ISO 21348 – Process for determining solar irradiances

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A new international standard is being published by the International Standards Organization (ISO). The document, *ISO 21348 Space Environment (natural and artificial) – Process for determining solar irradiances*, describes the process for representing solar irradiances. We report on the content of the final version of this new standard. Because solar irradiance measurements and modeling are constantly evolving through improved instrumentation, measurement techniques, and modeling capabilities, the new standard has been written as a process-based standard to encourage development in solar irradiance determination. The standard covers all representations of solar irradiances and is applicable to measurements, reference spectra, empirical models, physics-based models, as well as solar proxies and indices. The purpose of the standard is to provide a common specification for all solar irradiances for use by space systems materials and environment users. A solar irradiance product or specification is compliant with the standard if four criteria are followed. First, solar irradiances are reported, at the minimum, in SI units of Watts per square meter corrected to 1 AU. Second, the method of determining irradiances is documented for data collection, processing, archiving, validation, accuracy, precision, methodology, and algorithm information. Where applicable, a description of proxies and independent data sets used in the derivation of empirical models, including the rationale for proxy selection, and the mathematical formulation for numerical models is provided. Third, a compliant data set or model is published in an internationally-available peer review journal. Fourth, the compliant data set or model is archived in a method consistent with current technology that ensures international accessibility. The final review draft of the solar irradiance standard is publicly available at the web site http://www.SpaceWx.com/.