

Annual Report Division B: Facilities, Technologies and Data Science (May 2022 – April 2023)

IAU Division B has at present 4231 active members and 359 junior members. It has 8 participating Commissions with a total of 11 working groups (Division, Commission, and Inter-Commission).

Division B Steering Committee is composed as follow:

[Gabriele Giovannini \(President\)](#)
[Ana I. Gomez de Castro \(Vice-President\)](#)
[Paul S. Barklem \(Commission B5 President\)](#)
[Christian M. Boily \(Commission B1 President\)](#)
[Michael G. Burton \(Advisor - Past President\)](#)
[Chenzhou CUI \(Commission B2 President\)](#)
[Carole A. Jackson \(Commission B4 President\)](#)
[Ashish Mahabal \(Commission B3 President\)](#)
[J. Allyn Smith \(Commission B6 President\)](#)
[Constance Elaine Walker \(Commission B7 President\)](#)
[Elizabeth Marie George \(member – elected\)](#)
[J. M. van der Hulst \(elected\)](#)
[Yongtian ZHU \(elected\)](#)
[A.C. Beasley \(extra member\)](#)
[T. Henning \(extra member\)](#)
[Y-S Kim \(extra member\)](#)

Participating Commissions to Division B are:

[Commission B1 Computational Astrophysics](#)
[Commission B2 Data and Documentation](#)
[Commission B3 Astroinformatics and Astrostatistics](#)
[Commission B4 Radio Astronomy](#)
[Commission B5 Laboratory Astrophysics](#)
[Commission B6 Astronomical Photometry and Polarimetry](#)
[Inter-Division B-C Commission Protection of Existing and Potential Observatory Sites](#)
[Inter-Division B-H-J Commission Intergalactic Medium](#)

Working Groups are:

Division WGs:

[Division B WG Time Domain Astronomy](#)
[Division B WG UV Astronomy](#)
[Division B WG Virtual Observatory](#) Functional

Inter-Division WGs:

[Coordination of Synoptic Observations of the Sun](#) (B-E) Functional

Commission WGs:

[Designations & Nomenclature](#) Commission B2 Functional

[FITS](#) Commission B2 Functional

[Preservation and Digitization of Photographic Plates](#) Commission B2 Functional

[Global VLBI Alliance](#) Commission B4

[Spectroscopic and Radiative Data for Molecules](#) Commission B5

[Site Protection](#) Commission B7

Inter-Commission WGs:

[Historical Radio Astronomy \(Inter-Union IAU-URSI\)](#) Commission B4-C3 Functional

Division Activity

Division B SC was strongly involved in organizing the two Division days at the IAU GA in Busan where many Commissions and WGs presented and discussed their activity.

After a plenary session, six sessions were scheduled in parallel mode for a total of 48 oral contributions and 10 e-talks; in more detail, this was the program:

Plenary Session: [P. Benvenuti](#) presented the new IAU Center for the Protection of Dark and Quiet Sky from Satellite Constellations Interference (CPS) and the PhD Prize winners of the last 4 years presented and discussed their scientific results. [Francisco J.B. Martinez](#) - *Spectropolarimetric and imaging properties of Fabry-Pérot etalons*; [Danna Qasim](#) - *Laboratory studies of interstellar methane ice in the era of JWST*; [Luke Pratley](#) - *Exact wide-field interferometric imaging via distributed sparse image reconstruction*; and [Niels Ligterink](#) - *The astrochemical factory: Producing the first biomolecule building blocks*.

In the **New Facilities and Growing Archives** session the following topics were presented: highlights of important developments in the field of Computational Astrophysics (Commission B1) and first results and properties of new relevant telescopes: the Iranian National Observatory 3.4m optical telescope, the FAST radio telescope in China, and the Imaging X-ray Polarimeter Explorer (IXPE). In addition there was a presentation discussing problems related to the SKA data reduction and presenting important results from the SKA precursor ASKAP. **Virtual Observatory (VO)** science was introduced and problems/solutions related to the rapidly increasing satellite pollution in radio and optical bands was discussed.

In the **History of Radio Astronomy in Eastern Asia** sessions, coordinated by the WGHRA, the radio astronomy developments in the Republic of Korea, Japan, Taiwan and China were presented. Commission B5 (**Laboratory Astrophysics**) presented and discussed its activity in Korea, South America, Japan, the US and Europe with contributions from local people. The working group **The Global VLBI Alliance** presented talks on major VLBI arrays: EVN, VLA/ngVLA, LBA, EAVLBI and invited astronomers to join the GVA Science Forum. The International **Virtual Observatory Activity** was discussed and main principles were presented. The **UV working** group discussed UV photometry, approved standards and their implementation.

These sessions had a large number of people attending in person and remote. A relatively large amount

of time was devoted to discussing the past and future activity, in particular the possibility to organize international meetings on the most interesting topics that were brought.

Main activity after the GA was to contact all Division members to encourage applications for Focus meetings and Symposia in 2024 on topics related to the various Division activities. The SC was available to provide preliminary comments to the drafts of Lols received. At the end Div. B was involved in 10 applications for a IAU Symposium (3 as coordinating Division) and in 19 applications (7 as coordinating Division) for a Focus meeting at the 2024 GA.

All proposal were discussed with the PI of the proposals by members of the Division SC. A support letter was sent to the PIs. Finally Division ranked the submitted proposals.

For details on the scientific activity, see the reports from the Commissions and WGs. Reports will appear at dedicated pages on the IAU web site:

https://www.iau.org/publications/iau/commission_reports/

https://www.iau.org/publications/iau/wg_reports/

