

“An Overview of NASA Earth Sciences: From Satellites to Computer Models”

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Since its beginning in 1958, the mission of the U.S. National Aeronautics and Space Administration (NASA) has included “the expansion of human knowledge of the Earth”.

The Earth is comprised of diverse systems (atmosphere, lithosphere, hydrosphere, cryosphere, and biosphere) that can interact physically, chemically, and dynamically with each other in complex ways. The goal of NASA's Earth science program is to further develop a scientific understanding of the Earth as an integrated system and its response to natural and human-induced changes. This is accomplished through a variety of measurements (satellite, airborne, ground-based), computer models, and related research activities. NASA efforts, in combination with the agency's domestic and international partners, improve our ability to predict climate change, forecast weather, and respond to natural hazards for the benefit of all. NASA will continue to pioneer the use of spaceborne technology and measurements to study the Earth in the coming decade.

NASA is committed to bringing information about its Earth science activities to the public, including students engaged in science and technical studies. This presentation will provide a broad overview of NASA Earth science efforts, discuss satellite orbit concepts, and show examples of satellite observations and modeling studies. A special emphasis will be on tropical cyclones. Satellite observations are essential for fully understanding the spatial organization and dynamics of these powerful storms.