

- How to read the Format

The data is recorded in the NetCDF4 format, which is a widely-used self-describing format developed at Unidata (<http://www.unidata.ucar.edu/software/netcdf/software.html>), or in the formatted ASCII. A number of data viewers and manipulation tools are available for the NetCDF format. Please see the tool list (<http://www.unidata.ucar.edu/software/netcdf/software.html>). Each of the formatted ASCII data contains an explanatory header.

If you use Python3, you can read the NetCDF data with such description as bellow;

```
from os import chdir
import netCDF4 as ncf

chdir("Write an absolute path of the directory where you have downloaded the data")

year = str(2015) # year
mm = str(12).zfill(2) # month
dd = str(8).zfill(2) # day

nc0 = ncf.Dataset('Caiondensity_'+year+mm+dd+'.nc', 'r', format='NETCDF4')

lon = nc0.variables["lon"][:] # longitude [deg.]
lat = nc0.variables["lat"][:] # latitude [deg.]
alt = nc0.variables["alt"][:] # altitude [km]
time = nc0.variables["time"][:] # time [UT]
density = nc0.variables["dens"][::,::,::] # Ca Ion Density [/m3]

lon_dim = len(lon)
lat_dim = len(lat)
alt_dim = len(alt)
time_dim = len(time)

nc0.close()
```