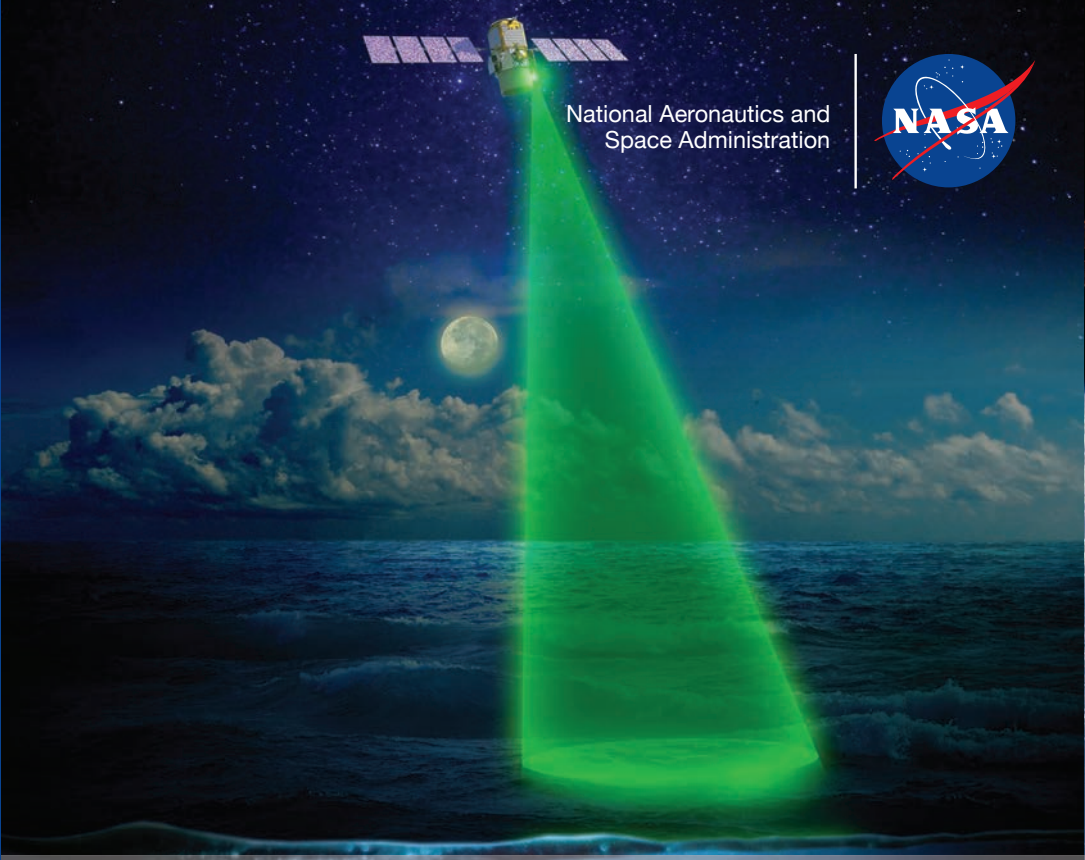


National Aeronautics and
Space Administration

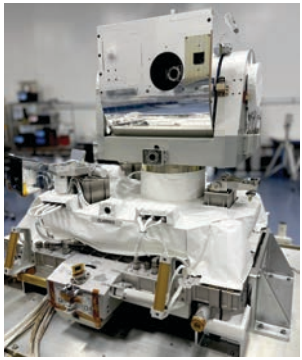
ATMOSPHERIC CHARACTERIZATION

NASA's Langley Research Center



NASA Langley executes research, advances measurement capabilities, and exploits data to better understand Earth and the universe for the benefit of society.

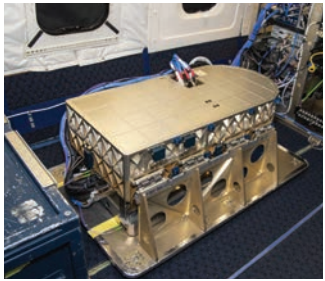
Climate Absolute Radiance and Refractivity Observatory (CLARREO) Pathfinder data will help us better understand the Earth's changing system by taking highly accurate measurements of sunlight reflected by Earth and the Moon. These measurements will be five to ten times more accurate than those from existing sensors and will showcase novel techniques in transferring its high accuracy to other sensors monitoring Earth. Higher accuracy means greater certainty in our measurements, which makes it possible to detect changes in Earth's system decades sooner than otherwise possible.

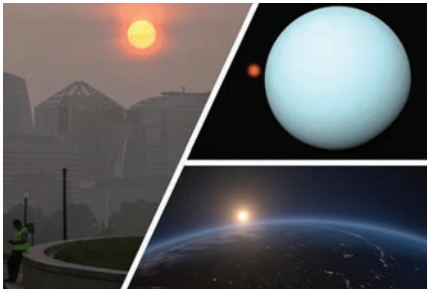




Tropospheric Emissions: Monitoring of Pollution (TEMPO) is the first space-based instrument that can provide air pollution observations – down to the scale of individual neighborhoods – every daylight hour at high spatial resolution. Langley's Atmospheric Science Data Center provides public release of TEMPO's air quality data for federal, state, and local air quality agencies, public health workers, educators, non-profit organizations, and international partners to use for the benefit of humanity.

NASA Langley's High-Altitude Lidar Observatory (HALO) is an advanced airborne research instrument designed to study Earth's atmosphere, clouds, and surface characteristics using lidar technology. The data provided by HALO improves our understanding of the role aerosols and clouds in Earth's radiation budget and provides detailed data on wind and humidity profiles that allow for better weather forecasting.





Atmospheric Composition

Studying Earth's atmosphere from the surface to the stratosphere. We apply this knowledge toward exploration of other planetary atmospheres.



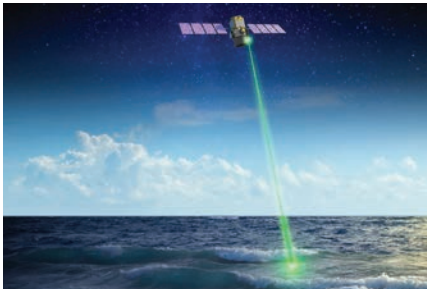
Earth's Energy Budget

Studying Earth's absorbed solar and outgoing thermal infrared radiant energy.



Earth Data in Action

Supporting disaster response, coastal resilience, weather predictions and forecasting, energy efficiency, and agriculture.



Lidar Remote Sensing

Characterizing atmospheric composition, weather and atmospheric dynamics, and ocean ecosystems.

Langley's state-of-the-art labs and facilities allow NASA, other government agencies, and private industry partners to develop and test the next breakthroughs in air and space.

- Atmospheric Science Data Center
- Flight Mission Support Center
- 3 Lidar Development Labs
- Mobile Ozone Lidar Trailer
- Lidar Range
- Measurement Systems Lab
- Space Environmental System Integration and Test Lab
- Airborne Science Platform System Integration and Flight Lab
- Vibration Testing Lab
- Fleet of research airplanes in the Flight Research Hangar



PARTNER WITH US

NASA Langley is building new partnerships with industry, academia, and other government agencies to solve the world's toughest technical problems.

NASA's Front Door is your way in.

Connecting strategic partners with NASA Langley's expertise and world-class facilities moves ideas from concept to reality.

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