



## Research Equipment

### Field Projects: Science in Action

**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

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



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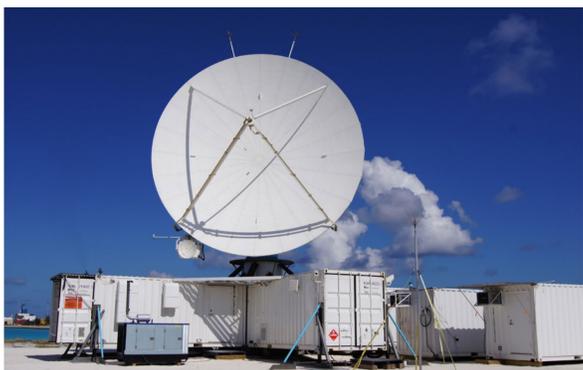
**Research Instruments:** can be mounted onto Research Platforms, or used as a stand-alone piece of research equipment



**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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#### Research Instruments Continued



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



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



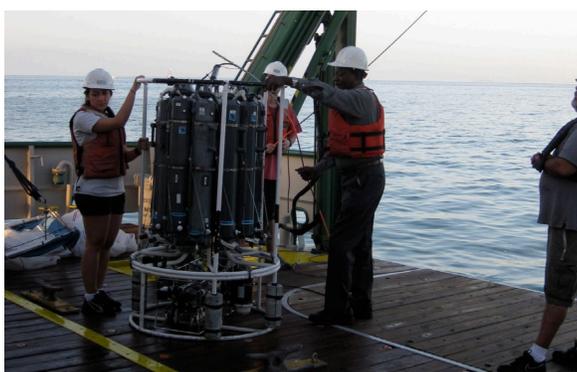
**Ship-based Radar:** looking at cloud particles (mounted high on the ship in a protective “ball”)



**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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