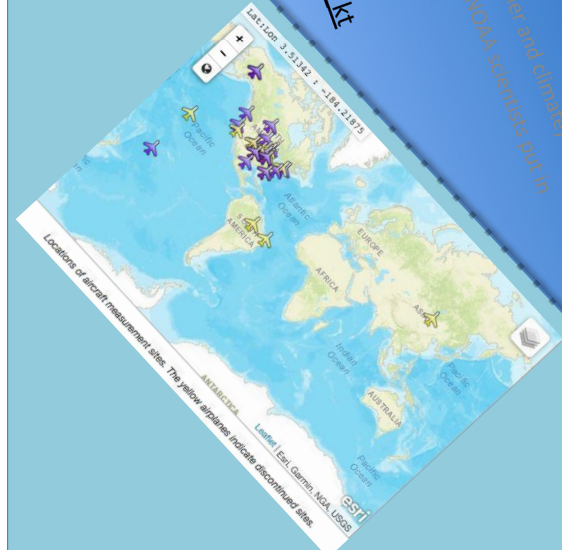




NOAA Boulder website: <http://www.boulder.noaa.gov>

Weather Safety for teens and kids: [https://www.weather.gov/owlie/safety\\_kit](https://www.weather.gov/owlie/safety_kit)



Online Resources for Kids:  
<http://www.noaa.gov/learning/activities/kids>  
<http://www.noaa.gov/learning/activities/kids/games>  
<http://www.noaa.gov/learning/activities/kids/games/aircraft>  
<http://www.noaa.gov/learning/activities/kids/games/aircraft/aircraft>  
<http://www.noaa.gov/learning/activities/kids/games/aircraft/aircraft>

Collecting air samples in vertical profiles higher in the atmosphere than can be reached by the Tall Tower Network.

Most aircraft flights collect 12 air samples at different altitudes up to 13,279 m/43,555 ft. The samples are stored in glass flasks for later analysis at the Boulder Central Facility.



The Programmable Compressor Package (PCP) contains 2 pumps, a first-stage pump and a second-stage pump that are plumbed in series in order to increase the pumping power, a rechargeable battery, a control board, and a flow meter.



The pilot display is a digital LED screen and toggle switch that communicates sampling altitudes with the pilot from the control system in the PFP.



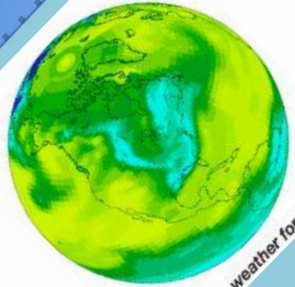
The Programmable Flask Package (PFP) contains 12 glass flasks for storing air samples, a flexible stainless steel manifold system connection the flasks, a data logging system, and a control system.

Aircraft sampling allows us to see where CO<sub>2</sub> and other greenhouse gases go after being emitted at the surface like CarbonTracker, that model CO<sub>2</sub> concentrations across the globe.

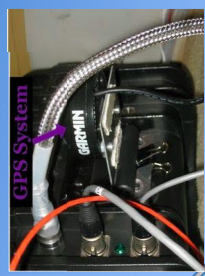
Data from aircraft sampling are used to verify computer models, like CarbonTracker, that model CO<sub>2</sub> concentrations across the globe.



**Inlets:** The sample air comes into the plane from tubes run to the outside of the plane, wither the wings or right out the side of the aircraft's cabin. This eliminates aircraft exhaust from the air sample.



CarbonTracker CO<sub>2</sub> weather for June-July, 2008.



The GPS system allows for precise positioning of the aircraft and universal time to be recorded along with the air samples. The position and time is recorded by the data logger within the PFP.