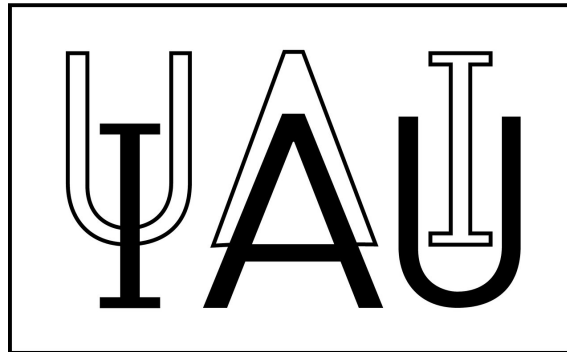
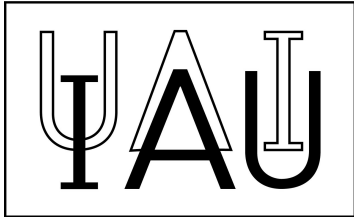


# Business Meeting Commission B5 Laboratory Astrophysics

Farid Salama





## Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - Future
  - Q&As



[News](#)

[Science](#)

[Publications](#)

[Administration](#)

[Education](#)

[IAU for the Public](#)

[Astronomy for  
Development](#)

[Home](#) / [Science](#) / [Scientific Bodies](#) / [Commissions](#) » [Commission B5 Laboratory Astrophysics](#)

## B5 – Commission B5 Laboratory Astrophysics

### Description

The purpose of the Laboratory Astrophysics Commission (B5) is to address the multidisciplinary needs and requirements of modern astronomy and planetary science. As a result, the Commission encompasses the four fundamental research areas that generate astrophysical data needs: atomic and molecular astrophysics, physics and chemistry of solid materials and condensed matter (dust and ices), plasma astrophysics, and nuclear and particle astrophysics. The Commission embraces interdisciplinary studies crossing physical, chemical, biological, geological sciences of relevance to astronomy, including experiment, theory, and modeling, from the nuclear and atomic/molecular level to application on astronomical scales.

In summary, the Laboratory Astrophysics Commission is a strongly cross-disciplinary commission with the aim to assist all IAU members in providing the data needed to interpret and understand astronomical observations and to promote Laboratory Astrophysics.

### Links:

- [Commission B5 Triennial Report \(2015-2018\)](#)
- [Commission B5 Annual Report \(2016\)](#)

### Meetings:

- [2018 GA Commission B5 Programme](#)

8/26/18

F. Salama, IAU GA 2018, Vienna

Search [www.iau.org](#)

### Search Scientific Bodies

Search...

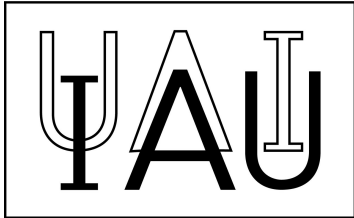
Search

### Follow the IAU on social media



### IAU General Assembly 2018





# Agenda

- **Mission**
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Statement of Mission

- ❖ Purpose of Commission B5: address the **multidisciplinary needs and requirements of modern astronomy and planetary science.**

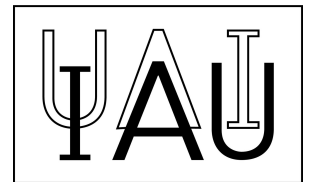


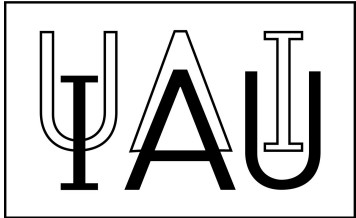
# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Statement of Mission

- ❖ Purpose of Commission B5: address the **multidisciplinary needs and requirements of modern astronomy and planetary science**.
- ❖ Commission B5 is a strongly **cross-disciplinary commission** with the aim **to assist IAU members** in providing the data needed to **interpret and understand astronomical observations and to promote Laboratory Astrophysics**.





# Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

❖ The Commission encompasses the 4 fundamental research areas that generate data needs:





# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

- ❖ The Commission encompasses the **4 fundamental research areas** that generate data needs:
  - atomic and molecular astrophysics



# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

- ❖ The Commission encompasses the 4 fundamental research areas that generate data needs:
  - atomic and molecular astrophysics
  - dust and ices



# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

- ❖ The Commission encompasses the **4 fundamental research areas** that generate data needs:
  - atomic and molecular astrophysics
  - dust and ices
  - plasma astrophysics



# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

- ❖ The Commission encompasses the 4 fundamental research areas that generate data needs:
  - atomic and molecular astrophysics
  - dust and ices
  - plasma astrophysics
  - nuclear and particle astrophysics.



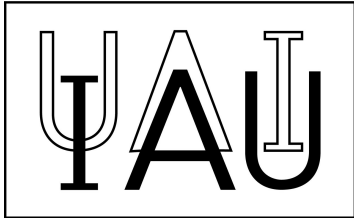
# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Description – Research Areas

- ❖ The Commission encompasses the **4 fundamental research areas** that generate data needs:
  - atomic and molecular astrophysics
  - physics and chemistry of solid materials and condensed matter (dust and ices)
  - plasma astrophysics
  - nuclear and particle astrophysics.
- ❖ The **interdisciplinary** studies include experiment, theory, and modeling, from the nuclear and atomic/molecular level to application on astronomical scales.





## Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## History/Chronology

- The Commission came into being at the IAU 29th General Assembly Meeting in Hawaii in 2015 as a natural successor of Commission 14 (Atomic and Molecular Data) and in recognition of the ever expanding multidisciplinary needs of the astronomical community.



# B5 – Commission B5 Laboratory Astrophysics

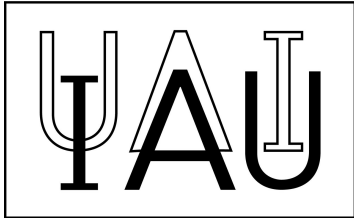
[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## History/Chronology

- The Commission came into being at the IAU 29th General Assembly Meeting in Hawaii in 2015 as a natural successor of Commission 14 (Atomic and Molecular Data) and in recognition of the ever expanding multidisciplinary needs of the astronomical community.
- Founding Members: Farid Salama, Helen Fraser, Paul Barklem, Thomas Henning, Gianfranco Vidali







## Agenda

- Mission
- Research Areas
  - History
- **Governing Body**
  - Activities
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Governing Body

- First OC (2015-2018): Founding Members + Elected Members  
(Total number of seats: 7)

Farid Salama (**President**)

Helen J. Fraser (**Vice-President**)

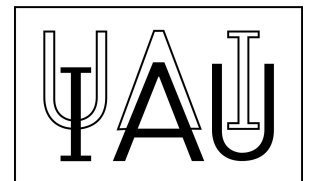
Gianfranco Vidali (**Secretary**)

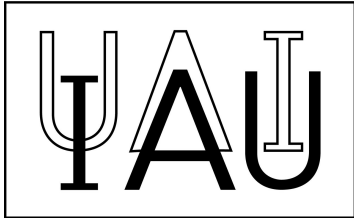
Paul Barklem (**Member-at-Large**)

Thomas Henning (**Member-at-Large**)

Harold Linnartz (**Member-at-Large**)

Feilu WANG (**Member-at-Large**)





# Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - **Activities**
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Activities

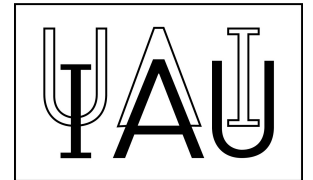
- Advise IAU on Laboratory Astrophysics
- Promote Laboratory Astrophysics
- Organize Meetings (2018 GA, 2019 non-GA Symposium)
- Establish Working Groups to undertake well-defined tasks for limited time periods on behalf of the Commission as a whole
- Run Elections
- Yearly evaluation of IAU Symposium proposals
- Report to IAU:
  - Annual and Triennial Reports of Commission activities
  - Annual and Triennial Reports of Working Groups



# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Working Groups



- CB5 has two Working Groups

- **High-Accuracy Stellar Spectroscopy WG**

- P. Barklem (Chair)

- Objective: promote the interaction between theoretical atomic physics, laboratory spectroscopy, and astrophysical observations to generate the high-accuracy atomic and molecular data required for accurate stellar spectroscopy.

- **Spectroscopic and Radiative Data for Molecules**

- S. Federman (Chair)

- Objective: provide updated reports on the latest experimental and theoretical results in rotational, vibrational, and electronic spectroscopy for radiative processes that provide essential information on molecular abundances and excitation in astronomical environments.

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Reports of Activities



- Annual and Triennial Reports of Commission activities
- Annual and Triennial Reports of Working Groups
- All reports are published in IAU Transactions (*Transactions IAU, Volume XXXA, Reports on Astronomy 2015-2018, P. Benvenuti, ed.*)

Commission B5 Triennial Report (2015-2018):

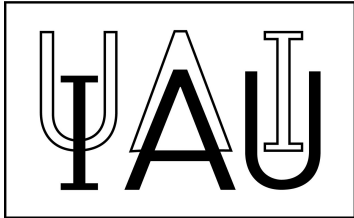
[https://www.iau.org/static/science/scientific\\_bodies/commissions/b5/commission-b5-triennial-report-2015-2018.pdf](https://www.iau.org/static/science/scientific_bodies/commissions/b5/commission-b5-triennial-report-2015-2018.pdf)

Commission B5 WG Triennial Report (2015-2018) - High-Accuracy Stellar Spectroscopy:

[https://www.iau.org/static/science/scientific\\_bodies/working\\_groups/275/wg-hass-triennial-report-2015-2018.pdf](https://www.iau.org/static/science/scientific_bodies/working_groups/275/wg-hass-triennial-report-2015-2018.pdf)

Commission B5 WG Spectroscopic and Radiative Data for Molecules

[https://www.iau.org/static/science/scientific\\_bodies/working\\_groups/309/wg-srdm-triennial-report-2015-2018.pdf](https://www.iau.org/static/science/scientific_bodies/working_groups/309/wg-srdm-triennial-report-2015-2018.pdf)



## Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - Future
  - Q&As

# B5 – Commission B5 Laboratory Astrophysics

[https://www.iau.org/science/scientific\\_bodies/commissions/B5/](https://www.iau.org/science/scientific_bodies/commissions/B5/)

## Elections

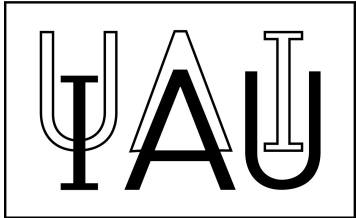
- New OC (2018-2021): Second-Term Members + Elected Members

*Commission B5 Laboratory Astrophysics* (Total number of seats: 7)

- **President:** Helen J. Fraser (UK)
- **VP (elected):** Paul S. Barklem (Sweden)
- **At-large members (elected):** Marie-Lise Dubernet (France), Elisabetta Micelotta (Finland)
- **Second-term members:** Thomas Henning (Germany), Gianfranco Vidali (United States), Feilu Wang (China-Nanjing)
- **Advisor (Past President):** Farid Salama (United States)





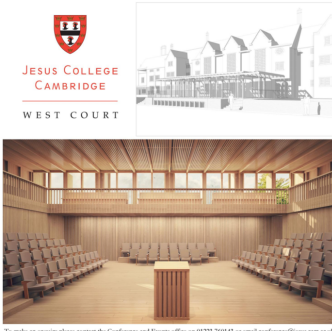


# Agenda

- Mission
- Research Areas
  - History
- Governing Body
  - Activities
  - Elections
  - **Future**
  - Q&As



# IAU S350 Laboratory Astrophysics: From Observations to Interpretation



**Jesus College, Cambridge**  
**April 14<sup>th</sup> – 19<sup>th</sup> 2019**



**For more information and  
to pre-register interest email**

**[IAUS350-labastro2019@open.ac.uk](mailto:IAUS350-labastro2019@open.ac.uk)**

SOC: Farid Salama (Chair), USA, 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



# Reports From Commission B5 – Laboratory Astrophysics: from Observations to Interpretation – Business & Science Meeting

**Monday, August 27, 2018:**

**Session 4b** *parallel session 10:30 – 12:00*

**Reports Commission B5** – Laboratory Astrophysics: from Observations to Interpretation (Part 1)

10:30 – 11:00: Commission B5 Business Meeting – Farid Salama

*CB5 Triennial report and CB5 WG reports*

*OC Elections; Plans for the future, 2019 IAUS 350: Laboratory*

*Astrophysics non-GA Symposium; Q&As*

11:00 – 11:20: Progress report of the Working Group Spectroscopic and Radiative Data for Molecules – Steve Federman

11:20 – 11:40: The ESO Diffuse Interstellar Band Large Exploration Survey: First Results – Jan Cami

11:40 – 12:00: The Virtual Atomic and Molecular Data Centre (VAMDC)  
A Resource for Atomic and Molecular Data – Marie-Lise Dubernet

**Session 5b** *parallel session 13:30 – 15:00*

**Reports Commission B5** – Laboratory Astrophysics: from Observations to Interpretation (Part 2)

13:30 – 13:50: A progress report of the Working Group High-Accuracy Stellar Spectroscopy – Tanya Ryabchikova

13:50 – 14:10: Searching for the sources of meteorites in the asteroid belt  
– Peter Jenniskens

14:10 – 14:30: Laboratory Astrophysics in the era of JWST  
– Stefanie Milam

14:30 – 14:50: Optical Properties of Organic Analogs to Cosmic Dust – Lisseth Gavilan

14:50 – 15:00: Open Discussion: Summary and Conclusions – All

**Monday, August 27, 2018:**

**Session 4b parallel session 10:30 – 12:00**

**Reports Commission B5 – Laboratory Astrophysics: from Observations to Interpretation (Part 1)**

- 10:30 – 11:00: Commission B5 Business Meeting – Farid Salama  
*CB5 Triennial report and CB5 WG reports*  
*OC Elections; Plans for the future, 2019 IAUS 350: Laboratory Astrophysics non-GA Symposium; Q&As*
- 11:00 – 11:20: Progress report of the Working Group Spectroscopic and Radiative Data for Molecules – Steve Federman
- 11:20 – 11:40: The ESO Diffuse Interstellar Band Large Exploration Survey: First Results – Jan Cami
- 11:40 – 12:00: The Virtual Atomic and Molecular Data Centre (VAMDC)  
A Resource for Atomic and Molecular Data – Marie-Lise Dubernet

**Session 5b parallel session 13:30 – 15:00**

**Reports Commission B5 – Laboratory Astrophysics: from Observations to Interpretation (Part 2)**

- 13:30 – 13:50: A progress report of the Working Group High-Accuracy Stellar Spectroscopy – Tanya Ryabchikova
- 13:50 – 14:10: Searching for the sources of meteorites in the asteroid belt  
– Peter Jenniskens
- 14:10 – 14:30: Laboratory Astrophysics in the era of JWST  
– Stefanie Milam
- 14:30 – 14:50: Optical Properties of Organic Analogs to Cosmic Dust – Lisseth Gavilan
- 14:50 – 15:00: Open Discussion: Summary and Conclusions – All