# **Archive Weather data download**

Archive weather data can be downloaded using a download program that is very similar to the daily NWS data download program. The source code of the program is located on [\\SWSATMOSSCI](file:///\\SWSATMOSSCI) in the directory

C:\Program Files (x86)\NMSU\RSET\src\Data\Processing\NWS\grib2\src\NWS\_archive

The main difference between archive and daily weather data is the location of ftp site, and the naming of the files. The archive data are stored as WMO headers. The NWS filenames and corresponding WMO headers are given in the table 1.

**Table 1**: NWS files and corresponding WMO headers. The colors represent matching WMO headers.

|  |  |  |
| --- | --- | --- |
| **No** | **NWS File Names** | **WMO Headers** |
| 1 | ds.precipa.bin | LEIA98 KWBR 082300 |
| 2 | ds.press.bin | LPIA98 KWBR 090000 |
| 3 | ds.sky.bin | LAMA98 KNES 090000 |
| 4 | ds.td.bin | LRIA98 KWBR 090000 |
| 5 | ds.temp.bin | LTIA98 KWBR 090000 |
| 6 | ds.upress.bin | LPIA98 KWBR 090000 |
| 7 | ds.utd.bin | LRIA98 KWBR 090000 |
| 8 | ds.utemp.bin | LTIA98 KWBR 090000 |
| 9 | ds.uwdir.bin | LNIA98 KWBR 090000 |
| 10 | ds.uwspd.bin | LNIA98 KWBR 090000 |
| 11 | ds.wdir.bin | LNIA98 KWBR 090000 |
| 12 | ds.wspd.bin | LNIA98 KWBR 090000 |

The archive data is available on NOMADS’ ftp servers at

ftp server: <ftp://nomads.ncdc.noaa.gov/NDGD/>

For downloading the data, date of data download can be specified in the m file named ‘***ndgd\_maual\_download.m***’. On the first line, the variable ***n*** defines the MATLAB serial date number (counted from 1-1-0000) which is used as the day before the required day for which download is needed. In the ***for*** loop on second line, change the loop limit to the number of days for which data is required. For example, to download data starting from Jan 1, 2014 and ending in Dec 31, 2015 (730 days)

n = 735599; % Dec 31, 2013

for i = 1:730 % download for two years, 2014 and 2015 = 730 days

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**Notice** that not all of the data is available. Opening any downloaded folder will reveal that ds.sky.bin is of 0 KB. This is because there is no file corresponding to sky cover on the archive data. This will have to be resolved in future. Currently, this data is available separately from <https://www.ncdc.noaa.gov/has/HAS.FileAppRouter?datasetname=9959_02&subqueryby=STATION&applname=&outdest=FILE>

However, the data is at different resolution. This can be verified by opening any other file and sky file in tkdegrib software and exporting the data in csv format. All other files that were downloaded from NOMADS server have 2,953,665 data records while the sky cover data downloaded from the NCDC link provided above only contains 739,299 data records (~1/4th of the 2,953,665). A strategy is needed to be adopted to interpolate sky data to make them of same resolution; otherwise, the program that processes the data will throw errors.

# **Data Processing:**

This section is being added to the document despite the fact that archive data processing haven’t been achieved because of the problem with missing/different resolution data. Once the problem is resolved, processing the data will be similar to the processing of the daily weather data. Loop through each date (just like in the download program described above) with ‘***hh\_ndgd\_et\_dailycal.m***’ that takes in serial date number as input and calculates all the necessary variables for the online tool.