

NASA's Earth Observations of the Global Environment: Our Changing Planet and the View from Space

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Observations of the Earth from space over the past 30 years has enabled an increasingly detailed view of our Earth's atmosphere, land, oceans, and cryosphere, and its many alterations over time. With the advent of improvements in technology, together with increased understanding of the physical principles of remote sensing, it is now possible to routinely observe the global distribution of atmospheric constituents, including both cloud and aerosol optical properties, land surface reflectance, sea ice and glaciers, and numerous properties of the world's oceans.

This talk will review the current status of recent NASA Earth observing missions, and summarize key findings. These missions include EOS missions such as Landsat 7, QuikScat, Terra, Jason-1, Aqua, ICESat, SORCE, and Aura, as well as Earth probe missions such as TRMM and SeaWiFS. Recent findings from CloudSat and CALIPSO from the Earth System Science Pathfinder program will also be summarized, if time permits.

Due to its wide utilization by the Earth science community, both in the US and abroad, special emphasis will be placed on the Moderate Resolution Imaging Spectroradiometer (MODIS), developed by NASA and launched onboard the Terra spacecraft in 1999 and the Aqua spacecraft in 2002. As the quintessential instrument of the Earth Observing System, it is widely used for studies of the oceans, land, and atmosphere, and its lengthening time series of Earth observations is finding utilization in many communities for both climate, weather, and applications use.