

# RESEARCH EQUIPMENT

**Research Platforms** :: designed to house and carry the research equipment that is specially designed for each particular platform



**Research Ship** :: able to be equipped with instruments and sensors that collect data on both the ocean and the atmosphere



**High-flying Research Aircraft** :: able to hold a variety of wing-mounted instruments and sensors



**Low-flying Research Aircraft** :: able to hold a variety of wing-mounted instruments and sensors, and is well-suited for heavy chemistry equipment



**Research Truck** :: research equipment can be mounted to back side of truck, to easily move heavy research equipment close to weather



## Field Projects: Science in Action

Activity by Becca Hatheway, UCAR Center for Science Education and Alison Rockwell, Earth Observing Laboratory, NCAR  
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## RESEARCH EQUIPMENT

**Research Instruments** :: can be mounted onto Research Platforms, or used as a stand-alone piece of research equipment



**Greenhouse Gas Sensors** :: aircraft-mounted sensor, measuring the types and quantities of different greenhouse gases



**Truck-mounted Radar** :: radar mounted to the back of a truck so it can easily drive close to a storm to observe winds



**Fixed Ground-based Radar** :: detecting cloud particles and winds



**Weather Balloon** :: attached instrument measures temperature, pressure, humidity, wind speed, & wind direction profile from the ground up to about 60,000'



**Lightning Mapping Array** :: a network of land-based sensors detecting the frequency of lightning strikes



**Buoy System** :: located throughout the Indian Ocean at fixed locations, sensing sea surface temperature



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**Cloud Droplet Sensor** :: aircraft-mounted sensor measuring cloud droplet size and distribution



**Dropsonde** :: measuring temperature, pressure, humidity, wind speed & direction, dropped from aircraft to sea surface; about the size of a tennis ball canister



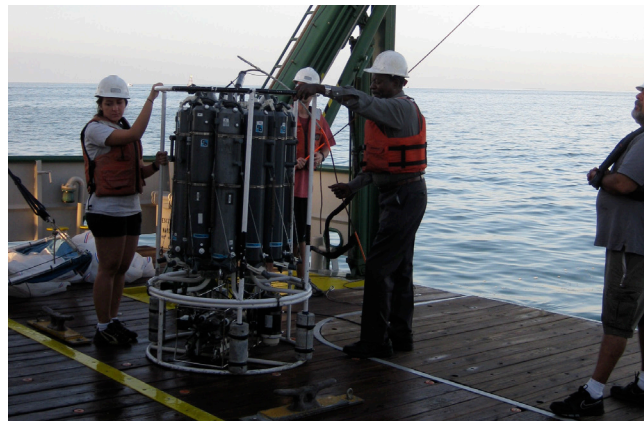
**Ship-based Radar** :: looking at cloud particles (mounted high on the ship in a protective "ball")



**Particle Sensor** :: sensing various particles in the atmosphere, such as soot and dust



**Solar Radiation Sensor** :: sensing incoming and outgoing solar radiation



**Ocean Salinity & Temperature Sensor**:: measuring ocean salinity & temperature at chosen depths



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