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Report on Division D activities in 2022

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1. New Members:

2. 2021 IAU PhD Prize:

Division D has examined 28 candidates and nominated Dr. Riccardo Arcodia for the 2021 IAU PhD Prize. He has obtained his PhD with the thesis "Accretion onto black holes across the mass scale" based on work developed in Germany. The committee has also awarded two honourable mentions to Dr. Benjamin Crinquant for his work on "Particle acceleration in Kerr black-hole magnetospheres" in France, and to Dr. Kishalay De for his work on "The Whisper and the Bang: Cosmic fireworks in the lives of compact binaries" at Cal'Tech.

3. IAU Event Proposals:

The Division D Steering Committee has reviewed and endorsed one Focus Meeting on gamma-ray astronomy and one Symposium on gravitational waves, both proposed for the next general assembly in 2024 and for which Division D would act as Coordinating Division. The committee has reviewed and commented four other Focus Meetings for other divisions.

4. IAU meetings:

The IAU symposium IAUS 375 on "the multi-messenger chakra of blazar jets" was held in Kathmandu (Nepal) in 2022. It was a successful meeting with 90 participants from many countries and a large fraction of young researchers.

5. Commission D1 on gravitational-wave astrophysics:

The commission currently has 220 members. The steering committee met three times online during 2022-23 to share information about the status of GW detection projects, associated astronomical observations, and the theoretical understanding of GW signals. Among other things, the committee provided input to a proposal for a Gravitational Wave Astrophysics symposium during the next IAU General Assembly. The steering committee is now maintaining a list of international meetings, workshops and schools, with a focus on GW astrophysics, on the IAU website at https://www.iau.org/science/scientific_bodies/commissions/D1/info/meetings/.

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Members of the committee are also assembling a list of online resources to be posted on the website.

6. Commission X1 on Supermassive Black Holes, Feedback and Galaxy Evolution: no activities besides the division ones.

7. Division D bulletins:

Monthly bulletins have regularly been issued by the division secretary, Dr. Nanda Rea, circulating the information about many world-wide science meetings discussing topics about high-energy phenomena, astroparticles, or fundamental physics.

7. Division D exceptional webinars

We have launched the " IAU Division D Science Webinar series". These webinars aim at diffusing large-impact scientific results to all the division members (and beyond). They are scheduled at a time that can accommodate the largest world-wide audience. We have started the series in the summer of 2022 with a presentation of the spectacular EHT images of the M87 and Sgr A* black holes by the EHT project scientist, Geoffrey Bower. Others will be organised as discoveries are made.

8. Division D meetings

The division held a 3-day topical meeting during the General Assembly to review the measurements and theoretical understanding of the mass spectrum of black holes and neutron stars.