



## **Whole Air Sampler measurements of organic halogens in the troposphere and lower stratosphere from aircraft and balloon platforms.**

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Measurements of organic halogens from whole air samples collected during a variety of field campaigns in recent years will be presented. Spatial coverage includes 85N-67S over the Pacific from the HIAPER Pole to Pole (HIPPO) campaign using the NSF/NCAR GV aircraft, the tropics and northern subtropics from several NASA sponsored campaigns using the NASA WB-57 aircraft, and the midlatitudes over the U.S. from the NSF/NCAR GV aircraft during the START-08 campaign and two deployments of the NASA high altitude balloon platform. The broad latitudinal distributions from HIPPO show the magnitude of interhemispheric mixing ratio differences at different altitudes. During the NASA campaigns, decreasing mixing ratios of short lived organic halogens were observed across the TTL. The difference between these values and the surface and mid troposphere are used to calculate potential inorganic bromine available for transport into the lower stratosphere. Midlatitude airborne studies focused on regional stratosphere-troposphere exchange using a variety of chemical tracers in conjunction with detailed meteorological analyses. Air masses were characterized using a combination of chemical composition, meteorological analysis, and back trajectories.