COMMISSION B3	**Astroinformatics and Astrostatistics**
	ASTROINFORMATIQUES ET ASTROSTATISTIQUES

PRESIDENT	**Ashish Mahabal**
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ORGANIZING COMMITTEE	**Alberto Garcez de Oliveira Martins,**
	Francesca Panessa, Petr Skoda, Ricardo Vilalta,
	Tanuka Chattopadhyay (deceased Oct 2023)

TRIENNIAL REPORT 2021-2024

1. Background

Astrostatistics and Astroinformatics now firmly belong to the astronomical landscape with many international and national organizations, as well as major survey collaborations. To make it even broader, and to enable seamless international collaborations, an S20 Policy Webinar on Astroinformatics for Sustainable Development was held during the G20 presidency of India (2023). The deliberations encompassed a wide array of topics, including broad astroinformatics, sky surveys, large-scale international initiatives, global data repositories, space-related data, regional and international collaborative efforts, as well as workforce development within the field.

2. Developments within the past triennium

2.1. *Activities of the Organizing Committee*

The commission members met regularly (three to four times per year) to discuss activities of the commission and its participants. A regular newsletter with links to opportunities, conferences etc. as well as niche pedagogical articles has been circulated to the members of the B3 Commission over the last year. Supplements have included one-page articles on different brokers.

The commission has sponsored an Astrostatistics and Astroinformatics seminar series†, joint with IAA, focused on statistical analysis and data mining of astronomical data. Seminars started in October 2021 and alternate between Europe-America and Australasia-Europe time zones. The meetings are recorded allowing offline viewing later. The organizing team has been enlarged in 2023 with the intent of broadening the subject area coverage of seminar coordinators.

2.2. *Activities related to meetings and schools*

The symposium (368) 'Machine Learning in Astronomy: Possibilities and Pitfalls' was held at the 2022 IAU GA. The proceedings have been prepared and should get published anytime now. The S20 meeting mentioned earlier has resuled in a few white papers. The

† https://sites.google.com/view/iau-iaaseminar-new/home

summary paper‡ can be found on arXiv. Many more meetings have been organized across the world showing a stronger presence of Machine Learning and Artificial Intelligence in astrophysics.

Our members have contributed to many summer schools, and, during the times of pandemic, to various online events. Members continue to be active in various large and small meetings.

3. Future Plans

The B3 Commission reflects the importance of Astroinformatics and Astrostatistics that has been gained in the last several years, and thus will continue to play an important role at the IAU. The Commission will continue to stay connected with sister groups like the American Astronomical Society (AAS), the American Statistical Association (ASA), the International AstroInformatics Association (IAIA), the International Astrostatistics Association (IAA), the International Virtual Observatory Alliance (IVOA), and to build new bridges with other similar organizations. We plan to continue engaging with major survey collaborations like Euclid, Gaia, LSST/Rubin, ZTF to address big and compplex data problems. We will also reinforce the support of pedagogic activities and teaching at various astroinformatics courses, and participation in journals encouraging Astroinformatics and Astrostatistics articles and help foster reproducible and FAIR practices. Finally, the B3 Commission would be delighted to contribute to the next editions of S20 Policy Webinars on Astroinformatics for Sustainable Development.

Ashish Mahabal
President of the Commission

‡ `https://arxiv.org/pdf/2401.04623.pdf`