

IAU Commission A3 - Fundamental Standards Annual Report 2019

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The purpose of IAU Division A Commission A3 is to facilitate advances in astronomy and other fields of science and engineering by developing, implementing, and communicating IAU-endorsed fundamental standards for fundamental astronomy. The Commission currently has 102 members. Our main effort continues to be to develop our website, which was first developed by Catherine Hohenkerk at the inception of Commission A3. We are grateful to for the hosting of this site (www.iauufs.org) by the United Kingdom Hydrographic Office (UKHO) and Steve Bell's serving as webmaster.

Loss of web services for the US Naval Observatory in the fall of 2019 demonstrated the need for an "institution free" solution for web services. It also has made the web site (<http://maia.usno.navy.mil/NSFA/>) for the Working Group on Numerical Standards for Fundamental Astronomy (NSFA) inaccessible. The requirements of the Commission A3 web site do not fit within the IAU's commissions web site template and allow for frequent maintenance of constants, so a new web site has been developed on GitLab by Susan Stewart (US Naval Observatory) accessed at <https://iau-a3.gitlab.io/>. The site includes a scrolling news window to keep the commission members aware of recent actions. The page of developing standards has been updated to prepare organizing committee members for discussion on current issues that need to be addressed in the near term. The web site is a first draft and is open for comments from the commission. Once formalized, it will replace to URL link currently listed on the IAU website. We would like to thank Susan Stewart who has agreed to continue to update the site and serve as webmaster.

The new web site includes a revised site for the NSFA. The chair of the NSFA WG has agreed to allow Commission A3 to maintain its web site. The NSFA pages can be accessed from the new A3 Commission web site pages or directly at the URL <https://iau-a3.gitlab.io/NSFA/index.html>. Changes to the NSFA pages include an update of the Best Estimates for the potential for the geoid as well as a reorganization of the constants to two list - estimates and fixed by convention - as suggested by the NSFA WG.

The commission supported the proposed General Assembly symposium on "Reference systems and their interaction with the rotation of the Earth and other Solar System bodies," with a letter of support. Two of the four co-chairs for the proposed symposium's SOC are members of Commission A3 and at least one other Commission member has agreed to serve on the SOC.

We continue to maintain contact with other standard-setting organizations to ensure the consistency of standards. Robert Heinkelmann is our contact with the Global Geodetic Observing System (GGOS) Bureau of Products and Standards. We assisted Heinkelmann in presentations for the International Union of Geodesy and Geophysics (IUGG) general assembly in Montréal and Journées 2019 in Paris.

In addition to NSFA we continue to maintain close contacts with the working groups Standards Of Fundamental Astronomy (SOFA) and Cartographic Coordinates & Rotational Elements (WGCCRE). Both of these working groups, like NSFA, are functional working groups dedicated to making improvements in particular sub-disciplines.