



Commission A2 Rotation of the Earth International Astronomical Union

8th January, 2021

Dear A2 Commission Member:

At the beginning of the year let us provide some information related to our Commission A2.

– IAU XXXI General Assembly (Busan, Republic of Korea):

Several emails from IAU General Secretary and Division A president have been received, containing relevant information relative to next IAU GA that was originally planned to be held in Busan in August 2021. In Annex A there is a summary of the most important points. Some decisions are still in progress, so that it is expedient to keep informed through IAU official web information (<https://www.iau.org/administration/events/#>) and IAU mail communications. As soon as more detailed information will become available, we will again inform and discuss within Commission A2. The main considerations refer to:

- IAU XXXI GA was postponed (<https://www.iau.org/news/pressreleases/detail/iau2009>) to August 2022 due to the uncertainty in the evolution of COVID-19 situation. However, other activities related to GAs will be maintained such as the Business Sessions (Executive Committee report, Resolutions, etc.).
- After their creation in 2015, it is necessary to apply for the continuation of IAU Commissions (IAU Bye-laws, https://www.iau.org/administration/statutes_rules/bye_laws/#Bye-LawsVI). A respective proposal to continue Commission A2 for the next term was sent to Division A President in October 2020. We include it in Annex B of this letter. A formal decision will be taken by the IAU Executive Committee within the next weeks.
- The deadline for the submission of Resolutions to the Secretary General is 15 February 2021 and there will be no additional Resolutions at GA 2022.

– Application for an IAU Symposium lead by the Commission:

- As informed last year, we submitted a proposal to hold in the frame of the XXXI IAU GA a Symposium “Reference systems and their ties with the rotation of the Earth and other Solar System bodies” jointly with Commission A1 and WGCCRE. Regrettably, the proposal was not accepted. The Commission will evaluate possibilities to submit a revised/new proposal for an upcoming year.

– Forthcoming meetings:

- Several meetings of interest for our Commission are scheduled during 2021, among them EGU General Assembly, IAG Scientific Assembly, and AGU Fall Meeting. The particular dates and format (in person or online) might change due to the evolution of the pandemic, so it is worth to follow regularly their web pages or to check IERS meetings information (<https://www.iers.org/IERS/EN/NewsMeetings/ForthcomingMeetings/forthcoming.html>).

In particular, we would like to draw your attention to the next EGU2021, to be held entirely online, which will include the dedicated [Session G3.3: Earth Rotation: Theoretical aspects, observation of temporal variations and physical interpretation](#). The **deadline** for abstract submission is **January 13, 2020**. We hope for several contributions out of our Commission.

Any feedback about the above-mentioned points, or other announcements of interest to our Commission, are very welcome (alberto.escapa@ua.es).

In our name and on behalf of the Organizing Committee of IAU Commission A2 Rotation of the Earth, we wish a safe and healthy New Year. All the best for you in 2021.

Sincerely,

Florian Seitz
President

Alberto Escapa
Secretary

ANNEX A

IAU MAIL COMMUNICATIONS CONCERNING THE IAU XXXI GENERAL ASSEMBLY

Find below the main points of the last mails received from IAU about the actions and changes, relative to next IAU GA. The text is extracted from the mails, please revisit them for a full description of their contents.

- 02/12/2020: mail from IAU General Secretary
 - To postpone the General Assembly to August 2022, specific dates to be determined
 - Business Meetings, including the elections for the next three years provided for in the IAU Bye-Laws, will take place in August 2021, as virtual meetings
 - The Executive Committee will soon decide on the policy to be adopted for the 2021 GA scientific meetings and the IAU symposia for 2022

- 17/12/2020: mail from Division A President
 - To postpone the General Assembly to August 2022, specific dates to be determined
 - Some IAU business activity mid-2021, and the EC will state on the programming of future scientific meetings in the period 2020-2022
 - The triennial Business Meetings, including the elections for the next three years as set out in the IAU Bye-Laws, will take place in August 2021 as virtual meetings
 - Decisions are in progress regarding the General Assembly scientific programme, including Symposia and Focus Meetings, that had been planned for the meeting in 2021
 - The IAU will publish these decisions as soon as they have been finalised by the IAU Executive Committee
 - Commissions renewal: Division A has asked for renewal of its commissions, incl. the inter-division and cross-division ones (A1, A2, A3, A4, X2). So did the other divisions. Several new commissions have been proposed in Divisions E, F, H and J. All these are now discussed within the Executive Committee.

- 30/12/2020: mail from IAU General Secretary
 - We will hold the Business Sessions in August 2021, in principle on the 23rd and 26th, in the afternoon CET. They will be virtual and recorded so that members in different time zones can follow at convenient times. The timetable and Agenda will be published later, after approval at the Executive Committee meeting in April
 - These sessions will include: Executive Committee report, admission of new National Members and Honorary Members, Resolutions, new Division Presidents and Vice-Presidents, Financial affairs, appointment of new Committee members (Finance, Membership, Resolutions and Special Nominating Committees), election of the Executive Committee 2021-2024 (Officers and 3 Vice-Presidents)
 - Be reminded that the deadline for submission of Resolutions to the General Secretary is 15 February 2021 and there will be no additional Resolutions at GA 2022

ANNEX B PROPOSAL FOR COMMISSION A2 CONTINUATION

Renewal of the Commission A2 Rotation of the Earth (CA2)

CA2 is part of IAU since its foundation in 1919. It is dedicated to Earth rotation research in theory, observation and analysis, and it acts as the effective link of IAU with other organizations and services involved in Earth rotation, in particular IAG/IUGG, IERS, and IVS. By October 2020, CA2 counts 111 members.

Scientific milestones since the Commission's re-foundation in 2015

- IAU Resolutions (GA 2018): Commission A2 proposed Resolution B1 on “Geocentric and International Terrestrial Reference Systems and Frames” and discussed and supported Resolution B2 on ICRF3, both adopted at the GA.
- Working Groups: CA2 promoted the creation of the following working groups, also linked to other international organizations: IAU/IAG Joint Working Group (JWG) on Theory of Earth Rotation and Validation (JWG TERV), 2015-2019; IAU/IAG JWG on Improving Theories and Models of the Earth's Rotation (JWG ITMER), 2019-2021; IAU/IAG/IERS JWG on the Consistent Realization of TRF, CRF, and EOP (JWG CRTCE), 2019-2021.
The two JWGs ITMER and CRTCE were created in late 2019 (and approved on IAG side for its term 2019-2023). Both just started their operations and shall be continued in the next term; see below.
- Scientific Meetings: Commission A2 promoted and played a leading role in the organization of the following major scientific meetings: “Geodesy, Astronomy, and Geophysics in Earth Rotation”, Wuhan, China, 2016; “Journées 2017: Furthering our Knowledge of Earth Rotation”, Alicante, Spain, 2017; “Journées 2019: Astrometry, Earth rotation and Reference systems in the Gaia era”, Paris, France, 2019.
- Proposals of IAU Symposia: Commission A2 initiated and lead the following proposals for IAU Symposia: “Reference Systems and Frames” (GA 2018); “The Earth's Time Varying Rotation: A Centennial Celebration” (2019); “Reference systems and their ties with the rotation of the Earth and other Solar System bodies” (GA 2021).

Upcoming period (2021-2024)

Major topics of interest include but not limited to:

- Enhancement of the **IAU precession-nutation models** to **adapt them** to the current **demands of accuracy** based on previous investigations performed in the framework of the Commission's JWGs TERV and ITMER. The task will entail a revision and enhancement of the current models and their implementations. It will be a **major task of JWG ITMER** that shall be continued for the next term.
- Theoretical studies of **consistent Terrestrial and Celestial Reference Frames with the connecting EOP**. Based on the quantification of existing inconsistencies by JWG CRTCE, CA2 will study how fully consistent frames and EOP may be determined and implemented in future and address the related implications for IAU. This task will remain the **central focus of JWG CRTCE** that is to be continued for the next term.
- Assessment of a potential **re-reduction of past optical astrometric measurements** using **Gaia catalog** and current standards. This will create a centennial series of observational Earth orientation data, valuable for investigations of long-term changes of polar motion and the Earth's spin under the influence of geophysical processes and climate change.