



## **Spectral variability in Earth's global reflectance as observed by DSCOVR/EPIC**

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In contrast to low orbit and geostationary satellites, the EPIC instrument on board the DSCOVR satellite provides multispectral images of the sunlit side of the Earth every hour or two. EPIC's 10 narrowband channels span from UV to visible and near IR. The spectral observations reveal a strong daily cycle and seasonal variations in the average brightness of the planet, especially at longer wavelengths. By combining EPIC observations taken at different wavelengths, this study examines the way the brightness and the color of our planet has varied since the launch of the DSCOVR satellite in mid-2015. A special attention has been paid to the spectral daily and monthly seasonal variability of the EPIC observations. In order to understand the observed variability, the study also analyzes the influence of factors such as variations in the observed size of land and ocean, in ice and snow covered areas, as well as in cloud cover. For example, it was found that including the contributions from snow and ice in the polar areas enhances daily mean reflectance by up to 2 to 6% in northern hemispheric winter and up to 1 to 4% in summer.