

## Snapshot of Atmospheric Trace Gases “Pole to Pole” – Highlights from the HIPPO Whole Air Sampler

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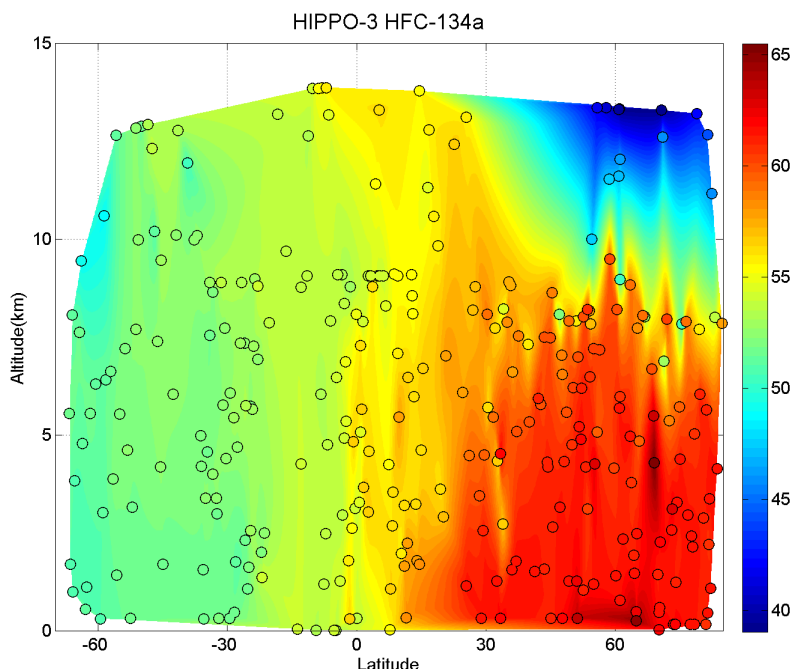
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***HI**aper Pole to Pole Observations (HIPPO) mission: “To measure cross sections of atmospheric concentrations approximately pole-to-pole, from the surface to the tropopause, five times during different seasons over a three year period...”*

Results from the NOAA/RSMAS whole air flask sampler taken during the HIPPO missions provide an unprecedented snapshot view of ~80 atmospheric trace gas distributions throughout much of the troposphere. A custom air sampling module aboard the Gulf Stream V aircraft was used to sample whole air into stainless steel flasks and glass flask packages. Observed trace gas distributions reflect the combination of transport, chemistry and/or source/sink distributions and are evident across hemispheric scales and through atmospheric regimes that include the open Pacific Ocean and North America and from near-surface (200 m) up to regions of stratospheric influence (14,400 m). The multitude of measured atmospheric compounds, spanning a wide range of lifetimes, growth rates and source/sink distributions, provide insight into chemistry and transport processes.



**Figure 1.** HFC-134a mole fractions (colorbar in parts per trillion) from the Pacific Ocean North-South transect. Circles represent coordinates of samples collected in NOAA’s Carbon Cycle Greenhouse Gases Group’s glass flask packages.