Today, and Tomorrow V. Trimble

## Joint Discussion 10

### PROGRESS IN PLANETARY EXPLORATION MISSIONS

*From Monday 21 09:00 through Tuesday August 22, 12:30, Meeting Hall IV*

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

**Scientific Organizing Committee:** M.F. A'Hearn (USA), C. Blanco (Italy), G.J. Consolmagno (Vatican City State, chair) R. Courtin (France), D.P. Cruikshank (USA), W.F. Huebner (USA), P.M.M. Jenniskens (The Netherlands), H.U. Keller (Germany), L.V. Ksanfomality (Russian Federation), M.Ya. Marov (Russian Federation), M.A. McGrath (USA), K.S. Noll (USA), M.C. Roos-Serote (Portugal), E.F. Tedesco (USA) & I.P. Williams (UK)

*Monday, August 21*

#### **Session I. Missions to Saturn and the Solar Wind**

- 09:00 Genesis Discovery Mission Science Results (Invited) D. Burnett  
09:45 Cassini at Saturn (Invited) D. Matson  
10:30 *Coffee*  
11:00 Cassini at Saturn (continued) (Invited) D. Matson  
11:30 Huygens at Titan (Invited) J.-P. Lebreton  
12:30 *Lunch*

#### **Session II. Missions to Minor Planets and the Moon**

- 14:00 Hayabusa – Its Adventure around (Invited) Y. Makato  
the Tiny Asteroid Itokawa  
14:45 Deep Impact: Excavating Comet Tempel 1 (Invited) M. A'Hearn  
15:30 *Coffee*  
16:00 Preliminary Examination of the Comet Wild 2 (Invited) M. Zolensky  
Samples Returned by the Stardust  
16:45 Results from SMART-1 Lunar Mission (Invited) B. Foing  
18:15 *Invited Discourse, Shuang Nan Zhang* **Congress Hall**

*Tuesday, August 22*

#### **Session III. Missions to Venus and Mars**

- 09:00 Venus Express (Invited) H. Svedhem  
09:30 Mars Express Science Results and (Invited) A. Chucarro  
Goals for the Extended Mission  
10:30 *Coffee*  
11:00 Scientific Results of the Mars Exploration (Invited) B. Banerdt  
Rovers Spirit and Opportunity

## Joint Discussion 11

### PRE-SOLAR GRAINS AS ASTROPHYSICAL TOOLS

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

**Monday August 21, 09:00-17:30, Club A**

**Scientific Organizing Committee:** A.C. Andersen (Denmark, co-chair), W.D. Arnett (USA), M. Asplund (Australia), S.C. Balachandran (USA), J.P. Bradley (USA), M. El Eid (Lebanon), R. Gallino (Italy), S. Girdhar (India), J.C. Lattanzio (Australia, co-chair), J.Th. Van Loon (UK), N. Mowlavi (Switzerland), A. Natta (Italy), T. Yoshida (Japan) & E. Zinner (USA)

#### **Session I. Introduction and Overview**

- 09:00 Overview: Opportunities from Grains U. Ott  
09:20 Abundances in Grains, Stars and the Galaxy . Nittler  
10:10 New Science from New Technology: Nano-SIMS and RIMS P. Hoppe  
10:30 *Coffee*

#### **Session II. Nucleosynthesis**

- 11:00 Pre-Solar Grains and AGB Stars M. Lugaro  
11:30 Pre-Solar Grains: WR Stars, novae and supernovae S. Amari  
12:00 Supernova Mixtures Indicating Isotopic Ratios of Presolar Grains T. Yoshida  
12:20 Is There any Evidence for Interstellar Nanodiamond Particles? W.W. Duley  
12:40 *Lunch*

#### **Session III. Grain Formation**

- 14:00 Condensation of Grains K. Lodders  
14:30 Mass-loss: the role of Grains S. Hoefner  
15:00 Time-dependent modelling of oxygen-rich dust formation C. Helling  
15:20 The possible age of Dergaon meteorite H.L. Duorah  
15:40 *Coffee*

#### **Session IV. Grains in Space**

- 16:00 Life Story of a Grain: from Formation to the Lab B. Draine  
16:30 Constraints on Conditions in the Solar Nebula from the Laboratory Study of Presolar Grains G. Huss  
17:00 STARDUST Mission Update S. Messenger  
17:30 Overview: Agenda for the Future C. Alexander  
18:15 *Invited Discourse, Shuang Nan Zhang* **Congress Hall**

## Joint Discussion 12

### LONG WAVELENGTH ASTROPHYSICS

Monday August 21, 09:00-17:30, Club H

*Scientific Organizing Committee:* F. Briggs (Australia), G. Dubner (Argentina), L. Feretti (Italy), N.E. Kassim (USA, Co-Chair), T.J.W. Lazio (USA, Co-Chair), A.V. Megn (Ukraine), A.A. Konovalenko (Ukraine), A. Lecacheux (France), A.P. Rao (India), H.J.A. Röttgering (The Netherlands) & K.W. Weiler (USA)

#### Session I. Sun, Planets, and Nearby Space

*Chair,* A. Konovalenko

- 09:00 Low-Frequency Radiophysics of the Sun and Heliosphere T. Bastian  
09:30 Sporadic Radio Emission of the Sun in the Decameter Range V. Mel'nik  
09:50 Solar U- and J-Bursts at the Frequencies 10-30 MHz V. Dorovskyy  
10:10 Bi-Static Radar Observations of the Ionosphere G. Langston  
10:20 New Galactic ISM Results and Progress toward  
Low Frequency Spectroscopy A. Green  
10:30 *Coffee*

#### Session II. Acceleration Processes

*Chair,* G. Dubner

- 11:00 Diffuse Radio Sources in Clusters of Galaxies:  
Models and Long Wavelength Radio Observations C. Sarazin  
11:30 Acceleration Processes in the Large-Scale Structure T. Ensslin  
11:50 Particle Acceleration Processes in Galaxy Clusters  
and Future Low Frequency Radio Observations G. Brunetti  
12:10 The Fossil Record of Episodic AGN Heating in Clusters M. Wise  
12:20 Long Wavelength Spectral Studies of Giant Radio Galaxies E. Orrú  
12:30 *Lunch*

#### Session III. Cosmology and Large-Scale Structure

*Chair,* L. Feretti

- 14:00 Observations of Cosmic Reionization  
using the 21 cm line of Neutral Hydrogen C. Carilli  
14:30 Cosmic Reionization:  
Theoretical Modeling and Forthcoming Observations B. Ciardi  
14:50 High Redshift Radio Galaxies,  
The Most Massive Galaxies at Every Epoch C. de Breuck

JOINT DISCUSSION 12

- 15:10 Deep GMRT Images of the Spitzer Extragalactic Faint Look Survey at 610 MHz D. Green
- 15:20 A Steradian of the Southern Sky at 151 MHz Using the Mauritius Radio Telescope V. Pandey

15:30 *Coffee*

**Session IV. Emerging Long-Wavelength Instruments**

*Chair, N. Kassim*

- 16:00 LOFAR – The Low Frequency Array H. Falcke
- 16:15 The Long Wavelength Array G. Taylor
- 16:30 Searching for Early Ionization with the Primeval Structure Telescope J. Peterson
- 16:45 The Frequency Agile Solar Radiotelescope (FASR) D. Gary
- 17:00 Mileura Wide-field Array R. Webster
- 17:15 Mission Concepts for Spacecraft and Lunar-based Radio Source Imaging at Frequencies below the Ionospheric Cutoff N. Gopalswamy

18:15 *Invited Discourse, Shuang Nan Zhang* *Congress Hall*

## Joint Discussion 13

### EXPLOITING LARGE SURVEYS FOR GALACTIC ASTRONOMY

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

*From Tuesday 22, 09:00, through Wednesday August 23, 12:30, Club A*

**Scientific Organizing Committee:** C. Bailer-Jones (Germany, Co-Chair), C. Corbally (Vatican, Co-Chair), L. Eyer (Switzerland), S. Giridhar (India, Co-Chair), T. Lloyd Evans (UK), D. Minniti (Chile), H. Morrison (USA), B. Nordström (Denmark), I. Platais (USA) & P. Whitelock (South Africa)

*Tuesday, August 22*

#### **Session I. Photometric, Spectroscopic and Kinematic Surveys**

*Chair, L. Eyer*

|       |   |             |
|-------|---|-------------|
| 09:00 | Earlier Galactic surveys: their goals and lessons | R. Wyse     |
| 09:30 | Photometric surveys                               | H. Newberg  |
| 09:55 | Spectroscopic surveys                             | Z. Ivezic   |
| 10:20 | Revisiting the Geneva-Copenhagen survey           | J. Holmberg |
| 10:35 | <i>Coffee</i>                                     |             |

*Chair, I. Platais*

|       |   |              |
|-------|---|--------------|
| 11:00 | Radial velocity surveys                                 | M. Steinmetz |
| 11:30 | Astrometric surveys                                     | C. Turon     |
| 12:00 | Kinematics of nearby disk stars from Hipparcos database | R. Teixeira  |
| 12:15 | Mid-infrared all-sky survey with AKARI                  | D. Ishihara  |
| 12:30 | <i>Lunch</i>  |              |

#### **Session II. Impact on Galactic Astronomy**

*Chair, D. Minniti*

|       |   |                   |
|-------|---|-------------------|
| 14:00 | Galactic history: formation and evolution             | J. Bland-Hawthorn |
| 14:20 | Variable stars and galactic structure                 | K. Cook           |
| 14:50 | Abundance structure of the Galactic disk              | S. Feltzing       |
| 15:10 | Substructures in the Galactic halo, including mergers | A. Helmi          |
| 15:30 | <i>Coffee</i>   |                   |

#### **Session III. Interpretations and Limitations of the Data**

*Chair, T. Lloyd Evans*

|       |   |             |
|-------|---|-------------|
| 16:00 | Classic and new photometric systems                   | I. Glass    |
| 16:20 | Parameterization of stars                             | R. Gray     |
| 16:40 | Automated classification and stellar parameterization | S. Giridhar |
| 17:00 | Data sets and population synthesis                    | A. Robin    |
| 17:20 | Call for written reflections and proposals            |             |

**18.15 *Invited Discourse, Reinhard Genzel***

***Congress Hall***

*Wednesday, August 23*

**Session IV. *Future Strategies***

09:00 Prospects for space-based Galactic surveys

*Chair, P. Whitelock*

09:30 Prospects for ground-based Galactic surveys

C.A.L. Bailer-Jones

10:00 Poster summary

N. Kaiser

10:30 *Coffee*

B. Nordström

**Session V. *Joint Discussion***

*Moderator, C. Corbally*

11:00 Panel Discussion, with written proposals presented by moderator

12:15 Summary

T. de Zeeuw

## Joint Discussion 14

### MODELLING DENSE STELLAR SYSTEMS

*From Tuesday 22, 14:00, through Wednesday August 23, 17:30, Meeting Hall IV*

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

*Scientific Organizing Committee:* C. Boily (France), M. Davies (Sweden), D. Heggie (UK), P. Hut (USA), R. Klessen (Germany), J. Makino (Japan), R. Mardling (Australia), S. McMillan (USA), G. Meylan (Switzerland), G. Piotto (Italy), S. Portegies Zwart (Holland), A. Sills (Canada, Co-Chair), R. Spurzem (Germany) & L. Subr (Czech Republic, Co-Chair)

#### **Session I. Introductions**

*Chair, S. McMillan*

- 14:00 Background and Summary of JD06 P. Hut  
14:30 Special-Purpose Computing for Dense Stellar Systems J. Makino  
15:00 Panel Discussion  
15:30 Coffee

#### **Session II. Computer Codes and Clusters**

*Chair, S. Portegies Zwart*

- 16:00 How to Build and Use Special Purpose PC Clusters for Stellar Dynamics R. Spurzem  
16:30 N-Body codes S. Aarseth  
17:00 Panel Discussion

**18.15 Invited Discourse, Reinhard Genzel**

**Congress Hall**

*Wednesday, August 23*

#### **Session III. Connections between Stellar Evolution and Stellar Dynamics**

*Chair, J. Lattanzio*

- 09:00 Stellar Evolution and Feedback Connections to Stellar Dynamics F. D'Antona  
09:30 Stellar Dynamics and Feedback Connections to Stellar Evolution N. Ivanova  
10:00 Panel Discussion  
10:30 Coffee

**Session IV. *Are there Multiple Stellar Populations in Globular Clusters?***

*Chair, H. M. Lee*

- 11:00 Observations of Multiple Stellar Populations in Globular Clusters G. Piotto  
11:30 Dynamical Implications of Multiple Stellar Populations A. Sills  
12:00 Panel Discussion  
12:30 *Lunch*

**Session V. *Stellar Exotic in Clusters: Collisions, Blue Stragglers, & CVs***

*Chair, J. Lombardi*

- 14:00 Observations of Blue Stragglers in Globular Clusters F. Ferraro  
14:30 Exotica F. Verbunt  
15:00 Panel Discussion  
15:30 *Coffee*

**Session VI. *Putting it all together - Kitchen Sink Models***

*Chair, L. Subr*

- 16:00 Models of M67 J. Hurley  
16:20 Spectroscopic Binaries in M67 D. Latham  
16:40 Observations of Internal Dynamics of Globular Clusters L. Bedin  
17:00 Panel Discussion  
17:20 Summary of the Joint Discussion D. Heggie

## Joint Discussion 15

### NEW COSMOLOGY RESULTS FROM THE SPITZER SPACE TELESCOPE

From Tuesday 22, 09:00, through Wednesday August 23, 12:30, Small Hall

<http://ssc.spitzer.caltech.edu/mtgs/iauw2006-JD15/>

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

Tuesday, August 22

#### Introductory Session

09:00 Welcome (Organizing Committee)

09:05 Overview of the Science Program Related to the Cosmological Studies with the Spitzer Space Telescope B.T. Soifer

#### Session I. *The Modern Universe, $z \sim 0$ to 1, properties of galaxies and AGN*

09:30 A multi-wavelength view of the  $z < 1$  Universe S. Oliver

09:50 Normal Galaxies as Revealed by the Spitzer Space Telescope R. Kennicutt

10:10 Spitzer Results on Low Metallicity Galaxies J. Houck

10:30 *Coffee*

11:00 New Results on ULIRGs and AGN in the Local Universe E. Sturm

11:20 Questions/ Answers for Session I.

#### Session II. *The Evolving Universe, $z \sim 1$ to 3, properties and evolution of galaxies and AGN*

11:35 Young and old stars in distant  $z = 2$  galaxies: the view from Spitzer E. Daddi

12:00 The Obscured Universe as Seen by Spitzer  $24\mu\text{m}$  Surveys R.R. Chary

12:25 *Lunch*

14:00 Deep and Ultra-Deep  $70$  and  $160\mu\text{m}$  Surveys D. Frayer

14:25 Probing the Properties of High- $z$  Infrared Luminous Galaxies with Spitzer/IRS G. Lagache

14:50 The Nature of Massive Galaxies at  $1 < z < 3$  P. Van Dokkum

15:15 AKARI in Orbit: Scientific Potential for Cosmology T. Wada

15:30 *Coffee*

**Session III. *The Distant Universe,  $z \sim 3$  to  $\sim 5$  and beyond***

- |              |  |                             |
|--------------|--|-----------------------------|
| 16:00        | The Optical Side of Spitzer: Massive and Evolved Galaxies at $z > 5$                                       | T. Wiklind                  |
| 16:25        | Evolution of Highest Redshift Quasars: Implications from IR Observations                                   | X. Fan                      |
| 16:50        | Searching for the Sources Responsible for Cosmic Reionization: The Key Role of the Spitzer Space Telescope | R. Ellis                    |
| 17:15        | Joint Spitzer/Hubble/Chandra Results on Extreme X-ray/Optical Sources (EXOs)                               | A. Koekemoer                |
| 17:40        | End of Session   |                             |
| <b>18:15</b> | <b><i>Invited Discourse, Reinhard Genzel</i></b>   | <b><i>Congress Hall</i></b> |

*Wednesday, August 23*

**Session IV. *Integrated Phenomenological and Theoretical Perspectives***

- |       |   |              |
|-------|---|--------------|
| 09:00 | Evolution of galaxies measured from Spitzer and multiwavelength surveys | M. Franx     |
| 09:25 | Constraints on the global history of star formation in the Spitzer era  | M. Dickinson |
| 09:50 | CDM Predictions for Spitzer   | Ca. Frenk    |
| 10:15 | Star Formation History: Infrared vs. Optical Output                     | J.-L. Puget  |
| 10:40 | Break   |              |
| 11:10 | ULIRGs in the Cosmological Context                                      | S. Veilleux  |
| 11:35 | Theory of Galaxy Mergers  | T. Naab      |
|       | <b><i>Concluding Session</i></b>  |              |
| 12:00 | Summary talk  |              |

## Joint Discussion 16

### NOMENCLATURE, PRECESSION AND NEW MODELS IN FUNDAMENTAL ASTRONOMY.

#### APPLICATIONS AND SCIENTIFIC CONTRIBUTION TO ASTRONOMY

*From Tuesday 22, 09:00, through Wednesday August 23, 12:30, Club H*

*Scientific Organizing Committee:* A. Brzezinski (Poland), M. Calabretta (Australia), N. Capitaine (France, Co-Chair), V. Dehant (Belgium), T. Fukushima (Japan), J. Hilton (USA, Co-Chair), K. Johnston (USA), I. Kumkova (Russia), A. Milani (Italy), R. Nelson (USA), K. Seidelmann (USA), M. Soffel (Germany) & J. Vondrák (Czech Republic, Co-Chair)

*Tuesday, August 22*

09:00 Introduction to the Joint Discussion N. Capitaine

#### **Session I *State of the art of the implementation of the IAU Resolutions and the ICRS***

*Chair, J. Vondrák*

09:10 Present status of the celestial reference system and frame *(Invited) C. Ma*

09:30 Tools for implementing the recent IAU resolutions:  
USNO Circular 179 and the NOVA software package *(Invited) G. Kaplan  
& J. Bangert*

09:55 Selecting highly-compact radio sources for the definition  
of the celestial reference frame *P. Charlot et al.*

10:05 Véron & Véron based optical extragalactic reference:  
progress report *A. Andrei et al.*

10:15 Problems of the reference radio source selection *O. Titov*

10:30 *Coffee break*

#### **Session II. *Precession and the Ecliptic***

*Chair, T. Fukushima*

11:00 Review on the work of the "Precession and ecliptic"  
Working Group *(Invited) J. Hilton*

11:20 Long-term solution for the insolation quantities  
of the Earth *(Invited) J. Laskar*

11:45 Using the P03 precession model *P. Wallace & N. Capitaine*

11:55 Long-periodic precession parameterization *J. Vondrák*

12:05 Numerical theory of rotation of the deformable Earth  
with the fluid core: fitting to VLBI data and deriving  
corrections to IAU 2000 theory *G. Krasinski*

12:20 *Short poster review*

12:30 *Poster session*

**Session III. High accuracy models for reducing astronomical observations**

Chair, J. Hilton

- 14:00 Models for high precision spacecraft and planetary ephemerides (Invited) M. Standish & J.G Williams
- 14:20 Relativistic aspects of the Earth's rotation (Invited) S. Klioner & M. Soffel
- 14:45 The dynamical model of the planet motions and EPM ephemerides E. Pitjeva
- 14:55 INPOP06: A new planetary ephemeris A. Fienga et al.
- 15:05 Accurate harmonic development of lunar ephemeris LE-405/406 S. Kudryavstev
- 15:15 The solar quadrupole moment from planetary ephemerides: present state of the art S. Pireaux et al.
- 15:30 *Coffee break*

**Session IV. New terminology in fundamental astronomy, time and relativity**

Chair, M. Soffel

- 16:00 Proposed terminology in fundamental astronomy based on IAU 2000 Resolutions (Invited) N. Capitaine et al.
- 16:20 Implementation of the new nomenclature in The Astronomical Almanac (Invited) C. Hohenkerk
- 16:45 TDB or TCB: does it make a difference? S. Klioner
- 16:55 From atomic clocks to coordinate times G. Petit
- 17:05 Pulsars as barycenter coordinate clocks V. Zharov et al.
- 17:15 General relativity theory: tests through time Ya. Yatskiv
- 17:30: *Poster session (continuation)*

18.15 *Invited Discourse, Reinhard Genzel*

*Congress Hall*

Wednesday, August 23

**Session V. Scientific applications of high accuracy astronomy**

Chair, V. Dehant

- 09:00 Accurate optical reference catalogs (Invited) N. Zacharias
- 09:20 Scientific potential of the future space astrometric missions (Invited) L. Lindgren
- 09:45 Space astrometry with the milli-arcsecond pathfinder survey (MAPS): mission overview and science possibilities R. Gaume et al.

- 09:55 Astrometric science with SIM planetQuest S.C. Unwin  
10:05 Does the magnetic field in the fluid core contribute C.-L.Huang et al.  
a lot to Earth nutation?  
10:15 Retrieving diurnal and semidiurnal signals A. Brzezinski & S. Bolotin  
in polar motion and UT1 from analysis  
of the routine VLBI observations  
10:30 *Coffee break*

**Session 6. General Discussion and educational efforts**

- Chair*, N. Capitaine  
11:00 Education in astrometry (*Invited*) W. van Altena  
11:20 The 3D representation of the new transformation (*Invited*) V. Dehant et al.  
from the terrestrial to the celestial system  
11:45 The small telescopes still useful for astrometry M. Stavinschi  
11:55 *Discussion*  
12:20 Concluding remarks J. Vondrák

**Joint Discussion 17**  
**HIGHLIGHTS OF RECENT PROGRESS**  
**IN THE SEISMOLOGY OF THE SUN AND SUN-LIKE STARS**

*Wednesday August 23, 09:00-18:30, Small Theater*

*Scientific Organizing Committee:* H. Antia (India), A. Baglin (France), P. Cally (Australia), F. Carrier (Switzerland), M.P. Di Mauro (Italy), H. Kjeldsen (Denmark), J. Leibacher (USA, co-chair), J. Matthews (Canada), M. Monteiro (Portugal), P. Pallé (Spain), P. Scherrer (USA), H. Shibahashi (Japan), M. Thompson (UK, co-chair), & S. Turck-Chièze (France)

**Session I. Global Helioseismology and Models**

- 09:00 *Introductory Overview:* Interplay between global helioseismology & dynamical models (Invited) J. Toomre
- 09:25 Time variations (Invited) F. Hill
- 09:40 Helioseismology vs. the new solar chemical composition (Invited) M. Asplund
- 09:55 Helioseismology and solar models with the updated elemental abundances (Invited) H. Shibahashi
- 10:10 What can 3-D global simulations teach us about the solar turbulent convection zone, differential rotation, and meridional circulation? (Invited) A.S. Brun
- 10:25 Non-kinematic flux-transport dynamos and torsional oscillations (Invited) M. Rempel
- 10:40 *Coffee*
- 11:00 Determination of global high-degree solar  $p$ -mode parameters M.C. Rabello-Soares
- 11:10 Knowledge of the solar core dynamics through  $g$  modes R. García
- 11:25 Internal gravity waves and mixing in the Sun (Invited) S. Talon
- 11:40 Solar dynamics, asphericities, and gravitational moments: present state of the art J.P. Rozelot
- 11:50 *Lunch*

**Session II. Local Helioseismology, Magnetic Activity, and Mode Physics**

- 13:20 *Introductory Overview* (Invited) L. Gizon
- 13:45 Local helioseismology techniques and results (Invited) A. Kosovichev
- 14:00 Magneto-helioseismology (Invited) A. Crouch
- 14:15 Seismic diagnostics inferred from amplitudes of stochastically-excited modes (Invited) R. Samadi
- 14:30 Solar supergranulation-scale simulations A. Nordlund
- 14:40 *Coffee*

**Session III. A New Era of Asteroseismology**

- 15:00 *Introductory Overview* (Invited) J.Christensen-Dalsgaard  
 15:25 Dynamical processes in stellar radiation zones (Invited) S. Mathis  
 15:40 Hot stars (Invited) P. De Cat  
 15:55 Rotation detection in solar-like stars (Invited) M.-J. Goupil  
 16:10 Asteroseismology with the *MOST* space mission (Invited) J. Matthews  
 16:25 Oscillations in solar-type stars: (Invited) T.R. Bedding  
 recent observational results  
 16:40 Asteroseismology of sub-giants and red giants (Invited) H. Kjeldsen

**Session IV. Future Activities**

- 16:55 *Introductory Overview* J. Leibacher  
 17:00 SIAMOIS: an interferometric doppler seismometer (Invited) J-P. Maillard  
 at Dome C  
 17:10 *The Stellar Oscillations Network Group* (Invited) H. Kjeldsen  
 17:10 *The Helioseismic and Magnetic Imager for the (Invited) M.C. Rabello-Soares  
 Solar Dynamics Observatory*  
 17:20 *The COROT mission: Asteroseismology and (Invited) I.W. Roxburgh  
 Planet Finding*  
 17:50 *PLATO: PLANetary Transits and Oscillations of stars (Invited) I.W. Roxburgh*  
 18:05 *Concluding Remarks* M. Thompson

## SPECIAL SESSIONS

### Special Session 1

#### ASTRONOMICAL FACILITIES OF THE NEXT DECADE

*From Wednesday 16, 09:00 through Thursday August 17, 12:30, Small Theater*

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

**Scientific Organizing Committee:** X. Cui (China, Nanjing), R.G. Carlberg (Canada), M. Dennefeld (France), E.F. van Dishoeck (The Netherlands), G.F. Gilmore (UK, co-chair), G. Hasinger (Germany), M. Iye (Japan), P. Quinn (Germany), R. T. Schilizzi (The Netherlands, co-chair), P. Stockman (USA), N.A. Walton (UK) & P.A. Whitelock (South Africa)

*Timings quoted include discussion, but note generous coffee/ lunch breaks. Related poster space is available.*

*Wednesday, August 16*

**Session I. Which major facilities are being developed now for operation  
in the middle of the next decade:  
the second set of 'great observatories.**

|              |  |                             |
|--------------|--|-----------------------------|
| 09:00        | Introduction to the meeting                  | G. Gilmore                  |
| 09:05        | James Webb Space Telescope                   | P. Stockman                 |
| 09:50        | Atacama Large Millimetre Array               | J. Turner                   |
| 10:30        | <i>Coffee</i>                                |                             |
| 11:30        | LOFAR  | H. Butcher                  |
| 12:00        | Square Kilometre Array                       | R. Schilizzi                |
| 12:30        | <i>Lunch</i>                                 |                             |
| 14:00        | Thirty Metre Telescope                       | J. Nelson                   |
| 14:30        | Giant Magellan Telescope                     | S. Schectman                |
| 15:00        | European Extremely Large Telescope           | R. Gilmozzi                 |
| 15:30        | <i>Coffee</i>                                |                             |
| 16:00        | High Energy Facilities                       | G. Hasinger                 |
| 16:25        | Gravity Wave Facilities                      | S. Rowan                    |
| 16:50        | Neutrino Facilities                          | Y. Suzuki                   |
| 17:15        | Virtual Observatory                          | M. Ohishi                   |
| 17:45        | End of day one                               |                             |
| <b>18:15</b> | <b><i>Invited Discourse, Jill Tarter</i></b> | <b><i>Congress Hall</i></b> |

*Thursday August 17*

**Session II. *What processes are underway to set priorities and to approve and fund some or all of these ambitions.***

|       |   |                |
|-------|---|----------------|
| 09:00 | NASA's Astrophysics Division Missions in the coming decade  | E. Smith       |
| 09:30 | ESA Astrophysics mission plans for the next decade          | C. Turon       |
| 10:00 | Japanese astronomy plans for the future                     | M. Iye         |
| 10:20 | Chinese astronomy plans for the future                      | X. Cui         |
| 10:40 | <i>Coffee</i>   |                |
| 11:30 | US/NSF Strategic planning for the future: status & plans    | W. van Citters |
| 11:50 | Astronet and ESFRI: European Strategic planning initiatives | A.-M. Lagrange |
| 12:10 | OECD strategic activities                                   | H.-F. Wagner   |
| 12:30 | End of day two  |                |

## Special Session 2

### INNOVATION IN TEACHING/LEARNING ASTRONOMY METHODS

From Thursday 17, 09:00 through Friday August 18, 17:30, Meeting Hall V

<http://www.communicatingastronomy.org/innovation2006>

**Scientific Organizing Committee:** M.A. Bennett (USA), J. Fierro (Mexico), M. Gerbaldi (France), P. Heinzel (Czech Republic), B. Hidayat (Indonesia), S. Isobe (Japan), E.V. Kononovich (Russian Federation), M. Metaxa (Greece), J.M. Pasachoff (USA, co-chair), J.R. Percy (Canada), R.M. Ros (Spain, co-chair), M. Stavinschi (Romania) & R.M. West (Germany)

Thursday, August 17

#### Theme 1. General strategies for effective teaching

|       |  |                       |
|-------|--|-----------------------|
| 09:00 | Welcome  | J. Pasachoff/R.M. Ros |
| 09:05 | Main Objectives of the meeting   | J. Pasachoff/RM.Ros   |
| 09:25 | Learning Astronomy by doing Astronomy  | J. Percy              |
| 09:45 | Hands-on Universe - Europe   | R. Ferlet             |
| 10:00 | Life of the Earth in the solar atmosphere  | E. Kononovich         |
| 10:15 | A Model of Teaching Astronomy to Pre-Service Teachers  | W.R. MacIntyre        |
| 10:30 | <i>Coffee</i>  |                       |
| 11:00 | Education Efforts of the International Astronomical Union  | J.M. Pasachoff        |
| 11:20 | How to teach, learning, doing and enjoying Astronomy   | R.M. Ros              |
| 11:40 | Clickers: A New Teaching Tool of Exceptional Promise   | D.K. Duncan           |
| 11:55 | Teaching students astronomy through after-school programs  | A. Krishnamurthi      |
| 12:10 | Teaching the evolution of stellar and Milky Way  | G. Theureau           |
| 12:25 | <i>Lunch</i>   |                       |
| 13:50 | Astronomy and Culture  | M. Stavinschi         |
| 14:10 | Light Pollution a tool for Astronomy Education   | M. Metaxa             |
| 14:30 | Student Gains in Understanding the Process of Scientific Research  | T.A. Rector           |
| 14:45 | Effects of Collaborative Learning on Students' Achievements in introductory Astronomy for Non-science Majors | M.-H. Rhee            |
| 15:00 | Worldwide On-line Distance Learning University Astronomy   | S.P.S. Eyres          |
| 15:15 | Edible Astronomy Demonstrations  | D.A. Lubowich         |
| 15:30 | <i>Coffee</i>  |                       |
| 16:00 | Amateur Astronomers as Public Outreach Partners  | M.A. Bennett          |
| 16:20 | Does the Sun Rotate around the Earth   | S. Isobe              |



SPECIAL SESSION 2

- 14:45 Towards a New Program in Astronomy Education in Secondary Z. Aslan
- 15:00 Astronomy in the Russian Scientific-Educational Project A. Gusev
- 15:15 Universe Awareness for Young Children C. Scorza
- 15:30 *Coffee*
- 16:00 Spreading Astronomy Education through Africa P Baki
- 16:20 Education in Egypt and Egyptian response to eclipses A. Hady
- 16:40 Freshman Seminars: Interdisciplinary Engagements in Astronomy M.K. Hemenway
- 16:55 *Posters*
- 17:15 *Discussion*

### Special Session 3

#### THE VIRTUAL OBSERVATORY IN ACTION: NEW SCIENCE, NEW TECHNOLOGY, AND NEXT GENERATION FACILITIES

<http://www.ivoa.net/pub/VOScienceIAUPrague>

*Thursday August 17, 14:00 through Tuesday August 22, 12:30, Small Theatre*

*Scientific Organizing Committee:* G. Fabbiano (USA), F. Genova (France), R. Hanisch (USA), A. Lawrence (UK, Chair), A. Meszaros (Czech Republic), O. Malkov (Russia), R. Norris (Australia), M. Ohishi (Japan), P. Quinn (Germany), I. Scholl (France), E. Solano (Spain), A. Szalay (USA), N. Walton (UK), R. Williams (USA), Y. Zhao (China, Nanjing).

*Thursday, August 17*

#### **Session I. Introductory Review**

14:00 The Virtual Observatory : what it is and where it came from (Invited) A. Lawrence

#### **Session II. AGN and galaxies**

14:30 Large Surveys and the VO (Invited) K. Kuijken

15:00 A VO study of SDSS AGN with X-ray emission from ROSAT pointed observations R. Hanisch

15:15 VO capabilities for AGN and starburst galaxies M. Allen

15:30 *Coffee*

16:00 A VO-based solution to the origin of soft X-ray emission in obscured AGN M. Guinazzi

16:15 Determination of radio spectra from catalogues and identification of GHz peaked sources using the VO B. Vollmer

16:30 Quasar environment to  $z=0.9$  Y. Loh

16:45 Study on the environment around QSOs with redshift of 1.3 using the JVO system Y. Shirasaki

18:15 *Invited Discourse, Alan Title* **Congress Hall**

*Friday, August 18*

#### **Session III. Large Facilities and Data Archives**

09:00 Implications of the VO for ground based facilities (Invited) C. Cesarsky

09:30 Towards a VO compliant ESO Science Archive P. Padovani

09:45 SAI Catalogue Access Services S. Koposov

- 10:00 Development of the database of the Nikolaev Astronomical Observatory as a Unit of an International Virtual Observatory Yu. Protsyuk
- 10:15 An archive of Chandra observations of regions of star formation (ANCHORS) S. Wolk
- 10:30 *Coffee*
- 11:00 End-to-end science from major facilities : does the VO have a role ? (Invited) G. Gilmore
- 11:30 "Re-tooling" Data Centre infrastructure to support the VO S. Gaudet
- 11:45 Prototype development for a Hubble Legacy Archive B. Whitmore
- 12:00 *Demonstration / Posters*
- 12:30 *Lunch*

#### **Session IV. Stars and galaxies**

- 14:00 New generation wide-fast-deep optical surveys : Petabytes from the sky (Invited) A. Tyson
- 14:30 Galaxy formation and evolution using multi-wavelength, multi-resolution imaging data in the Virtual Observatory P. Prema
- 14:45 NVO study of Super Star Clusters in nearby galaxies B. Whitmore
- 15:00 Science projects with the Armenian Virtual Observatory A. Mickaelian
- 15:15 Mapping Galactic Spiral Arm structure : the IPHAS survey and Virtual Observatory access N. Walton
- 15:30 *Coffee*
- 16:00 Large surveys and determination of interstellar extinction O. Malkov
- 16:15 Discovery and characterisation of Brown Dwarfs mining large-area surveys E. Solano
- 16:30 Criteria for spectral classification of cool stars using high resolution spectra D. Montes
- 16:45 Extracting parameters for stellar populations synthesis from SDSS galaxy spectra using evolution strategies J. Gomez
- 17:00 Virtual Observatory as a tool for stellar spectroscopy P. Skoda

*Monday, August 21*

#### **Session V. VO Technology and Projects**

- 09:00 Grid technology and multi-disciplinary science (Invited) I. Foster
- 09:30 Interconnecting the Virtual Observatory with computational grid infrastructures F. Pasian
- 09:45 Subject Mediation approach for scientific problem solving in Virtual Observatories L. Kalinichenko

- 10:00 An ontology of astronomical object types for the VO S. Derriere  
 10:15 OWLviper - a semantics based analysis and query tool E. Shaya  
 10:30 *Coffee*  
 11:00 The Virtual Observatory Paradigm and National Projects (Invited) A. Kembhavi  
 11:30 Connecting the literature with on-line data G. Eichorn  
 11:45 Astrophysical Integrated Research Environment J. Zhou  
 12:00 The Astro-Wise system : a federated information accumulator for astronomy G. Verdoes Keijn  
 1215 *Demonstration / Posters*  
 12:30 *Lunch*

### Session VI. Large surveys

- 14:00 Wide Field optical surveys (Invited) N. Yasuda  
 14:30 Photometric Redshifts for the SDSS Data Release 5 I. Csabai  
 14:45 Photometric identification of quasars and AGN from the Sloan survey N. Phillip  
 15:00 A multiwavelength study of a sample of Texas Radio Survey Steep Spectrum Sources R. Lucas  
 15:15 Near-IR properties of Spitzer selected sources E. Gonzales-Solares  
 15:30 *Coffee*

### Session VII. Solar System science

- 16:00 Solar Physics with the Virtual Solar Observatory (Invited) F. Hill  
 16:30 Mexican Virtual Solar Observatory project A. Santillan  
 16:45 Solar Active Region emergence and flare productivity S. Dalla  
 17:00 Solar System Bodies : "Observations in the Past" with Plate Archive of Main Astronomical Observatory of Ukrainian NAS T. Sergeeva  
 17:15 Massive physical and dynamical characterisation of asteroids W. Thuillot  
 18:15 *Invited Discourse, Shuang Nan Zhang* Congress Hall

*Tuesday, August 22*

**Session VIII. VO Applications**

- |       |   |                     |
|-------|---|---------------------|
| 09:00 | Future directions of the VO   | (Invited) A. Szalay |
| 09:30 | Image processing and scientific workflows in the Virtual Observatory context            | E. Slezak           |
| 09:45 | Implementing astronomical image analysis pipelines using VO standards                   | M. Louys            |
| 10:00 | VOMegaPlot : efficient plotting of large VOTable datasets                               | N. Urunkar          |
| 10:15 | The MERLINImager - a customised radio interferometry image server provided by AstroGrid | A. Richards         |
| 10:30 | <i>Coffee</i>   |                     |
| 11:00 | Science Applications of the Montage image mosaic engine                                 | G. Berriman         |
| 11:15 | VisiVO : an interoperable visualisation tool for VO data                                | U. Becciani         |

**Session IX. Closing Review**

- |       |                    |                     |
|-------|--------------------|---------------------|
| 11:30 | Conference Summary | (Invited) F. Genova |
|-------|--------------------|---------------------|

**Special Session 4**

**OPEN FOR "HOT TOPICS"**

*SPS 4a: Friday August 18, 14:00-17:30, Panorama Hall*

*SPS 4b: Tuesday August 22, 09:12:30, Club E*

To be announced later

## Special Session 5

### ASTRONOMY FOR THE DEVELOPING WORLD

[http://www2.phys.canterbury.ac.nz/~jhe25/SPS5\\_website.pdf](http://www2.phys.canterbury.ac.nz/~jhe25/SPS5_website.pdf)

*From Monday 21, 09:00, through Tuesday August 22, 17:30, Meeting Hall V*

**Scientific Organizing Committee:** J. Hearnshaw (New Zealand, chair), A. Alsabti (UK, Iraq), J. Fierro (Mexico), M. Gerbaldi (France), H. Haubold (Germany), B. Jones (UK), A. Kembhavi (India), H. Levato (Argentina), P. Martinez (South Africa), J. Narlikar (India), J. Pasachoff (USA), J. Percy (Canada), B. Soonthornthum (Thailand), P. Willmore (UK), J. White (USA).

*Monday August 21*

#### **Session I. Overview to astronomy in the developing world**

09:00 Welcoming address

09:05 TWAN: a way of networking third-world astronomers (Invited) J. Narlikar

09:25 A survey of published astronomical outputs of countries 1976-2005 (Invited) J. Hearnshaw

09:45 Promoting astronomy in developing countries: an historical perspective R. Kochhar

10:00 Astronomy – the Caribbean view from the ground up S. Haque

10:15 A new astronomical facility for Peru: transforming a 32-m antenna into a radiotelescope J. Ishitsuka

10:30 *Coffee*

#### **Session II: Astronomy in Latin America**

11:00 Formal education in astronomy in Latin America (Invited) H. Levato

11:20 Astronomy for teachers in Mexico (Invited) J. Fierro

11:40 Encounters with science at ULA, Venezuela: an incentive for learning P. Rosenzweig

11:55 Developing astronomy in Cuba R. Rodríguez

12:10 Planetario Habana: a cultural centre for science and technology O. Álvarez

12:25 Activities of the Observatorio Astronómico Los Molinos, Uruguay G. Tancredi

12:40 *Lunch*

**Session III: Astronomy in Africa and eastern Asia**

- 13:50 Capacity building for astronomy education and research in Africa (Invited) P. Martinez
- 14:10 Astronomy in Asia (Invited) B. Soonthornthum
- 14:30 Astronomy in Thailand B. Kramer
- 14:45 Astronomy in Vietnam Lan Nguyen Quynh
- 15:00 ELT site prospecting in the Moroccan Atlas Mountains Z. Benkhaldoun
- 15:15 The astronomical observatory Khurel Togoot in Mongolia B. Damdin
- 15:30 *Coffee*

**Session IV: Astronomy in the Middle East and central Asia**

- 16:00 Astronomy in Iraq (Invited) A. Alsabti
- 16:20 Astronomy in Iran (Invited) Y. Sobouti
- 16:40 Astronomy in the former Soviet territory after the USSR disintegration N. Bochkarev
- 16:55 Relativistic astrophysics and cosmology in Uzbekistan B. Ahmedov
- 17:10 Teaching and research in astronomy using small aperture optical telescopes S. Pandey
- 17:25 Astronomical education in Armenia H. Harutyunian
- 17:40 Close of day 1

18:15 *Invited Discourse, Shuang Nan Zhang*

*Congress Hall*

*Tuesday August 22*

**Session V. Astronomy education in developing countries:  
astronomy in eastern Europe**

- 09:00 Distance education at university level: opportunities and pitfalls (Invited) B. Jones
- 09:20 International School for Young Astronomers (ISYA): their new horizon (Invited) M. Gerbaldi
- 09:40 Astronomy and astrophysics in Bosnia and Herzegovina A. Andic
- 09:55 Study astrophysics in Split! D. Krajnovic
- 10:10 Astronomy in Serbia and in Montenegro O. Atanackovic-Vukmanovic
- 10:25 *Coffee*

**Session VI: Astronomy education in developing countries**

- 11:00 Observing solar eclipses in the developing world (Invited) J. Pasachoff
- 11:20 Undergrad and graduate programs in astronomy for the developing world (Invited) J. Percy
- 11:40 A packet of proposals for collaboration between the IAU and developing world M. Kaldalu
- 11:55 Basic astronomy as part of general higher education in the developing world J. Baruch

- 12:10 Implementing an education and outreach program for Gemini Observatory in Chile A. García  
 12:25 Projects of the LIADA teaching and popularization section P. Bretones  
 12:40 *Lunch*

**Session VII: Promoting astronomy in developing countries  
 through the UN and the IHY**

- 14:00 The United Nations basic space science initiative (Invited) H. Haubold  
 14:20 The International Heliophysical Year program and associated IAU activities (Invited) D. Webb  
 14:40 Globalizing space and Earth science: the IHY education and outreach program C. Rabello-Soares  
 14:55 The UN basic space science initiative for IHY 2007 N. Gopalswamy  
 15:10 Exploiting software tools towards easier use and higher efficiency G. Lin  
 15:25 *Coffee*

**Session VIII: COSPAR capacity-building workshops  
 and the virtual observatory**

- 16:00 The COSPAR capacity-building workshop program, 2000–2007 (Invited) K. Arnaud & P. Willmore  
 16:20 Developing countries and the virtual observatory (Invited) A. Kembhavi  
 16:40 Panel discussion; discussion of posters  
 17:20 Concluding remarks  
 17:30 Close of Special Session 5

18:15 *Invited Discourse, Reinhard Genzel* *Congress Hall*

## Special Session 6

### ASTRONOMICAL DATA MANAGEMENT

*Tuesday August 22, 14:00-17:30, Small Theatrer*

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

**Scientific Organizing Committee:** G. Fabbiano (USA), F. Genova (France), R.J. Hanisch (USA), A.K. Kembhavi (India), A. Lawrence (UK), O.Yu. Malkov (Russian Federation), A. Meszaros (Czech Republic), R.P. Norris (Australia, chair), M. Ohishi (Japan), P. Quinn (Germany), I.F. Scholl (France), E. Solano (Spain), A. Szalay (USA), N.A. Walton (UK), R. Williams (USA) & Y. Zhao (China, Nanjing)

*Tuesday, August 22*

- 14:00 Data management: Introduction and Welcome (Invited) R. Norris  
14:15 The Next Information Revolution in Astronomy (Invited) R. Kennicutt  
14:45 Data needs for New Projects (Invited) D. Schade  
15:10 Challenging the Digital Divide (Invited) A. Kembhavi  
15:30 *Coffee*  
16:00 Moving Data from Journals into Data Centres and the VO (Invited) R. Hanisch  
16:20 Safe-Guarding Data (Invited) E. Griffin  
16:40 Data Centres in the Virtual Observatory (Invited) F. Genova  
17:00 Panel Discussion G. Eichhorn, P. Fox, R. Norris, A. Richards

**18:15 *Invited Discourse, Reinhard Genzel***

***Congress Hall***

## Special Session 7

### ASTRONOMY IN ANTARCTICA

*From Tuesday 22, 14:00, through Wednesday 23 August, 17:00, Club E*

*Scientific Organising Committee:* M. Burton (Australia, Chair), M. Busso (Italy), E. Fossat (France), J. Lloyd (USA), M. McCaughrean (UK), C. Spiering (Germany) & S. Tori (Japan)

*Tuesday, August 22*

#### **Session 1: Overview**

|       |  |           |
|-------|--|-----------|
| 14:00 | Introduction   | SOC       |
| 14:10 | An overview of Astronomy in Antarctica                 | M. Burton |
| 14:50 | A decade of observations with AST/RO at the South Pole | C. Martin |

15:30 *Coffee*

#### **Session 2. High Energy**

|       |  |               |
|-------|--|---------------|
| 16:00 | Site testing at Dome C: history, present status and future                 | J. Vernin     |
| 16:30 | Latest results on neutrino point source searches with the AMANDA telescope | T. Castermans |
| 17:00 | Status of the high energy neutrino observatory IceCube                     | A. Karle      |
| 17:30 | Close  |               |

**18:15 *Invited Discourse, Reinhard Genzel***

***Congress Hall***

*Wednesday, August 23*

#### **Session 3. Current Projects**

|       |   |           |
|-------|---|-----------|
| 09:00 | The AST/RO survey of the Galactic center region | C. Martin |
| 09:15 | Sub-millimetre maps of nearby molecular clouds  | N.Tothill |
| 09:35 | Single star scidar first light from Dome C      | J. Vernin |
| 09:50 | AMICA - the infrared eye at Dome C              | A.R. Riva |
| 10:10 | <i>Coffee</i>                                   |           |

#### **Session 4. Future Projects**

|       |   |             |
|-------|---|-------------|
| 11:00 | PILOT: the pathfinder for an international large optical telescope  | M. Ashley   |
| 11:40 | The Greenland icesheet as an astronomical site                      | M. Andersen |
| 12:00 | Panoramic camera systems for meteor tracking and meteorite recovery | N. Brosch   |
| 12:15 | Australian - New Zealand - Antarctic (ANZAC) VLBI network           | S. Gulyaev  |
| 12:30 | <i>Lunch</i>  |             |

**Session 5**

- |       |  |             |
|-------|--|-------------|
| 14:00 | Preparing a 20 $\mu$ m water vapour monitor (IRMA)<br>for operations at Dome C | R. Phillips |
| 14:15 | Wide field surveys for sub-mm astronomy with CAMISTIC<br>at Dome C             | V. Minier   |
| 14:35 | Antarctica – a case for 3D spectroscopy  | A. Kelz     |
| 14:55 | Prospects for Antarctic interferometry   | E. Fossat   |
| 15:20 | <i>Coffee</i>  |             |

*Session 6 (16:00-17:30) is available for meetings etc.*

**OTHER MEETINGS ORGANIZED IN CONJUNCTION  
WITH THE IAU GENERAL ASSEMBLY**

**OPEN SESSION OF THE EUROPEAN ASTRONOMICAL SOCIETY (EAS)**

*Monday, August 21, 14:00-17:30, Meeting Room 1.1.*

- 14:00 Status of Astronet and its Science Vision plan T. de Zeeuw
- 14:20 OPTICON- The largest EU Astronomy network: J.K. Davies  
Progress and plans.
- 14:40 RADIONET- Advanced radio astronomy in Europe: L. Gurvitz  
look in the future
- 15:00 The situation of the astronomical Job market in Europe:  
- Presentation of specificities in some countries  
(Germany, Italy, France, etc...)  
- The Marie Curie program and perspectives for FP7 T. Meziani  
EU Commission)
- Discussion
- 16:30 EAS General Assembly (with election of new council members)

**ESA: THE GAIA ASTROMETRIC  
AND SPECTROPHOTOMETRIC SURVEY MISSION**

*Monday, August 21, 14:00-17:30, Chamber Hall*

Gaia is an all sky astrometric and photometric survey mission of the European Space Agency (ESA) due for launch in late 2011. Its primary goal is to study the composition, formation and evolution of our Galaxy. During its five year mission Gaia will observe every object in the sky brighter than visual magnitude 20, amounting to about  $10^9$  stars, galaxies, quasars and solar system objects. It will achieve an astrometric accuracy of 12 – 25  $\mu\text{s}$  at  $G=15$  (corresponding to a distance accuracy of 1 – 2 % at 1 kpc) and 100 – 300  $\mu\text{s}$  at  $G=20$ . Gaia will be equipped with a high resolution ( $\lambda/\Delta\lambda \approx 10,000$ ) spectrograph to measure radial velocities to a precision of 1 – 10 km/s down to  $V \approx 17$ , thus providing full six-dimensional phase space information for the brighter sources. To characterize the objects (which are detected in real time) each object is observed with low dispersion (4 – 30 nm/pixel) spectro-photometry between 330 nm and 1000 nm from which we determine intrinsic stellar parameters ( $T_{\text{eff}}$ ,  $\log g$ , [Fe/H] and line-of-sight interstellar extinction). Using the kinematics and 3D positions of large numbers of stars across the whole Galaxy we will map large and small scale structures and thus unravel the formation and evolution of our Galaxy through, for example, a chronology of its merger history. The gravitational potential of the Galaxy and the stellar luminosity function will be determined from which the distribution of dark matter can be accurately mapped on small scales ( $< 1$  Mpc) for the first time.

Gaia will detect tens of millions of binary systems to permit a calibration of the Mass-Luminosity relation over a wide range of masses to much high precision. In the same way, Gaia will determine orbits for thousands of exoplanetary systems around stars across the whole HR diagram. Accurate distances to thousands of globular and open clusters will significantly improve models of stellar structure and evolution. Gaia will discover and determine the orbits of thousands of asteroids and Near-Earth objects and will provide accurate tests of General Relativity. Beyond the Galaxy, Gaia will measure distances to the Galactic satellites, calibrate the distance ladder and provide a new astrometric reference frame.

Gaia is a fully funded mission. The prime contractor, EADS Astrium, provides both the satellite and the scientific instruments. The data processing is the responsibility of the scientific community. This is a very significant challenge, involving numerous complex, iterative and interdependent tasks. Following several years of studies, the community efforts have been assembled into the pan-European Data Processing and Analysis Consortium (DPAC) which will undertake all of the data processing.

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

For more information, see the Gaia website at <http://www.rssd.esa.int/Gaia/>

### ESO/ALMA

*Thursday August 23, 09:30-12:00, Dressing Room 225*

#### **"The ALMA Era for Astrophysics Begins"**

|       |   |  |
|-------|---|--|
| 09:00 | Scope, Science Goals and Organization   | M. Tarenghi (Director)                   |
| 09:30 | Present Status                          | A. Beasley (Project Manager)             |
| 10:00 | ALMA Enhanced by the ALMA Compact Array | R. Kawabe<br>(Project Scientist interim) |
| 10:30 | <i>Coffee</i>                           |  |

Reviews of ALMA Science Meetings: Synergy with other projects (total time 60 min). This will be organized by the regional Project Scientists.

- The SZ Effect and ALMA (Meeting in Orsay Apr 2005)
- Galactic and Extragalactic ISM Modelling in an ALMA Perspective (Meeting in Onsala Oct 2005)
- Stellar Physics with ALMA (Meeting in Montpellier Oct 2005)
- From z-Machines to ALMA (Meeting in Charlottesville Va, January 2006)

- Complex Molecules in Space: present status and prospects with ALMA (Meeting in Aarhus, Denmark, May 2006)
- The fate of gas in galaxies (Meeting in Dwingeloo, NL, July 2006)
- Subaru-ALMA Science (Meeting in Hilo, March 2006)
- ALMA Science (Meeting in Wakayama, March 2006)

**IUCAF: SPECTRUM MANAGEMENT FOR ASTRONOMY**

*Friday August 18, 09:00-10:30, Dressing Room 225*

In order to obtain radio astronomical data of sufficiently high quality, our observations must be free of harmful interference emitted by other spectrum users. The (radio) spectrum is a finite, and increasingly precious resource for astronomical research, where we are clearly feeling the ever-increasing pressure for frequency bands by so-called active spectrum users, who emit electromagnetic radiation.

To attain this goal, regulatory protection measures (such as limits on interference levels in frequency bands allocated to radio astronomy) need to be determined and introduced into legislation.

The active spectrum users are often not very eager to take the proper measures to protect our astronomical measurements from their harmful radio emissions, usually for economic reasons. Also, new telecommunication technologies (like Ultra-wide Band and Power-line Transmissions) are constantly emerging, and their potentially harmful effects on our observations need to be studied - and regulated.

The IAU-sponsored organization that represents the requirements of the worldwide astronomical community in these regulatory matters is IUCAF, the Scientific Committee on Frequency Allocations for Radio Astronomy and Space Science. It was formed in 1960 by URSI, the IAU and COSPAR, and it operates as a standing inter-disciplinary committee under the auspices of ICSU, the International Council for Science.

The 11 IUCAF members are active at different levels: local, national, regional and global. They interact with radio observatories and the national Administrations in charge of frequency management, they participate in regional organizations coordinating frequency management, and, at a global level, in all relevant forums of the International Telecommunication Union, ITU, whose Radio Regulations provide a worldwide regulatory framework. IUCAF also regularly organizes international workshops on regulatory and technical aspects of spectrum management.

At this open IUCAF meeting an overview will be given of its various activities and of current and future issues in frequency protection - e.g. new communication technologies, protection of future large radio telescopes, and the possible extension of world-wide spectrum regulation into the infrared/optical domain. Furthermore, the list of IAU representatives in IUCAF will be reviewed.

**DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
& MISCELLANEOUS MEETINGS**

**MEETINGS UNDER EC**

**WG Publishing, jointly with C 5 WG Libraries**

*Friday August 18, 16:17:30, Dressing Room 225*

See under Division XII, Commission 5

**WG Women in Astronomy**

*Monday August 21, 11:00-12:30, Meeting Room 2.1.*

followed by a lunch, 12:30-14:00, *Small Hall*

**WG 2009: The Year of Astronomy**

*Friday August 18, 11:00-12:30, Panorama Hall*

**Young Astronomers**

- ***Young-Astronomers Lunch-Debate***

*Thursday 15 August, 11:00 – 13:30, Small Hall*

- ***Young-Astronomers Consulting Service***

*Wednesday 16 August, 9:00 through Friday 25, 17:30 Meeting Hall 2.2*

**DIVISION I - FUNDAMENTAL ASTRONOMY**

**Commission 08 - Astrometry**

*Monday August 21, 09:00-15:30, Club D*

**Session 1. Business**

09:00 Administrative matters, Commission report, WG reports

10:30 *Coffee*

**Session 2. "Frontiers of astrometry"**

|       |   |               |
|-------|---|---------------|
| 11:00 | Infrared astrometric satellite JASMINE                          | N. Gouda      |
| 11:20 | SIM PlanetQuest - a science and mission update                  | S. Unwin      |
| 11:40 | Where is Gaia now?  | A. Brown      |
| 12:00 | Hubble FGS parallaxes of galactic Cepheids<br>and P-L relations | G.F. Benedict |
| 12:20 | Synergy between radioastronomy and astrometry                   | E. Fomalont   |
| 12:30 | <i>Lunch</i>  |               |

**Session 3. "Frontiers of astrometry"**

|       |  |              |
|-------|--|--------------|
| 14:00 | Ground-based surveys: UCAC and beyond                  | N. Zacharias |
| 14:20 | A quest for the nearest stars                          | R.-D. Scholz |
| 14:40 | Near-infrared parallax program at USNO                 | F. Vrba      |
| 14:50 | IAU2000 resolutions for the general user               | P. Wallace   |
| 15:10 | A database of QSOs and surrounding stars from the SDSS | A. Andrei    |
| 15:20 | Abrupt changes in the Earth's rotation speed           | M. Soma      |
|       | Posters  |              |
|       | "Deep Astrometric Standards"                           | I. Platais   |
|       | "Linking optical to radio reference frames"            | G. Pinigin   |
|       | "Large Spectral parallaxes of the Tycho-2 stars"       | A. Popov     |

Only the first author presenting a talk is indicated; All abstracts can be found on the Commission 8 website at [http://www.pha.jhu.edu/iau\\_comm8/comm8.html](http://www.pha.jhu.edu/iau_comm8/comm8.html)

**Commission 19 - Rotation of the Earth**

*Friday August 18, 14:00-17:30, Club E*

**Session I. Business**

|       |   |                       |
|-------|---|-----------------------|
| 14:00 | Brief report on the IAU Commission 19 activities                  | (President) V. Dehant |
| 14:10 | Business: new members, new associated, new OC, terms of reference | (President) V. Dehant |

**Session II. WG and Services report**

|       |   |                                  |
|-------|---|----------------------------------|
| 14:30 | IERS report   | Chopo Ma                         |
| 14:40 | IVS report  | Chopo Ma                         |
| 14:50 | Coordination between IERS and GGOS  | M. Rothacher                     |
| 15:00 | IERS, IVS and the re-organization of the Federation of astronomical and geophysical data analysis services (FAGS) | N. Capitaine                     |
| 15:05 | SOFA report   | P. Wallace                       |
| 15:15 | IERS Conventions  | G. Petit                         |
| 15:20 | Discussion about link between IERS and SOFA   | (chairmen) G. Petit & P. Wallace |
| 15.30 | <i>Coffee</i>   |                                  |

**Session III. Scientific presentations related to themes  
defined in Commission 19 terms of reference**

**A. Reference frames and their links with other**

**astronomical reference frames and their densification**

- 16:00 Combined astrometric catalogue EOC-3: (Invited) J. Vondrak  
An improved reference frame for long-term  
Earth rotation studies
- 16:15 Related communications TBD

**B. Observation and theory of polar motion and length-of-day**

- 16:20 Observation and theory of polar motion: new (Invited) A. Brzezinski  
developments and results
- 16:35 Related communications N

**C. Observation and theory precession and nutation**

- 16:40 Recent issues in observation and theory of nutation (Invited) S. Lambert
- 16:55 Summary of what has been done in the frame of V. Dehant  
the Descartes Prize
- 17:00 Related communications TBD

**D. Present Earth orientation parameter determination**

- 17:05 Present Earth orientation parameter (EOP) determination D. Gambis
- 17:15 Consistency analysis in the computation of EOP W. Wooden
- 17:25 Related communications TBD
- 17:30 End

**Commission 31 - Time**

*Monday, August 21, 09:00-15:30, Panorama Hall*

09:00 Election of President and Vice President, Observatory Reports

09:20 Scientific Session

- Relativity and Interplanetary Exploration R. Nelson & T. Ely
- Relativity and Space Geodesy S. Pireaux
- Jovian and Solar Radio Deflection Experiments E. Fomalont & S. Kopeikin
- Navigation with X-Ray Pulsars S. Sheikh & D. Matsakis

10:30 *Coffee*

11:00 Scientific Session

- Pulsar Time Scales G. Petit
- Parkes Pulsar Timing Array and Radio Waves D. Manchester
- Relativistic Time Measurements and Other Experiments C. Alley
- Require Going Beyond Einstein to the Yilmaz Theory of Gravity

12:30 *Lunch*

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
& MISCELLANEOUS MEETINGS

14:00 Scientific Session

|   |                         |
|---|-------------------------|
| Navigation with X-ray Pulsars                               | S. Sheikh & D. Matsakis |
| Long-Term Pulsar Timing Results from Arecibo and Green Bank | I. Stairs               |
| Ten Years of Millisecond Pulsar Timing at Kalyazin          | Y. Ilyasov & V. Oreshko |
| The Stability of a Pulsar Time Scale                        | M. Sazhin & M. Pshirkov |

**DIVISION III - PLANETARY SYSTEMS SCIENCES**

**Commission 15 - Physical Studies of Comets & Minor Planets**

*Tuesday August 22, 9:00-10:30 & 11:00-12:30, Club C*

Business Meeting

|  |             |
|--|-------------|
| 09:00 Report from the President                    | E. Tedesco  |
| Summary of Activities during the Past Triennium    |             |
| Discussion   |             |
| Reports from Working Groups                        |             |
| 09:30 Report by Comet Working Group Chair          | T. Yamamoto |
| Highlights of Activities during the Past Triennium |             |
| Discussion   |             |
| 10:00 Report by Minor Planet Working Group Chair   | A. Cellino  |
| Highlights of Activities during the Past Triennium |             |
| Discussion   |             |
| 10:30 Coffee                                       |             |
| Commission Business                                |             |
| 11:00 Election of Officers                         | E.d Tedesco |
| 11:30 Future of the Commission                     | All present |
| Discussion   |             |

**WG on Comets**

*Friday August 18, 14:00-15:30, Meeting Room 1.1.*

|   |              |
|---|--------------|
| 14:00 Introduction  | T. Yamamoto  |
| 14:05 Comparison of the 4 cometary nuclei imaged by space missions:                           | U. Keller    |
| - Recent observations of cometary nuclei by the various space missions                        |              |
| Discussion  |              |
| 14:50 Results of Laboratory Analysis of Comet Dust returned to Earth by the Stardust Mission: |              |
| - Mineralogy of the Comet Wild2 Nucleus Samples   |              |
| Returned by the Stardust Mission  | K. Messenger |
| Discussion  |              |

**WG Physical Studies of Minor Planets**

*Thursday August 24, 09:00-12:30, Club D*

- 09:00 Introduction A. Cellino
- 09:05 Asteroid Radiometry and Polarimetry
- Issues with the Radiometric Method for Small Asteroids Ed Tedesco & M. Delbo
  - Absolute Magnitudes
  - Theoretical understanding of asteroid polarimetric properties: State of the art K. Muinonen
- Discussion
- 10:30 *Coffee*
- 11:00 The Renaissance of Polarimetry
- Calibration of the Slope-Albedo Relation E. Tedesco & D. Lupishko
  - On a polarimetry-based asteroid taxonomy A.-C. Levasseur-Regourd
  - NEO polarimetry A. Cellino & I. Belskaya
- Discussion

**Commission 51 - Bioastronomy: Search for Extraterrestrial Life**

*Friday, August 8, 0:00-10:230, Club B*

I've conferred with my OC, and we have the following program we would like published. The problem is, I cannot find the original email requesting this information now, and don't know if it was you who requested it or not. If it was not you, could you please pass it to the appropriate person?

- 09:00 Presentation on the Bioastronomy 2007 meeting K. Meech
- 09:30 New officers and OC members K. Meech, A. Boss
- 09:45 Discussion of an ISSOL/IAU C51 Joint meeting in 2011 K. Meech, A. Boss

**DIVISION V - VARIABLE STARS**

*Wednesday 16, 11:00-12:30, Club D*

Business Meeting

*Thursday 17 August, 09:00--15:30, Club D*

Science Meeting

- 09:00 Welcome J. Christensen-Dalsgaard
- 09:05 Probing the Accretion Disc of DQ,Her:  
a Strong Correlation between the Balmer Lines'  
Radial Distribution and their Transition Energy R. Saito
- 09:23 Characteristics of Postoutburst Novae Spectra:  
the Quadratic Zeeman Effect? R. Williams
- 09:41 RS Ophiuchi and its' 6th(?) Outburst S. Eyres
- 09:59 Evidence for precession of a white dwarf  
in a close binary system G. Tovmassian

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
& MISCELLANEOUS MEETINGS

- |       |  |                          |
|-------|--|--------------------------|
| 10:17 | A complete study of the pulsating eclipsing binary subdwarf B star PG,1336-018   | H. Hu                    |
| 10:35 | <i>Coffee</i>  |                          |
| 11:00 | UU,Cnc and BM,Cas: Two Long-period Eclipsing Binaries Involving Supergiant Primaries: Intrinsic Variability as a Circumstantial Evidence on Ongoing Common Envelope Activity | I. Pustynnik             |
| 11:18 | Evidences of the Donor Star Heating in Precessional and Orbital Variabilities of SS433   | T. Irsmbabetova          |
| 11:36 | A Study of Two Peculiar Interacting Binaries from NURO Observations: VV,CVn and V965,Cygni   | R. Samec                 |
| 11:54 | Two Scenarios of Mass Exchange in Close Binary Systems Consisting of Low-mass Pre-main Sequence Stars  | V. Karetnikov            |
| 12:12 | Creating a Statistically Significant Sample of Stars Showing the Flip-Flop Phenomenon  | H. Korhonen              |
| 12:30 | <i>Lunch</i>   |                          |
| 14:00 | Light Curves and High-resolution Spectroscopy of Blazhko Stars   | K. Kolenberg             |
| 14:18 | Long-term Photometric Monitoring with the MERCATOR Telescope   | P. De Cat                |
| 14:36 | Amplitude Variability and Pulsation  | M. Breger                |
| 14:54 | Spatial Asymmetry and Temporal Aperiodicity in Bright Mira Variables   | L.A. Willson             |
| 15:12 | Productivity and Impact Data on Binary and Variable Star Astronomy   | V. Trimble               |
| 15:30 | Summary of the Meeting   | J. Christensen-Dalsgaard |

## DIVISION VII - GALACTIC SYSTEM

### NEW RESULTS ON THE GALACTIC CENTRE

*Monday August 21, 9:00-17:30, Club B*

*Scientific Organizing Committee for Galactic Centre session:* R. Genzel (Germany), O. Gerhard (Germany), C. Lang (USA), J. Lazio (USA) & P. Whitelock (chair, South Africa)

#### **Session I. *The Centre itself***

*Chair, P. Whitelock*

- |       |  |                               |
|-------|--|-------------------------------|
| 09:00 | The supermassive black hole at the Centre of our Galaxy  | <i>(Invited)</i> A. Ghez      |
| 09:30 | Radio Imaging of Sgr A*  | <i>(Invited)</i> A. Broderick |
| 10:00 | Recent near-IR/X-ray measurements, and the first time resolved AO near-IR polarization measurements, of Sgr A* | A. Eckart                     |

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
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- 10:20 *Coffee break*
- 10:50 The Sgr B2 region in H<sup>13</sup>CO<sup>+</sup> and SiO lines M. Tsuboi *et al.*
- 11:10 The Galactic Centre region as seen by H.E.S.S. (Invited) L. Rolland  
in very high energy  $\gamma$ -rays
- 11:30 Theory of accretion and flares (Invited) S. Markoff
- 12:00 Division VII and Commission 33 business meeting
- 12:30 *Lunch*

**Session II. *The central environment***

*Chair, O. Gerhard*

- 14:00 The origin of the young stars in the Galactic Centre (Invited) T. Paumard
- 14:30 The origin of young stars in the (Invited) S. Portegies Zwart  
central parsec
- 15:00 The Spitzer mid-infrared survey of the H. Smith  
inner 2 x 1.5 degrees of the galaxy
- 15:20 *Coffee*
- 15:50 Star clusters and star formation in the Galactic Centre (Invited) A. Cotera
- 16:20 The centres of disk-dominated galaxies (Invited) M. Carollo
- 16:50 Proposed formation of a J. Lazio & P. Whitelock  
Working Group on the Galactic Centre
- Discussion*

**DIVISION X - RADIO ASTRONOMY**

*Friday August 18, 14:00-17:30, Club C*

***WG Historic Radio Astronomy***

See under Division XII

**DIVISION XI - SPACE & HIGH ENERGY ASTROPHYSICS**

*August 17, 16:00-17:30, Club D*

Business meeting: Brief report of the current activities of the Division and discussion on relevant problems in management or organization will be presented.

Two science sessions will be held as follows:

***Working Group Astronomy from the Moon***

*August 23, 14:00 - 17:30, Meeting Room 1.1.*

- 14:00 **2003-2006 Report** H. Okuda, N. Kaifu & S. Baliunas  
*Elections*
- 15:00 **Science Session -- Lunar studies: present and future**  
SMART-1, Aurora B. Foing, invited

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
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|                 |     |
|-----------------|-----|
| Lunar-A, SELENE | TBD |
| LRO             | TBD |

15:30 *Coffee*

16:00 ***Lunar studies ( cont'd)***

|  |  |
|--|--|
| LOFAR on the moon - a lunar low-frequency radio telescope and more | H. Falcke  |
| Radio astronomy view at and from the Moon                          | L. Gurvitz                                       |
| RISE   | N. Kwan  |
| Optical and UV Interferometry from the Moon                        | Y. Kondo & P. Chen/<br>E. Guinan & F. Bruhweiler |
| Other topics, speakers   |  |
| Discussion   |  |

***Working Group Particle Astrophysics Science session***

*August 24, 9:00 - 12:30, Meeting Room 1.1.*

|  |                          |
|--|--------------------------|
| 09:00 Welcome and opening remarks  | H. Okuda/R. Schlickeiser |
| 09:15 Scope and Potential of Particle Astrophysics                           | E. Waxman                |
| 09:45 Recent Results of High-Energy Gamma-Ray Astronomy                      | P. Chadwick              |
| 10:15 <i>Coffee</i>  |                          |
| 10:30 Progress in the Theory of Particle Acceleration at Relativistic Shocks | D. Ellison               |
| 11:00 Results and Prospects of Neutrino Astronomy                            | C. Spiering              |
| 11:30 Gravitational wave astronomy and particle astrophysics                 | R. Blandford             |
| 12:00 Discussion   |                          |

**XII UNION-WIDE ACTIVITIES**

***WG Historic Radio Astronomy***

*Thursday 17, 09:00-15:30 & Wednesday August 23, 14:00-17:30, Chamber Hall*

*Thursday, August 17*

|                        |                            |
|------------------------|----------------------------|
| 09:00 Business Meeting | <i>Chair, W. Orchiston</i> |
|------------------------|----------------------------|

***Session I. The history of European radio astronomy***

|   |                     |
|---|---------------------|
| 09:30 The Dwingeloo 25-meter dish celebrates its Golden Jubilee | H. van Woerden      |
| 10:00 Fifty years of the Pushino Radio Astronomy Observatory    | R.D. Dagkesamanskiy |
| 11:00 Attempts by theorists to work with Martin Ryle            | G. Burbidge         |

in the Cavendish, 1954-1956

- 11:30 A.H. de Voogt, radio amateur, engineer and astronomy pioneer R. Strom  
 12:00 The Pulkovo (BRP 1956) giant radio telescope Y. Parijskij  
 12:30 *Lunch*  
 14:00 Presentation of the 2006 Grote Reber Medal  
 14:30 Fifty years of the Stockert 25-m radio telescope and what came after R.Wielebinski  
 15:00 The search for the elusive Zeeman Effect R. Davies  
 15:30 *Coffee*

*Wednesday, August 23*

**Session II. Radio astronomy 50 years ago—from field stations to ‘big science’**

- 14:00 The Beginnings of the U.S. National Radio Astronomy Observatory K. Kellermann & E.N. Bouton  
 14:30 The 218-ft Jodrell Bank Transit Telescope and its contribution to radio astronomy A.Quinn et al.  
 14:50 A true radio astronomy pioneer: Cornell H. Mayer (1921-2005) V. Radhakrishnan  
 15:10 Solar radio astronomy at Fort Davis, Stanford and Kalyan, 1956-1966 G. Swarup  
 16:00 The contribution of the ex-Georges Heights experimental radar antenna to Australian radio astronomy W. Orchiston & H. Wendt  
 16:30 The development of low frequency radio astronomy in Tasmania M. George & W. Orchiston  
 16:50 Discovery of the CMBR: looking back 40 years P. Boynton  
 17:10 The cosmic microwave background and radio astronomy B. Partridge

**Commission 05 - Documentation & Astronomical Data**

*Wednesday August 16, 11:00- 17:30, Club E*

- 11:00 WGAD Business Meeting *Chair*, R. Norris  
 12:30 *Lunch*  
 14:00 The Astronomers Data Manifesto R.Norris  
 14:20 Data management in astronomy and earth sciences: similarities and differences P. Fox  
 14:40 Dynamic data access and the need for science ready-data A. Richards  
 15:00 Connecting the Literature with On-line Data G. Eichhorn  
 15:30 *Coffee*  
 16:00 Sustainability and diversity of data centres F.Genova  
 16:20 Future Software Environments for Astronomical Data Analysis P. Grosbol

- 16:30 Software Patents P. Grosbol  
16:50 Discussion on "Individual and corporate attitudes to data management - reducing the credibility gap". (chair) E. Griffin

**C 05 WG on Libraries, jointly with EC-WG Publishing**  
*Friday August 18, 16:00-17:30, Dressing Room 225*

**Libraries and Publishing in the VO Era**

- Report on LISA V conference B. Corbin & Grothkopf
- Overview on observatory archives B. Corbin
- Cooperation between ADS and libraries G. Eichhorn
- Use and validation of the Astronomy Thesaurus in ontologies F. Genova
- The new structure of IAU publications K.A. van der Hucht
- Usage of bibliometrics in observatories U. Grothkopf

**Commission 41 - The Inter-Union Commission for the History of Astronomy (C41/ICHA)**

*Tuesday August 22, 09:00-17:30, Chamber Hall*

**Science Meeting 1: History of modern astronomy**

- 09:00 Milestones in the history of astronomy in Czech lands P. Hadrava  
09:25 HIPPARCOS in historic perspective J. Kovalevsky  
09:45 The Venus transit of 2004 S. Dick  
10:00 Magnitude variation of 19 Piscium in historical records T. Fujiwara & M. Hirai  
10:15 The emergence of "dark matter" as a critical element in astrophysics C. Montgomery & W. Orchiston  
10:30 *Coffee*

**Science Meeting 2: Ancient historical astronomy, archaeoastronomy and ethnoastronomy**

- 11:00 Attempts by theorists to work with Martin Ryle in the Cavendish, 1954-1956 G. Burbidge  
11:20 Early VLBI in the USSR L. Matveyenko  
11:50 The Pulkovo (BRP 1956) giant radio telescope Y. Parijskij  
12:10 A.H. de Voogt, radio amateur, engineer and astronomy pioneer R. Strom  
12:30 *Lunch*

**Poster papers**

- History of Astronomy developments at James Cook University, Australia W. Orchiston et al.
- Newton's analysis of Hipparchus' equinox observations A. Belenkiy & E. Vila Echagüe

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
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- Ernst Öpik's scientific legacy and its impact on modern astrophysics I. Pustölnik
- Nikolaev Astronomical Observatory: astro-historical monument of the northern Black Seashore G. Pinigin et al.  
Archaeoastronomical fieldwork in Peru M. Zawaski & K. Malville

14:00 C41/ICHA Business Meeting

15:30 *Coffee*

**C41 WG Archives**

*Wednesday 23, 09:00-12:30, Club B*

09:00- Working Group Business Meeting *Chair, Brenda Corbin*

**Session 1. Archives in astronomical institutions**

- 09:20 Historical archives in Italian astronomical observatories: the "Specola 2000" project I. Chinnici, A. Mandrino & Fabrizio Bònoli
- 09:50 Paris Observatory archives: enrichment over five years L. Bobis & S. Débarbat
- 10:10 Archives programs at smaller institutions: successes on limited budgets A. Beiser et al.

10:30 *Coffee*

**Session 2. Archives and specific astronomical topics**

- 11:00 A case of archival theft: the retrieval of the Greenwich Observatory Neptune papers A. Perkins
- 11:30 Origin and history of Japanese star charts "Sekido Nanboku Kosei Zu" T. Fujiwara & M. Hirai
- 11:50 Abdul-Rahman al-Sufi and his "Book of the Fixed Stars" I. Hafez & R. Stephenson
- 12:10 Japanese astronomical and meteorological archives M. Soma & K. Tanikawa

**Poster papers**

- The Japanese Astronomical Archives Project: final outcome T. Nakamura
- Camille Flammarion and Romania E. Botez

**C 41 WG on Astronomical Chronology**

*Tuesday, August 22, 16:00-17:30, Meeting Room 1.1.*

- 16:00 Introductory comments A. Gurshtein
- 16:15 General discussion

**C 41 WG on Historical Instruments**

*Wednesday, August 23, 14:00-17:30, Club B*

- |       |   |  |
|-------|---|--|
| 14:00 | Working Group Business Meeting  | Chair, N. Il-Seong                     |
|       | Oral papers: The world-wide search for historically significant astronomical instruments                                  |  |
| 14:15 | A miniature ivory sundial and equinox indicator from Greek Egypt  | J. Evans                               |
| 14:35 | Nineteenth-century astronomical instruments in India  | R. Kochhar                             |
| 14:55 | The instruments of the METRE  | S. Débarbat                            |
| 15:15 | A portable Dutch astronomical quadrant imported into Japan in 1792  | T. Nakamura                            |
| 16:10 | Eighteenth-century quadrants at the 'Specula Astronomica' in Padova   | L. Pigatto & V. Zanini                 |
| 16:30 | The most important instrument: the Sydney Observatory transit circle  | N. Lomb                                |
| 16:50 | Astronomical instruments associated with Lick Observatory solar eclipse expeditions                                       | J. Pearson, K. Malville & W. Orchiston |
| 17:10 | Nautical astronomy in the Pacific: the astronomical instruments used during Cook's third voyage stop-over at Nootka Sound | B. Wells & W. Orchiston                |

**Poster papers**

- Valeria Zanini: The Hofmann direct-vision spectroscope at the Padova Astronomical Observatory
- Nha Il-Seong & Nha Sarah: Time-keeping instruments from East Asian countries: a classification scheme and an inventory of significant relics
- Jenny Andropoulos, Wayne Orchiston & Graeme White: The Great Melbourne Telescope and observational astronomy
- Farhad Rahimi, Jamshid Ghanbari & Ali Adjabshirzadeh: The history of some of the astronomical instruments in the Astan-e Ghods Museum at Mashhad, Iran
- Lajos Balazs, Magda Vargha & Endre Zsoldos: Homage to Rado von Kovesligethy, a hero of early astrophysics

**C 41 WG on Transits of Venus**

*Thursday, August 17, 09:00-12:30, Club E*

**Session 1. Transit of Venus history**

- |       |  |                          |
|-------|--|--------------------------|
| 09:00 | Maya observations of 13 <sup>th</sup> century transits of Venus? | C. Allen & J.G. Trejo    |
| 09:15 | Anticipating the 1882 transit of Venus                           | D. DeVorkin              |
| 09:30 | Houzeau and the Belgian transit of Venus expeditions             | C. Sterken & H. Duerbeck |

DETAIL ON DIVISION, COMMISSION, WORKING GROUP  
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- 09:45 The 1874 transit of Venus observed in Nagasaki S. Débarbat & F. Launay  
by the French, and its remnants
- 10:00 Transit of Venus observations and relics in South Africa W. P. Koorts
- 10:15 Further investigation of the 1874 transit W. Orchiston, A. Buchanan  
of Venus relics at The Grange, Tasmania & T. Sprent
- 10:30 *Coffee*

**Poster paper**

- Rajesh Kochhar: Transits of Venus in the service of the state and astronomy:  
the Indian example

**Session 2. Transit 2004 and the future**

- 11:00 2004 transit of Venus from TRACE, sea-level, J. Pasachoff &  
and the mountaintop Swedish Solar Telescope G. Schneider
- 11:15 Kepler-mission analog study using ACRIMSAT G. Schneider &  
J. Pasachoff
- 11:30 Transits of Venus and Mercury: L.A. Marschall et al.  
A new computer-based exercise from Project CLEA
- 11:45 Transit of Venus in context: where has it all brought us? R. Strom
- 12:00 Exoplanet Transits: D.L. Blank, G.L. White,  
History and Future Prospects B. Jayawardene & A.H. Hons
- 12:15 Working Group Business Meeting *Chair, S. Dick*

**Commission 46 - Astronomy Education & Development**

*Wednesday, August 16 & Thursday August 24, 09:00-12:30, Club C*

*Wednesday, August 16,*

09:00 Business meetings: Astronomy Education and Development

12:30 *Lunch*

Scientific Sessions

**Scientific Organizing Committee:** J.M. Pasachoff (USA, President), B.W. Jones (UK, Vice-President), J. Hearnshaw (New Zealand), R.M. Ros (Spain), J. Percy (Canada), M. Gerbaldi (France), E. Guinan (USA), J. White (USA), H. Haubold (Germany) & J. Fierro, Mexico.

**Meeting organizers:** George Greenstein (USA) & Bruce Partridge (USA)

- 14.00 G. Greenstein/B. Partridge, for the USA
- 14.25 for China P.F. Chen
- 14.50 for the UK J. Bell Burnell
- 15.15 for South Africa P. Martinez
- 16.00 about the Virtual Observatory and its use C. Christian  
in undergraduate education
- 16.30 Panel discussion of general themes in astronomy education

**Thursday, August 24, Business Meeting, 14:00-17:30, Club C**

09:00 National reports, Working Group reports, discussions, elections

**Commission 50 - Protection of Existing & Potential Observatory Sites**

*Wednesday August 23, 09:00-17:30, Meeting Hall V*

**Session I. Business**

09:00 **Commission Business**

Possibilities for closer collaboration with Commission 46  
(Astronomy Education and Development) during the 2006-2009 period

09:10 Update on World-wide efforts to monitor Light Pollution

**Satellite Monitoring**

Recent Progress on a Second World Atlas P. Cinzano  
of the Night-Sky Brightness: LPTRAN/LPDART realistic models,  
Tomography of light pollution, accurate validation methods  
and extended satellite data analysis

**Ground-based Monitoring**

Digital Imaging Photometry with Common Cameras J. Hollan  
- Methods, Results and Perspectives

A Low-cost, Web-based, Sky-Brightness-Monitoring System D. McKenna

**Public Affairs and Educational Outreach aspects** J. Percy (TBC)

*Discussion (including posters)*

10:30 *Coffee*

**Session 2. Protection of "Class A" Optical/IR Observatory Sites**

11:00 Protection of Observatory Sites R. Wainscoat  
on Mauna Kea and Haleakala

Protection of Existing and Potential Observatory Sites H. Schwarz  
in the North of Chile

Protection of Existing and Potential Observatory Sites R. Green  
in the South Western United States, with Emphasis  
on Mount Graham, Arizona and Mount Locke, Texas

- Protection of Observatory Sites on La Palma J. Diaz

12:30 *Lunch*

**Session 3. Protection of Major Sites for Radio Astronomy**

14:00 IUCAF and the protection of Radio Astronomy Sites W. van Driel  
Protecting ALMA E. Hardy

Radio Quiet Zones, with Special Emphasis on the SKA T. Tzioumis

***Discussion:***

*The Exact Future Role of IAU Commission 50 in Protecting Radio Astronomy Sites and the ITU's potential interest in extending its regulation of use of frequencies extending into the IR and optical.*

15:30 Coffee

**Session 4. Working with our Allies on Site Protection in Your Part of the World**

16:00 Studies of the Effects of Global Warming on the Future of Astronomical Observation. D. McNally

OECD Global Science Forum Studies Relevant to Interference Protection and Dark Skies (To be confirmed) R. Ekers

The International Dark-Sky Association's World-Wide Support of Astronomy (To be confirmed) IDA Representative

*Discussion*

*Handover to new Commission 50 President (Hugo Schwarz), Vice President (Richard Wainscoat) and IAUCAF representative (Wim van Driel).*