

Abstract Submitted
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The Sun on Trial PIERRE-MARIE ROBITAILLE, The Ohio State University — For 150 years, the Sun has been seen as a gaseous object devoid of a surface, as required by the Standard Solar Model (SSM). Yet, not one line of observational evidence supports a gaseous Sun. In contrast, overwhelming evidence exists that the Sun is comprised of condensed matter. Recently, 40 proofs have been compiled in conjunction with the Liquid Metallic Hydrogen Solar Model (LMHSM). This model advances that the Sun has a true surface. Photospheric structures, such as sunspots, granules, and faculae, are not optical illusions, as in the SSM, but real objects with a condensed nature. The LMHSM accounts for the thermal spectrum by invoking true inter-atomic structure on the photosphere in the form of the graphite-like layered hexagonal metallic hydrogen lattice first proposed by Wigner and Huntington. Within the convection zone, layered metallic hydrogen, insulated by intercalate atoms, enables the generation of the solar dynamo. Electrons located in conduction bands provide a proper means of generating magnetic fields. Metallic hydrogen ejected from the photosphere also thinly populates the corona, as reflected by the continuous K-coronal spectrum. This coronal matter harvests electrons, resulting in the production of highly ionized atoms. Electron affinity, not temperature, governs the ion profile. The chromosphere is a site of hydrogen and proton capture. Line emission in this region, strongly supports the idea that exothermic condensation reactions are occurring in the chromosphere. In the LMHSM, solar activity and solar winds are regulated by exfoliation reactions occurring in the Sun itself, as the metallic hydrogen lattice excludes non-hydrogen elements from the solar body.

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