Ozonesondes Show Record Low Stratospheric Ozone in the Arctic in 2011

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The 2011 Arctic Polar vortex was uncharacteristically stable and cold allowing record stratospheric ozone depletion to occur late winter and early spring as reported by the Alfred Wegener Institute (AWI) for Polar and Marine Research. This was based on their analysis from an ongoing international network of about 30 ozone sounding stations in the Arctic and Subarctic. The winter time network program called "Match" coordinates ozonesonde balloon launches with air mass trajectories to sample specific air parcels for direct determination of ozone loss rates. One of the participating sites is at Summit Station, Greenland, where ozonesondes are launched weekly, and more often during the Match campaigns, by NOAA ESRL and supported by the National Science Foundation. Summit is located at 72.6°, N 38.5° W and often within the vortex and main ozone depletion area. Figure 1 shows the minimum ozone profile measured at Summit on March 28, 2011. The greatest depletion layer was from 18-21 km, 70% lower than the March average. This was consistent with loss rates observed over broad regions from Greenland to northern Scandinavia and Russia from AWI Match in 2011.

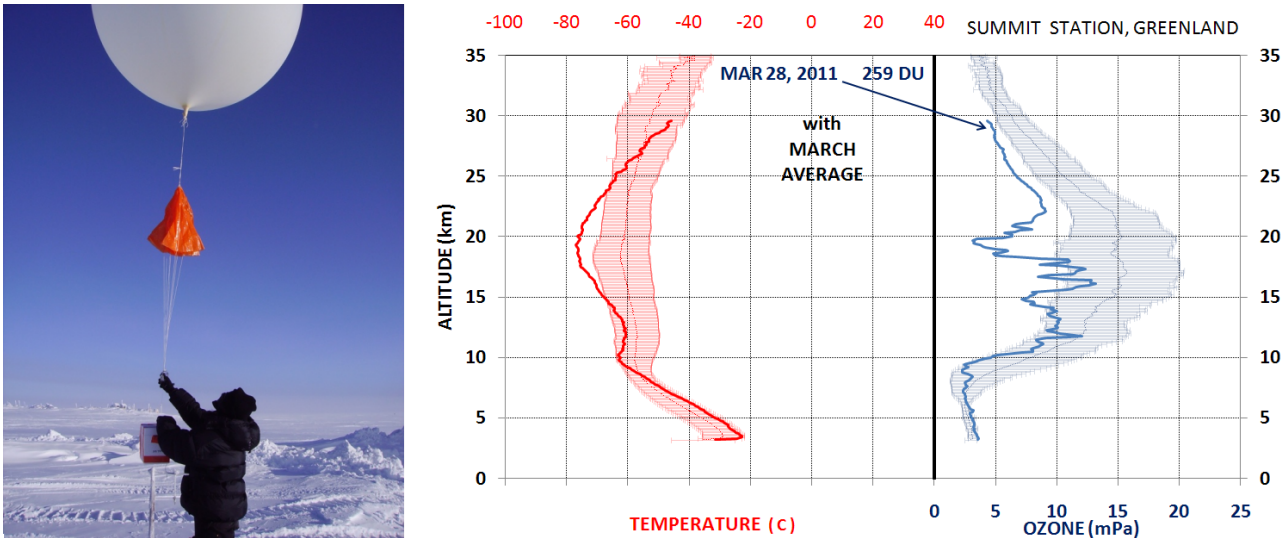

Figure 1. Ozonesonde launch at Summit, Greenland with temperature and minimum ozone profile measured on March 28, 2011. The shaded area represents the average ± standard deviation for March since observations began in February, 2005.