

Symposium programme

Saturday, 10 June 2006

10:00 - 24:00 **Registration**

20:00 **Buffet dinner**

Sunday, 11 June 2006

08:45-10:35 *Session I : Introductory session*

08:45 **Welcome address by the conference chairman**
Mats Larsson, Stockholm University

08:55 **Introductory lecture (50 min + 5 min discussion)**
Alexander Dalgarno, Harvard-Smithsonian Centre for
Astronomy, USA

09:50 **The chemistry of the early universe**
Francesco Palla, Osservatorio d'Arcetri, Italy

10:35-11:00 **Coffee break**

11:00-12:30 *Session II: Formation and evolution of grains and
reactions on their surfaces*

Chair: Ewine van Dishoeck, University of Leiden,
The Netherlands

11:00 **Grain surface chemistry and the composition of
interstellar ice**
Alexander G. G. M. Tielens, NASA Ames Research
Centre, USA

- 11:45 **Formation of molecules on analogues of interstellar dust grains.**
Gianfranco Vidali, University of Syracuse, USA
- 12:30-14:15** **Lunch break**
- 14:15-17:45** *Session III: The structure and chemistry of interstellar clouds and star-forming regions*
Chair: René Liseau, Stockholm University
- 14:15 **Molecules in Wonderland: Non-equilibrium processes in the interstellar medium**
John Black, Onsala Space Centre, Sweden
- 15:00 **The chemistry of interstellar molecular clouds**
Tom J. Millar, Queen's University Belfast , UK
- 15:45 -16:15** **Coffee break**
- 16:15 **Hot cores and high mass star formation**
Malcolm Walmsley, Osservatorio Astrofisico di Arcetri, Firenze, Italy
- 17:00 **So cold, so hot: Solar type embryos**
Cecilia Ceccarelli, Observatoire de Grenoble, France
- 18:30** **Dinner**
- 20:15-21:45** **Session IV: Chemistry of the stellar environment**
Chair: Hans Olofsson, Stockholm University
- 20:15 **Molecular evolution in star-forming cores and protoplanetary disks**
Yuri Aikawa, Kobe University, Japan
- 21:00 **To be defined**
José Cernicharo, Instituto de Estructura de Materia, Madrid

Monday, 12 June 2006

- 09:00-12:30** *Session IV (cont.): Chemistry of the stellar environment*
- 09:00 **Physical processes and their chemical tracers in near-stellar environments**
David A. Williams, University College London, UK
- 09:45 **Icy planetesimals**
Tobias Owen, Institute for Astronomy, University of Hawaii, USA
- 10:30-11:00** **Coffee break**
- 11:00 **Chemistry in evolving protoplanetary disks**
Ewine F. van Dishoeck, University of Leiden, The Netherlands
- 11:45 **Interstellar molecules in the protostellar environment: recent results from Spitzer**
David Neufeld, Johns Hopkins University, Baltimore, USA
- 12:30-14:15** **Lunch break**
- 14:15-16:15** **Press briefing and poster session (2 hours)**
- 16:15-18:40** *Session V: Hot topics in cosmic chemistry and molecular astrophysics*
Chair: Wolf D. Geppert, Stockholm University
- 16:15 **Formation of H₂ on models of interstellar grains**
David C. Clary, University of Oxford, UK
- 17:00 **Recombination pathways and energy release in molecular hydrogen formation on graphitic surfaces.**
Liv Hornekær, University of Aarhus, Denmark
- 17:25 **Chemistry in protoplanetary disks.**
Thomas Henning, MPI for Astronomy, Heidelberg, Germany

- 17:50 **Non-equilibrium chemistry and dust formation in AGB-stars.**
Fredrik Schöier, Stockholm Observatory, Sweden
- 18:15 **New Astronomy Highlights from the Odin Satellite.**
Åke Hjalmarson, Onsala Space Observatory, Sweden
- 19:00 **Dinner**

Tuesday, 13 June 2006

- 09:00-10:30** *Session VI: Observational identification of molecular species in space*
Chair: J. Cernicharo, Instituto de Estructura de Materia, Madrid
- 09:00 **Identification of interstellar molecules:**
Beating the confusion at mm and submm wavelengths
Michel Guelin, IRAM, Grenoble, France
- 09:45 **Infrared, millimeter & THz spectroscopy of interstellar molecules**
Geoff Blake, Caltech, Pasadena, USA
- 10:30-11:00 **Coffee break**
- 11:00-12:30** *Session VII: Laboratory detection of interstellar molecules*
Chair: Takeshi Oka, University of Chicago, USA
- 11:00 **Decoding IR spectra of cosmic ices and organics in the laboratory**
Louis Allamandola, NASA Ames Research Centre, USA
- 11:45 **Laboratory detection of interstellar molecules**
Pat Thaddeus, Harvard University, Cambridge, USA
- 12:30 **Lunch**

14:00-20:30 **Excursion**

Wednesday, 14 June 2006

09:00-10:30 *Session VIII: Kinetics and molecular dynamics of low temperature reactions*

Chair: E. Roueff, Observatory of Meudon, Paris

09:00

Isomerisation and dissociation of aromatic hydrocarbons

Yuan T. Lee, Academia Sinica, Taiwan

09:45

Experimental investigation of neutral-neutral reactions and energy transfer at lower temperatures

Ian R. Sims, University of Rennes, France

10:30-11:00

Coffee break

11:00-12:30

Session IX: Experimental research into astrophysically important ions and their reactions

Chair: Mats Larsson, Stockholm University

11:00

Interstellar H₃⁺

Takeshi Oka, University of Chicago, USA

11:45

Electron-cold molecular ion reactions using the heavy ion storage ring technique

Daniel Zajfman, Weizmann Institute, Rehovot, Israel and Max-Planck Institute for Nuclear Physics, Heidelberg, Germany

12:30 – 14:15

Lunch break

14:15-15:45

Session X: Modelling of large chemical reaction networks

Chair: Tom J. Millar, Queen's University Belfast, UK

14:15

The role of chemistry on granular surfaces in models of interstellar clouds

Eric Herbst, Ohio State University, USA

- 15:00 **Gas phase chemical networks: The influence of new chemical reaction studies versus models and the link to observations**
Evelyne Roueff, Observatory of Paris, France
- 15:45-16:15** **Coffee break**
- 16:15-17:45 *Session XI: Extragalactic molecular observations:
External galaxies and high red shift objects*
Chair: Patrick Thaddeus, Harvard University, USA
- 16:15 **Studying galaxies and molecules at high redshifts**
Reinhard Genzel, Max Planck Institute for Extraterrestrial Physics, Munich, Germany
- 17:00 **Observed molecular gas properties at nearby galaxies**
Eva Schinnerer, MPIA Heidelberg, Germany
- 19:30** **Conference Banquet**
After-dinner speaker:
David A. Williams, University College London

Thursday, 15 June 2006

- 09:00-10:30** *Session XII: The chemistry of planetary atmospheres*
Chair: Alex Dalgarno, Harvard-Smithsonian Center for Astrophysics
- 09:00 **Photochemistry, dynamics and transport in planetary atmospheres in the outer solar system**
Darrel Strobel, Johns Hopkins University, USA
- 09:45 **Highlights from the Cassini-Huygens-mission (20 min + 25 min discussion)**
Tobias Owen, Institute for Astronomy, University of Hawaii, USA
- 10:30-11:00** **Coffee Break**

11:00-12:30

*Session XIII: A new frontier in space research-
exobiochemistry*

Chair: Louis J. Allamandola, NASA Ames Research
Centre, USA

11:00

From the origin of life to life in the universe

André Brack, Centre de Biophysique Moléculaire,
Orléans, France

11:45

Strategies for life detection on Mars

Pascale Ehrenfreund, University of Leiden, The
Netherlands

12:30

Lunch

13:30

Departure of participants