Thank you for your interest in this data set produced by NOAA's Global Monitoring Division. If you plan to use our data in a publication, we ask that you contact us during the preparation of the manuscript. This will ensure that the data is being used properly, the data is the most current version, and the data is cited correctly. If GMD's data comprises a significant portion of the manuscript or is used in figures, we ask to be considered for co-authorship of the publication. We are happy to answer any questions related to this data product. NOAA GMD's funding and the future of our data sets depends on the usage and publications of our data. Please, give credit when credit is due.

The first line of the fleout file details the version number of the software used to process the sounding data file as well as the date processed.

**Header Labels**

Header lines = Number of lines in the header of the sounding data file

Data columns = Number of columns in the sounding data file

Flight number = The flight number begins with a two letter station abbreviation followed by the flight number (e.g. BU450)

Date [GMT] = GMT Date of launch

Time [GMT] = GMT Time of launch

Location = Station name or nearest city to launch location

Longitude = Longitude of launch location

Latitude = Latitude of launch location

Launch altitude (km) = Altitude of launch location in kilometers above sea level

Surface pressure (mb) = Observed or measured surface pressure in millibars

Surface temperature (deg) = Observed or measured surface temperature in degrees Celsius

Surface humidity (%) = Observed or measured surface humidity in %

\*(The launch altitude, surface pressure, surface temperature, and surface humidity are the initial constraints used in the geopotential altitude calculation.)

Turn altitude (km) = Altitude of balloon turn or burst in kilometers above sea level

Turn pressure (mb) = Atmospheric pressure of balloon turn or burst in millibars

Radiosonde number = Radiosonde serial number

Radiation correction = States whether a solar radiation correction was applied to the temperature (e.g. Yes or No)

Pressure sensor offset = Pressure offset in millibars applied to the atmospheric pressure measured by the radiosonde

A/D System = Data acquisition system used (e.g. TMAX, V2C, V7)

Radiosonde Total Col. Water = The total column water calculated from radiosonde

Instrument Type = States what kind of instrument was on the balloon (e.g. Ozonesonde, Water Vapor, Ozonesone and Water Vapor)

Original File Source = States the original source the fleout file was produced from (e.g. raw, fle2, fle)

Ozone sonde number = The serial number of the ozonesone. An x,y,z,r,a following the serial number denotes a reconditioned ozonesonde

Solution = Type of sensing solution used (e.g. 1% full buffer, 2% no buffer, 1% 1/10th buffer)

Oltmans solution correction = A correction applied to specific solution types

Total ozone column (CMR) = The total column ozone calculated for the sounding using the Constant Mixing Ratio extrapolation method

Total ozone column (SBUV) = The total column ozone calculated for the sounding using the climatology based on the SBUV instrument for extrapolation

Total ozone stop pressure = The pressure at which total column ozone is extrapolated from

Time (sec) to pump 100 ml = The pump flow rate as measured using the bubble flow meter method in seconds per 100 milliliters

Dry flowrate correction = The relative humidity flowrate correction in %

Background current (uA) = The background current in µA

Coefficients = The name given to the set of pump coefficients used.

Pump coefficients = The pump efficiency used in calculating ozone represented by 4 coefficients representing a cubic polynomial (e.g. pc0 = 4.0564 pc1 = -7.0851 pc2 = 5.1822 pc3 = -1.1581) or a pressure table

Pressure data source = The source of the pressure data is either the radiosonde measured pressure or the GPS calculated pressure

Altitude data source = The source of the altitude data is either geopotential altitude as calculated by the pressure, temperature, and relative humidity or the GPS altitude

**Column Labels**

Time = The elapsed time from launch in minutes

Press = The corrected pressure as measured by the radiosonde with the pressure offset applied

Alt = The altitude in kilometers above sea level either calculated by the geopotential altitude or reported by the GPS

Temp = The corrected temperature as measured by the radiosonde

Theta = The calculated potential temperature

RH = The corrected relative humidity as measured by the radiosonde

TFp V = The temperature of the frost point as measured by the radiosonde

IPW V = The integrated perceptible water as measured by the radiosonde

O3 Cell I = The cell current in µA measured by the ozonesonde

O3 P = The partial pressure of ozone in millipascals

O3 Mr = The mixing ratio of ozone in parts per million by volume

T Pump = The temperature of the pump in degrees Celsius

Total Column O3 = The total column ozone without the extrapolated amount added

Total w/ Extrap O3 = The total column ozone with the extrapolated amount added

GPS lat = The latitude as reported by the GPS receiver

GPS lon = The longitude as reported by the GPS receiver

GPS alt = The altitude as reported by the GPS receiver

Wind Speed = The calculated wind speed in meters per second

Wind Dir = The direction of the wind in degrees (0º-360 º)

GPS sats = The number of GPS satellites locked on to the radiosonde GPS receiver

\*Data that does not pass quality control will be represented as 99999.