

## New Ozonesonde Measurement Program at Summit, Greenland

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Reports of unusually cold stratospheric temperatures during the Arctic winter of 2004-2005 prompted CMDL to participate in monitoring stratospheric ozone in the far northern latitudes by adding Summit, Greenland, as a new site for launching ozonesondes. Summit is an ideal location (72.6°N 38.5°W; 3202 m elevation) for observing ozone depletion within the Arctic polar vortex, since the vortex is often displaced to the European-Canadian-Greenland side of the north pole by the Aleutian high. However, the spatial position, timing, and degree of ozone depletion are much more variable than that which occurs in the Antarctic ozone hole in September and October. Therefore, the “MATCH” technique, developed by von der Gathen and Rex [*Nature*, 375, pp. 131-134, 1995] has become part of the European Vintersol campaigns, and been used to coordinate various ozonesonde balloon launches to intercept specific air parcels to determine ozone loss rates. The Summit site was added immediately to the program after the first ozonesonde flight on February 12, 2005. The next several ozonesondes flights at Summit showed minimum temperatures of -82°C within altitudes ranging from 20-23 km and layers of relatively low ozone below the stratospheric ozone peak. The minimum total column ozone measured was 259 Dobson Units (DU) on February 24, which increased to a more typical level of 370 DU on March 15 when the vortex appeared to be breaking down (Figure 1.).

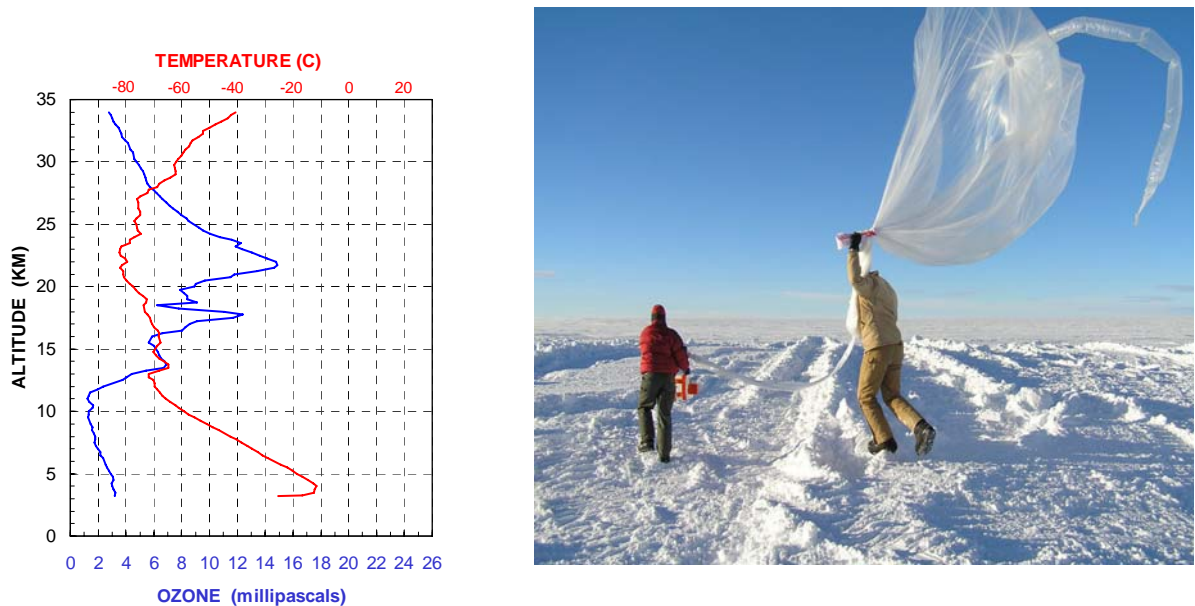


Figure 1. Ozonesonde launch at Summit, Greenland, with temperature and ozone profile measured on February 24, 2005.