Atmospheric Radiation Measurement
Climate Research Facility
A National User Facility for the Scientific Community

ARM Archive Data Extraction Capabilities and Plans

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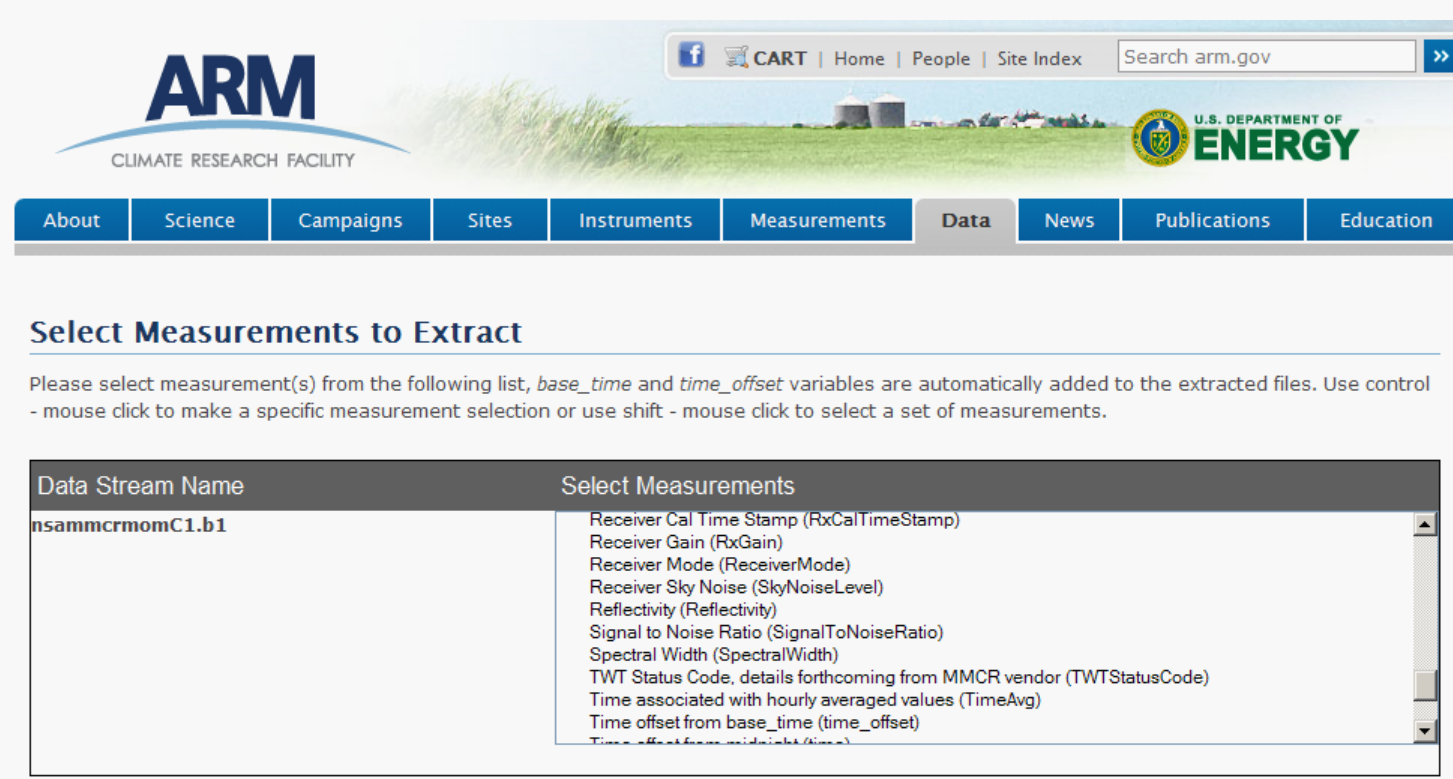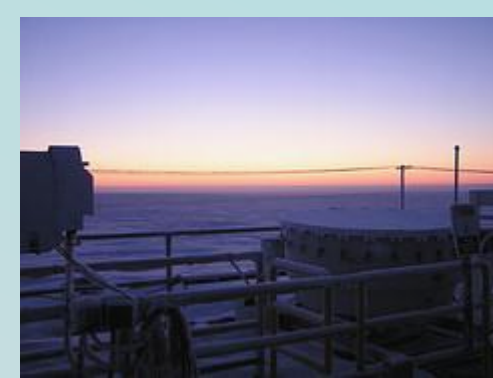
Objectives

❑ Allow users to order and download specific measurements, without requiring them to download an entire data stream

❑ Allow advanced selection criteria in choosing measurements of interest
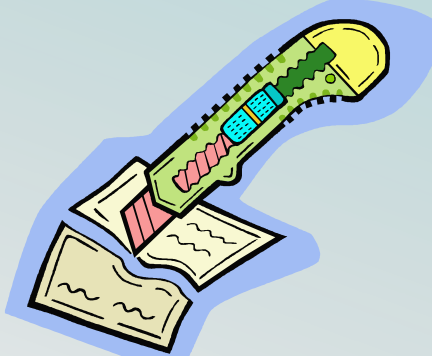
Extract Using Data Browser

400 MB per day – Full Radar File

```
netcdf nsammcrmomC1.b1
dimensions:
    time = UNLIMITED ; // (54795 currently)
    mode = 10 ;
    namelength = 64 ;
    heights = 234 ;
    Hourly = 24 ;
```
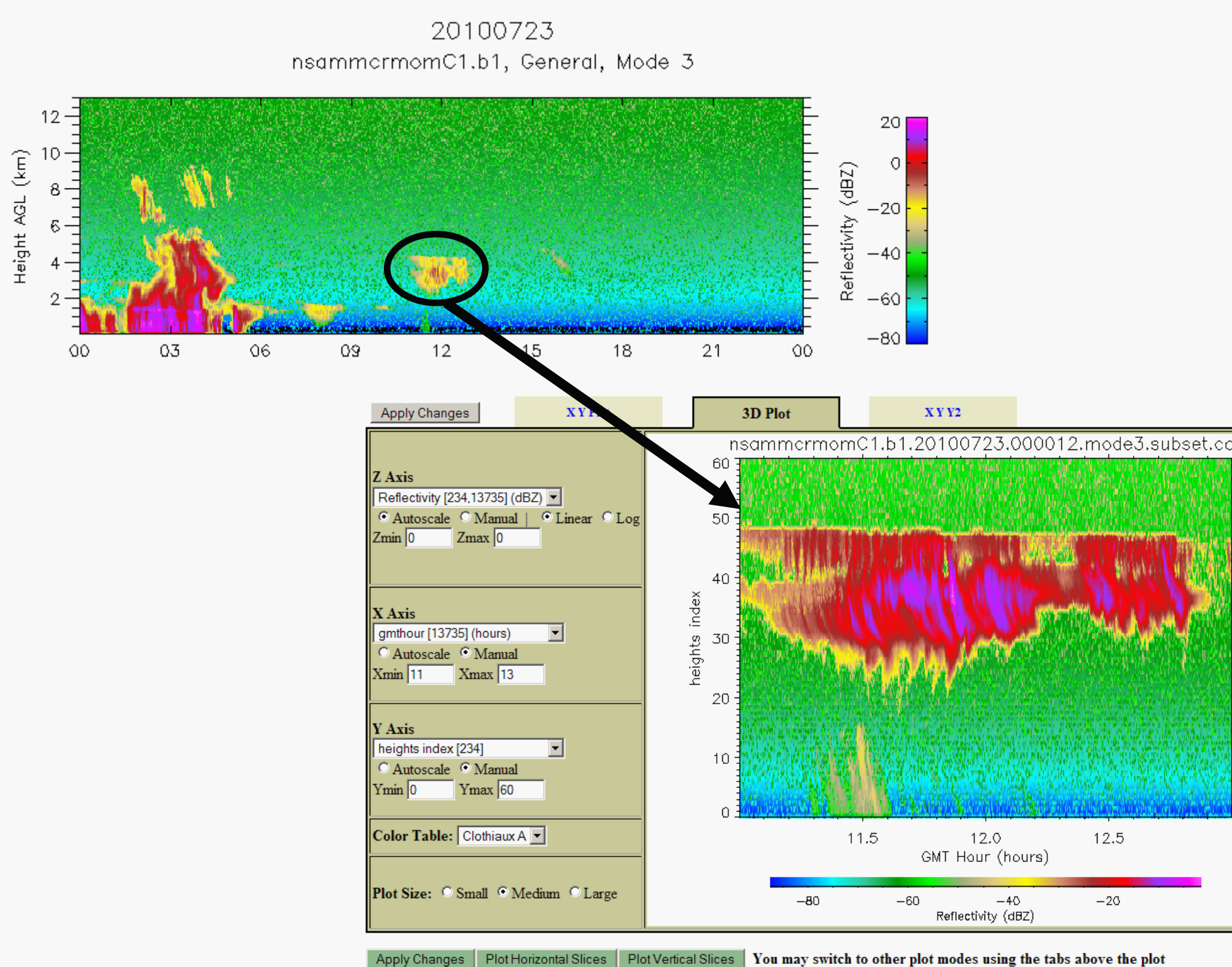
12 MB per day - Custom File
97% reduction!

Extracting:
• General Mode Reflectivity
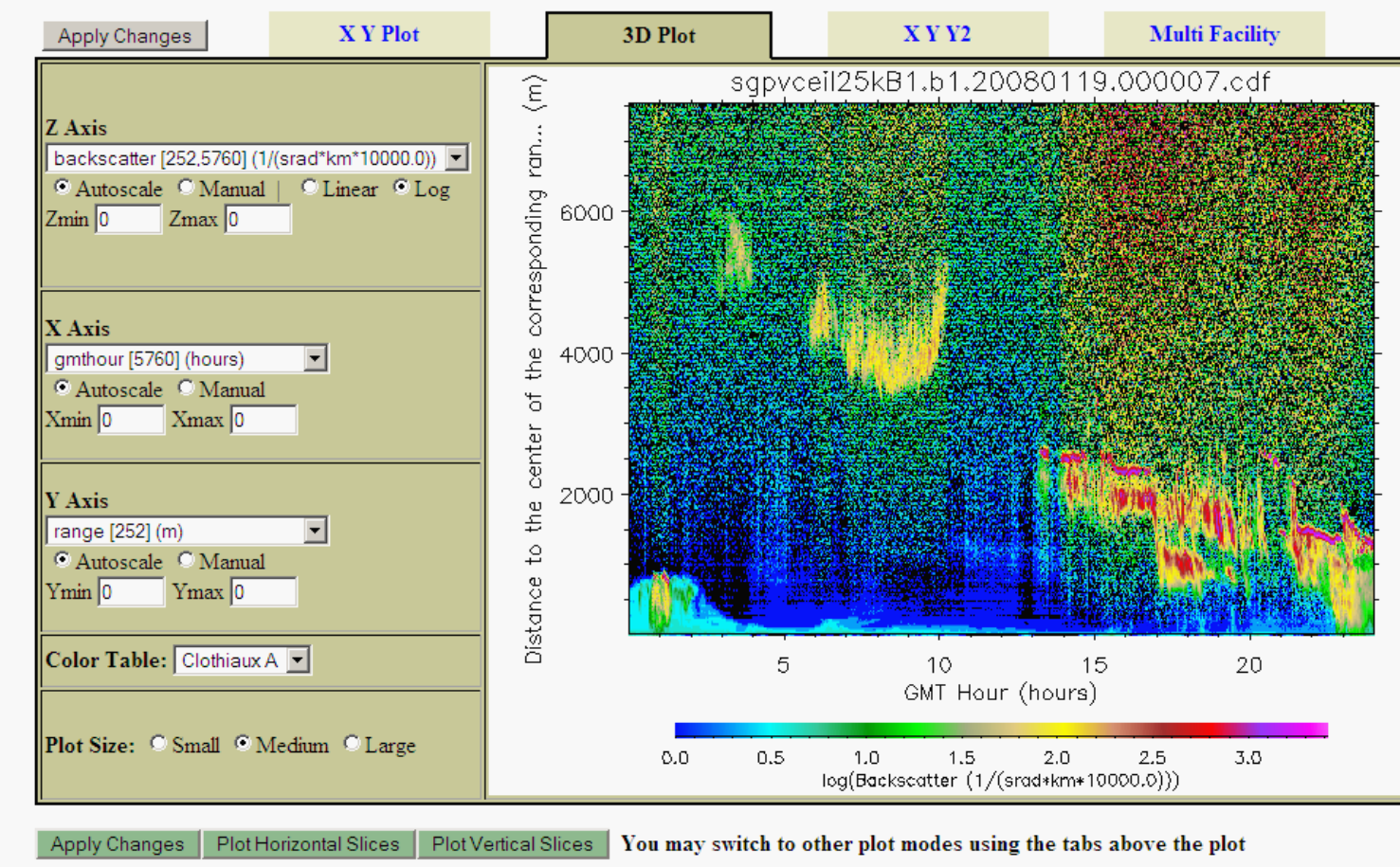• Height and Time arrays

After Extraction

▪ Easily plot and focus on region of interest using NCVweb
▪ Download much smaller files!

Custom NetCDF Extract Using NCVweb

Features

▪ Works with files already requested

▪ Works with single or multi-dimensioned data fields

▪ Field-level and global attributes for the selected variables are retained

▪ Parentage of data is documented in global attributes

▪ Greatly reduces amount to download


```
netcdf sgpvceil25kB1.b1.20080119.000007.subset {

dimensions:
    time = UNLIMITED ; // (5760 currently)
variables:
    int base_time ;
        base_time:string = "19-Jan-2008,0:00:07 GMT" ;
        base_time:long_name = "Base time in Epoch" ;
        base_time:units = "seconds since 1970-1-1 0:00:00 0:00" ;
    double time_offset(time) ;
        time_offset:long_name = "Time offset from base_time" ;
        time_offset:units = "seconds since 2008-01-19 00:00:07 0:00" ;
    float first_cbh(time) ;
        first_cbh:long_name = "Lowest cloud base height detected." ;
        first_cbh:units = "m" ;
        first_cbh:valid_min = 0.f ;
        first_cbh:valid_max = 7620.f ;
        first_cbh:missing_value = -9999.f ;
        first_cbh:values = " If detection_status = 1, 2 or 3,\n",
    " lowest cloud base height measured.\n",
    " If detection_status = 4 this value\n",
    " will be stored as -9999 and a value\n",
    " for vertical_visibility will be stored.\n",
    " If detection_status = 0 or 5, -9999 will \n",
    " be stored for this value and vertical_visibility.\n",
    " (5 slashes were read from field)." ;

// global attributes:
    :ingest_version = "process-ingest-vceil_ingest-8.1-0" ;
    :libingest_version = "ds-dsutil-ingest_lib-1.7-0" ;
            •
            •
            •
:NCV_extraction_from_file = "/data/datastream/sgp/sgpvceil25kB1.b1/sgpvceil25kB1.b1.20080119.000007.cdf";
:NCV_extraction_timestamp = "Thu Feb 28 09:06:32 2008" ;
```

Custom ASCII Extract Using NCVweb

Features

▪ Create one row per time record with as many variables (columns) as desired
▪ Create block output for variable sets having mismatched dimensions
▪ Send results to a spreadsheet or text file for further analysis and plotting
▪ Tool can remove records designated as missing
▪ Allows subsampling of results

Plans

Conditional Extraction

Select data based on values of other measurements, conditions, reports, or flags

Examples:

▪ Extract radiation data when solar zenith angle is small

▪ Extract radar data when clouds are present or rain detected

▪ Extract data for time periods when no data quality reports have been issued

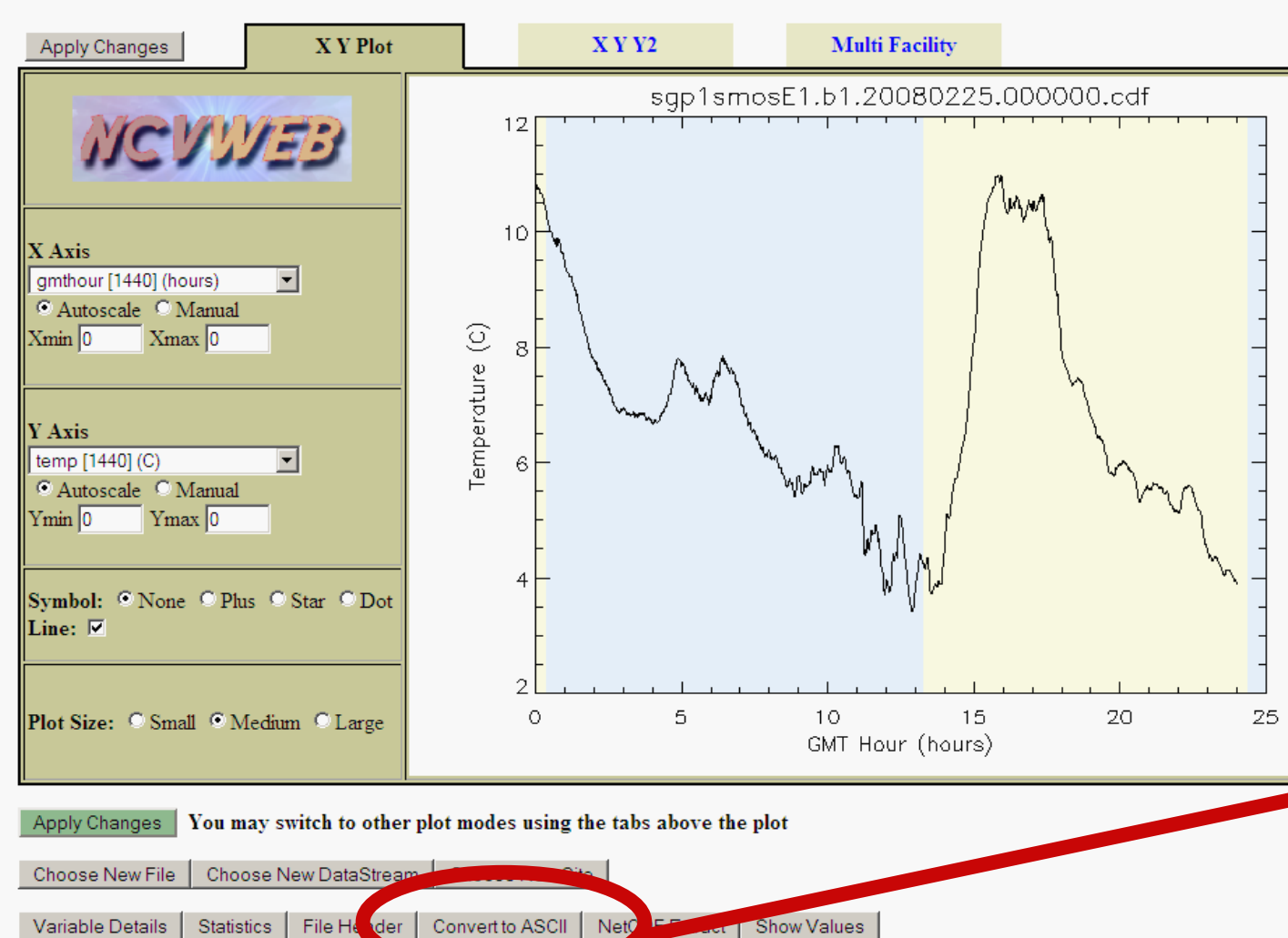▪ Extract data that passes specific data quality tests

Enhanced Data Slices

Extract specific height, range, time, mode, or wavelength slices