

## 1997 EXPLANATION OF OBSERVATIONS BY REFERENCE NUMBER

Observational records have been kept continuously since August 31, 1979. Station moved to 6515 Oakwood Dr. FAIRFAX CO. (POST OFFICE ADDRESS FALLS CHURCH) on Feb.8, 1986- LATITUDE 38° 50' 25" LONGITUDE 77° 09' 58". This is about 2.7 miles north and 1/3 of a mile west of the earlier location. THIS NEW LOCATION IS ABOUT 1.8 MILES ENE OF ANNANDALE, VA., INSIDE THE BELTWAY AND IS JUST NE OF BELVEDERE ELEMENTARY SCHOOL (FAIRFAX CO. PUBLIC SCHOOL). THE ALTITUDE IS 360 FEET ABOVE MEAN SEA LEVEL.

### 1. DATE: MONTH - DAY - YEAR

#### TEMPERATURE - #2 AND #4

The maximum and minimum temperatures are read from a 1996 upgraded Nimbus digital thermometer and recorded on a daily observation sheet to the nearest 1/10 of a degree but are rounded off when entered on the monthly observation sheet. Example: 50.5°F would be recorded 51°F.

### 2. TEMP. °F MAX. - MAXIMUM TEMPERATURE DEGREES F FOR DATE

Maximum temperature in degrees F for a 24 hour period from midnight until midnight at exactly 5 feet above ground level.

#### TIME #3 AND #5

The time of the maximum and minimum are read from a Nimbus digital thermometer made by Sensor Instruments Co., Inc. Concord, NH

### 3. HR. OF MAX. - TIME THE MAXIMUM TEMPERATURE OCCURS

Time of maximum temperature in 24 hr. time. Time taken from a Nimbus digital thermometer and/or the Weksler thermograph.

### 4. TEMP. °F MIN. - MINIMUM TEMPERATURE DEGREES F FOR DATE

Minimum temperature in degrees F for a 24 hour period from midnight until midnight at exactly 5 feet above ground level.

### 5. HR. OF MIN. - TIME THE MINIMUM TEMPERATURE OCCURS

Time of minimum temperature in 24 hr. time. Time taken from a Nimbus digital thermometer and/or the Weksler thermograph.

### 6. TEMP. RANGE - DAILY TEMPERATURE RANGE

Temperature range in degrees F obtained by subtracting the minimum temp. from the maximum temp. for the day.

### 7. TEMP. MEAN - MEAN TEMPERATURE IN DEGREES F FOR DATE

Mean temperature equals the maximum temperature plus the minimum temperature and divide the sum by two.

### 8. MEAN CHANGE - MEAN TEMPERATURE CHANGE IN DEGREES F FROM YESTERDAY

Change in today's mean compared to yesterday's mean temp. or yesterday's mean temp. minus today's mean.

### 9. GROUND TEMP.- GROUND TEMPERATURE IN DEGREES F

The ground temp. is taken remotely with a thermometer probe at a depth of one foot sealed in wax to prevent corrosion. Observation taken at sunset.

#### SOLAR RADIATION #10 AND #11

The Nimbus Digital Solar Radiation instrument is used to help in the determination of sky cover. If the sky is covered with thin cirrus and significant solar radiation is passing through, a remark will be made to the effect that sunlight is passing through high thin clouds.

### 10. SKY A.M. - AMOUNT OF AVERAGE CLOUD SKY COVERAGE SEEN FROM SUNRISE TO NOON

Cloud cover in A.M. is taken from sunrise until noon. 0 = clear (0 to 33% sky coverage), 1 = partly cloudy (34% to 66% sky coverage), 2 = cloudy (67% to 100% sky coverage).

11. **SKY P.M. - AMOUNT OF AVERAGE CLOUD SKY COVERAGE SEEN FROM NOON TO SUNSET**

See #10 above as explanation is the same except for time.

12. **PRECIP. MELTED - MELTED PRECIPITATION MEASURED IN HUNDREDTHS OF AN INCH**

Starting Jan. 1, 1983 the melted precipitation for 24 hour period will be recorded from midnight to midnight measured in .01 of an inch. T means Trace, less than .01 inches of precipitation. From Aug. 31, 1979 to Dec. 31, 1982 precipitation was recorded sunset to sunset. In the event a measurement could not be made at midnight then it will be noted under remarks. Precipitation is checked with both a nine inch diameter and a four inch diameter gauge.

13. **MAX. 1 HR. PRECIP. - MAXIMUM PRECIPITATION OCCURRING IN A ONE HOUR PERIOD FOR DATE**

This information is observed from a NIMBUS remote precipitation monitor which is battery operated and thus will record data during power outages that occur during thunderstorms. Instrument is reset manually. If the precip. pd. goes through midnight and it can't be determined if the max. pd. of precip. occurred before or after MT a note will be made under remarks and the observation will be recorded on the date it is thought to have occurred or will be omitted.

14. **MAX. 5 MIN. PRECIP.- MAXIMUM PRECIPITATION OCCURRING IN A FIVE MINUTE PERIOD FOR DATE**

This information is recorded from a NIMBUS remote precipitation monitor which is battery operated and thus will record data during power outages that occur during thunderstorms. Instrument is reset manually. ALSO NOTE THE ADDED REMARKS OF #13 AS THIS ALSO APPLIES TO #14.

15. **FROZEN PRECIP. - FROZEN PRECIPITATION MEASURED IN TENTHS OF AN INCH FOR DATE**

Amount of new snow or frozen precipitation recorded for a 24 hour period from midnight until midnight starting Jan. 1, 1983, from 1979 to Dec. 1982 it was sunset to sunset. Measurement will be taken when the snowfall has just stopped before melting caused by sunlight, etc. In deep snows the frozen precip. #15 and snow on the ground measurements #16 will differ because of packing of new snow by the weight of overlaying snow. If the precipitation is other than snow it should be noted under remarks #39. The amount is measured in tenths of an inch. This represents the max. frozen precipitation depth on the ground at any one time. If a measurement cannot be made or determined at midnight a measurement will be made as near to midnight as possible and recorded as to time under remarks. Starting 1996 on deep snows (over five inches) a separate reading will be taken on snowfall. **The snow board is cleared each hour or before snow depth reaches five inches this is called the five inch running total method (RTM) and will be recorded under remarks as an additional observation.**

16. **SNOW ON GROUND- SNOW TOTAL MEASURED IN TENTHS OF AN INCH AT SUNSET**

Snow total is a measure of the average amount of snow or frozen precipitation on the ground at sunset measured in inches. Example: if 3 inches of snow is recorded in shadows and one inch in sunny areas an average of 2 inches would be recorded. When T or trace is used it means there are only some patches of snow left in shadowed or colder areas. Trace or T will be recorded until all snow patches have melted in the area where the station is located. Numbers 15 and 16 should be the same if it is a very cold day and if no previous snow was on the ground. Numbers 15 and 16 could be different if some of the new snow melted before the sunset observations. Also the decrease in snow on the ground #16 may decrease on a day when the maximum temperature is less than 32° due to melting or settling due to the heat of the sun in the open areas. In very deep snows 15 and 16 could be different because of settling or packing with temperatures even much below freezing.

17. **START TIME - FIRST STARTING TIME OF PRECIPITATION**

The time precipitation started in 24 hour time. Time of 1 means midnight or continued precipitation through time midnight. Time may not be given if less than .01 precip. fell. Time listed would be when enough precipitation had fallen to wet the pavement or approximately .005 inches. Snowfall time is recorded when the first snow flakes were observed during daylight hours and not later than .01 hundreds snowfall when melted when falling during late hours of night or early hours of morning when readings are recorded on a precipitation recorder not directly observed.

**\*\*\* The following only applies to observations between Aug. 1979 to Dec. 1982: If a time is listed for the date but no precipitation is recorded then the precipitation started between sunset and midnight and the amount would be recorded in the following day.**

18. **END TIME - FIRST ENDING TIME OF PRECIPITATION**

Time precipitation ended - see #17 for additional information. End of precipitation is most often determined from the precipitation recorder when the last precipitation dot has been recorded. One dot equals about .005 of an inch rain.

**19. DATE: MONTH - DAY - YEAR****20. START TIME - SECOND STARTING TIME OF PRECIPITATION**

If more than one time is given for a date then two distinct periods (interval of >1 to 2 hours separating periods of precipitation) of precipitation occurred. If more than two periods of precipitation occurred a note should be found under remarks #39, example: period of off and on showers from 1400-2000 hours. Often a time will not be given when only a T of precipitation has been recorded.

**21. END TIME - SECOND ENDING TIME OF PRECIPITATION**

SEE #20 ABOVE FOR MORE INFORMATION.

**22. WIND DOT AVE. - UNITS TO REPRESENT THE AVERAGE WIND SPEED**

The number of wind dots from midnight until midnight. One dot represents about 618 turns of the wind cups. THIS IS TWICE THE NUMBER OF TURNS OR 1/2 THE NUMBER OF DOTS BEFORE NOV. 8, 1987.

**WIND VELOCITY #23 AND #24**

The Anemometer for the average velocity is about eight feet above the ground.

The other anemometer for max. wind velocity is about five feet above the apex of the house roof at 32 feet above the ground but is still protected from the wind by tall trees to the north and south but is moderately well exposed to east or west winds.

**23. MAX. SUNRISE. - MAXIMUM WIND SUNSET YESTERDAY TO SUNRISE TODAY**

The maximum wind recorded from sunset to sunrise as recorded by a maximum wind gust recorder. Recorded by the Vigilant wind gust cups and a Nimbus wind monitor recorder.

**24. MAX. SUNSET. - MAXIMUM WIND SUNRISE TODAY TO SUNSET TODAY**

The maximum wind recorded for the 12 hour period from sunrise to sunset as recorded by a maximum wind gust recorder. If a morning observation is not recorded for #23 then the maximum wind gust for 24 represents the maximum wind gust to occur in a 24 hour period from sunset to sunset. Recorded by the Nimbus wind monitor.

**25. MAX. R.H. - MAXIMUM HUMIDITY FOR 24 HR. PERIOD MT TO MT**

Starting on Jan. 1st 1991 the maximum relative humidity reading will be taken from a NIMBUS digital remote humidity sensor with an accuracy of 2% from (20%-100%) at 70° F and 5% from (20%-100%) at 32° F. This instrument will record the max. and min. relative humidity during the set period. The hydrothermograph may be used if a max. relative humidity occurs at or near midnight. When the observer is absent for a few days the maximum relative humidity readings will be taken from a hydrothermograph for the 24 hour period of midnight until midnight. At higher readings (80% or more) errors of plus or minus 8% may occur.

**26. MIN. R.H. - MINIMUM HUMIDITY FOR 24 HR. PERIOD MT TO MT**

Starting on Jan. 1st the minimum relative humidity reading will be taken from a NIMBUS digital remote humidity sensor with an accuracy of 2% from (20%-100%) at 70° F and 5% from (20%-100%) at 32° F. This instrument will record the max. and min. relative humidity during the set period. The hydrothermograph may be used if a min. relative humidity occurs at or near midnight. When the observer is absent for a few days the minimum relative humidity readings will be taken from a hydrothermograph for the 24 hour period of midnight until midnight. At lower readings (20% or less) errors of plus or minus 8% may occur. READINGS OF LESS THAN 16% ARE GENERALLY CHECKED WITH A WET AND DRY BULB THERMOMETER.

**27. MAX. BAROMETER - MAXIMUM BAROMETER READING FOR DATE**

The maximum barometer reading taken from a barograph for the 24 hour period of midnight until midnight. The barometer reading will also be checked against a NIMBUS digital barometer sensor.

**28. MIN. BAROMETER - MINIMUM BAROMETER READING FOR DATE**

The minimum barometer reading taken from a barograph for the 24 hour period of midnight until midnight. The barometer reading will also be checked against a NIMBUS digital barometer sensor.

**29. AVE. BAROMETER - AVERAGE BAROMETER READING FOR THE DATE**

Mean barometer equals the maximum barometer plus the minimum barometer and divide the sum by two.

**30. BAR. CHANGE - AVE. CHANGE MEAN BAROMETER READING FOR DATE COMPARED TO YESTERDAY'S**

Change in today's mean barometer compared to yesterday's mean barometer reading.

**31. BAR. & PRECIP. - BAROMETER READING AT THE ONSET OF PRECIPITATION**

The atmospheric pressure when precipitation started and if there is more than one period of precipitation then the pressure is taken at the time of the first precipitation.

**32. MAP FEATURE - MAP FEATURE INFLUENCING TODAY'S WEATHER**

Code for map features through the use of the following numbers. The feature listed is the one most effecting the day's weather. If more than one is recorded then they both were responsible for the day's weather and in the order listed.

- |                                      |   |
|--------------------------------------|---|
| 8 Low pressure                       | 11 Cold fronts                              |
| 9 High Pressure                      | 21 Warm fronts                              |
| 9R. Elongated high Pressure          | 24 Stationary front                         |
| 10 Air Mass ( mT- maritime tropical) | 23 Upper level disturbance or a trough line |
|                                      | 26 Occluded front                           |

**33. FEAT. LOCATION - LOCATION OF THE INFLUENCING MAP FEATURE GIVEN BY STATE USING THE POST OFFICE'S STATE ABBREVIATIONS.**

If C is placed after a state abbreviation it means the feature is located off the coast of that state or G for off the gulf coast, A for off the Atlantic coast. The feature location is given for a time between 6:00 and 8:00 A.M. local time.

**34. HP. / LP. TRACK - HIGH OR LOW PRESSURE TRACK DIRECTION**

Only given for High or Low Pressures as to the direction they track (often NE at our latitude)

**35. FRONT DIRECT. - DIRECTION OF FRONTAL APPROACH**

Indicates the direction of frontal approach, if there is more than one front then the direction of nearest front will be given.

**36. FRONT INTEN. - FRONTAL INTENSITY**

THE STRENGTH OF THE FRONT INFLUENCING THE AREA'S WEATHER FOR THE DATE.

- S = STRONG FRONT [greater than 10 degrees temp. difference on either side of the front]
- A V E. = AVERAGE FRONT [approximately 5 to 10° of temp. change on opposite sides of the front]
- W = WEAK FRONT [less than 5° temp. change across front]

**37. TIME PASS. - TIME OF FRONTAL PASSAGE**

If there are two fronts in 24 hours then two times will be given and the second front will be recorded under remarks # 39 and 24 hour time will be used.

**38. DATE: MONTH - DAY - YEAR**

**39. REMARKS**

Remarks will include other observations of interest.

Example: SNOW to WATER ratio, coldest since Dec. 23,1989

**Symbols commonly used in remarks column are as follows:**

- LP. = Low Pressure
- LPT. = Low Pressure Trough
- HP. = High Pressure
- HPR. = High Pressure Ridge
- CF. = Cold Front
- WF. = Warm Front
- OF. = Occluded Front
- SF. = Stationary Front
- TH. = Thunder but no storm observed
- L. = Lightning but no storm observed
- SH. = Shower
- SHS. = Showers
- TS. = Thunderstorm
- TSH. = Thundershower
- DCF. = Double Cold Front or 2 Fronts in 24 hours
- TP. = Triple Point Low- The point where the occluded front separates into a WF. and a CF.