

Appendix (Program)

Schedule

Monday 15th April

09:00 WELCOME by F. Salama (Chair of SOC)

SESSION 1

CHAIR: F. Salama

- 09:15 **E. van Dishoeck (P):** Laboratory astrophysics: Key to understanding the Universe
- 10:00 **A. Boogert (I):** From diffuse clouds to protostars: Outstanding questions about the evolution of ices
- 10:15 **O. Berné (I):** Observations and modeling of the photochemical evolution of carbonaceous macromolecules in star-forming regions
- 10:30 COFFEE BREAK

SESSION 2

CHAIR: C. Walsh

- 11:00 **I. Sims:** Experimental determination of reaction product branching ratios at low temperatures for astrochemistry
- 11:15 **C. Jäger (R):** Laboratory experiments on cosmic dust and ices
- 11:45 **A. Canosa (I):** Gas phase reaction kinetics of complex organic molecules at temperatures of the interstellar medium
- 12:00 **S. Wehres (I):** New laboratory techniques using heterodyne receivers
- 12:15 **D. Qasim:** Synthesis of solid-state Complex Organic Molecules (COMs) through accretion of simple species at low temperatures
- 12:30 LUNCH BREAK

SESSION 3

CHAIR: D. Heard

- 14:00 **N. Ysard (R):** Dust evolution: Going beyond the empirical
- 14:30 **C. Romero Rocha:** Potential energy surfaces of elemental carbon clusters: From theory to applications in astrochemistry
- 14:45 **C. Puzzarini (I):** Prebiotic molecules in interstellar space: Rotational spectroscopy and quantum chemistry
- 15:00 **Z. Awad:** N-bearing species in massive star forming regions
- 15:15 COFFEE BREAK

SESSION 4

CHAIR: A. Dawes

- 15:45 **M. Palumbo:** Laboratory investigations aimed at building a database for the interpretation of JWST spectra
- 16:00 **H. Cuppen:** Simulations of energy dissipation and non-thermal desorption on amorphous solid water
- 16:15 **100 Years of IAU - (Video Presentation)**

END OF SCIENCE SESSIONS AT 16:30
17:15 COLLEGE TOURS
17:30 POSTERS WITH REFRESHMENTS
END OF POSTER SESSION AT 19:00
19:30 DINNER

Tuesday 16th April

SESSION 5

CHAIR: D. Benoit

09:00 **K. Altwegg (R):** Interpretation of in situ mass spectra at comet 67P
09:30 **Y. Pendleton:** A window on the composition of the early solar nebula: Pluto, 2014MU69, and Phoebe
09:45 **A. Belloche:** Molecular complexity in the interstellar medium
10:00 **F. Pignatale:** Fingerprints of the protosolar cloud collapse in the Solar System: Refractory inclusion distribution and isotopic anomalies in meteorites
10:15 **H. Sabbah:** Characterization of large carbonaceous molecules in cosmic dust analogues and meteorites
10:30 COFFEE BREAK

SESSION 6

CHAIR: H. Linnartz

11:00 **V. Mennella:** Catalytic formation of H₂ on Mg-rich amorphous silicates
11:15 **K. Bowen:** Laboratory measurements of deuterium reacting with isotopologues of H₃⁺
11:30 **N. Watanabe (I):** Detection of OH radicals on amorphous solid water
11:45 **M. Nuevo:** Formation of complex organic molecules in astrophysical environments: Sugars and derivatives
12:00 **F. Dulieu:** Hydrogenation and binding energies on dust grains as selective forces for the formation and observation of interstellar molecules
12:15 **M. Stockett:** Intrinsic absorption profile and radiative cooling rate of a PAH cation revealed by action spectroscopy in the cryogenic electrostatic storage ring DESIREE
12:30 LUNCH BREAK

SESSION 7

CHAIR: C. Joblin

14:00 **S. Russell (I):** Carbonaceous chondrites as probes of protoplanetary disk conditions
14:15 **V. Deguin:** Amorphous Solid Water (ASW) particle production for collision experiments
14:30 **P. Theulé (I):** Chemical dynamics in interstellar ice
14:45 **M. Burchell:** Survival of shells of icy satellites against hypervelocity impact
15:00 **J. Thrower:** Laboratory evidence for the formation of hydrogenated fullerene molecules
15:15 COFFEE BREAK

- 15:45 **L. Wiesenfeld:** Quenching of interstellar carbenes: Interaction of C₃H₂ with He and H₂
- 16:00 **F. Ciesla (R):** Chemical evolution of planetary materials in a dynamic solar nebula
- END OF SCIENCE SESSIONS AT 16:30
- 17:15 COLLEGE TOURS
- 17:30 POSTERS WITH REFRESHMENTS
- END OF POSTER SESSION AT 19:00
- 19:30 DINNER

Wednesday 17th April

SESSION 8

CHAIR: S. Ioppolo

- 09:00 **Y. Aikawa (R):** Gas-dust chemistry of volatiles in the star and planetary system formation
- 09:30 **J. Olofsson (I):** Dust production and characterization in young debris disks
- 09:45 **B. Kerkeni:** Understanding Propyl-cyanide and its isomers formation: Ab initio study of the reaction kinetics
- 10:00 **S. Bromley:** Using atomistically detailed simulations to understand the formation, structure and composition of astrophysical silicate dust grains
- 10:15 **R. Teague (I):** Tracing the physical conditions of planet formation with molecular excitation
- 10:30 COFFEE BREAK

SESSION 9

CHAIR: A. Meijer

- 11:00 **A. Petrignani:** High-resolution electronic spectroscopy study of neutral gas-phase PAH species
- 11:15 **K. Lee:** Interstellar aromatic chemistry: A combined laboratory, observational, and theoretical perspective
- 11:30 **D. Dubois:** Benzene condensation on Titan's stratospheric aerosols: An integrated laboratory, modeling and observational approach
- 11:45 **V. Vuitton (I):** Chemical composition of (exo-)planetary haze analogues by very high-resolution mass spectrometry
- 12:00 **N. Sie:** Temperature and thickness effects on photodesorption of CO ices
- 12:15 **T. Birnstiel (I):** Evolution of solids in planet forming disks: The interplay of experiments, simulations, and observations
- END OF SCIENCE SESSIONS AT 12:30
- 12:30 LUNCH BREAK
- 13:30 CONFERENCE TRIPS
- Trips will finish between 16:30 and 17:30
- 19:30 GALA DINNER

Thursday 18th April

SESSION 10

CHAIR: E. Sciamma-O'Brien

- 09:00 **I. Kamp (R):** Protoplanetary disks, debris disks and solar system
 09:30 **N. Ligterink:** The formation of prebiotic building blocks of peptides on interstellar dust grains
 09:45 **B. Sivaraman (I):** Complex molecules in astrochemical impact conditions
 10:00 **J. Pickering (R):** Recent advances in experimental laboratory astrophysics for stellar astrophysics applications and future data needs.
 10:30 COFFEE BREAK

SESSION 11

CHAIR: F. Wang

- 11:00 **M. Montgomery (I):** The Wootton center for astrophysical plasma properties: First results for helium
 11:15 **I. Topala:** Comparative study of 3.4 micron band features from carbon dust analogs obtained in pulsed plasmas at low and atmospheric pressure
 11:30 **T. Schmidt:** Quantifying the aliphatic hydrocarbon content of interstellar dust using multiple laboratory spectroscopies
 11:45 **D. Gobrecht:** From molecules to dust: Alumina cluster seeds
 12:00 **L. Zhang:** Physical parameter estimation with MCMC from X-ray observations
 12:15 **M. Van de Sande:** AGB outflows as tests of chemical kinetic and radiative transfer models
 12:30 LUNCH BREAK

SESSION 12

CHAIR: N. Mason

- 14:00 **Poster Winner 1: S. Zeegers:** Modelling the properties of interstellar dust using the Si Kedge
 14:15 **Poster Winner 2: F. Simonsen:** H₂ catalysis through superhydrogenation of interstellar polycyclic aromatic hydrocarbons
 14:30 **K. Kotake (R):** Exploding and non-exploding core-collapse supernova models and the multimessenger predictions
 15:00 **J. Mao:** Density diagnostics of photoionized outflows in active galactic nuclei
 15:15 COFFEE BREAK

PANEL DISCUSSION

MODERATOR: F. Salama (IAU S350)

- 15:45 The Future of Laboratory Astrophysics (the role of IAU Commission B5):
 J. H. Fillion (PCMI), H. Fraser (IAU Comm B5), D. Hudgins (NASA SMD),
 H. Linnartz (DAN), N. Mason (Europlanet), V. Mennella (INAF), D. Savin (LAD), O. Shalabiea (CU), F. Wang (NAO), N. Watanabe (ILTS)

END OF SCIENCE SESSIONS AT 17:15

17:15 COLLEGE TOURS

18:00 POSTERS WITH REFRESHMENTS

END OF POSTER SESSION AT 19:00

19:30 DINNER

Friday 19th April**SESSION 13****CHAIR: G. Del Zanna**

- 09:00 **J. Tennyson (R):** The ExoMol project: Molecular line lists for the opacity of exoplanets and other hot atmospheres
- 09:30 **R. Bérard:** Using cold plasma to investigate the mechanisms involved in cosmic dust formation: Role of C/O ratio and metals
- 09:45 **K. Lind (I):** Non-LTE spectroscopy for galactic archaeology
- 10:00 **J. Lawler:** Quantitative atomic spectroscopy: A review of progress in the optical-UV region and future opportunities using X-Ray FELs
- 10:15 **A. Jerkstrand (I):** The origin of the elements: Diagnosing the nucleosynthesis production in supernovae
- 10:30 COFFEE BREAK

SESSION 14**CHAIR: O. Shalabiea**

- 11:00 **W. Liu (R):** Underground nuclear astrophysics experiment in Jinping China: JUNA
- 11:30 **J. Grumer:** Kilonovae and the lanthanides: An atomic theorists perspective
- 11:45 **S. White:** Generation of photoionized plasmas in the laboratory: Analogues to astrophysical sources
- 12:00 **M. Giarrusso:** Laboratory plasmas for high-energy Astrophysics
- 12:15 **H. Schatz (I):** Rare isotope physics in the era of multimessenger astronomy
- 12:30 LUNCH BREAK

SESSION 15**CHAIR: H. Fraser**

- 14:00 **P. Young (R):** The Sun: Our own backyard plasma laboratory
- 14:30 **G. Del Zanna:** Benchmarked atomic data for astrophysics
- 14:45 **U. Heiter (I):** Laboratory astrophysics for the interpretation of stellar spectra
- END OF SCIENCE SESSIONS AT 15:00
- 15:00 **F. Salama (SOC):** SUMMARY
- 15:25 **H. Fraser (LOC):** CLOSING REMARKS
- CLOSE OF MEETING AT 15:30