

Aerosol profiles from a balloon flight from Niamey, Niger, (13.5°N, 2.2°E) on 31 July 2006 (08:30-11:00 UT). The measurements included condensation nuclei (CN), aerosol between 0.15 and 10.0 μm in radius in 12 sizes, ozone, and pressure/temperature. The aerosol instruments are built by the University of Wyoming, the ozone sensor is an ENSCI electrochemical concentration cell, and the pressure/temperature sensor is from Vaisala.

The measurements were made in advance of an approaching thunderstorm which had radar tops near 13-14 km.

There are 2 figures shown:

- 1) ascent and descent aerosol concentration profiles vs altitude,
- 2) ascent and descent aerosol mixing ratio profile vs potential temperature

The CN instrument is saturated in the troposphere, thus the constant value at over 100 cm^{-3} . This occurs because, to limit gondola size and weight, the dilution valve, normally used in Laramie, is not included.

The oscillations above a potential temperature of 750 K result from temperature fluctuations which occur as ventilation decreases in the stratosphere and the temperature sensor swings into and out of the sun. The sun shield doesn't work well at low solar zenith angles.



