Earth's Wavelength-dependent Albedo Variations

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The Earthshine Project re-invigorated a method that holds the potential to observe our planet on a global scale, as it would be viewed from a very distant point. By measuring the light reflected from the bright and dark sides of the Moon, we can observe the Earth by means of astronomical techniques. More than six years of sustained observations from Big Bear Solar Observatory (BBSO) in California have enabled us to determine annual changes in the Earth's global reflectance, in the 0.4–0.7 m range, with an accuracy of 1.0%. These data are significant inputs for climatic global circulation models (GCM). Spectroscopic earthshine measurements have also been undertaken from Palomar Observatory. In this presentation, we will discuss the implications of our wavelength-dependent albedo variations for the characterization of terrestrial biomarkers.