

DIVISION A / WORKING GROUP NUMERICAL STANDARDS IN FUNDAMENTAL ASTRONOMY

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TRIENNIAL REPORT 2015–2018

1. Introduction

The IAU Working Group (WG) on Numerical Standards for Fundamental Astronomy has been tasked with updating the IAU Current Best Estimates (CBEs), conforming with the IAU Resolutions, International Earth Rotation and Reference Systems Service (IERS) Conventions and *Système international d'unités* whenever possible. As part of its effort to achieve this, the WG is working in close cooperation with the IAU, the IERS, and the Bureau international des poids et mesures (BIPM) Consultative Committee for Units.

2. Developments within the past triennium

The Working Group has been pursuing several topics. These include: whether the “defining” constant au should be moved out of the “defining” constants into “Other” possibly under “Constants Fixed by Convention”; whether the “other” constant L_C should be eliminated; whether the NSFA Current Best Estimate value for the “measurable” constant G should always point to the CODATA value for G ; whether the NSFA Current Best Estimate for the “body” constant GM_E should point to the latest geophysical value for GM_E ; whether the NSFA Current Best Estimate for “body” constants J_2 (Earth’s dynamical form factor) and W_0 (potential of the Earth’s geoid) should point to the latest geophysical values for J_2 and W_0 ; and whether the NSFA WG should issue reports with the latest values instead of proposing IAU Resolutions.

At the request of the IAU Office for Astronomy Outreach, the WG reviewed and provided feedback on the document associated with “Measuring the Universe”. This topic is one of the IAU themes and is linked to IAU Resolution B2 2012.

The WG created a joint poster with the Standards Of Fundamental Astronomy (SOFA)

and Cartographic Coordinates and Rotational Elements (CCRE) promoting “standards”. A version of the poster was presented at the “Understanding the Earth core and nutation” workshop at the Royal Observatory of Belgium in September 2016 and a different version was presented at the Journées des Systèmes de Référence et de la Rotation Terrestre at Universidad de Alicante, Spain in September, 2017.

Finally, the Chair of the NSFA Working Group provided letters of support for proposed IAU Symposia. First, a letter was provided for the proposed “Reference Systems and Frames” which had been proposed to be held during the IAU 2018 General Assembly. Another letter was provided for a proposed symposium “The Earth’s Time Varying Rotation: A Centennial Celebration”, which if approved, would be held in 2019 in Brussels, Belgium.

3. Closing remarks

The NSFA WG thanks Catherine Hohenkerk for her service during this triennium. She will be missed, but we wish her well in her retirement. We welcome Steve Bell as a member of the WG and thank him for his willingness to contribute to our endeavors. Finally the WG is considering our disposition for the future.

Brian Luzum
chair of Working Group