

Century-Long Monitoring of Solar Irradiance and Earth's Albedo Using a Stable Scattering Target in Space

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An inert sphere of a few meters diameter, placed in a special stable geosynchronous orbit in perpetuo, can be used for a variety of scientific experiments. Ground-based observations of such a sphere, "GeoSphere," can resolve very difficult problems in measuring the long-term solar irradiance. GeoSphere measurements will also help us understand the evolution of Earth's albedo and climate over at least the next century. I will review the high-precision solar and stellar measurements that motivate the case for GeoSphere, as well as the expected scientific results and technical challenges for this proposed experiment.