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The ATTREX Mission: Utilizing the Global Hawk Unmanned Aircraft System for Earth science research

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The NASA Airborne Tropical Tropopause Experiment (ATTREX)* is one the first demonstrations of the Global Hawk unmanned aircraft system (UAS) for Earth science research. This autonomous aircraft can travel nearly 11000 nm on 30-hr missions at altitudes up to 20 km carrying payloads of about 650 kg. The objective of ATTREX is to advance our understanding of processes occurring in the tropical tropopause layer (TTL) related to water vapor and clouds. These process control stratospheric humidity, which plays an important role in Earth's radiation budget and stratospheric photochemistry. The ATTREX payload includes in situ measurements of individual gases, cloud particles and solar flux, while remote measurements include other gases, temperature, and a cloud lidar. This presentation will introduce the Global Hawk UAS and its scientific operations, discuss the ATTREX mission plan, and present some preliminary results from recent flights.

* http://espo.nasa.gov/missions/attrex/