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# Enlightening Global Dimming and Brightening

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A fundamental determinant of climate and life on our planet is the solar radiation (sunlight) incident at the Earth's surface. Any change in this precious energy source affects our habitats profoundly. Until recently, for simplicity and lack of better knowledge, the amount of solar radiation received at the Earth surface was assumed to be stable over the years. However, there is increasing observational evidence that this quantity undergoes significant multi-decadal variations, which need to be accounted for in discussions of climate change and mitigation strategies. Coherent periods and regions with prevailing declines ("dimming") and inclines ("brightening") in surface solar radiation have been detected in the worldwide observational networks, often in accord with anthropogenic air pollution patterns. This synthesis paper, recently published in the Bulletin of the American Meteorological Society, provides in a nutshell the main characteristics of this phenomenon, a conceptual framework for its causes, an assessment of the interhemispheric differences in the impact of dimming/brightening on global warming, and an overview over potential environmental implications. Latest developments and remaining gaps of knowledge in this rapidly growing field of research are further highlighted.

Reference:
Wild, M. 2012: Enlightening global dimming and brightening, Bulletin Am. Met. Soc, DOI:10.1175/BAMS-D-11-00074.1