

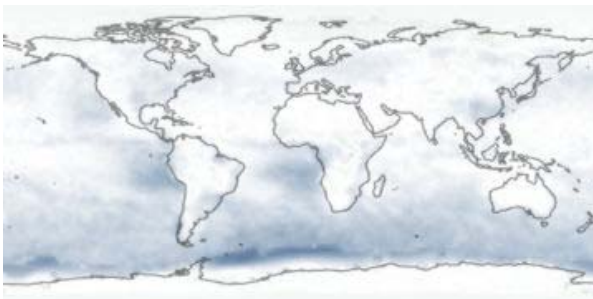
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CLOUD FORCING



OCTOBER 2002



Coverage of this dataset spans November 1984 to October 2002.

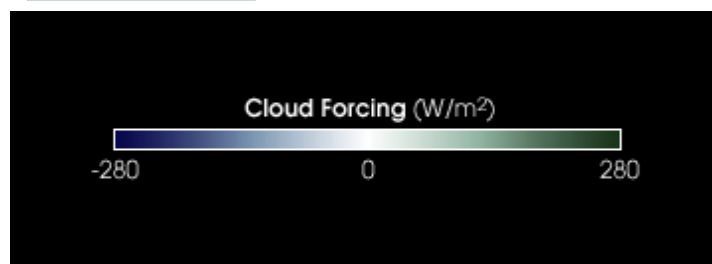
How to build animations

Start Month: Start Year: End Month: End Year: Compare to: Start Month: Start Year:

How to build globe animations

Month: Year: Compare to: Month: Year:

Format: Grid: Strip:



Product description: Clouds play a significant role in our world's energy balance -- they exert both a cooling effect on the surface by reflecting sunlight back into space, and a warming effect by trapping heat emitted from the surface. Clouds are one of the greatest areas of scientific uncertainty with respect to how much they influence climate on a global scale. The term "cloud radiative forcing" refers to the effects clouds have on both sunlight and heat in the atmosphere. More precisely, cloud radiative forcing measures how much clouds modify the net radiation, at wavelengths ranging from 0.3 to 100 micrometers, of the Earth system. The image above is a false-color map showing the magnitudes of cloud radiative forcing (in Watts per square meter) for the given month(s). Regions of positive cloud radiative forcing indicate areas where clouds act to increase net energy into the Earth system (i.e., regions of deep tropical convection) and areas

of negative cloud radiative forcing signify regions where clouds act to decrease net energy into the Earth system (such as areas of stratus clouds off the coast of California).

All of the images in this dataset up to and including February 1990 were acquired by the Earth Radiation Budget Experiment (ERBE) sensor and all of the images from March 2000 onward were acquired by the Clouds and the Earth's Radiant Energy System (CERES) sensor aboard NASA's Terra satellite. (Data courtesy ERBE and CERES Projects, NASA LaRC)

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