

FUNDAMENTAL ASTRONOMY

DIVISION A

DIVISION A FUNDAMENTAL ASTRONOMY ASTRONOMIE FONDAMENTALE

Division A provides a focus for astronomers studying a wide range of problems related to fundamental physical phenomena such as time, the inertial reference frame, positions and proper motions of celestial objects, and precise dynamical computation of the motions of bodies in stellar or planetary systems in the Universe.

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DIVISION A COMMISSIONS

- Commission A1 Astrometry
- Commission A2 Rotation of the Earth
- Commission A3 Fundamental Standards

INTER-DIVISION A-F COMMISSION

- Commission A4 Celestial Mechanics and Dynamical Astronomy

CROSS-DIVISION A-F COMMISSION

- Commission X2 Solar System Ephemerides

DIVISION A FUNCTIONAL WORKING GROUPS

Functional WG NSFA Numerical Standards in Fundamental Astronomy
 Functional WG SOFA Standards of Fundamental Astronomy
 Functional WG TMS Time Metrology Standards

DIVISION A WORKING GROUPS

WG ICRF3 Third Realisation of the International Celestial Reference Frame
 WG ASGBT Astrometry by Small Ground-Based Telescopes
 WG ICRS Multi-waveband Realisations of International Celestial Reference System

INTER-DIVISION A-F FUNCTIONAL WORKING GROUP

Functional WG CCRE Cartographic Coordinates and Rotational Elements

TRIENNIAL REPORT 2015-2018

1. Organisation of the division

The mandate 2015-2018 was the opportunity for Division A to settle down, to organize the work and the duties in the new context established in August 2015 by the General Assembly. The committee started discussing, exchanging requests or information, protesting or claiming against the new rules. A part of these discussions was reported at the EC meeting at Mexico in May 2016 and in the meeting of Pune, in May 2017, to clarify and optimize some of the new procedures.

The committee is now very receptive about the different strategies of the division, and most of the members take an active part to the discussions, choices or selections of projects.

2. Working Groups: creation, types, statutes, membership

Since the IAU General Assembly in 2015, the status of the Working Groups, in particular, has changed; they are now created for a few years (typically 3 years), automatically destroyed after each General Assembly, and have to be recreated/renewed if necessary after a new proposal by the concerned division(s). However, besides this dynamical creation and disappearance of WGs with a specific short mission, a particular class of Working Groups has appeared, called Functional Working Groups with a permanent mission, with constant objectives, collecting and controlling data, improving unities or constants knowledge, establishing standards, and certainly not linked to a specific period of time. In Division A, these tasks are well present and numerous, and most of the members of the committee estimated that four (at least) of the WGs depending on Division A had to become Functional. The first two functional WGs selected by Division A concerned the standards (SOFA, NSFA) and the third one has been created in 2016 to compensate the disappearance of the ex-commission responsible for the Time. It was proposed as a new Functional Working Group, called Time Metrology Standards (TMS), and approved in the EC Meeting of May 2016 at Mexico.

The Working Group shared with Division F (called WGCCRE) was approved by both divisions, after several exchanges about its missions, specificity and exact competences, and also recognized as Functional.

3. Proposals for IAU symposia and focus meetings

In September 2015, just after the 2015 General Assembly, it was very difficult for the committee to stimulate the scientific community of Division A to propose Symposia for 2017. After several contacts, the projects were postponed or forgotten, and Division A was reduced to a few supports of symposia, proposed by the other divisions, without any proposal as coordinating division.

In September 2016, two symposia and a focus meeting were proposed for the 2018 GA at Vienna, and several projects were discussed for future years. These three projects were officially confirmed in December 2016 in the final call for symposia and cover several of the main interests of the division. Unfortunately only one of these projects was selected for Vienna GA, the IAUS 348 *21st Century Astrometry: crossing the Dark and Habitable frontiers*. The scientific days of Division A in Vienna have been used to represent the other two thematics proposed : *The mission Gaia* (proposed as a FM) and *The reference frames* (proposed as a symposium).

Division A was also contacted as supporting division by about ten applications (symposia and FM for the General Assembly of 2018 in Vienna), and for each proposal, a debate and a discussion in the committee followed and the decisions were taken collegially. The support of Division A was given to a few proposals, connected to the interest of Division A.

For the next call, several discussions and exchanges led to two new proposals of IAU symposia for 2019, one in Brussels, the other one in California. Despite their very high level, and excellent preparation, they were not selected.

4. New communication inside IAU bodies

The project of creating a Division Newsletter was discussed in the committee, with very different positions. Some of the commission presidents preferred to create this newsletter in the commission itself with a more restrictive but targeted public, than in the division, with a too large scope. This was the decision taken for 2016, to push the local initiatives, as for example the Commission A4 project, which is now effective.

5. Mandates and representatives

Several commissions (A2 and A3 for example) have to designate quite a lot of IAU representatives for different associations, out of IAU but with close interests. With the limited number of scientists in the committees of the commissions, it is almost impossible to answer to all these requests. A first idea was to extend the number of officers, but it was not accepted. The solution is to choose those representatives in the commission as a whole, and not necessary among its officers, or to extend the number of officers.

The list of these representations for IAU is very long, and sometimes obsolete. A few representatives have to be recognized, or changed, or purely forgotten. The EC meeting of May 2016 pointed out this problem, and the problem was solved for the next mandate.

6. PhD Prizes

The idea of a PhD prize to motivate the young scientists to participate to IAU meetings and bodies was very well received by Division A. However the publicity about the prize was not efficiently performed by the committee members, and very differently announced

in the national committees. This first year was not productive, and no application was retained for the prize. For 2017, four applications were received, and a first Division A PhD prize was attributed to Gisela Ortiz Leon.

7. Scientific developments within the past triennium

The scientific activity of Division A is huge, and is mainly realized in the 5 commissions and the 7 Working groups. They have all submitted triennial reports, summarizing their activities and their priorities for the future.

The role of Division is mainly a coordination role. The main scientific results are present in the commissions and WG reports.

8. Closing remarks

The 5 commissions are clearly active and efficient and should be extended for at least one new mandate. The 4 (3+1) Functional Working groups have proven their relevance and will carry on their rigorous and necessary tasks, for the standards used by all the astronomers. The other 3 WG will be officially dismissed in the GA of 2018, but have already decided to request for being recreated to continue their efficient actions.

Division A strongly supports their demands.

A. Lemaitre
President of Division A