

WEATHER

A User's Guide

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1. INTRODUCTION

The WEATHER program is used to display both current and archives of text weather data. These data generally consist of a broad range of content including raw weather observations, National Weather Service (NWS) forecasts and direct output from numerical weather prediction models. This document is a how-to-use guide to the WEATHER program. Additional information on WEATHER can be obtained by typing “man weather” from your terminal or by typing HELP inside of the weather program.

WEATHER has a number of ways (or “modes”) in which it can be used. The most common use of WEATHER is in “interactive mode”. When in interactive mode, you issue a data request, WEATHER searches for the requested data, then waits for your next request. This request-and-search interaction is accomplished by either entering commands to a prompt or by using one of the WEATHER menus to guide you through. Generally throughout this document, the prompting means (as opposed to the menu means) of using WEATHER are discussed. A description on how to use the various WEATHER menus is provided in Sec. 4. The default mode (prompting vs. menu) that WEATHER runs is dependent on how the program was installed on your computer system. No matter what the default mode is, you can easily change modes once inside of WEATHER. WEATHER also has a command line (or shell) mode of operation designed for use in scripts; its use is described in Appendix A.

In order for WEATHER to find the data you are after, it needs to know 3 pieces of information: the TYPE of data you wish to see, WHERE you wish to see data from, and over what TIME you wish data for. You tell WEATHER what TYPE of data you want by first setting the so-called “subcommand”. You tell it where and when you want data for by then entering a list of places and times. Exactly how you tell WEATHER these things is described in the following sections.

Normally, WEATHER outputs any data it finds to your terminal. WEATHER can also send the output to a file and/or printer¹. WEATHER can also filter the data for you in various ways including searches for particular phrases. This filtering allows you, for example, to output only weather observations that report snow, or warnings mentioning tornadoes, or just the times and places that issued certain reports. Exactly how to do these manipulations in WEATHER is described in later sections.

2. ISSUING WEATHER COMMANDS.

2.1 Setting the subcommand: *Telling it what type of data you want.*

The first thing you must tell WEATHER is the **type** of data you want to see. For example, do you wish to see surface weather observations, profiler data, National Weather Service fore-

1. Some local configurations of WEATHER may not allow file or printer output.

casts or any of the other types of data available. You tell WEATHER the **type** of data you want to see by setting the so-called “subcommand”. If you are running WEATHER in prompt mode¹, then after you start the program, you will see the

```
WEATHER>
```

prompt. You then select a subcommand by typing² a slash (/) followed by the subcommand name, e.g.

```
WEATHER> /subcommand_name
```

Appendix C lists the currently available subcommands and the types of data each subcommand retrieves. Entering the command **COMMANDS** generates a list of currently available subcommands and a brief description of the data each one returns. Some of the more commonly used subcommands are METAR (coded surface weather observations), WARN (weather warnings and watches) and ZONES (National Weather Service forecasts for local regions). Note that WEATHER does not care if you use upper or lower case letters in your commands.

Once you have specified a sub-command, the prompt will reflect the current subcommand. For example, if you want to get into the WARN subcommand, you would enter

```
WEATHER> /warn
```

and the prompt would then change to

```
WARN>
```

Once you are in a subcommand, you may switch to any other subcommand in the same way. You can also abbreviate subcommand names to the minimum number of letters that uniquely identify that subcommand. For example, entering either **/WARN** or **/WAR** would switch you to the WARN subcommand. If you specify too few letters in a subcommand name, you will get a warning message and a list of your possible choices. Also note that many of the WEATHER subcommands are known by more than one name. For example, the subcommand METAR can also be referred to as OBS, and the WARN subcommand is also known as WATCHES.

2.2 The WEATHER data request: *Where and for when do you want data*

Once you have selected a subcommand you next need to tell WEATHER **where** and **when** you wish to see data. The generic way in which you tell WEATHER this is in the form:

-
1. If you are running WEATHER in menu mode, a different procedure is used to select the subcommand. Refer to Section X for details.
 2. WEATHER uses many Emacs/C-Shell rules for entering input Appendix E for details.

SUBCOMMAND> P1,P2,P3,...Pn h1.d1-h2.d2

where “**P1,P2,...Pn**” is the list of n places that you wish to see the data for and “**h1.d1-h2.d2**” is the time window over which WEATHER should search for the data. There are *alot* of short cuts and simplifications to this generic form which will make requesting data much simpler for you as described below.

2.2.1 Places in WEATHER: The “P1, P2, P3.... Pn” part of the command. WEATHER accepts three types of places, either: (a) 3-letter¹ station names (e.g. DEN, SFO, MIA, BOS); (b) an “@” preceding a 2-letter state abbreviation (e.g. @CO, @NY) and; (c) an “@” preceding a 3-letter name for a previously defined list of the first two types². You can mix these three types in a data request as you wish. Thus, to get the METAR observations for all of the state of Colorado plus Cheyenne WY, (CYS) you would ask for

METAR> @co,cys

You may use the wildcards “*”, “.” or “?” for a station name, to select all stations. Be careful though, as some subcommands can generate large volumes of data when wildcards are used. You can also mix the wildcards inside stations names. For example “P*” gets all stations that start with a P, while “A.C” finds stations AAC, ABC, etc. Some subcommands do not process wildcards if thieru use generally results in an exuberant volume of output data.

If you are unsure what a station’s 3-letter id is, the STATION subcommand can help. If you ask for all stations in a particular state from the STATION subcommand, then you will get a list of the 3-letter ids, names, locations and other information on each station in that state. You can also use the SEARCH option (discussed in Sec. 3) in conjunction with the STATION subcommand to help you locate specific city names if you are unsure of the state.

There is one special place called SHOW. If the first place you specify is SHOW, then *most* of the subcommands will list the stations and times for which reports are available. If you specify a set of states and/or stations after SHOW, then only reports from the specified list of places will be shown. For example, the command

RECORD> show

will generate list all stations reporting record events, while

RECORD> show,@ca,@or,@wa

will list only the stations from California, Oregon and Washington that reported records. Note that the time period over which available reports are listed by the SHOW option depends on the time window you specify (as described in the next section).

1. 4-letter names are acceptable for the subcommands that access and/or decode METARs.
2. See Appendix D for instructions on how to set up these predefined lists.

Reports having specific WMO report headers, rather than those issued by a specific station, may also be requested from most of the subcommands by enclosing the header(s) you wish to find in square brackets. In such requests a “.” or “?” are treated as wildcards. For example a search for `[A],[WWUS4.. KMIA]` would find all reports whose WMO headers start with a “A” or with “WWUS4.. KMIA”. This search option is often useful for users who have experience with WMO data types but not necessarily with WEATHER itself.

2.2.2 Specifying the time window: The h1.d1-h2.d2 part of the command. The time window over which WEATHER will search for data is specified in the form “h1.d1-h2.d2” where h1 is the hour (UTC) for the start of the window, d1 is the starting day, h2 is the ending hour (UTC) and d2 is the ending day. Thus the command

`SAO> @co,cys 12.11-0.12`

will get all of the Colorado and CYS SAO obs between 1200 UTC on the 11th through 0000 UTC on the 12th. The month and year of the data are determined logically from the current time¹.

There are many abbreviations and short cuts to the time window syntax; Table 1 summarizes these.

Table 1: Short-cuts and simplifications of the WEATHER time window

If you specify just....	The command will search for reports during..	For example
<code><no time></code>	The current hour	<code><no time entered></code>
<code>L (or l)</code>	The latest available report	<code>l</code>
<code>Ln</code>	The latest report in last n hrs	<code>l6 or (L6)</code>
<code>h1 (just a number)</code>	Last h1 hours	<code>18</code>
<code>h1Z (number then “Z”)</code>	The hour h1 of today	<code>18Z</code>
<code>h1.d1</code>	The hour h1 of day d1	<code>18.12</code>
<code>h1-</code>	Since hour h1 of today	<code>18-</code>
<code>h1.d1-</code>	Since hour h1 of d1	<code>18.10-</code>
<code>h1.d1-h2</code>	Between hours h1 and h2 of the day d1	<code>18.10-23</code>
<code>y</code>	All of yesterday	<code>y</code>
<code>t</code>	All of today	<code>t</code>
<code>y-</code>	Since yesterday, 00 UTC	<code>y-</code>
<code>h1.y</code>	Hour h1 of yesterday	<code>18.y</code>
<code>h1.y-h2</code>	Hour h1 to h2 of yesterday	<code>18.y-23</code>

1. In “archive” mode (Appendix B), the month and year are determined from the specified archive date.

Table 1: Short-cuts and simplifications of the WEATHER time window

If you specify just....	The command will search for reports during..	For example
r	Repeat last time request	r

Note that there are two special characters that can be used in place of the day. They are y (for yesterday) and t (for today). They may be used in place of either d1 or d2 above or as a stand alone time window, e.g.

```
METAR> cys 12.y [gets the METAR ob from CYS for 1200 UTC yesterday]  
METAR> cys t [gets the METAR obs from CYS for all of yesterday]
```

In addition, the special character “r” may be used anywhere within a WEATHER data request to imply a repeat of the last request. If it is used in place of the time window portion of the data request, then the last time window is used. If it is used in place of the list of places, then the last place list is used. If “r” is specified by itself, then the last data request is repeated even if the subcommand has changed. This feature can be handy when perusing many different data types for reports from the same locations and/or times.

2.3 Example Commands: Putting it all together

There is considerable flexibility in how you issue WEATHER commands with many variations getting the same results. Here are some example WEATHER commands:

1. To get the current hours SAO observations from California:
SAO> @ca
2. To get the latest NWS forecast for Boston and Providence
ZONES> bos,pvd l
3. To see a list of all the record events reported since yesterday:
RECORD> show y-
4. To get the synoptic observations for Miami between 00Z the 12th and 18Z the 13th:
SYNOPTIC> mia 0.12-18.13
5. To get all warnings issued for Virginia in the last 3 hours:
WARN> @va 3
6. To get the current METARs for the places and times requested in the previous request:
METAR> r

3. OTHER WEATHER COMMANDS: *Using WEATHER effectively.*

There are several WEATHER commands that can change the way that WEATHER searches for and/or outputs its data. Learning effective use of these commands can make your use of WEATHER more productive and efficient.

3.1 Commands that effect WEATHER output.

3.1.1 PAGE mode. Page mode enables you to control the rate at which data appears on the screen. Often WEATHER will find and output data faster than you can read it. With PAGE mode active, only one page at a time is output to your terminal. After a full page of data is output, you will see the ***PAGE*** prompt, to which you can respond in a variety of ways as described in Table 2. Generally, PAGE mode is active when you start WEATHER. You can force it to be on by starting WEATHER with the “-page” command-line option or by entering the command “PAGE” to any prompt. The commands “-nopage” on the command line, or NOPAGE to an interactive prompt, turn PAGE mode off.

Table 2: Responses to the *PAGE*** Prompt**

Entering...	Results in...
<SPACEBAR>	the next page of output
<RETURN>	the next line of output
<i>nn</i>	the next <i>nn</i> lines of output
Q	Quitting the current search
N	Skipping to the next report
F	Temporarily turn off page mode
+/- nn	adjustment of page size by +/- <i>nn</i> lines
/	starting a search for a character string. You will be prompted for the string.
anything else	the next page (same as <SPACEBAR>)

3.1.2 FILE mode - File mode allows you to direct WEATHER output to a named file. This is often more desirable than standard UNIX I/O redirection since all of the ancillary WEATHER output such as headers, menus and prompts will not be written to the output file. Note that while FILE mode is activated, output is still directed to the terminal. FILE mode is entered by typing **FILE** to any WEATHER prompt, or by starting WEATHER with the **-f filename** command line option. File mode may be terminated before the end of a WEATHER session by entering the **NOFILE** command.

3.1.3. PRINT mode - Analogous to FILE mode, PRINT mode causes WEATHER output to be directed to a printer. PRINT mode can be activated by entering the command **PRINT printer_name** to any WEATHER prompt or by adding the command line option **-pr**

printer_name. If *printer_name* is not specified, then either the default printer established for WEATHER at installation or your local default printer is used. Enter the command **STATUS** while PRINT mode is active to see which printer is used. WEATHER does not actually print out any data until either (a) the **NOPRINT** command is issued or (b) the WEATHER program exits.

3.1.4 TERM mode - In a similar matter to FILE and PRINT mode, output to the terminal screen may be toggled on or off. By default, TERM mode is active when WEATHER is started. Output to the terminal may be turned off by entering the command **NOTERM** to any WEATHER prompt, or by using the command line option **-noterm**. TERM mode may be restarted by entering the command **TERM**. Disabling output to the terminal is most useful when WEATHER is used in a script to output data to a file or printer. In such cases, disabling terminal output can minimize unnecessary output to the scripts's log files.

3.2 Commands that filter WEATHER data output.

3.2.1 FIND (SEARCH) mode - FIND (also known as SEARCH) mode causes WEATHER to output only reports¹ that contain phrases that match a specified pattern. This could be used to, for example, display all weather warnings that contain the word TORNADO, or all METAR reports that are observing SN+ (heavy snow). FIND mode is activated by entering the command **FIND *search_pattern***, where *search_pattern* is any so-called regular expression². The commands SEARCH and FIND are synonymous.

By default, FIND mode is active for only the subsequent data request and then it automatically deactivates. To keep FIND mode active, precede the word FIND (or SEARCH) with an asterisk (i.e. ***FIND**). FIND mode will then remain active until explicitly cancelled with the **NOFIND** command. To illustrate the use of FIND, consider a case where all weather warnings that mention either a TORNADO or HAIL over the last three hours are sought:

```
WARN> FIND [TORNADO|HAIL]
WARN> * 3
```

In this example, FIND mode is activated for the words TORNADO or HAIL. The subsequent data request, then asks for reports from all (*) stations over the last 3 hours. Therefore, WEATHER will look at all of the warnings issued in the past 3 hours, and output any warnings that mention either TORNADO or HAIL.

By default, WEATHER outputs the entire report when a match is found. You can tell WEATHER to output only a subset of the report by specifying the number of lines before and after each match that should be output. This specification should be made in square brackets after the word FIND and separated by a semicolon (;). For example, the command

1. The definition of a report is dependent on the data type. Generally a report is one data entity such as an observation or forecast.

2. Regular expressions can be as simple as a word or phrase, or a list of phrases enclosed in [square brackets] and separated by bars (|). Phrases that contain blank spaces should be enclosed in quotes. See the UNIX man pages on the command "egrep" for a detailed discussion on regular expressions.

WARN> FIND[2;5] [TORNADO|HAIL]

would tell WEATHER to output two lines before and five lines after each occurrence of the words TORNADO or HAIL. If you give only one number to the FIND command, e.g.

WARN> FIND[0] [TORNADO|HAIL]

then it is assumed that the number represents lines to output after each match with no lines before the match output. In this example, only the line that contains the word TORNADO or HAIL would be output by WEATHER.

FIND mode can also be activated when WEATHER is started with the command line options either **-S *search_pattern*** or **+S *search_pattern***. The -S option is equivalent to normal one-time searching, while the +S option keeps SEARCH mode active until a NOSEARCH command is issued.

3.2.2 HEADER mode - HEADER mode causes WEATHER to output only the first few lines of each report. This can be useful when you wish to get just a flavor of a large number of reports. HEADER mode is activated with the command **HEADER *nn*** where *nn* is the number of lines from the start of each report you wish to see. Header mode can also be activated with the command line option **-h *nn***. Header mode is deactivated with the command **NOHEADER**.

3.2.3 SHOW. As discussed in Sec. 2, the word SHOW, preceding any data request can be used to generate a list of stations and times having reports available. Unfortunately, SHOW and FIND modes are incompatible. SHOW is not available with all subcommands.

3.3 On-Line Help.

WEATHER has an on-line help feature that describes the functionality of WEATHER and the data returned by its subcommands. There are 3 basic HELP commands you can use. They are:

HELP
HELP .
HELP *topic*

The command **HELP** by itself will return general information about the use of WEATHER. If you are in a subcommand, then "**HELP .**" will return information about the use and data that is returned by that subcommand. Other information about WEATHER, such as how to use FIND mode, can be obtained by entering **HELP *topic*** where *topic* is the subject that you wish to get further information on. It is a good idea to ensure the WEATHER is in PAGE mode when requesting HELP.

3.4 Other WEATHER commands.

3.4.1 STATUS - The **STATUS** command can be entered at any time to get the current state of WEATHER including any output processing and filtering that might be enabled.

3.4.2 DATE - The **DATE** command returns the current date and time (UTC).

3.4.3 EXIT (or QUIT) - The **EXIT** and **QUIT** commands will terminate WEATHER. If you are not using one of the WEATHER menus, then a blank line entered to any WEATHER prompt will also terminate the WEATHER session.

3.4.4 COMMANDS - The **COMMANDS** command generates a list of all currently available WEATHER subcommands, along with a brief description of each subcommand.

3.4.5 ? - The **?** command is similar to the **COMMANDS** command, except that a more compact list of the commands is generated. This list is also generated whenever you enter an invalid subcommand name.

3.4.5 ARCHIVE - The **ARCHIVE** command is used to place WEATHER in archive data acquisition mode. While in this mode, WEATHER can retrieve data from archives of data files, if available, rather than the realtime data base. See Appendix C for more details on how to use archive mode.

3.4.5 ECHO- The **ECHO** command prints out a phrase of text to all active outputs. This command is useful when formatting output in a file or on the printer. The usage is

```
WEATHER> ECHO phrase
```

where **phrase** is any string of text or nothing at all to insert a blank line.

4. USING THE WEATHER MENUS.

WEATHER has two types of menus that can simplify the use of WEATHER for some users, particularly those new to WEATHER. The menus are designed to aid in the selection of subcommands (i.e. data types) only; subsequent data requests to WEATHER are as discussed in Sec 2.2 above.

4.1 The “Screen-Oriented” Menu - This mode of WEATHER is initiated by the command **MENU**. In this mode, WEATHER presents the user with three lists of currently available WEATHER subcommands. The lists are broken into the general categories of “Observations”, “Forecasts” and “Other/Misc”. Initially, the uppermost subcommand under the “Observations” section will be highlighted. The highlighted (or selected) subcommand can be changed by using the arrow keys on the keyboard to move the highlight through and across the lists. Once the particular subcommand of interest is highlighted, you can hit a return and then that subcommands prompt will be presented to you at the bottom. To this prompt, you can either:

- (a) Enter a regular data request as described in Sec. 2. After WEATHER performs that data request, you will be asked to hit another return, upon which the menu will return.

(b) Hit another return to *invoke* the subcommand. When a subcommand is invoked, the screen will clear and you will get another prompt from the subcommand. To this prompt you can enter any regular data request or other WEATHER command. However, after that data request is performed, WEATHER will not try to go back to the menu, but rather will present you with the subcommand's prompt again. This way you can run the same subcommand multiple times without having to go back and forth to the menu. Also note that from within invoked subcommands, you can switch to any other subcommand by typing a slash followed by the new subcommand name as described in Sec. 2.1

Screen-oriented menu mode is started by entering the command **MENU** to any WEATHER prompt, or by using the command line option **-menu** upon start-up of WEATHER. Screen-oriented menu mode may be terminated by entering the command **NOMENU**. Note that some implementations of WEATHER may automatically start WEATHER in screen-oriented menu mode. If you wish to override this, start WEATHER with the **-nomenu** command line option.

4.2 List-Oriented Menu - The list oriented menu is similar to screen-oriented menu except that you select subcommands by entering a number associated with that subcommand as presented to you in a list. When the list-oriented menu is started, you are presented with a list, numbered 1-5, of the classes of subcommands available. You pick the class of subcommands you are interested in by entering the corresponding number. You are then presented with a list (numbered 1-N) of the currently available subcommands in that class. You then pick the particular subcommand that you are interested in by entering its number. You will then be presented with that subcommand's prompt to which you can issue any WEATHER data request as discussed in Sec. 2.2 or other WEATHER command. After your request is performed, the subcommand's prompt will be presented to you again. You can either issue another request or return to the menu by typing a return.

List-oriented menu mode is started by entering the command **LIST** to any WEATHER prompt and can be terminated with the **NOLIST** command. WEATHER can be started in list-oriented menu mode by using the command line option **-list**. Note that some implementations will automatically start WEATHER in line-oriented menu mode. You can override this by starting WEATHER with the **-nolist** command line option.

APPENDIX A: USING WEATHER IN SCRIPTS

WEATHER can be used as part of shell-level scripts to automatically grab and process weather data (using "cron" or "at" for example) or as part of large data processing programs. WEATHER uses standard UNIX conventions for standard input, output and error. Therefore WEATHER can be used in a script identically to as described above. However, for some applications, it may be more convenient to make use of WEATHER's shell-level mode of operation. If a complete and valid data request is entered on the command line then WEATHER will not enter interactive-mode, but rather will attempt to execute that request and exit. When shell-level mode is used, the subcommand is specified on the command-line using the option **-c subcommand_name**.

The following two examples illustrate two methods to retrieve the last 12 hours of SAO observations from Denver (DEN) and write them to the file DEN.obs but not to the terminal (standard output):

```
weather -c sao den 12 -f DEN.obs -noterm
```

or (assuming a c-shell is used):

```
weather -nobanner -noterm << END  
/sao  
file DEN.obs  
den 12  
exit  
END
```

The **-nobanner** command line option used in the latter case suppresses the normal start-up messages that are displayed when WEATHER is started in interactive mode. In the former example, that option is not needed since the banner is not displayed in non-interactive WEATHER sessions.

All of the options available to interactive users, including output filtering are available to shell-level users through command line options. See the man pages (man weather) for details on how to specify these options on the startup command line.

Upon exit, WEATHER sets the value of the STATUS shell variable depending upon the outcome of the last data request. The possible values of STATUS and their meanings are:

- 0 = Normal exit, last data request at least partially satisfied.
- 1 = No data found, but the correct data files were found and searched.
- 2 = No data found since none of the needed data files could be found.
- 3 = No search requested or executed.

Therefore, one use of WEATHER is to test whether a certain report is available. For example, consider the following excerpt from a c-shell script that loops every 60 seconds until the 1200 UTC NGM MOS forecast for DEN is found, and then once it is, prints it out:

```
while ( 'weather -c ngmmos den 12Z -noterm' != 0)  
    sleep 60  
end  
weather -c ngmmos den 12Z -print -noterm  
exit
```

In this example, the execution of WEATHER inside of the while () command, does nothing more than set the status flag depending on whether the report was found. Once the status flag is set to 0, then the loop exits and the report is printed by the trailing WEATHER command. In a real application the while loop should have an escape route in the event that the

ngmmos forecast for Denver never arrives.

APPENDIX B: CREATING CUSTOMIZED PLACE LISTS

Frequently one will repeat the same list of places in different WEATHER sessions or sub-commands. If such repeated place lists are long, typing the place lists can often prove tedious. WEATHER provides a circumventing shortcut by allowing you to define an alias for a frequently used list of places. To do this, first create a file (using a standard text editor) having any name you choose. In this file, enter your frequently used place lists in the general form:

```
*XX1
p11
p12
p13
*XX2
p21
p22
...
p23
```

where XXn are 3-letter aliases (preceded with asterisks) you wish to use for the place list, and the “pnm”s are the places (either 3-letter station identifiers or state abbreviations preceded with “@”s). For example, a file having the following entries:

```
*LCL
den
bjc
bkf
apa
lic
fnl
*PAC
@OR
@WA
@CA
```

defines two aliases, one called LCL for several sites around Denver and one called PAC for the 3 Pacific Ocean border states. Then set the environment variable WEATHER_REGIONS to be the name of this file. WEATHER will then recognize any of the aliases you specify in a data request (preceded by an “@”) and expand them to the definitions in you alias file. For example, if the above example file is used, the you may use the place @lcl to refer to the place list den,bjc,bkf,apa,lic,fnl and the place @pac to refer to the list of states OR,WA and CA.

APPENDIX C: USING WEATHER TO VIEW ARCHIVED WEATHER DATA

If you have an archived WEATHER dataset and later recover it, you may use WEATHER

to view the data. WEATHER will need to know which directory you put the recovered database and a definition of “today” for this database. You can tell WEATHER this using the “archive” command inside of WEATHER or with the -D directory -d YYYYMMDD commands on the startup command line.

If the recovered dataset does not have a setup that matches the normal (or real-time) database, you can create your own WEATHER configuration file and then use the -CO option on the command line to specify a configuration other than the default. See your system administrator to get a copy of the real-time weather configuration file that includes instructions on how to set up a new configuration to match your dataset archives.

APPENDIX D: CURRENTLY AVAILABLE WEATHER SUBCOMMANDS

This appendix lists the available WEATHER subcommands, and the types of data type retrieve. However, since local WEATHER installations may have more or less types of data available, and since the types of data available are constantly changing, expect that there are some elements of this list that may be obsolete or irrelevant. The WEATHER command “COMMANDS” can always be used to generate an up-to-date list of the available subcommands.

Listed here by class are the names of the WEATHER subcommands. Many of the subcommands can referred to using multiple names, in which case, the alternate names are listed in parentheses. A brief description of the data returned by each command then follows.

A. RAW WEATHER OBSERVATIONS:

CARIB (BERMUDA) Obs from Bermuda/Carib Sea region
CMAN CMAN and offshore buoy observations
COAST (CGD) Coast Guard station weather obs
METAR Surface weather observations
RADAR Coded Summaries of WSR-57 radars
RECON Reconnaissance aircraft observations
SA (SAO, HOURLY) Raw surface observations (Obsolete after July '96, see METAR)
SHIP SHIP/BUOY/CMAN obs (crude output)
SYNOPTIC Raw Synoptic weather obs in WMO fmt
UA (UPPER) Soundings in raw WMO format

B. DECODED WEATHER OBSERVATIONS:

PROFILER Horizontal winds from the profiler network stations.
METARDECODE Decoded hourly weather obs
METARFULLDECODE Really decoded surface obs
SADECODE Decoded hourly weather obs (Obsolete, see METARDECODE)
SAFULLDECODE Really decoded surface obs (Obsolete, see METARFULLDEC)
SHIPD Partially decoded ship obs
UADECODE Decoded Soundings
UACLASS Decoded Soundings in NCAR's CLASS format
WPROF Vertical winds from the profiler network stations.

C. PUBLIC FORECAST PRODUCTS:

CITY (METRO) NWS forecasts for metro areas (becoming obsolete, see ZONES)
EXTENDED NWS 3-5 day extended forecasts
STATE NWS state forecasts
ZONES NWS Zone forecasts (e.g. MA011, or BOS)

D. MISCELLANEOUS PUBLIC WEATHER PRODUCTS:

CLIMO Daily weather/climatology summaries
EARTHQUAKE Earthquake reports from around the globe

HURR (TROPICAL) Tropical weather/hurricane stmts
RECORD Record weather event statements
RECREATION (SKI) Forecasts/reports from park/ski areas
STORM Severe storm observations/damage rpts
TAB Daily tabulations of nationwide sever estorm rpts
WARNINGS Weather warnings

E. AVIATION RELATED PRODUCTS:

AIRMET (SIGMET) FAA significant weather statements.
FDWINDS Upper level winds forecast for aviation
FT (TERMINAL) Airport terminal area forecasts
PIREPS (ACARS) Pilot Weather Observations

F. CURRENT WEATHER AND FORECAST DISCUSSIONS:

CONVECTION NSSFC Convection Forecasts
FOREDISS (DISC) NWS local forecast discussions
LONGRANGE (30DAY) Various (10-90 day) forecasts
NATIONAL National/Global forecast discussions

G. RAW FORECAST MODEL/NWS OUTPUT:

AVNMOS MOS forecasts statistics from the AVN run
ETA (FOUS) ETA FOUS (raw ETA output)
FP4 NWS numerical forecasts for locales.
MODEL A combination of various other model outputs.
MOS (LFMMOS) LFM MOS (regression fcasts)
MRFMOS - Day 1-7 Temp/Precip/Cloud forecasts
NGM NGM FOUS (raw NGM output)
NGMMOS NGM MOS (NGM regression fcasts)
MODEL NGM/ETA FOUS + LFM/NGM MOS

H. OTHER PRODUCTS

ADMIN NMC admin reports (model status, etc)
ALL Every possible report from certain cities (depends on local setup)
STATIONS (STN) Info on observing stations/sites

I. SPECIAL GRIDDED DATASET PRODUCTS

(these products may not be available in all implementations of WEATHER.)

EXTNGM (ENGM) - NGM gridded data interpolated to specific locations
EXTETA (EETA)- ETA gridded data interpolated to specific locations
EXTRUC (ERUC)- ETA gridded data interpolated to specific locations
ETAPROF - High vertical resolution ETA gridded data interpolated to specific locations.
EXTAVN (EAVN) - AVN gridded data interpolated to specific locations
EXTMRF - MRF gridded data interpolated to specific locations

APPENDIX E: ENTERING COMMANDS TO A WEATHER PROMPT

WEATHER recognizes several special commands to help you efficiently use the program in prompt mode. These commands are designed to help you recall and edit command you type in response to WEATHER's prompts. These rules are generally similar to those used by the C-Shell/T-Shell. These rules are summarized below.

Table 3: Rules for typing commands to a WEATHER prompt

When you type a....	The response is....
Regular Character (a,B,1..)	That character is added at the position of the cursor
Backspace	The previous character deleted
Delete or CTRL-D	The character under the cursor deleted
CTRL-U	The entire line is deleted
CTRL-K	The line from the cursor onwards deleted
CTRL-A	The cursor moved to the beginning of your response
CTRL-E	The cursor moved to the end of your response
CTRL-B	The cursor moved backwards one character
CTRL-F	The cursor moved forwards on character
UpArrow or CTRL-P	Recall the previous command in the history list
DownArrow or CTRL-N	Recall the next command in the history list
CTRL-L	Show commands in the history list (except menu mode)
!n (n is a number, e.g. !12)	Recall command "n" from the history list