



POST MEETING REPORT FORM

Deadline for Submission: within 1 month after the meeting

For Symposia and Focus Meetings the Post Meeting Report should be sent to the AGS. For Symposium reports all the following documents should be submitted, while for Focus Meetings documents (i), (ii) and (v) are required:

- (i) Final scientific program, list of invited review speakers and session chairs including their gender;
- (ii) Summary of the scientific highlights of the meeting (1 page, to be published on the IAU website);
- (iii) List of participants, including their distribution by country and gender (double bar chart);
- (iv) List of recipients of IAU grants, stating the country and gender;
- (v) An Executive Summary of the Meeting (1-2 pages) to be published on the IAU website. Note: for Symposia, two separate reports should be produced in PDF format. The one for the web should only answer (i), (ii) and (v).

For Regional Meetings the Post Meeting Report should include the documents referred above from (i) to (v) as well as a proposal for the next venue, and be sent to the GS.

1. Meeting Identification Number: Symposium X Focus Meeting Regional Meeting

2. Meeting Title: Laboratory Astrophysics: From observations to Interpretation

3. Coordinating Division: B

4. Dedication of meeting (if any): First IAU Laboratory Astrophysics Symposium

5. Location (city, country): Cambridge, UK

6. Dates of meeting: 14-19 April 2019

7. Number of participants: 167

8. Total Amount of IAU Grant funds received (in euros): 20,000.00

9. Number of IAU Grant recipients: 32

10. List of represented countries: see attached list

11. Report submitted by: Dr. Farid Salama

12. Date and place: 30 June 2019; Mountain View, California, USA

13. Signature of SOC Chairperson: Farid Salama.

Post Meeting Report IAU S350

(i) Final scientific program, list of invited review speakers and session chairs including their gender

See attached document #1: "IAUS350_scientific_program"

Session chairs: gender distribution: names/gender:

Session 1: F. Salama (M)

Session 2: C. Walsh (F)

Session 3: D. Heard (M)

Session 4: A Dawes (F)

Session 5: D. Benoit (M)

Session 6: H. Linnartz (M)

Session 7: C. Joblin (F)

Session 8: S. Ioppolo (M)

Session 9: A. Meijer (M)

Session 10: E. Sciamma-O'Brien (F)

Session 11: F. Wang (F)

Session 12: N. Mason (M)

Session 13: G. Del Zanna (M)

Session 14: O. Shalabiea (M)

Session 15: H. Fraser (F)

9 Male, 6 Female

Schedule

Monday 15th April

09:00		WELCOME by F. Salama (Chair of SOC)
<i>SESSION 1</i>		<i>CHAIR: F. Salama</i>
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
<i>SESSION 2</i>		<i>CHAIR: C. Walsh</i>
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. Schlemmer (I)	The Spectroscopy of Molecular Ions related to H_3^+
12:15	D. Qasim	Synthesis of solid-state Complex Organic Molecules (COMs) through accretion of simple species at low temperatures
12:30		LUNCH BREAK
<i>SESSION 3</i>		<i>CHAIR: D. Heard</i>
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
<i>SESSION 4</i>		<i>CHAIR: A. Dawes</i>
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	C. Kemper (I)	The dust budget problem in galaxies near and far
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
BAR OPEN UNTIL 23:00		

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Tuesday 16th April

<i>SESSION 5</i>		<i>CHAIR: D. Benoit</i>
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
<i>SESSION 6</i>		<i>CHAIR: H. Linnartz</i>
11:00	V. Mennella	Catalytic formation of H ₂ on Mg-rich amorphous silicates
11:15	K. Bowen	Laboratory Measurements of Deuterium Reacting with Isotopologues of H ₃ ⁺
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
<i>SESSION 7</i>		<i>CHAIR: C. Joblin</i>
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 C ₃ H ₂ with He and H ₂
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
BAR OPEN UNTIL 23:00		

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Wednesday 17th April

<i>SESSION 8</i>		<i>CHAIR: S. Ioppolo</i>
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
<i>SESSION 9</i>		<i>CHAIR: A. Meijer</i>
11:00	A. Petrigani	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
BAR OPEN UNTIL 23:00		

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Thursday 18th April

<i>SESSION 10</i>		<i>CHAIR: E. Sciamma-O'Brien</i>
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
<i>SESSION 11</i>		<i>CHAIR: F. Wang</i>
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
<i>SESSION 12</i>		<i>CHAIR: N. Mason</i>
14:00		<i>Poster Winner 1</i>
14:15		<i>Poster Winner 2</i>
14:30	K. Kotake (R)	Exploding and non-exploding core-collapse supernova models and the multi-messenger predictions
15:00	J. Mao	Density diagnostics of photoionized outflows in active galactic nuclei
15:15		COFFEE BREAK
<i>PANEL DISCUSSION</i>		<i>MODERATOR: F. Salama (IAU S350)</i>
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 (NL), N. Mason (Europlanet), V. Mennella (ECLA), D. Savin (LAD), O. Shalabiea (Africa/ME), F. Wang (China), N. Watanabe (Japan)
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
BAR OPEN UNTIL 23:00		

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Friday 19th April

<i>SESSION 13</i>		<i>CHAIR: G. Del Zanna</i>
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
<i>SESSION 14</i>		<i>CHAIR: O. Shalabiea</i>
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 photoionised 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
<i>SESSION 15</i>		<i>CHAIR: H. Fraser</i>
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		

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Posters

Student and PDRA poster presenters are indicated with an asterisk, *

1	L. Krim	Reduction of C=O functional group through H addition reactions at 10 K: The cases of glyoxal, propanal and methylformate
2	J. Bouwman	Probing the dissociation of interstellar polyaromatic hydrocarbons
3	J. Terwisscha van Scheltinga*	Infrared spectra of complex organic molecules in astronomically relevant ice matrices
4	L. Duc Thong	An updated constraint on variations of the fine-structure constant using wavelengths of Fe II absorption line multiplets
5	P. Sundararajan*	Infrared spectra of protonated and hydrogenated corannulene (C ₂₀ H ₁₀) and sumanene (C ₂₁ H ₁₂) using matrix isolation in solid para-Hydrogen - Implications to the UIR bands
6	M. Stockett	Non-statistical fragmentation of C ₆₀ and the formation of endohedral defect fullerenes
7	C. Arumainayagam	Photochemistry vs. Radiation Chemistry of Cosmic Ice Analogs
8	O. Shalabia	N-Bearing Species in Massive Star Forming Regions
9	A. Meijer	On the formation of Urea in the ISM
10	A. Ocaña*	Gas-phase reactivity of CH ₃ OH + OH down to 11.7K: Astrophysical implications.
11	S. Gaertner	Nanoscale Structure of Amorphous Solid Water. What Determines the Porosity in ASW?
12	W. Sameera	OH radical on interstellar ices: a quantum chemical study
13	H. Chaabouni	Thermal desorption of amino complex organic molecules. Effect of the substrate
14	N. Ligterink*	A new MALDI technique for the investigation of biomolecules in extraterrestrial environments
15	A. Kar*	Laboratory simulation of light scattering from regolith analogue: Effect of porosity and particle size
16	S. Spezzano*	High resolution rotational spectroscopy of elusive molecules at the Center for Astrochemical Studies (CAS@MPE)
17	V. Herrero	Adsorption of volatile molecules on interstellar carbonaceous dust analogs
18	A. Lemmens*	Anharmonic Aromatics
19	S. Blázquez*	Gas-phase reactivity of CH ₃ C(O)CH ₃ with OH radicals at interstellar temperatures (T = 11.7-64.0 K) using the CRESU technique
20	N. West*	Low Temperature Gas Phase Reaction Rate Coefficient Measurements: Toward Modeling of Stellar Winds and the Interstellar Medium.
21	R. Brunetto	Asteroid surfaces: irradiation and spectroscopy, in laboratory and in space
22	A. Booth*	Molecular Line Emission from Planet-Forming Disks
23	M. Laverick*	The Belgian repository of fundamental atomic data and stellar spectra (BRASS): Quality assessing atomic data for unblended lines in FGK-type stars
24	G. Wenzel*	Photoprocessing of large PAH cations
25	A. Cassidy*	Spontaneous polarisation charge on CO ice mantles accelerates ion recombination reaction rates in cold dark clouds.
26	M. Dubernet	VAMDC and Data Citation
27	A. Candian	Modelling the Anharmonicity of Polycyclic Aromatic Hydrocarbons

28	G. Tarcazy	On the correlation of the abundances of HNCO and NH ₂ CHO: Dehydrogenation of formamide by H atoms at low temperatures
29	G. Perotti*	A history of ice and gas: the case of Serpens SVS 4
30	I. Cooke*	Diffusion and Desorption Kinetics in the Apolar Ice Phase
31	X. Yu*	Propagating Atomic Uncertainties to Infer Coronal Plasma Properties
32	M. Martin-Drumel	Laboratory rotational spectroscopy of interstellar isomers
33	E. Micelotta	The importance of being stable: new results about the survival of PAHs and hydrocarbon nanoparticles in extreme astrophysical environments.
34	S. Ioppolo	Selective mid-IR and THz Free-Electron Laser irradiation of water ice probed by FTIR spectroscopy
35	R. Urso*	Ion irradiation of astrophysical relevant frozen mixtures and characterization of organic refractory residues
36	J. Tomassi*	Examining the chemistry Ophiuchi Diffuse Region using a rate sensitivity analysis
37	S. Panchagnula*	Photofragmentation of coronene cations
38	K. Chuang*	H ₂ photochemistry in interstellar ices: the formation of HCO in UV irradiated CO:H ₂ ice mixtures
39	S. Foschino*	Learning mid-IR emission spectra of polycyclic aromatic hydrocarbon populations from observations.
40	B. Hays*	A new chirped pulse microwave spectrometer dedicated to the measurement of reaction product branching ratios for astrochemistry
41	S. Thompson	Amorphous Mg-Fe silicates via sol-gel: method, structure, spectroscopy and thermal evolution
42	E. Sciamma-O'Brien	The Titan Haze Simulation Experiment: Investigating Titan's Low-temperature Atmospheric Chemistry in a Pulsed Plasma Jet Expansion
43	E. Niemczura	Heavy element abundance in the spectrum of the primary component in an extremely rare eclipsing binary HD66051
44	J. Fillion	Water ice photodesorption by VUV photons and X-rays investigated with synchrotron radiation
45	J. Roser	PAH Clusters as Interstellar Very Small Grains
46	C. Materese	Laboratory Studies of the Radiolytic Destruction of Nucleobases in Icy Environments
47	R. Martin-Domenech*	Formation of NH ₂ CHO and CH ₃ CHO upon UV processing of interstellar ice analogs
48	W. Rocha*	Decomposition of infrared ice features using genetic modelling algorithms
49	M. Rachid*	Galactic and Extragalactic ices with JWST
50	J. He*	Laboratory investigation of the formation of methoxymethanol in the CO-rich layer of the ice mantle
51	S. Zeegers*	Modelling the properties of interstellar dust using the Si K-edge
52	A. Ricca	Zigzag and armchair PAH subpopulations as probes of the local radiation environment
53	M. Bulak*	A quantitative approach to measuring VUV-triggered processes in icy (solid-state) COMs
54	P. Rimmer*	Prebiotic chemistry under a simulated young sun

55	I. Endo*	Quenched Nitrogen-included Carbonaceous Composite (QNCC): a powerful candidate of the carriers of the UIR bands in classical novae
56	F. Salama	Laboratory Astrophysics Studies with the COSmIC Facility at NASA Ames
57	S. Bejaoui*	Electronic Spectroscopy of PAHs and PAH derivatives in Supersonic Jet. Astrophysical Implications
58	D. Gupta*	Vacuum Ultraviolet photoabsorption of molecules with astrochemical and astrobiological relevance: Benzonitrile and Hydroxylamine
59	R. Garrod	Microscopic simulations of laboratory and interstellar ice structure and chemistry
60	H. Velázquez Navarro*	Fragmentation of neutral PAHs upon UV irradiation
61	R. James*	Does the initial mixing ratio of an interstellar ice analogue affect the formation of products when it is processed with electrons?
62	J. Mariñoso Guiu*	How to correctly model IR spectra of nanoclusters of astronomical interest
63	P. Ghesquiere*	Collision of centimeter-size water ice particles: impact of the surface roughness.
64	A. Heays*	Gas-phase UV cross sections of radicals
65	F. Simonsen*	H ₂ Catalysis Through Superhydrogenation of Interstellar Polycyclic Aromatic Hydrocarbons
66	C. Rab*	The chemistry of episodic accretion
67	A. Dawes	Laboratory spectroscopy: from macroscopic molecular films to microscopic icy grains
68	J. Franz	Investigation of rotational state-changing collisions of CCN ⁻ ions with helium
69	C. Rab*	The gas structure of the HD 163296 planet-forming disk - Gas gaps or not?
70	E. Vchko ^{va} Bebekovska*	The latest spectral analysis on asteroids at NAO Rozhen
71	G. Apostolovska	Asteroid collisions as origin of debris discs - asteroid shape reconstruction from BNAO Rozhen photometry
72	A. Hojaev	Census and Modeling of Molecular and Gas-Dust Clouds in Galaxies
73	J. Grumer*	A final-state resolved merged-beam experiment of mutual neutralization of Li ⁺ and D ⁻ at stellar photospheric temperatures at DESIREE
74	C. Shingledecker*	Radiation Chemistry in Astrochemical Models: From the Lab to the ISM
75	T. Suhasaria*	H atom irradiation of formamide ice at 12 K
76	G. Pantazidis*	Deuteration of C ₆₀ on a Highly Oriented Pyrolytic Graphite surface
77	B. Jiang	Are SiO molecules the seed of silicate dust around evolved stars?
78	A. Miyazaki*	Surface diffusion of OH radical on amorphous solid water
79	J. Li	The origins of two distinct halo populations revealed from the nucleosynthesis of barium
80	C. Walsh	Complex organic molecules tracing the comet-building zone in protoplanetary disks
81	L. Gavilan Marin*	Low-temperature condensation of polyaromatic carbon grains from PAHs

82	D. Paardekooper*	Plume profile studies of Nanosecond laser-induced desorption of water ice - amorphous versus crystalline -
83	D. Gupta*	Kinetics of the reaction between the CN radical and methanol at low temperatures using the CRESU technique

IAUS350 -- Scientific Highlights

IAU Symposium 350, "Laboratory Astrophysics: From observations to Interpretation" was organized by the IAU Commission B5 and was the *first topical* Symposium on Laboratory Astrophysics sponsored by the IAU. This Symposium was the first in a series of IAU Symposia to be held every 6 or so years on this topic. The essential role played by laboratory astrophysics in support of astronomy has long been recognized. Laboratory astrophysics is the Rosetta stone that enables astronomers to understand and interpret the cosmos. Astronomy is primarily an observational science detecting photons generated by atomic, molecular, chemical, and condensed matter processes. Our understanding of the universe also relies on knowledge of the evolution of matter (nuclear and particle physics) and of the dynamical processes shaping it (plasma physics). Planetary science, involving in-situ measurements of solar system bodies, requires knowledge from physics, chemistry, and geology. Exploring the question of life elsewhere in the Universe draws on all the above as well as biology. Hence, our quest to understand the cosmos rests firmly on theoretical and experimental research in many different branches of science. Taken together, these astrophysically motivated theoretical and experimental studies are known as Laboratory Astrophysics. The advent of new space, airborne and ground-based telescopes have largely motivated the tenure of this Symposium.

This multidisciplinary Symposium brought together astronomers with theoretical, and experimental chemists and physicists to discuss the state-of-the-art research in their respective disciplines and how their combined expertise can address important open questions in modern astronomy and astrophysics.

Active researchers in observational astronomy, space missions, experimental and theoretical laboratory astrophysics and astrochemistry were invited to gather and discuss the major topics and challenges that face today's Astronomy with the hope that interactions between researchers will result in a solid roadmap for future research that will lead to advances in our understanding of astronomical observations and guide the design of future observational instruments. The scientific discussions were divided between 5 major topics and 3 thematic areas encompassing the breadth and the pluridisciplinarity of the field of Laboratory Astrophysics. The astronomy topics covered are listed below and spanned from star- and planet-formation through stellar populations to extragalactic chemistry and dark matter, complemented by chemistry and physics reaching from fundamental atomic and molecular spectroscopy, through surface reaction dynamics, catalysis, nuclear processes and high-energy physics, including fundamental processes in some of the most extreme environments we can imagine. The Astronomy Topics covered in IAU S350:

- Star formation and the cosmic matter cycle in the near universe (Laboratory, Observations, Theory & Modeling)
- Solar System formation and the pre-solar nebula (Laboratory, Observations, Theory & Modeling)
- Protoplanetary disks, debris disks and solar system (Laboratory, Observations, Theory & Modeling)
- Stars, stellar populations, and stellar explosions (Laboratory, Observations, Theory & Modeling)
- Reaching beyond our galaxy: from extra galactic chemistry to dark matter (Laboratory, Observations, Theory & Modeling)

In addition to the 5 astronomy topics, topics of general interest to the field were also covered:

- Laboratory Techniques: Spectroscopy, Imaging, Mass Spectrometry, Plasma, Numerical simulations
- Databases

IAUS350 -- Executive Summary

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The Symposium was sponsored by Divisions B, H, F and D and Commissions B5 (organizing Commission), H2 and F3.

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- Reaching beyond our galaxy: from extra galactic chemistry to dark matter (Laboratory, Observations, Theory & Modeling)

In addition to the 5 astronomy topics, topics of general interest to the field were also covered:

- Laboratory Techniques: Spectroscopy, Imaging, Mass Spectrometry, Plasma, Numerical simulations
- Databases • Education and Public Outreach (EPO)

To aid the discussion, the Scientific Organizing Committee (SOC) identified a total of 31 invited speakers (16 male and 15 female) that included 1 Plenary, 11 Review, and 19 Invited speakers.

The Scientific Organizing Committee (SOC) reviewed and ranked all submitted abstracts and selected a further 38 contributed oral presentations, taking into account scientific impact, gender, geographical distribution and stage of career. The Plenary talk was allocated 40 mins, invited reviews 30 mins and invited oral contributions 15 mins, including discussion time. 85 poster presentations were also accepted. In total, 167 individuals, 102 males and 65 females, from 27 countries spanning all continents (see attached list of participants) attended with the UK, France and Germany registering the highest numbers of participants. The Symposium had a high gender diversity with

close to 39% female participants. Individual sessions were chaired by members of the SOC and other senior attendees whilst a variety of PDRAs and PhD students supported the logistics throughout the sessions.

The 83 posters (52 male and 31 female) were divided into three sessions on Monday, Tuesday and Thursday, lasting 90 and 60 mins respectively. A small group awarded prizes to 3 individuals. The three winners were offered 15 minutes each to orally present the winning poster.

Two sessions on public outreach were held with Kimberley Ennico (NASA Ames, USA) and Helen Fraser (Open Univ., UK) discussed “Dust, Ice and Water” and “How to Build a Planet in the Lab”, respectively. Sabrina Goertner organized a lively and very popular education outreach event for school children on the afternoon of Wednesday, April 17. Ewine van Dishoeck (Leiden, NL) made a special presentation on the 100 Years of the IAU and the associated events that are being held yearlong to celebrate this important event for astronomy. She also made a presentation on ‘Women in Astronomy’, summarizing the results of the recent IAU survey. She encouraged participants to contact her with any ideas on how the IAU could grow the number of its female members.

On the fourth day, Farid Salama moderated a Round Table discussion on The Future of Laboratory Astrophysics (the role of IAU Commission B5) to discuss how CB5 can best support the laboratory astrophysics community. The central issues discussed were what can CB5 do (within its mandate) and how can CB5 serve as a bridge between local/national laboratory astrophysics communities and help the exchange experiences and approaches. Prefiled questions from the audience were also discussed. The panel included representatives of IAU CB5, NASA, AAS/LAD, Europlanet, PCMI, ECLA and a few national programs from China, Japan and Africa/ME.

The Symposium proceedings, edited by Farid Salama, Editor with Helen Fraser and Harold Linnartz, co-Editors are to be published by Cambridge University Press.

In addition to the scientific sessions, the attendees enjoyed a welcome reception on Sunday 14 April and a series of social activities that included punting and walking tours, a visit of the Ely Cathedral and a guided tour of the Mullard Radio Astronomy Tour facility on the afternoon of Wednesday 17 April. The conference gala dinner was held at the Jesus College on Thursday 18 April, after which the SOC Chair, Farid Salama, opened the ceremony and introduced the distinguished guest speakers of the evening, Peter Sarre (Univ. Nottingham); Chris Lintott (Oxford Univ.) and Paul Woods (Editor Nature Astronomy) who gave after-dinner speeches on laboratory astrophysics and presented prizes to the poster competition winners. The banquet ceremony ended with Farid Salama giving tokens of the SOC’s appreciation to the LOC members who have done an outstanding work that largely contributed to the success of the meeting.

The organizers would like to thank a number of institutions for providing organizational and financial support: in particular, the IAU for the award of travel grants to 32 participants (22 male and 10 female), some 19 nationalities based in 20 countries; NASA; OU; PCMI; PPN; ESA and the IoP among others.

The Local Organizing Committee, which was very ably chaired by Helen Fraser, who brought her organizational skills and experience to this key role, comprised of David Benoit, Rebecca Coster (admin support), Anita Dawes, Sabrina Gaertner (Outreach), Dwayne Heard, Sergio Ioppolo, Nigel Mason, Anthony J. Meijer (Web-master), Jennifer Noble, Juliet Pickering, Paul Rimmer, Farid Salama, Ella Sciamma-O’Brien, Catherine Walsh, Mark Wyatt, Giulio Del-Zanna. They performed their duties both before and during the Symposium in a highly effective manner and the fact that the Symposium ran so smoothly is a testament to their professional approach and to the fact that many of the LOC remained on site throughout the duration of the meeting to ensure attendees had a stress-free, enjoyable experience.

Farid Salama, SOC Chair, was greatly aided in his duties by the other members of the SOC: Scientific organizing committee, SOC: Paul Barklem, Sweden, Helen Fraser, UK, Thomas Henning, Germany, Christine Joblin, France, Sun Kwok, China, Harold Linnartz, Netherlands, Lyudmila Mashonkina, Russia, Tom Millar, UK, Osama Shalabiea, Egypt, Gianfranco Vidali, USA, Feilu Wang, China, Giulio Del-Zanna, UK

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Farid Salama
Chair, IAU S350