

The Role of Space Observations in an Integrated Earth System Science

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The vantage point of space provides a unique way of studying the earth in its entirety as an integrated system made up of interacting components –

ocean, atmosphere, biosphere, cryosphere, land surface. NASA's fleet of operating satellites, together with related surface-based and airborne observing capability, allows scientists to study the Earth –

characterizing its variability on a broad range of spatial and temporal scales, understanding the processes that drive it, improving our predictive capability, and applying that knowledge for the benefit of society.

NASA's program is an end-to-end one, beginning with the development of technology and new techniques, through their testing, implementation, and utilization, provision of data sets to a broad spectrum of global users, as well as by maintaining an active research program that supports investigators in academia, laboratories of NASA and other US government agencies, the private sector, and non-profit entities.

NASA implements its programs in cooperation and consultation with a range of domestic and international partners. In this talk, the status of NASA's current and planned Earth Science programs will be presented, along with a sample of results from the program. Particular attention will be paid to examples that represent the values of international cooperation in the observational and research program.