Emerging Lunar Standards

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Abstract

The impending escalation of activity involving the cislunar and lunar environments by international space programs and scientific communities creates a pressing need to discuss the development of fundamental standards to support operations or research in this domain. The International Astronomical Union (IAU) and its international partner organizations in geodesy and time have well-established precedents in coordinating astronomical standards for international adoption. Through its commissions, the IAU should lead the effort to establish standards in lunar reference frames, lunar time standards and orientation parameters with partner organizations where appropriate. The IAU Commission A3 on Fundamental Standards expects to appoint a working group to discuss best practices for these emerging standards and present recommendations to the IAU. Specifically, there is a call from the astronomical community for a relativistic reference system and coordinate time based on the lunar center-of-mass to support lunar-based activities, much like the convenience of a geocentric coordinate system (GCRS) for Earth-based observations. Additionally, there is a need for the IAU to clearly define terms related to the cislunar and lunar environments. There has not been an update to the IAU 2006 Nomenclature for Fundamental Astronomy (NFA) since 2007 and several new terms are needed to modernize the list and encourage use of standard terms.

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