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## Space Weather and Global Warming GEORGE CARRUTHERS, Naval Research Laboratory

This presentation will give discussions of the broad topic of Space Weather, and of Global Warming (these have some associations, as well as differences). Both have the Sun as the major energy source; short-term differences in solar activity are the sources of space weather (which affects the entire solar system, not just our Earth), whereas global warming is a longer-term event which depends on both the Sun and on the lower regions of the Earth's atmosphere, and (more recently) human activities. In particular, the major gas of interest for global warming is the addition of carbon dioxide to the atmosphere by combustion of coal and oil. Means for decreasing the latter will be discussed, as well as of the effects of space weather on further human exploration of near-Earth and solar system environments.