
National Weather Service in Lubbock, Texas
2015
Calendar
Briscoe County
Photo courtesy
of Todd Lindley

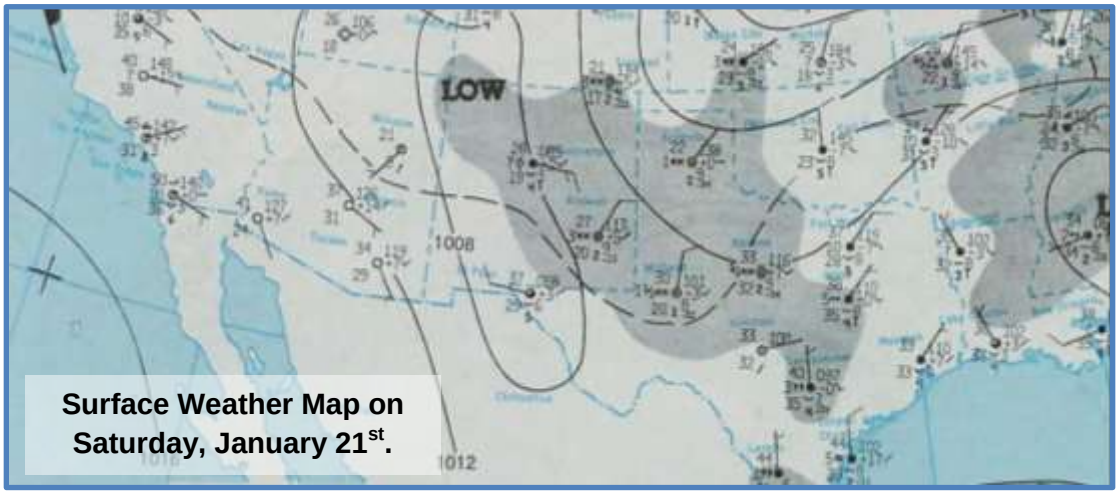
The Blizzard of January 20-21, 1983

In January of 1983, a fierce snowstorm paralyzed almost all of the Texas Panhandle and South Plains from the 20th through the 21st. This was one of the largest winter storms ever experienced across the region. The heavy wet snow shattered snowfall records in Lubbock after 16.9 inches accumulated by the 21st! Snow on the ground prior to this storm created a deep snow pack of 25.0 inches at the Lubbock Airport. Plainview measured 18 inches with up to 15 inches observed in Dalhart. Ground and air travel came to a halt stranding many persons. Since this storm hit on a Thursday and Friday, school kids were perhaps the most elated as they received a four-day weekend to play in the historic snow.

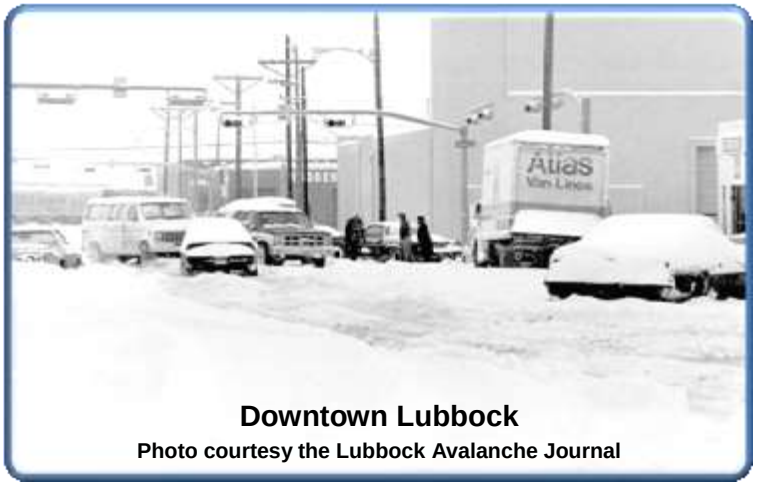
Snowfall from the storm:

~some of the largest totals reported across the area~

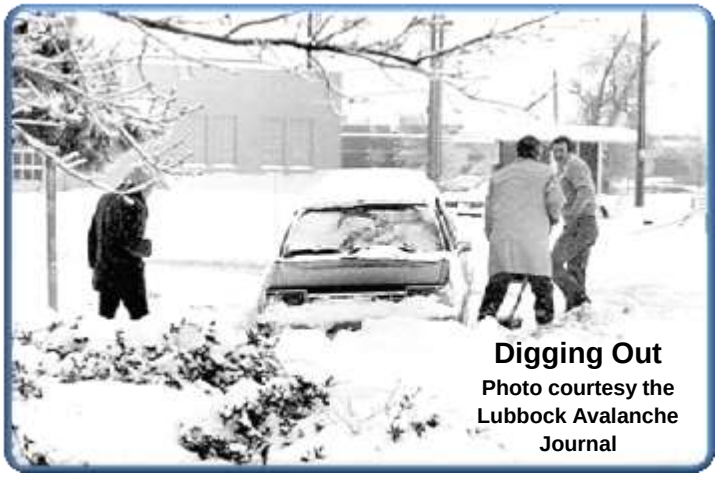
Dimmitt and Plainview: 18 inches
Abernathy: 17 inches
Tulia: 15 inches
Floydada and Tahoka: 12 inches
Brownfield and Crosbyton: 10 inches



Surface Weather Map on Saturday, January 21st.



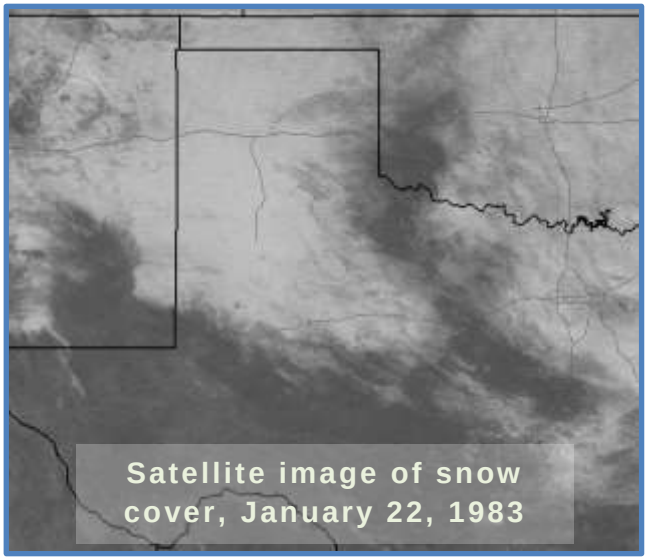
Downtown Lubbock
Photo courtesy the Lubbock Avalanche Journal



Digging Out
Photo courtesy the Lubbock Avalanche Journal

TOP 5 Snow events at Lubbock

1	Jan 20-21, 1983	16.9”
2	Feb 2-5, 1956	14.8”
3	Feb 20-21, 1961	12.1”
4	March 14-16, 1969	11.7”
5	Nov 25-26, 1980	10.8”



Satellite image of snow cover, January 22, 1983

Lubbock National Weather Service

January 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on twitter at: www.twitter.com/ **NWSLubbock**		Follow us on facebook at: www.facebook.com/ **NWSLubbock**	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	**1** Normals: 53 / 26 0.02 76-1997 / -2-1919 Lubbock Records sr 752 am - sunrise ss 550 pm – sunset **New Year's Day**	**2** 53 / 26 0.02 77-2009 / -2-1979 sr 752 am ss 551 pm Quadrantids Meteor Shower (peaks Jan 2-3)	**3** 53 / 26 0.01 83-2006 / -2-1947 sr 752 am ss 552 pm
4 53 / 26 0.02 76-1918 / -9-1947 sr 752 am ss 553 pm Full Moon	**5** 53 / 26 0.02 82-1927 / -4-1971 sr 752 am ss 553 pm	**6** 53 / 26 0.02 79-1927 / 0-1971 sr 753 am ss 554 pm	**7** 53 / 26 0.02 80-2006 / 6-1968 sr 753 am ss 555 pm	**8** 53 / 26 0.02 82-1969 / 3-1967 sr 753 am ss 556 pm	**9** 53 / 26 0.02 79-2002 / 2-1920 sr 753 am ss 557 pm	**10** 53 / 26 0.01 76-1928 / -10-1930 sr 752 am ss 558 pm
11 54 / 26 0.02 76-1911 / -7-1918 sr 752 am ss 559 pm	**12** 54 / 26 0.02 77-1953 / -10-1918 sr 752 am ss 559 pm	**13** 54 / 26 0.02 79-1957 / -16-1963 sr 752 am ss 600 pm Last Quarter	**14** 54 / 26 0.01 82-1928 / 3-1963 sr 752 am ss 601 pm	**15** 54/ 26 0.02 80-1911 / 4-1963 sr 752 am ss 602 pm	**16** 54/ 26 0.02 80-1974 / 6-1930 sr 752am ss 603 pm	**17** 54/ 26 0.02 87-1914 / -2-1930 sr 751 am ss 604 pm
18 54/ 26 0.03 79-1914 / -5-1930 sr 751 am ss 605 pm	**19** 54/ 26 0.02 80-2000 / 0-1963 sr 751 am ss 606 pm Martin Luther King Jr. Day (Observed)	**20** 54/ 27 0.02 78-1986 / 7-1940 sr 750 am ss 607 pm New Moon	**21** 55/ 27 0.02 81-1950 / -4-1918 sr 750 am ss 608 pm	**22** 55/ 27 0.02 79-2009 / -6-1918 sr 750 am ss 609 pm	**23** 55/ 27 0.03 83-1972/ 3-1983 sr 749 am ss 610 pm	**24** 55/ 27 0.02 83-1970 /-1-1915 sr 749 am ss 611 pm
25 55/ 27 0.03 79-1952 / 7-1940 sr 748 am ss 612 pm	**26** 55/ 27 0.02 78-1975 / 7-1966 sr 748 am ss 613 pm First Quarter	**27** 55/ 27 0.03 78-1970 / 5-1925 sr 747 am ss 614 pm	**28** 55/ 27 0.02 80-2003 / 6-2014 sr 746 am ss 615 pm	**29** 56/ 27 0.03 80-1911 / 1-1948 sr 746 am ss 616 pm	**30** 56/ 27 0.02 80-1967 / 6-1951 sr 745 am ss 617 pm	**31** 56/ 28 0.03 84-1911 / 2-1985 sr 745 am ss 618 pm

A Brief History of the NWS in Lubbock

For a complete history, visit our webpage
www.srh.noaa.gov/lub/?n=lubhistory

1940s

Nov 6, 1946: The U.S. Weather Bureau Office in Lubbock is officially established at the airport. Leo Weaver becomes the office's first Meteorologist-in-Charge (MIC).


"OLD JACK FROST" HAS ARRIVED!—At least that's what

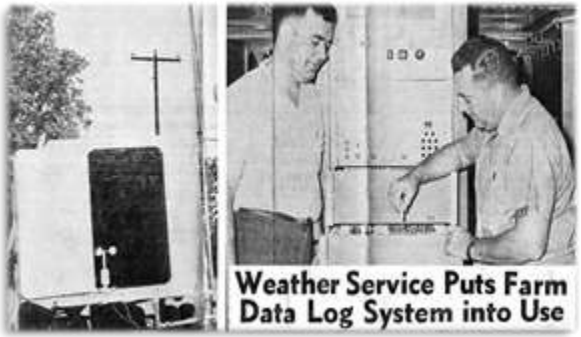
October 7, 1948: Harold "Jack" Frost becomes the 2nd MIC at the Lubbock Weather Bureau. Mr. Frost would serve out the remaining 31 years of his Federal Service in Lubbock and in 1970 was awarded a Department of Commerce Gold Medal for his outstanding leadership in the severe weather preparedness program.

1950s

1954: The WSR-1 radar is installed at the Lubbock Airport. This radar was salvaged from a WWII bomber and was converted using funds from the City of Lubbock, Lubbock County and the Lubbock Board of City Development.

1960s

June 1964: A mobile weather logger is activated to record dozens of soil temperatures and wind data at farms across the South Plains. The information greatly improves agricultural planning and decision making.


Weather Service Puts Farm Data Log System into Use

1970s

August 27, 1972: Linda Djerf becomes the first female meteorologist at the Lubbock NWS office.

December 1993: The Lubbock NWS forecast office moves from the airport to the Science Spectrum building. Daily weather observations continue at the airport.

1989-1994: NWS Lubbock's forecast area is gradually reduced in size from 77 to 24 counties across West Texas to accommodate new forecast offices in Amarillo, Midland, San Angelo, and El Paso.

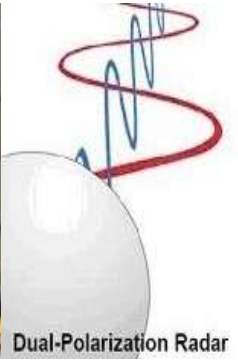
April 4, 1994: NEXRAD Doppler radar is commissioned at the airport. The radar offers significant improvements over the outgoing WSR-74C installed in August 1972.

1980s

1990s

February 8, 2004: Justin Weaver becomes the 8th MIC at NWS Lubbock and remains in this capacity over 10 years later.

2000s


Dual-Polarization Radar

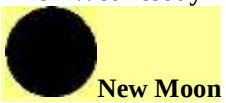
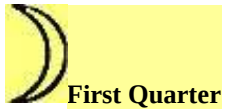
March 27, 2013: Lubbock's Radar is upgraded to dual polarization. This allows for better discrimination between various types of precipitation.

2010s

Lubbock National Weather Service

February 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 56 / 28 0.03 83-1963 / -7-1951 Lubbock Records sr 744 am - sunrise ss 619 pm - sunset	**2** 56 / 28 0.02 80-2003 / -4-1951 sr 743 am ss 620 pm Groundhog Day	**3** 56 / 28 0.03 80-1934 / 4-1972 sr 742 am ss 621 pm  Full Moon	**4** 57 / 28 0.02 82-1925 / 3-1989 sr 742 am ss 622 pm	**5** 57 / 28 0.03 81-1937 / 3-1982 sr 741 am ss 622 pm	**6** 57 / 28 0.02 80-2009 / 4-1956 sr 740 am ss 623 pm	**7** 57 / 29 0.03 84-1918 / -3-1933 sr 739 am ss 624 pm
8 57 / 29 0.03 83-1951 / -17-1933 (all-time) sr 738 am ss 625 pm	**9** 58 / 29 0.03 83-1976 / 0-1933 sr 737 am ss 626 pm	**10** 58 / 29 0.03 84-1962 / 1-1929 sr 737 am ss 627 pm	**11** 58 / 29 0.03 85-1962 / 6-1981 sr 736 am ss 628 pm  Last Quarter	**12** 58 / 29 0.02 86-1962 / 9-1958 sr 735 am ss 629 pm	**13** 59 / 30 0.03 81-1979 / 7-1963 sr 734 am ss 630 pm	**14** 59 / 30 0.03 87-1979 / 12-2004 sr 733 am ss 631 pm Valentine's Day
15 59 / 30 0.02 87-2014 / 8-1951 sr 732 am ss 632 pm	**16** 59 / 30 0.03 85-2011 / 13-1979 sr 731 am ss 633 pm Presidents' Day	**17** 59 / 31 0.03 85-1970 / 0-1978 sr 730 am ss 634 pm	**18** 60 / 31 0.02 83-1996 / -2-1978 sr 729 am ss 635 pm Ash Wednesday  New Moon	**19** 60 / 31 0.03 83-1986 / 2-1978 sr 728 am ss 635 pm	**20** 60 / 31 0.03 82-1996 / 4-1918 sr 727 am ss 636 pm	**21** 60 / 31 0.02 84-1996 / 6-1964 sr 725 am ss 637 pm
22 61 / 32 0.03 87-1996 / 12-1911 sr 724 am ss 638 pm	**23** 61 / 32 0.02 85-2009 / 9-1914 sr 723 am ss 639 pm	**24** 61 / 32 0.03 89-1918 / 1-1960 sr 722 am ss 640 pm	**25** 61 / 32 0.02 86-1989 / -8-1960 sr 721 am ss 641 pm  First Quarter	**26** 62 / 33 0.03 85-1918 / 8-1935 sr 720 am ss 642 pm	**27** 62 / 33 0.03 81-2006 / 10-1934 sr 718 am ss 642 pm	**28** 62 / 33 0.03 89-2006 / 7-1962 sr 717 am ss 643 pm
Follow us on facebook at: www.facebook.com/ **NWSLubbock**				NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500		Follow us on twitter at: www.twitter.com/ **NWSLubbock**

How to Receive Timely Weather Information

NOAA Weather Radio (NWR)

NWR is one of the best ways to get information directly from the National Weather Service (NWS). A NWR can even be programmed to audio alert when watches and warnings are issued for your area, which can be a literal life-saver during the overnight hours when you are sleeping.

There are many different ways to receive weather information. Some methods are more reliable than others, but it is always a good practice to have several means to obtain the most critical watches and warnings in case one fails. Once you receive the warning you can then implement your severe weather plan. To take protective actions, first you must get the watch or warning. **THE RESPONSIBILITY IS YOURS!** A tornado warning with 20 minutes of lead time is of no value if you have no way to get the warning. Don't be the next person to state that, "It came without warning." Just because you didn't get the warning doesn't mean there wasn't a warning. Take action now so you will be prepared when the weather takes a turn for the worse.

Commercial Broadcast Media

Local TV is the primary source of warning information reaching a majority of the people. On air meteorologists can add valuable details to the NWS products through the aid of visual means. In addition, radio stations will often transmit various amounts of weather information. TV and radio are often a great source for urgent weather information, though you must know when to tune in to get it.

Mobile Devices

Smartphones can receive urgent weather information through several different methods. Since June of 2012, all cell phones are equipped to receive Wireless Emergency Alerts (WEA). WEA messages appear like a short text message and convey only basic information. WEA messages are only created for tornado, flash flood, extreme wind, dust storm, hurricane, ice storm, and blizzard warnings.

The Internet

In addition to the NWS website (www.weather.gov), there are a variety of other sites that have access to NWS products.

Other Sources

Sirens, where available, are useful in alerting people who are outdoors that something dangerous is happening and they should take shelter. In addition, **Friends and Family** are often a big reason many people choose to seek shelter, though they should never be a primary method of receiving a warning. **Social Media** is also becoming an ever increasing way to share weather information, though it does also have several drawbacks.

Lubbock National Weather Service

March 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 63 / 33 0.03 89-2006 / 5-1922 Lubbock Records sr 716 am - sunrise ss 644 pm – sunset	**2** 63 / 34 0.03 86-1974 / -2-1922 sr 715 am ss 645 pm	**3** 63 / 34 0.03 88-2009 / 7-1943 sr 714 am ss 646 pm	**4** 63 / 34 0.03 89-2009 / -1-1917 sr 712 am ss 647 pm	**5** 64 / 34 0.04 90-1916 / 11-1989 sr 711 am ss 647 pm  Full Moon	**6** 64 / 35 0.03 87-1934 / 10-1943 sr 710 am ss 648 pm	**7** 64 / 35 0.03 88-2006 / 11-1996 sr 709 am ss 649 pm
8 64 / 35 0.03 87-1918 / 12-1967 sr 807 am ss 750 pm Daylight Saving Time begins	**9** 65 / 35 0.04 88-1911 / 13-1969 sr 806 am ss 751 pm	**10** 65 / 36 0.03 88-1911 / 4-1948 sr 805 am ss 751 pm	**11** 65 / 36 0.03 95-1989 / 2-1948 sr 803 am ss 752 pm	**12** 66 / 36 0.04 94-1989 / 10-1948 sr 802 am ss 753 pm	**13** 66 / 36 0.03 91-1916 / 12-1950 sr 801 am ss 754 pm  Last Quarter	**14** 66 / 37 0.04 86-1972 / 13-1954 sr 759 am ss 754 pm
15 66 / 37 0.03 88-2013 / 17-1947 sr 758 am ss 755 pm	**16** 67 / 37 0.04 87-1966 / 16-1923 sr 757 am ss 756 pm	**17** 67 / 37 0.03 90-2011 / 18-1970 sr 755 am ss 757 pm St. Patrick's Day	**18** 67 / 37 0.04 88-1916 / 11-1923 sr 754 am ss 757 pm	**19** 68 / 38 0.04 87-1995 / 11-1923 sr 753 am ss 758 pm	**20** 68 / 38 0.03 90-1916 / 8-1965 sr 751 am ss 759 pm Spring Equinox (5:45 pm)  New Moon	**21** 68 / 38 0.04 93-1997 / 17-1983 sr 750 am ss 800 pm
22 68 / 38 0.04 86-1935 / 18-1952 sr 749 am ss 800 pm	**23** 69 / 39 0.04 84-2009 / 13-1952 sr 747 am ss 801 pm	**24** 69 / 39 0.04 88-1929 / 22-1965 sr 746 am ss 802 pm	**25** 69 / 39 0.04 90-1998 / 19-2013 sr 745 am ss 803 pm	**26** 70 / 40 0.04 88-1956 / 16-1965 sr 743 am ss 803 pm	**27** 70 / 40 0.04 94-1971 / 12-1931 sr 742 am ss 804 pm  First Quarter	**28** 70 / 40 0.04 90-1963 / 16-1931 sr 741 am ss 805 pm
29 70 / 40 0.04 91-2012 / 18-1944 sr 739 am ss 806 pm	**30** 71 / 41 0.03 91-2010 / 16-1987 sr 738 am ss 806 pm	**31** 71 / 41 0.04 95-1946 / 19-1931 sr 737 am ss 807 pm	 Follow us on twitter at: www.twitter.com/ **NWSLubbock**		NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	 Follow us on facebook at: www.facebook.com/ **NWSLubbock**

HAIL

Above is a picture of a record breaking hailstone that fell in Vivian, SD on July 23, 2010. The hailstone was:

- 8.0” in diameter
- 18.625” in circumference
- 1.9375 pounds

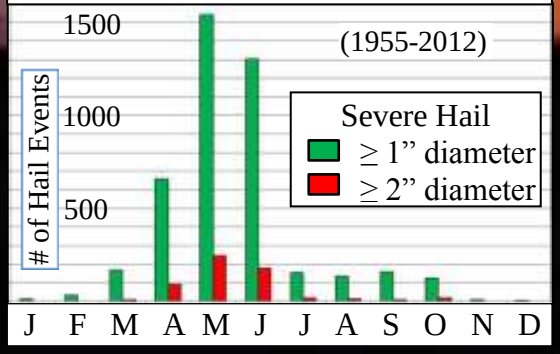
This hailstone broke the record for diameter (previously 7.0” in Aurora, Nebraska on June 22, 2003) and weight (previously 1.67 lbs in Coffeyville, Kansas on September 3, 1970). The Aurora stone maintains the circumference record of 18.75”.

Grapefruit to softball size hail that fell in northeast Lubbock on June 17, 2013.

Rising air in thunderstorms carries water droplets high into the atmosphere where temperatures are well below freezing. Water at these high altitudes will subsequently freeze on contact with frozen water droplets that are already present. The stronger the thunderstorm, the greater the lift to keep a hailstone suspended where it continues to grow through this process. The stone will eventually fall toward the ground once it weighs too much for the rising air to hold it aloft.

Hail Diameter Size	Description
1/4"	Pea
1/2"	Plain M&M
3/4"	Penny
7/8"	Nickel
1"	Quarter
1 1/4"	Half Dollar
1 1/2"	Walnut/Ping Pong Ball
1 3/4"	Golf Ball
2"	Hen Egg/Lime
2 1/2"	Tennis Ball
2 3/4"	Baseball
3"	Teacup/Large Apple
4"	Grapefruit
4 1/2"	Softball
4 3/4"- 5"	Computer CD-DVD

Monthly Hail Reports for the South Plains



Hail damage sustained southwest of Lubbock on April 29, 2012.

April 2015

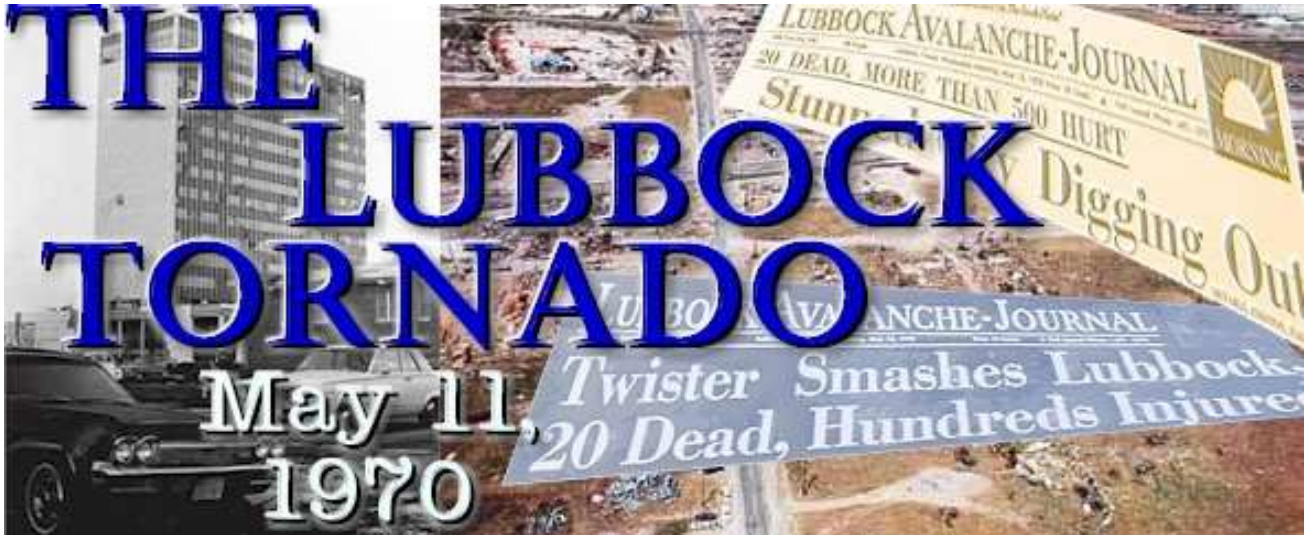
Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			**1** Normals: 71 / 41 0.04 96-1946 / 22-1948 Lubbock Records sr 735 am - sunrise ss 808 pm - sunset **April Fool's Day**	**2** 72 / 41 0.04 92-2011 / 20-1936 sr 734 am ss 809 pm	**3** 72 / 42 0.04 94-2011 / 26-1975 sr 733 am ss 809 pm	**4** 72 / 42 0.04 92-1928 / 18-1920 sr 731 am ss 810 pm Full Moon **Total Lunar Eclipse**
5 72 / 42 0.04 92-2006 / 21-1917 sr 730 am ss 811 pm **Easter Sunday**	**6** 73 / 43 0.04 96-1972 / 21-1936 sr 729 am ss 812 pm	**7** 73 / 43 0.04 93-1930 / 21-1936 sr 727 am ss 812 pm	**8** 73 / 43 0.05 91-1930 / 23-1938 sr 726 am ss 813 pm	**9** 74 / 44 0.04 94-1939 / 23-1973 sr 725 am ss 814 pm	**10** 74 / 44 0.04 93-1972 / 22-2013 sr 724 am ss 815 pm	**11** 74 / 44 0.04 94-1972 / 25-1932 sr 722 am ss 815 pm Last Quarter
12 74 / 44 0.04 96-1972 / 22-1997 sr 721 am ss 816 pm	**13** 75 / 45 0.05 91-2006 / 26-1957 sr 720 am ss 817 pm	**14** 75 / 45 0.04 93-2006 / 27-1933 sr 719 am ss 818 pm	**15** 75 / 45 0.04 92-2006 / 25-2014 sr 717 am ss 818 pm	**16** 76 / 46 0.05 100-1925 / 31-1947 sr 716 am ss 819 pm	**17** 76 / 46 0.05 94-2006 / 23-1921 sr 715 am ss 820 pm	**18** 76 / 47 0.04 96-1987 / 29-1953 sr 714 am ss 821 pm New Moon
19 76 / 47 0.05 92-2001 / 25-2013 sr 712 am ss 821 pm	**20** 77 / 47 0.05 93-1925 / 30-1933 sr 711 am sr 822 pm	**21** 77 / 48 0.04 98-1989 / 28-1918 sr 710 am ss 823 pm **Lynids Meteor Shower (Peak Apr 21-22)**	**22** 77 / 48 0.06 100-1989 / 29-1927 sr 709 am ss 824 pm **Earth Day**	**23** 78 / 48 0.05 97-1989 / 30-1928 sr 708 am ss 824 pm	**24** 78 / 49 0.05 95-1996 / 25-2013 sr 707 am ss 825 pm	**25** 78 / 49 0.06 104-2012 / 35-1927 sr 706 am ss 826 pm First Quarter
26 78 / 49 0.05 96-1943 / 29-1947 sr 704 am ss 827 pm	**27** 79 / 50 0.06 97-1996 / 27-1920 sr 703 am ss 827 pm	**28** 79 / 50 0.06 94-1992 / 35-1994 sr 702 am ss 828 pm	**29** 79 / 50 0.06 97-2011 / 31-1968 sr 701 am ss 829 pm	**30** 80 / 51 0.06 94-2013 / 33-1918 sr 700 am ss 830 pm	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

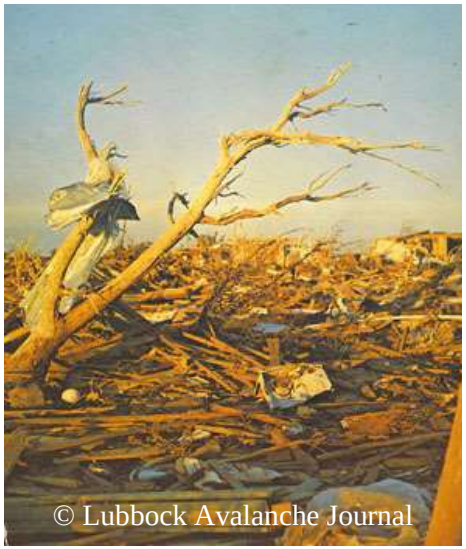
What Happened?

On May 11th, 1970, the Lubbock landscape was forever altered by a devastating tornado. The second of two tornadoes that hit the city that night touched down around 9:30 in the evening southwest of downtown. The tornado moved northeast, destroying buildings, airplanes and taking human lives until it dissipated around the Lubbock Municipal Airport shortly after 10:00 pm.



What Did the Tornado Do?

The tornado killed 26 people and injured more than 1500 along its 8.5 mile long track, and covered about 15 square miles. The tornado caused extensive damage to the northeast side of Lubbock and resulted in approximately 250 million dollars worth of damage (in 1970 dollars), equivalent to about 1.55 billion now.



Interesting Facts:

- The tornado was initially 1 1/2 miles wide, but narrowed to about 1/4 mile wide when it reached the airport
- 10,000 automobiles were damaged or destroyed
- 119 aircraft were demolished at the airport
- 600 apartment units were demolished**,** 250 businesses damaged or destroyed, and 8,800 family units were damaged (430 which were destroyed)
- In downtown Lubbock, an estimated 80% of all plate glass windows were smashed
- 3.25 inches of precipitation (rain and hail) fell at the airport that night, with baseball- to grapefruit-sized hail falling in some locations around Lubbock
- The tornado was rated F5 on the old Fujita Tornado Damage Scale - the highest a tornado can be rated
- No known photographs were taken of the tornado, which is attributed to the fact that the storm occurred after the sun had set
- Dr. Theodore "Ted" Fujita determined that all but one of the deaths occurred along the path of suction spots. These suction spots, which result in localized areas of increased damage, are created when smaller-scale vortices develop and rotate around the larger parent tornado.

Lubbock National Weather Service

May 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 80 / 51 0.05 **1** 96-2012 / 32-1970 Lubbock Records sr 659 am - sunrise ss 830 pm – sunset	80 / 51 0.06 **2** 97-2012 / 30-1967 sr 658 am ss 831 pm
80 / 52 0.05 **3** 98-2012 / 27-2013 sr 657 am ss 832 pm Full Moon	81 / 52 0.06 **4** 104-1947 / 35-1935 sr 656 am ss 833 pm	81 / 52 0.05 **5** 99-2012 / 34-1953 sr 655 am ss 833 pm Cinco De Mayo	81 / 53 0.06 **6** 99-2000 / 32-1917 sr 654 am ss 834 pm	81 / 53 0.05 **7** 100-2009 / 29-1917 sr 654 am ss 835 pm	82 / 53 0.06 **8** 102-1989 / 31-1938 sr 653 am ss 836 pm	82 / 54 0.06 **9** 97-2011 / 38-1961 sr 652 am ss 836 pm
82 / 54 0.06 **10** 99-2000 / 33-1918 sr 651 am ss 837 pm Mother's Day	83 / 54 0.07 **11** 101-2000 / 37-1930 sr 650 am ss 838 pm Last Quarter	83 / 55 0.06 **12** 98-1962 / 35-1960 sr 649 am ss 839 pm	83 / 55 0.08 **13** 100-2006 / 37-1971 sr 649 am ss 839 pm	83 / 55 0.07 **14** 100-1996 / 35-1953 sr 648 am ss 840 pm	84 / 56 0.06 **15** 103-1996 / 34-1967 sr 647 am ss 841 pm	84 / 56 0.07 **16** 102-1996 / 37-1945 sr 646 am ss 842 pm
84 / 56 0.08 **17** 101-1996 / 41-1986 sr 646 am ss 842 pm	84 / 57 0.08 **18** 103-2003 / 42-1916 sr 645 am ss 843 pm New Moon	85 / 57 0.08 **19** 105-1996 / 42-1971 sr 644 am ss 844 pm	85 / 57 0.08 **20** 102-2006 / 40-1931 sr 644 am ss 845 pm	85 / 58 0.09 **21** 101-1989 / 39-1967 sr 643 am ss 845 pm	85 / 58 0.09 **22** 105-1996 / 40-1931 sr 643 am ss 846 pm	86 / 58 0.09 **23** 105-2000 / 45-1917 sr 642 am ss 847 pm
86 / 58 0.09 **24** 109-2000 / 40-1930 sr 642 am ss 847 pm 87 / 61 0.10 **31** 102-1916 / 43-1983 sr 639 am ss 852 pm	86 / 59 0.09 **25** 102-2012 / 44-1924 sr 641 am ss 848 pm Memorial Day First Quarter	86 / 59 0.09 **26** 101-1945 / 43-1950 sr 641 am ss 849 pm	86 / 59 0.08 **27** 103-1984 / 48-1961 sr 640 am ss 849 pm	87 / 60 0.10 **28** 104-2011 / 43-1917 sr 640 am ss 850 pm	87 / 60 0.10 **29** 104-2011 / 38-1947 sr 639 am ss 851 pm	87 / 60 0.09 **30** 103-1998 / 45-1983 sr 639 am ss 851 pm

Number of "observed" tornadoes - 1950 to 2014

Parmer	Castro	Swisher	Briscoe	Hall	Childress
Total 48	Total 57	Total 66	Total 44	Total 46	Total 26
F3+ 3	F3+ 1	F3+ 5	F3+ 3	F3+ 2	F3+ 0
Bailey	**Lamb**	**Hale**	**Floyd**	**Motley**	**Cottle**
Total 50	Total 82	Total 126	Total 56	Total 21	Total 31
F3+ 2	F3+ 7	F3+ 3	F3+ 3	F3+ 2	F3+ 1
Cochran	**Hockley**	**Lubbock**	**Crosby**	**Dickens**	**King**
Total 28	Total 59	Total 94	Total 52	Total 32	Total 19
F3+ 1	F3+ 6	F3+ 3	F3+ 2	F3+ 1	F3+ 0
		F5 1			
Yoakum	**Terry**	**Lynn**	**Garza**	**Kent**	**Stonewall**
Total 25	Total 31	Total 42	Total 19	Total 22	Total 24
F3+ 0	F3+ 0	F3+ 1	F3+ 0	F3+ 0	F3+ 0

South Plains Tornado Trivia

Longest Tracked Tornado:

- From NE of Muleshoe to NE of Pampa on April 17, 1970 = 130 miles
- Entire track in Lubbock NWS area: From NW of Levelland to NE of Muleshoe on June 17, 1980 = 45 miles

Largest Tornado:

- May 31, 1968 – Multiple vortex tornado that tracked near Edmonson was estimated to be 2 miles wide.

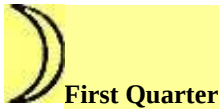
Strongest Tornado:

- May 11, 1970 - F5 tornado tracked through Lubbock and produced $250 million in damage, killed 26 people, and injured 1500

June 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

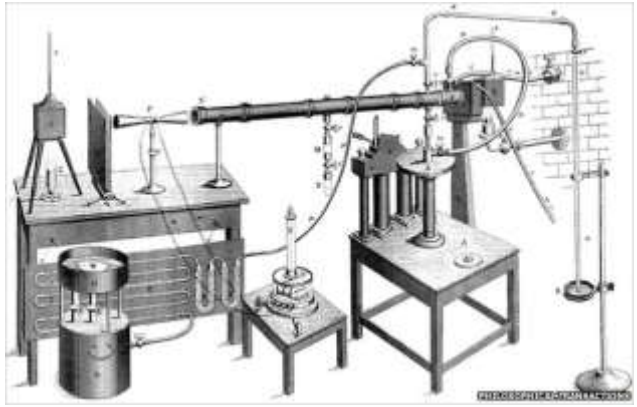
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Normals: 88 / 61 0.11 **1** 107-1998 / 45-1964 Lubbock Records sr 638 am - sunrise ss 852 pm - sunset	88 / 61 0.10 **2** 107-1998 / 39-1917 sr 638 am ss 853 pm  Full Moon	88 / 61 0.11 **3** 104-1998 / 43-1919 sr 638 am ss 854 pm	89 / 62 0.12 **4** 106-2013 / 47-1970 sr 638 am ss 854 pm	89 / 62 0.11 **5** 106-1990 / 45-1928 sr 638 am ss 855 pm	89 / 62 0.12 **6** 107-1990 / 45-1917 sr 637 am ss 855 pm
89 / 62 0.11 **7** 103-1994 / 45-1915 sr 637 am ss 856 pm	89 / 63 0.11 **8** 106-1981 / 43-1915 sr 637 am ss 856 pm	90 / 63 0.12 **9** 107-1981 / 50-1955 sr 637 am ss 857 pm  Last Quarter	90 / 63 0.10 **10** 105-1917 / 47-1955 sr 637 am ss 857 pm	90 / 63 0.11 **11** 105-2008 / 50-1955 sr 637 am ss 858 pm	90 / 64 0.10 **12** 105-2001 / 53-1951 sr 637 am ss 858 pm	90 / 64 0.11 **13** 105-2011 / 52-1945 sr 637 am ss 858 pm
91 / 64 0.11 **14** 106-1939 / 44-1947 sr 637 am ss 859 pm Flag Day	91 / 64 0.10 **15** 109-1939 / 49-1927 sr 637 am ss 859 pm	91 / 65 0.10 **16** 108-2011 / 49-1981 sr 637 am ss 859 pm  New Moon	91 / 65 0.10 **17** 107-1924 / 53-1999 sr 637 am ss 900 pm	91 / 65 0.10 **18** 107-1924 / 47-1945 sr 637 am ss 900 pm	91 / 65 0.10 **19** 107-2011 / 52-1945 sr 637 am ss 900 pm	92 / 65 0.09 **20** 108-1935 / 49-1973 sr 638 am ss 901 pm
92 / 66 0.10 **21** 107-1981 / 54-1973 sr 638 am ss 901 pm Father's Day Summer Solstice (11:38 am)	92 / 66 0.10 **22** 106-1978 / 50-1927 sr 638 am ss 901 pm	92 / 66 0.09 **23** 107-1980 / 56-1964 sr 638 am ss 901 pm	92 / 66 0.09 **24** 110-1990 / 56-1957 sr 639 am ss 901 pm  First Quarter	92 / 66 0.10 **25** 110-2011 / 54-1940 sr 639 am ss 901 pm	92 / 66 0.08 **26** 112-2011 / 53-1958 sr 639 am ss 901 pm	92 / 67 0.09 **27** 114-1994 / 56-1958 (all-time) sr 639 am ss 902 pm
92 / 67 0.08 **28** 108-1980 / 56-1946 sr 640 am ss 902 pm	92 / 67 0.09 **29** 107-1957 / 57-1948 sr 640 am ss 902 pm	93 / 67 0.09 **30** 106-1957 / 57-1940 sr 641 am ss 902 pm	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on facebook at: www.facebook.com/ **NWSLubbock**	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Influential Climate Change Scientists through history

Decades before becoming the contentious issue of today, principles of climate change were established through laborious scientific methods. And long before the perception of any concern with increasing greenhouse gases, the problem was defined and solutions identified.

This month, we present several historic Climate Change scientists and their discoveries that have moved into the current climate change arena.

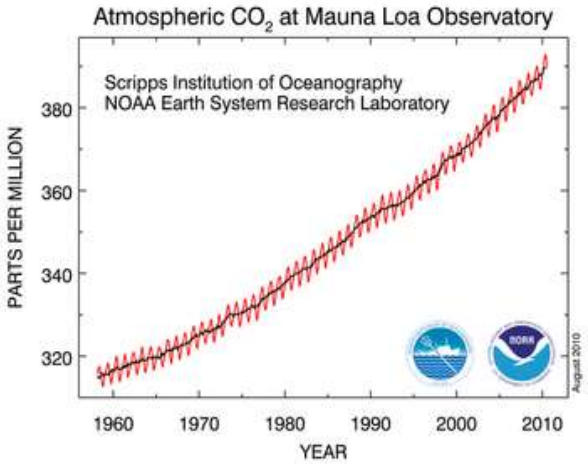
John Tyndall (1820-1893) Tyndall, a prominent Irish physicist, was first to explain the heat in the Earth's atmosphere in terms of ability of various gases to absorb radiant heat (1859). He was first to correctly measure absorptive powers of gases, including water vapor, methane and carbon dioxide (CO_2). Below is a depiction of Tyndall's apparatus for measuring radiant heat and absorption by gases.



Svante Arrhenius (1859-1927) Arrhenius was a Swedish physicist/chemist who calculated how changes in levels of carbon dioxide in the atmosphere would alter the surface temperature through the greenhouse effect.

Arrhenius' greenhouse law (1896): *If the quantity of carbonic acid [CO_2] increases in geometric progression, the augmentation of the temperature will increase nearly in arithmetic progression*

Charles David Keeling (1928-2005) Keeling was an American Scientist who implemented monitoring of carbon dioxide levels at the Mauna Loa Observatory in the 1950s. The Keeling Curve (lower left) shows the progressive buildup of the greenhouse gas and was largely responsible for alerting the world to possible anthropogenic contributions to the greenhouse effect.



President Bush awarded David Keeling the National Medal of Science in 2002 for his work on global climate change

Guy Callendar (1898-1964) Callendar, an English steam engineer and inventor first compiled measurements of temperature and CO_2 concentrations to conclude that global land temperatures had increased and could be explained as an effect of the increase in carbon dioxide. Callendar went on to publish 10 major scientific articles between 1938 and 1964 on global warming, infrared radiation, and anthropogenic carbon dioxide.

Quiz: Who said "This generation has altered the composition of the atmosphere on a global scale through … a steady increase in carbon dioxide from the burning of fossil fuels."?

a) **Barack Obama (2011)**

b) **Al Gore (2006)**

c) **Bill Nye (2013)**

d) **Lyndon B. Johnson (1965)**

If you chose LBJ, you were correct! This was said during a special message to Congress in February 1965.

July 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 93 / 67 0.08 **1** 105-1994 / 56-1924 Lubbock Records sr 641 am - sunrise ss 902 pm – sunset Full Moon	**2** 93 / 67 0.08 106-1989 / 56-1944 sr 641 am ss 902 pm	**3** 93 / 67 0.08 108-1983 / 54-1929 sr 642 am ss 901 pm	**4** 93 / 67 0.07 105-1987 / 56-1924 sr 642 am ss 901 pm Independence Day
5 93 / 67 0.07 104-1971 / 49-1915 sr 643 am ss 901 pm	**6** 93 / 67 0.07 105-1994 / 53-1946 sr 643 am ss 901 pm	**7** 93 / 68 0.07 103-1998 / 51-1952 sr 644 am ss 901 pm	**8** 93 / 68 0.06 106-2009 / 51-1952 sr 644 am ss 901 pm Last Quarter	**9** 93 / 68 0.07 107-2009 / 56-1952 sr 645 am ss 900 pm	**10** 93 / 68 0.06 109-1940 / 58-1968 sr 645 am ss 900 pm	**11** 93 / 68 0.07 104-1970 / 57-1999 sr 646 am ss 900 pm
12 93 / 68 0.06 105-1933 / 57-1999 sr 647 am ss 859 pm	**13** 93 / 68 0.06 107-1933 / 54-1953 sr 647 am ss 859 pm	**14** 93 / 68 0.07 108-1933 / 55-1990 sr 648 am ss 859 pm	**15** 93 / 68 0.06 105-2001 / 58-1926 sr 648 am ss 858 pm New Moon	**16** 93 / 68 0.06 105-2001 / 58-1935 sr 649 am ss 858 pm	**17** 93 / 68 0.06 105-1989 / 59-1930 sr 650 am ss 857 pm	**18** 93 / 68 0.05 103-1978 / 60-1935 sr 650 am ss 857 pm
19 93 / 68 0.06 108-1936 / 55-1947 sr 651 am ss 856 pm	**20** 93 / 68 0.05 105-1936/ 59-1971 sr 651 am ss 856 pm	**21** 93 / 68 0.06 102-1966 / 57-1988 sr 652 am ss 855 pm	**22** 93 / 68 0.05 104-2003 / 55-1915 sr 653 am ss 855 pm	**23** 93 / 68 0.06 104-2001 / 54-1915 sr 653 am ss 854 pm	**24** 93 / 68 0.05 104-1958 / 57-1915 sr 654 am ss 853 pm First Quarter	**25** 93 / 68 0.05 104-1940 / 59-1956 sr 655 am ss 853 pm
26 93 / 68 0.06 105-1995 / 58-1959 sr 656 am ss 852 pm	**27** 93 / 68 0.05 106-1995 / 57-1933 sr 656 am ss 851 pm Delta Aquarids Meteor Shower (Peak July 27-28)	**28** 93 / 68 0.06 105-1995 / 54-2005 sr 657 am ss 851 pm	**29** 93 / 68 0.05 102-1948 / 60-2004 sr 658 am ss 850 pm	**30** 93 / 68 0.05 104-1946 / 60-2000 sr 658 am ss 849 pm	**31** 93 / 68 0.06 104-1934 / 56-1971 sr 659 am ss 848 pm Full Moon	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500

Local Groups Provide Great Information to the National Weather Service

NWS Cooperative Observers (COOP)

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the nation's weather and climate observing network of, by, and for the people. The COOP was formally created in 1890 under the Organic Act. More than 11,000 volunteers take observations on farms, in urban and suburban areas, in National Parks, on seashores, and on mountain tops. The data are representative of the places people live, work and play.

The NWS Lubbock COOP program has about 40 observers that collect valuable meteorological data every day from around the South Plains, Rolling Plains and Southern Texas Panhandle. The observations are widely used by surrounding NWS offices, River Forecast Centers at Tulsa, OK, and Fort Worth, TX, and the National Climatic Data Center (NCDC). Additionally, dozens more observers send in precipitation information when it rains, sleets or snows.

SKYWARN Storm Spotters

There are over 1000 trained SKYWARN storm spotters across the 24 counties in the South Plains region served by NWS Lubbock. These volunteers come from all walks of life but most are affiliated with their local law enforcement agencies or fire departments. We also have an amateur radio storm spotting team, the South Plains Storm Spotting Team, who cover the majority the region. Most of our spotters attend annual training conducted by the NWS in the spring. The training is geared toward keeping them safe while navigating around and interpreting what they see in close proximity to severe thunderstorms. The vital information from their "eyes on the sky" are relayed to our office and help provide ground truth to what forecasters are seeing on radar and in other meteorological data, and greatly help warning forecasters make their critical decisions.

If you are interested in becoming a spotter or taking a spotter training class in person or online, check the Lubbock National Weather Service web site at: http://www.weather.gov/lub/?n=skywarn-2013. Spotter classes are generally taught between February and April, though several online modules are available year-round.

SKYWARN spotter & NWS employee Bruce Haynie intercepts a tornado near Turkey on March 28, 2007.

In addition to the COOP observers and SKYWARN Storm Spotters, many other groups provide great information to the NWS. These groups include, but are not limited to:

- Sheriff's Offices
- Media
- Emergency Management Officials
- Public

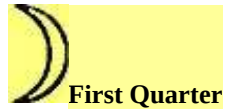
Several people participate in SKYWARN recognition day at NWS Lubbock.

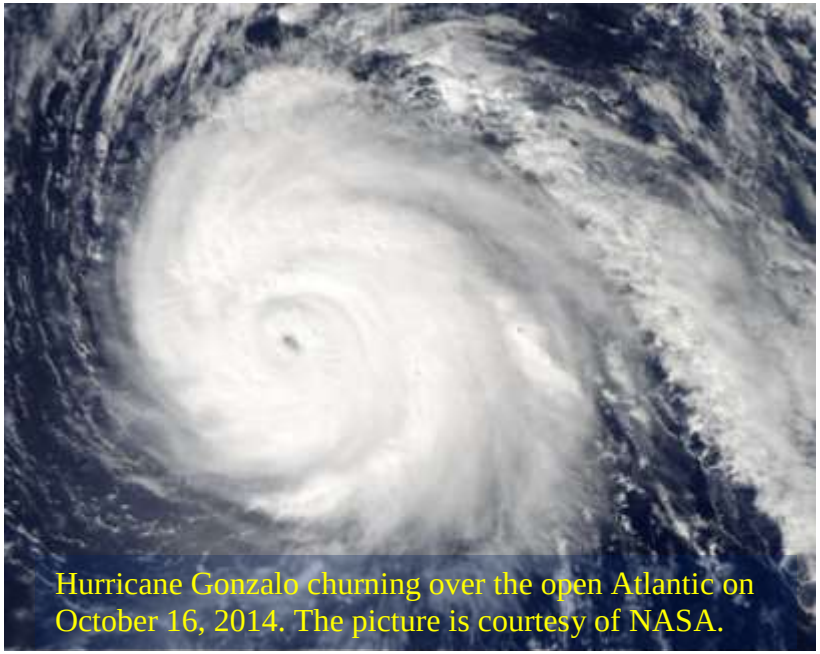
National Weather Service Lubbock would like to express our sincere appreciation to the many COOP observers, SKYWARN storm spotters and to everyone who provides us with valuable information and services!

August 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 93 / 68 0.05 **1** 106-1966 / 55-1925 Lubbock Records sr 700 am - sunrise ss 848 pm – sunset
2 93 / 68 0.06 105-2012 / 54-1936 sr 700 am ss 847 pm	**3** 93 / 68 0.07 107-1944 / 56-1921 sr 701 am ss 846 pm	**4** 93 / 68 0.06 105-2003 / 57-1915 sr 702 am ss 845 pm	**5** 92 / 68 0.07 102-2011 / 57-1915 sr 703 am ss 844 pm	**6** 92 / 68 0.06 105-2013 / 57-1990 sr 703 am ss 843 pm  Last Quarter	**7** 92 / 68 0.06 104-2003 / 58-1971 sr 704 am ss 842 pm	**8** 92 / 68 0.06 105-2003 / 58-1990 sr 705 am ss 841 pm
9 92 / 68 0.07 103-2011 / 51-1946 sr 705 am ss 840 pm	**10** 92 / 68 0.06 104-2011 / 55-1915 sr 706 am ss 839 pm	**11** 92 / 67 0.06 103-1936 / 56-1931 sr 707 am ss 838 pm Perseids Meteor Shower (peak Aug 11-12)	**12** 92 / 67 0.05 107-1936 / 54-1979 sr 707 am ss 837 pm	**13** 92 / 67 0.06 107-1936 / 54-1920 sr 708 am ss 836 pm	**14** 92 / 67 0.06 103-1946 / 53-1920 sr 709 am ss 835 pm  New Moon	**15** 92 / 67 0.06 103-1982 / 56-1920 sr 710 am ss 834 pm
16 92 / 67 0.06 104-1943 / 55-1931 sr 710 am ss 833 pm	**17** 92 / 67 0.06 103-1978 / 56-1931 sr 711 am ss 832 pm	**18** 91 / 67 0.06 103-1994 / 55-1943 sr 712 am ss 830 pm	**19** 91 / 67 0.05 103-1994 / 58-1950 sr 712 am ss 829 pm	**20** 91 / 66 0.06 103-1943 / 54-1915 sr 713 am ss 828 pm	**21** 91 / 66 0.07 103-1930 / 52-1956 sr 714 am ss 827 pm	**22** 91 / 66 0.06 100-1999 / 58-1967 sr 715 am ss 826 pm  First Quarter
23 91 / 66 0.06 101-1985 / 54-1923 sr 715 am ss 825 pm **30** 89 / 64 0.07 104-2011 / 44-1915 sr 720 am ss 816 pm	**24** 91 / 66 0.06 101-1936 / 51-1916 sr 716 am ss 823 pm **31** 89 / 64 0.07 100-2014 / 43-1915 sr 721 am ss 814 pm	**25** 90 / 66 0.07 105-1936 / 54-1962 sr 717 am ss 822 pm	**26** 90 / 65 0.06 102-1922 / 51-2010 sr 717 am ss 821 pm	**27** 90 / 65 0.06 100-1931 / 53-1926 sr 718 am ss 820 pm	**28** 90 / 65 0.06 103-2011 / 54-1916 sr 719 am ss 818 pm	**29** 90 / 65 0.07 99-1943 / 51-1917 sr 719 am ss 817 pm  Full Moon



Hurricane Gonzalo churning over the open Atlantic on October 16, 2014. The picture is courtesy of NASA.

The Tropics

Water spilling over the Red Bluff Reservoir Dam for the first time in about 20 year. Picture taken on Sep. 24, 2014.

2014 Atlantic Tropical Season

The 2014 Atlantic hurricane season was relatively quiet, producing 8 tropical storms, 6 hurricanes, and 2 major hurricanes (long-term averages are 12, 6, and 2, respectively). Hurricane **Gonzalo** did briefly strengthen to a Category 4 storm, with sustained winds peaking at 145 mph, in mid-Oct. **Gonzalo** was the first Category 4 storm in the Atlantic since **Ophelia** in 2011. Although weakening, **Gonzalo** did strike Bermuda as a Category 2 storm, downing many trees, causing flooding and thousands of power outages.

2015 Atlantic Cyclone Names

Ana	Henri	Odette
Bill	Ida	Peter
Claudette	Joaquin	Rose
Danny	Kate	Sam
Erika	Larry	Teresa
Fred	Mindy	Victor
Grace	Nicholas	Wanda

Tropical Impacts Closer to Home

Texas again escaped without any direct tropical cyclone landfalls in 2014. However, the moisture from the remnants of Tropical Storm **Dolly** in the Gulf of Mexico combined with an upper level moisture tap from Hurricane **Norbert** in the eastern Pacific to bring widespread rains to West Texas in early Sep. Between Sep. 5th and 7th much of the South Plains and Rolling Plains recorded 1-2 inches, with localized 3 inch amounts over the western Texas Panhandle. Even more impressive, a prolonged stretch of periodic heavy rain visited northwest Texas in mid-Sep. when the remnants of eastern Pacific Hurricane **Odile** stalled in southeast New Mexico and West Texas. On the morning of Sep. 20th, one area of rain parked over Gail and dumped an incredible 10.81 inches, most of which fell in a 4 hour period. Parts of southeast New Mexico recorded a foot or more, which led to flooding but also filled Red Bluff Reservoir for the first time since the early 1990s. Lastly, eastern Pacific Hurricane **Vance** was a generous contributor of moisture for a system that brought widespread 1-2 inch rain totals to the South Plains Nov. 3rd-4th.

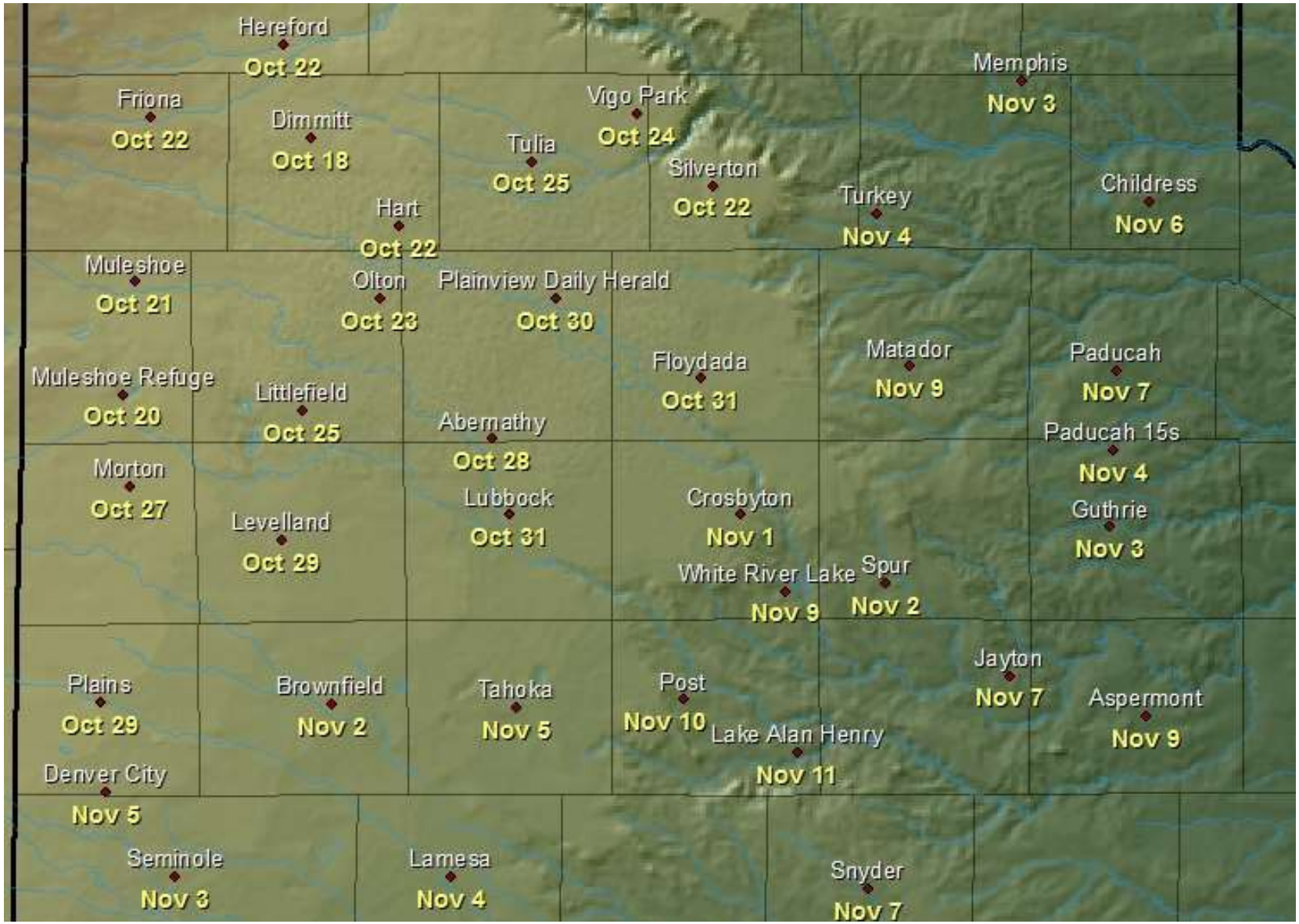
Lubbock National Weather Service

September 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		Normals: 89 / 64 0.08 **1** 104-2014 / 43-1915 Lubbock Records sr 721 am - sunrise ss 813 pm – sunset	89 / 64 0.07 **2** 101-1947 / 50-1955 sr 722 am ss 812 pm	88 / 63 0.09 **3** 101-2000 / 48-1974 sr 723 am ss 810 pm	88 / 63 0.08 **4** 101-2000 / 46-1915 sr 723 am ss 809 pm	88 / 63 0.09 **5** 102-2000 / 46-1961 sr 724 am ss 808 pm Last Quarter
87 / 62 0.09 **6** 103-1948 / 51-1918 sr 725 am ss 806 pm	87 / 62 0.09 **7** 99-2012 / 45-1918 sr 725 am ss 805 pm Labor Day	87 / 62 0.09 **8** 97-1985 / 47-2004 sr 726 am ss 804 pm	87 / 61 0.09 **9** 99-1984 / 47-1956 sr 727 am ss 802 pm	86 / 61 0.09 **10** 100-2000 / 47-1962 sr 727 am ss 801 pm	86 / 61 0.09 **11** 103-2000 / 47-1959 sr 728 am ss 800 pm	86 / 60 0.08 **12** 100-1930 / 44-1959 sr 729 am ss 758 pm
85 / 60 0.09 **13** 101-1930 / 43-1959 sr 729 am ss 757 pm New Moon	85 / 60 0.09 **14** 100-1965 / 42-1945 sr 730 am ss 756 pm	85 / 59 0.08 **15** 99-1965 / 42-1993 sr 731 am ss 754 pm	84 / 59 0.09 **16** 100-1965 / 42-1951 sr 731 am ss 753 pm	84 / 58 0.09 **17** 98-2005 / 42-1951 sr 732 am ss 751 pm	84 / 58 0.08 **18** 98-1997 / 43-1971 sr 733 am ss 750 pm	83 / 58 0.09 **19** 105-1930 / 42-1991 sr 733 am ss 749 pm
83 / 57 0.08 **20** 98-1977 / 41-1991 sr 734 am ss 747 pm	83 / 57 0.08 **21** 98-1998 / 33-1983 sr 735 am ss 746 pm First Quarter	83 / 56 0.09 **22** 98-1977 / 40-1995 sr 735 am ss 744 pm	82 / 56 0.08 **23** 98-1926 / 41-2009 sr 736 am ss 743 pm Autumnal Equinox (3:21 am)	82 / 56 0.09 **24** 97-1953 / 38-1989 sr 737 am ss 742 pm	82 / 55 0.08 **25** 100-2005 / 36-2000 sr 738 am ss 740 pm	81 / 55 0.08 **26** 99-1997 / 36-1926 sr 738 am ss 739 pm
81 / 55 0.08 **27** 100-1953 / 39-1942 sr 739 am ss 738 pm Full Moon Total Lunar Eclipse	81 / 54 0.07 **28** 98-1994 / 36-1918 sr 740 am ss 736 pm	80 / 54 0.07 **29** 97-2011 / 33-1916 sr 740 am ss 735 pm	80 / 53 0.07 **30** 99-1977 / 35-1985 sr 741 am ss 733 pm	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Average First Freeze Dates



In Lubbock, the earliest fall freeze occurred on October 7, 1952.
The latest fall freeze in Lubbock occurred on November 23, 2003.

October 2015

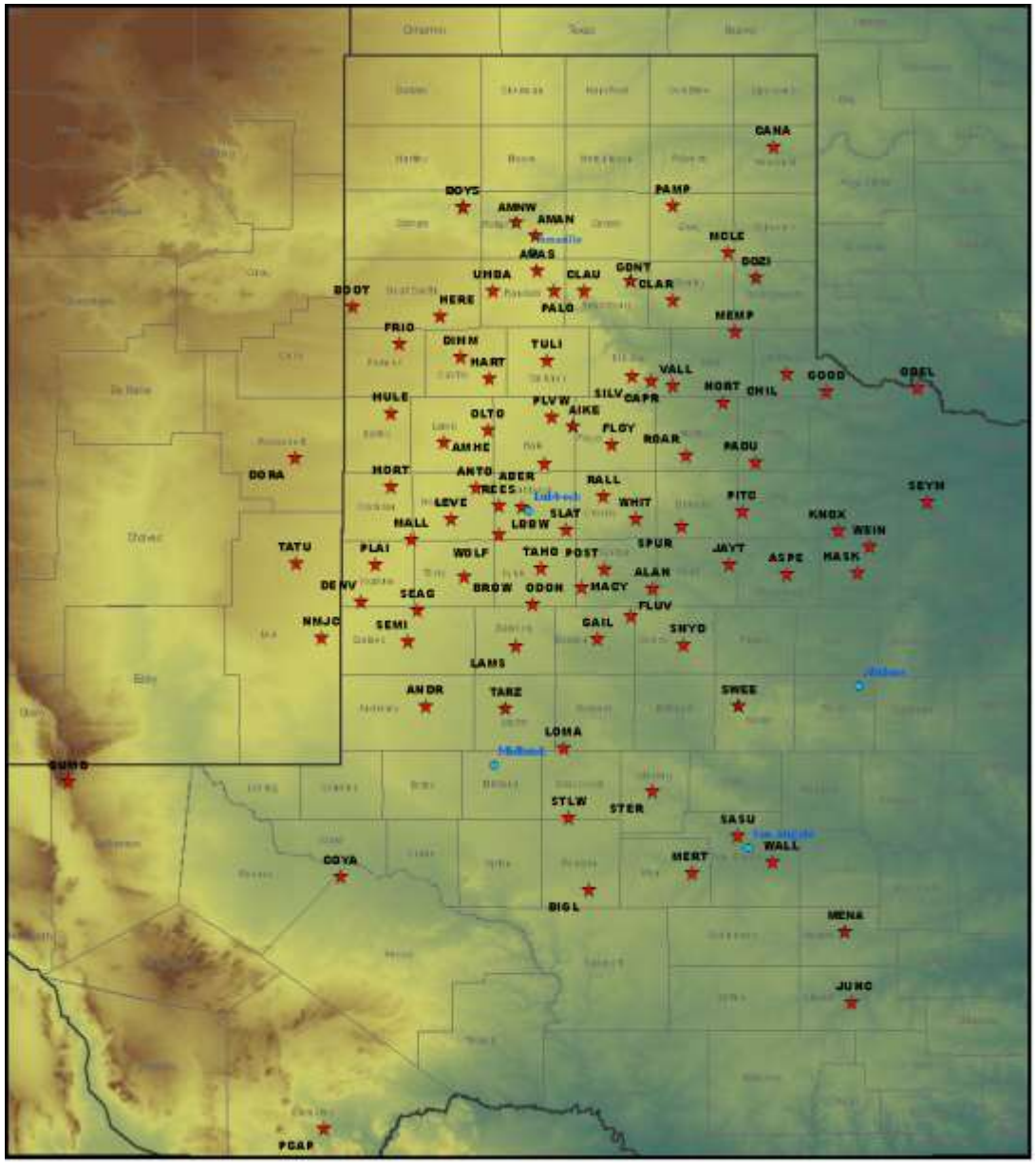
Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 80 / 53 0.07 **1** 98-2000 / 39-1985 Lubbock Records sr 742 am - sunrise ss 732 pm – sunset	79 / 53 0.07 **2** 99-2000 / 40-2009 sr 742 am ss 731 pm	79 / 52 0.06 **3** 100-2000 / 35-1961 sr 743 am ss 729 pm
79 / 52 0.06 **4** 96-2000 / 41-1961 sr 744 am ss 728 pm Last Quarter	79 / 52 0.07 **5** 97-1934 / 33-1932 sr 745 am ss 727 pm	78 / 51 0.07 **6** 94-1939 / 34-2001 sr 745 am ss 725 pm	78 / 51 0.07 **7** 98-1979 / 31-1952 sr 746 am ss 724 pm	78 / 51 0.07 **8** 98-1979 / 31-1976 sr 747 am ss 723 pm	77 / 50 0.07 **9** 93-1965 / 29-1970 sr 748 am ss 722 pm	77 / 50 0.07 **10** 93-1965 / 37-2009 sr 748 am ss 720 pm
77 / 50 0.08 **11** 93-1979 / 34-2009 sr 749 am ss 719 pm	77 / 49 0.07 **12** 92-1989 / 33-1969 sr 750 am ss 718 pm Columbus Day New Moon	76 / 49 0.06 **13** 92-1992 / 28-1969 sr 751 am ss 716 pm	76 / 49 0.07 **14** 93-2009 / 31-1969 sr 751 am ss 715 pm	76 / 48 0.07 **15** 92-1965 / 31-1966 sr 752 am ss 714 pm	75 / 48 0.07 **16** 92-2003 / 30-2001 sr 753 am ss 713 pm	75 / 48 0.06 **17** 93-1988 / 32-1999 sr 754 am ss 712 pm
75 / 47 0.07 **18** 90-2001 / 32-1968 sr 754 am ss 710 pm	74 / 47 0.06 **19** 92-1940 / 24-1917 sr 755 am ss 709 pm	74 / 47 0.06 **20** 93-2012 / 25-1916 sr 756 am ss 708 pm First Quarter	74 / 46 0.07 **21** 90-2003 / 26-1917 sr 757 am ss 707 pm Orionids Meteor Shower (Peak Oct 21-22)	74 / 46 0.06 **22** 89-1961 / 28-1945 sr 758 am ss 706 pm	73 / 46 0.06 **23** 91-2003 / 22-1917 sr 759 am ss 705 pm	73 / 45 0.05 **24** 91-1933 / 26-1929 sr 759 am ss 704 pm
72 / 45 0.05 **25** 91-1959 / 30-1955 sr 800 am ss 703 pm	72 / 44 0.05 **26** 91-2014 / 26-1913 sr 801 am ss 701 pm	72 / 44 0.05 **27** 87-1922 / 26-2012 sr 802 am ss 700 pm Full Moon	71 / 44 0.05 **28** 91-1943 / 25-1970 sr 803 am ss 659 pm	71 / 43 0.05 **29** 90-2003 / 20-1917 sr 804 am ss 658 pm	71 / 43 0.04 **30** 90-2010 / 18-1993 sr 804 am ss 657 pm	70 / 43 0.05 **31** 88-1934 / 20-1991 sr 805 am ss 656 pm Halloween

WEST TEXAS MESONET

(http://www.mesonet.ttu.edu/)



The West Texas Mesonet project began in 1999 to provide **free, real-time** weather and agricultural information for residents of the South Plains of West Texas. Over the years the project has grown well beyond the South Plains to include three observation towers in eastern New Mexico, sites in Guadalupe Mountains and Big Bend National Parks, and stations at Palo Duro and Caprock Canyons State Parks. To the left is a map of the West Texas domain which includes 85 mesonet stations (red stars) as of late 2014. Each observation station collects temperature, moisture, wind, pressure, solar radiation, and precipitation data, with most sites also sensing soil temperature and moisture at several depths. The data are not only valuable for the agriculture community; they are a tremendous resource for the National Weather Service.

West Texas Mesonet Station and a towering cumulus cloud

November 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 70 / 42 0.04 85-1994 / 23-1951 Lubbock Records sr 706 am - sunrise ss 556 pm – sunset Daylight Saving Time Ends	**2** 69 / 42 0.04 85-2012 / 19-1991 sr 707 am ss 555 pm	**3** 69 / 41 0.04 88-2005 / 7-1991 sr 708 am ss 554 pm Election Day Last Quarter	**4** 69 / 41 0.04 86-1916 / 20-1950 sr 709 am ss 553 pm	**5** 68 / 40 0.03 86-1924 / 22-1959 sr 710 am ss 552 pm	**6** 68 / 40 0.03 85-1975 / 16-1959 sr 711 am ss 551 pm	**7** 67 / 40 0.03 89-1916 / 19-1947 sr 712 am ss 550 pm
8 67 / 39 0.03 88--2005 / 20-1943 sr 712 am ss 550 pm	**9** 67 / 39 0.02 90-2006 / 21-1943 sr 713 am ss 549 pm	**10** 66 / 38 0.03 85-1927 / 19-1950 sr 714 am ss 548 pm	**11** 66 / 38 0.03 82-1956 / 16-1950 sr 715 am ss 547 pm Veterans Day New Moon	**12** 65 / 37 0.03 85-1995 / 19-2014 sr 716 am ss 547 pm	**13** 65 / 37 0.02 82-1973 / 14-1976 sr 717 am ss 546 pm	**14** 64 / 37 0.03 85-1933 / 4-1976 sr 718 am ss 545 pm
15 64 / 36 0.03 85-1965 / 10-1916 sr 719 am ss 545 pm	**16** 63 / 36 0.02 83-1966 / 11-1916 sr 720 am ss 544 pm	**17** 63 / 35 0.03 85-1966 / 10-1959 sr 721 am ss 544 pm Leonids Meteor Shower (peak Nov 17-18)	**18** 62 / 35 0.02 82-1999 / 16-1951 sr 722 am ss 543 pm	**19** 62 / 34 0.03 85-1996 / 14-1937 sr 723 am ss 543 pm First Quarter	**20** 62 / 34 0.02 88-1996 / 17-1937 sr 724 am ss 542 pm	**21** 61 / 33 0.03 84-1927 / 18-1956 sr 725 am ss 542 pm
22 61 / 33 0.02 82-2006 / 6-1957 sr 725 am ss 541 pm	**23** 60 / 33 0.03 84-1965 / -1-1957 sr 726 am ss 541 pm	**24** 60 / 32 0.02 82-1915 / 7-1938 sr 727 am ss 541 pm	**25** 59 / 32 0.03 86-1965 / 15-1993 sr 728 am ss 540 pm Full Moon	**26** 59 / 32 0.03 82-1970 / 8-1980 sr 729 am ss 540 pm Thanksgiving Day	**27** 59 / 31 0.02 81-1949 / 12-1976 sr 730 am ss 540 pm	**28** 58 / 31 0.03 83-1949 / 5-1976 sr 731 am ss 540 pm
29 58 / 30 0.03 80-2014 / 1-1976 sr 732 am ss 540 pm	**30** 58 / 30 0.02 81-2012 / 10-1918 sr 733 am ss 539 pm End of the Atlantic Hurricane Season		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	NATIONAL WEATHER SERVICE	Follow us on facebook at: www.facebook.com/ **NWSLubbock**

THE KLBB WSR-88D

At a glance

The WSR-88D is the workhorse of the National Weather Service. Using data from these radar systems, meteorologists can ascertain severe storm, flooding, and damaging wind potential.

What else have we seen? Wind farms, chaff from military exercises, trains, re-entering space junk, and meteor trails.

Our primary radar is located at the Lubbock International Airport with a maximum range of 285 statute miles.

Inside the radome and equipment shelter at the Lubbock radar site

Lubbock National Weather Service — December 2015 — WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	**1** Normals: 57 / 30 0.02 79-2012/ 12-1918 Lubbock Records sr 734 am - sunrise ss 539 pm – sunset	**2** 57 / 30 0.03 81-1995 / 13-1985 sr 734 am ss 539 pm	**3** 57 / 29 0.02 82-2010 / 15-1967 sr 735 am ss 539 pm Last Quarter	**4** 56 / 29 0.02 81-1958 / 15-1921 sr 736 am ss 539 pm	**5** 56 / 29 0.03 79-1939 / 10-1950 sr 737 am ss 539 pm
6 56 / 28 0.02 83-1939 / 1-1950 sr 738 am ss 539 pm	**7** 55 / 28 0.03 79-2007 / 8-2005 sr 738 am ss 539 pm	**8** 55 / 28 0.03 78-1970 / 3-1917 sr 739 am ss 539 pm	**9** 55 / 28 0.02 80-1939 / 5-1978 sr 740 am ss 539 pm	**10** 55 / 28 0.03 81-1933 / 5-1917 sr 741 am ss 540 pm	**11** 54 / 27 0.03 80-1939 / 6-1917 sr 742 am ss 540 pm New Moon	**12** 54 / 27 0.02 82-1937 / 6-1961 sr 742 am ss 540 pm
13 54 / 27 0.03 79-1921 / 5-1917 sr 743 am ss 540 pm Geminids Meteor Shower (peak Dec 13-14)	**14** 54 / 27 0.03 82-2010 / 8-1987 sr 744 am ss 541 pm	**15** 54 / 27 0.02 80-2010 / 2-1987 sr 744 am ss 541 pm	**16** 54 / 27 0.03 77-2006 / 3-1987 sr 745 am ss 541 pm	**17** 53 / 27 0.03 78-1980 / 5-1932 sr 746 am ss 542 pm	**18** 53 / 27 0.02 77-1980 / 6-1996 sr 746 am ss 542 pm First Quarter	**19** 53 / 26 0.03 76-1921 / 0-1924 sr 747 am ss 542 pm
20 53 / 26 0.02 80-1921 / 3-1924 sr 747 am ss 543 pm	**21** 53 / 26 0.03 78-1981 / 2-1983 sr 748 am ss 543 pm Winter Solstice (10:48 pm)	**22** 53 / 26 0.02 79-1969 / -2-1989 sr 748 am ss 544 pm	**23** 53 / 26 0.03 80-1964 / -1-1989 sr 749 am ss 544 pm	**24** 53 / 26 0.02 80-1955 / 0-1983 sr 749 am ss 545 pm	**25** 53 / 26 0.02 76-1955 / -1-1924 sr 750 am ss 546pm Christmas Full Moon	**26** 53 / 26 0.02 77-2005 / 0-1918 sr 750 am ss 546 pm
27 53 / 26 0.03 76-2006 / 3-1918 sr 750 am ss 547 pm	**28** 53 / 26 0.02 81-1928 / -2-1924 sr 751 am ss 547 pm	**29** 53 / 26 0.02 77-1920 / -1-1939 sr 751 am ss 548 pm	**30** 53 / 26 0.02 80-2008 / 7-2000 sr 751 am ss 549 pm	**31** 53 / 26 0.02 76-2011 / 8-1923 sr 752 am ss 549 pm New Year's Eve	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Severe Weather Safety Tips

Prepare a Home Severe Weather Plan—

- Pick a place where family members could gather if a tornado is headed your way. It could be your basement or, if there is no basement, a center hallway, bathroom, or closet on the lowest floor. Keep this place uncluttered.
- If you are in a high-rise building, you may not have enough time to go to the lowest floor. Pick a place in a hallway in the center of the building.

Assemble a Disaster Supplies Kit containing—

- First aid kit and essential medications.
- Canned food and can opener.
- At least three gallons of water per person.
- Protective clothing, bedding, or sleeping bags.
- Battery-powered radio, flashlight, and extra batteries.
- Special items for infant, elderly, or disabled family members.

When a Severe Thunderstorm or Tornado WATCH is issued—

- Listen to NOAA Weather Radio, local radio and TV stations for further updates.
- Be alert to changing weather conditions.

When a Severe Thunderstorm or Tornado WARNING is issued—

- If you are inside, go to the safe place you picked to protect yourself from glass and other flying objects.
- If you are outside, hurry to the basement of a nearby sturdy building or lie flat in a ditch or low-lying area.
- If you are in a car or mobile home, get out immediately and head for safety (as above).

After the Severe Thunderstorm or Tornado passes—

- Watch out for fallen power lines and stay out of the damaged area.
- Listen to the radio for information and instructions.
- Use a flashlight to inspect your home for damage.

Conduct periodic Severe Weather drills so everyone remembers what to do. Stay tuned for warnings—

- Listen to your local radio and TV stations for updated storm information.
- Be especially alert to the weather when Severe Thunderstorm and Tornado WATCHES are in effect and take action when WARNINGS are issued.
- Know what a Severe Thunderstorm or Tornado WATCH and WARNING means:
  - A Tornado/Severe Thunderstorm WATCH means a Tornado/Severe Thunderstorm is possible in your area.
  - A Tornado/Severe Thunderstorm WARNING means a Tornado/Severe Thunderstorm has been detected and may be headed for your area. Go to a safe location immediately.


National Weather Service in Lubbock, Texas
2015
Calendar
Briscoe County
Photo courtesy
of Matt Ziebell

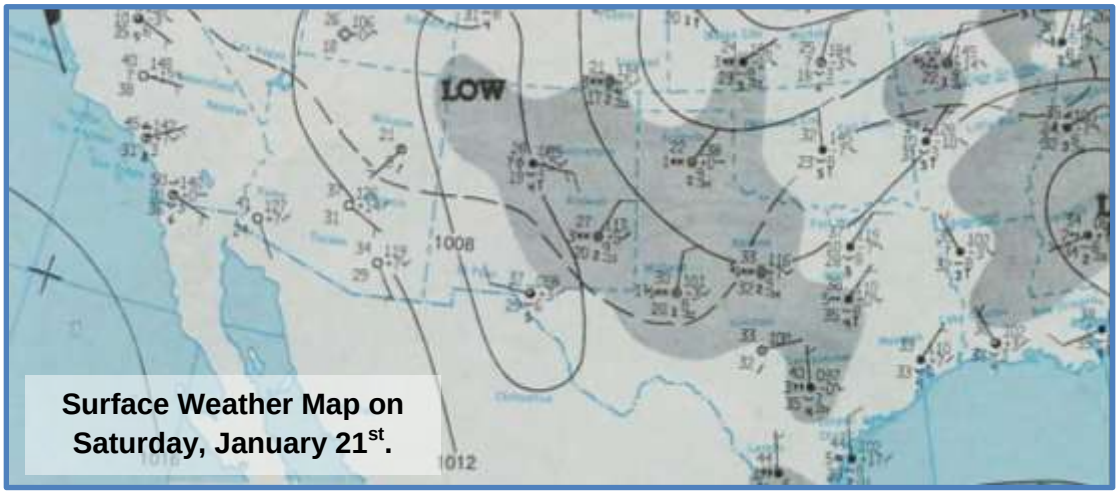
The Blizzard of January 20-21, 1983

In January of 1983, a fierce snowstorm paralyzed almost all of the Texas Panhandle and South Plains from the 20th through the 21st. This was one of the largest winter storms ever experienced across the region. The heavy wet snow shattered snowfall records in Lubbock after 16.9 inches accumulated by the 21st! Snow on the ground prior to this storm created a deep snow pack of 25.0 inches at the Lubbock Airport. Plainview measured 18 inches with up to 15 inches observed in Dalhart. Ground and air travel came to a halt stranding many persons. Since this storm hit on a Thursday and Friday, school kids were perhaps the most elated as they received a four-day weekend to play in the historic snow.

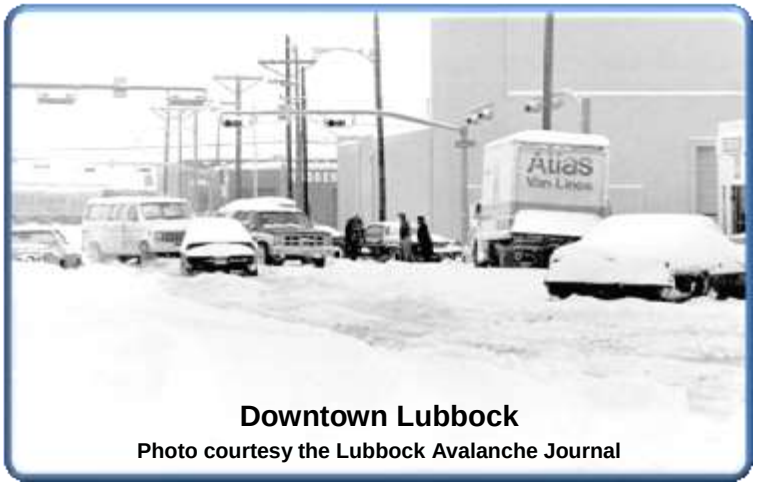
Snowfall from the storm:

~some of the largest totals reported across the area~

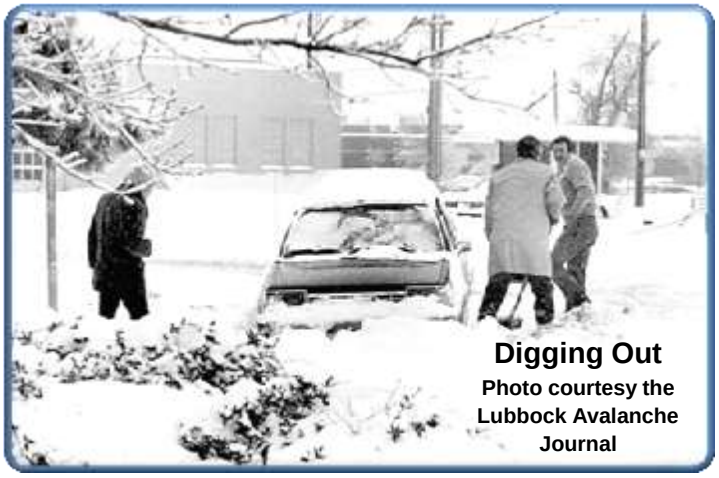
Dimmitt and Plainview: 18 inches
Abernathy: 17 inches
Tulia: 15 inches
Floydada and Tahoka: 12 inches
Brownfield and Crosbyton: 10 inches



Surface Weather Map on Saturday, January 21st.



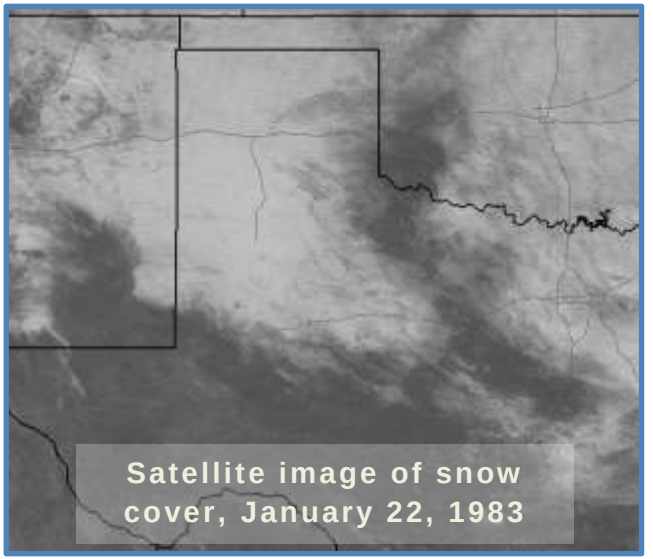
Downtown Lubbock
Photo courtesy the Lubbock Avalanche Journal



Digging Out
Photo courtesy the Lubbock Avalanche Journal

TOP 5 Snow events at Lubbock

1	Jan 20-21, 1983	16.9”
2	Feb 2-5, 1956	14.8”
3	Feb 20-21, 1961	12.1”
4	March 14-16, 1969	11.7”
5	Nov 25-26, 1980	10.8”



Satellite image of snow cover, January 22, 1983

Lubbock National Weather Service

January 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on twitter at: www.twitter.com/ **NWSLubbock**		Follow us on facebook at: www.facebook.com/ **NWSLubbock**	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	**1** Normals: 53 / 26 0.02 76-1997 / -2-1919 Lubbock Records sr 752 am - sunrise ss 550 pm – sunset **New Year's Day**	**2** 53 / 26 0.02 77-2009 / -2-1979 sr 752 am ss 551 pm Quadrantids Meteor Shower (peaks Jan 2-3)	**3** 53 / 26 0.01 83-2006 / -2-1947 sr 752 am ss 552 pm
4 53 / 26 0.02 76-1918 / -9-1947 sr 752 am ss 553 pm Full Moon	**5** 53 / 26 0.02 82-1927 / -4-1971 sr 752 am ss 553 pm	**6** 53 / 26 0.02 79-1927 / 0-1971 sr 753 am ss 554 pm	**7** 53 / 26 0.02 80-2006 / 6-1968 sr 753 am ss 555 pm	**8** 53 / 26 0.02 82-1969 / 3-1967 sr 753 am ss 556 pm	**9** 53 / 26 0.02 79-2002 / 2-1920 sr 753 am ss 557 pm	**10** 53 / 26 0.01 76-1928 / -10-1930 sr 752 am ss 558 pm
11 54 / 26 0.02 76-1911 / -7-1918 sr 752 am ss 559 pm	**12** 54 / 26 0.02 77-1953 / -10-1918 sr 752 am ss 559 pm	**13** 54 / 26 0.02 79-1957 / -16-1963 sr 752 am ss 600 pm Last Quarter	**14** 54 / 26 0.01 82-1928 / 3-1963 sr 752 am ss 601 pm	**15** 54/ 26 0.02 80-1911 / 4-1963 sr 752 am ss 602 pm	**16** 54/ 26 0.02 80-1974 / 6-1930 sr 752am ss 603 pm	**17** 54/ 26 0.02 87-1914 / -2-1930 sr 751 am ss 604 pm
18 54/ 26 0.03 79-1914 / -5-1930 sr 751 am ss 605 pm	**19** 54/ 26 0.02 80-2000 / 0-1963 sr 751 am ss 606 pm Martin Luther King Jr. Day (Observed)	**20** 54/ 27 0.02 78-1986 / 7-1940 sr 750 am ss 607 pm New Moon	**21** 55/ 27 0.02 81-1950 / -4-1918 sr 750 am ss 608 pm	**22** 55/ 27 0.02 79-2009 / -6-1918 sr 750 am ss 609 pm	**23** 55/ 27 0.03 83-1972/ 3-1983 sr 749 am ss 610 pm	**24** 55/ 27 0.02 83-1970 /-1-1915 sr 749 am ss 611 pm
25 55/ 27 0.03 79-1952 / 7-1940 sr 748 am ss 612 pm	**26** 55/ 27 0.02 78-1975 / 7-1966 sr 748 am ss 613 pm First Quarter	**27** 55/ 27 0.03 78-1970 / 5-1925 sr 747 am ss 614 pm	**28** 55/ 27 0.02 80-2003 / 6-2014 sr 746 am ss 615 pm	**29** 56/ 27 0.03 80-1911 / 1-1948 sr 746 am ss 616 pm	**30** 56/ 27 0.02 80-1967 / 6-1951 sr 745 am ss 617 pm	**31** 56/ 28 0.03 84-1911 / 2-1985 sr 745 am ss 618 pm

A Brief History of the NWS in Lubbock

For a complete history, visit our webpage
www.srh.noaa.gov/lub/?n=lubhistory

1940s

Nov 6, 1946: The U.S. Weather Bureau Office in Lubbock is officially established at the airport. Leo Weaver becomes the office's first Meteorologist-in-Charge (MIC).


"OLD JACK FROST" HAS ARRIVED!—At least that's what

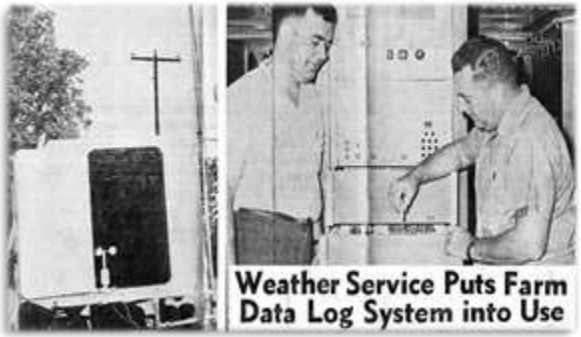
October 7, 1948: Harold "Jack" Frost becomes the 2nd MIC at the Lubbock Weather Bureau. Mr. Frost would serve out the remaining 31 years of his Federal Service in Lubbock and in 1970 was awarded a Department of Commerce Gold Medal for his outstanding leadership in the severe weather preparedness program.

1950s

1954: The WSR-1 radar is installed at the Lubbock Airport. This radar was salvaged from a WWII bomber and was converted using funds from the City of Lubbock, Lubbock County and the Lubbock Board of City Development.

1960s

June 1964: A mobile weather logger is activated to record dozens of soil temperatures and wind data at farms across the South Plains. The information greatly improves agricultural planning and decision making.


Weather Service Puts Farm Data Log System into Use

1970s

August 27, 1972: Linda Djerf becomes the first female meteorologist at the Lubbock NWS office.

December 1993: The Lubbock NWS forecast office moves from the airport to the Science Spectrum building. Daily weather observations continue at the airport.

1989-1994: NWS Lubbock's forecast area is gradually reduced in size from 77 to 24 counties across West Texas to accommodate new forecast offices in Amarillo, Midland, San Angelo, and El Paso.

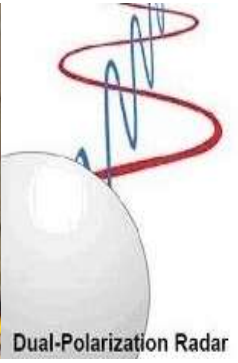
April 4, 1994: NEXRAD Doppler radar is commissioned at the airport. The radar offers significant improvements over the outgoing WSR-74C installed in August 1972.

1980s

1990s

February 8, 2004: Justin Weaver becomes the 8th MIC at NWS Lubbock and remains in this capacity over 10 years later.

2000s


Dual-Polarization Radar

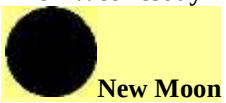
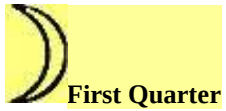
March 27, 2013: Lubbock's Radar is upgraded to dual polarization. This allows for better discrimination between various types of precipitation.

2010s

Lubbock National Weather Service

February 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 56 / 28 0.03 83-1963 / -7-1951 Lubbock Records sr 744 am - sunrise ss 619 pm - sunset	**2** 56 / 28 0.02 80-2003 / -4-1951 sr 743 am ss 620 pm Groundhog Day	**3** 56 / 28 0.03 80-1934 / 4-1972 sr 742 am ss 621 pm  Full Moon	**4** 57 / 28 0.02 82-1925 / 3-1989 sr 742 am ss 622 pm	**5** 57 / 28 0.03 81-1937 / 3-1982 sr 741 am ss 622 pm	**6** 57 / 28 0.02 80-2009 / 4-1956 sr 740 am ss 623 pm	**7** 57 / 29 0.03 84-1918 / -3-1933 sr 739 am ss 624 pm
8 57 / 29 0.03 83-1951 / -17-1933 (all-time) sr 738 am ss 625 pm	**9** 58 / 29 0.03 83-1976 / 0-1933 sr 737 am ss 626 pm	**10** 58 / 29 0.03 84-1962 / 1-1929 sr 737 am ss 627 pm	**11** 58 / 29 0.03 85-1962 / 6-1981 sr 736 am ss 628 pm  Last Quarter	**12** 58 / 29 0.02 86-1962 / 9-1958 sr 735 am ss 629 pm	**13** 59 / 30 0.03 81-1979 / 7-1963 sr 734 am ss 630 pm	**14** 59 / 30 0.03 87-1979 / 12-2004 sr 733 am ss 631 pm Valentine's Day
15 59 / 30 0.02 87-2014 / 8-1951 sr 732 am ss 632 pm	**16** 59 / 30 0.03 85-2011 / 13-1979 sr 731 am ss 633 pm Presidents' Day	**17** 59 / 31 0.03 85-1970 / 0-1978 sr 730 am ss 634 pm	**18** 60 / 31 0.02 83-1996 / -2-1978 sr 729 am ss 635 pm Ash Wednesday  New Moon	**19** 60 / 31 0.03 83-1986 / 2-1978 sr 728 am ss 635 pm	**20** 60 / 31 0.03 82-1996 / 4-1918 sr 727 am ss 636 pm	**21** 60 / 31 0.02 84-1996 / 6-1964 sr 725 am ss 637 pm
22 61 / 32 0.03 87-1996 / 12-1911 sr 724 am ss 638 pm	**23** 61 / 32 0.02 85-2009 / 9-1914 sr 723 am ss 639 pm	**24** 61 / 32 0.03 89-1918 / 1-1960 sr 722 am ss 640 pm	**25** 61 / 32 0.02 86-1989 / -8-1960 sr 721 am ss 641 pm  First Quarter	**26** 62 / 33 0.03 85-1918 / 8-1935 sr 720 am ss 642 pm	**27** 62 / 33 0.03 81-2006 / 10-1934 sr 718 am ss 642 pm	**28** 62 / 33 0.03 89-2006 / 7-1962 sr 717 am ss 643 pm
Follow us on facebook at: www.facebook.com/ **NWSLubbock**				NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500		Follow us on twitter at: www.twitter.com/ **NWSLubbock**

How to Receive Timely Weather Information

NOAA Weather Radio (NWR)

NWR is one of the best ways to get information directly from the National Weather Service (NWS). A NWR can even be programmed to audio alert when watches and warnings are issued for your area, which can be a literal life-saver during the overnight hours when you are sleeping.

There are many different ways to receive weather information. Some methods are more reliable than others, but it is always a good practice to have several means to obtain the most critical watches and warnings in case one fails. Once you receive the warning you can then implement your severe weather plan. To take protective actions, first you must get the watch or warning. **THE RESPONSIBILITY IS YOURS!** A tornado warning with 20 minutes of lead time is of no value if you have no way to get the warning. Don't be the next person to state that, "It came without warning." Just because you didn't get the warning doesn't mean there wasn't a warning. Take action now so you will be prepared when the weather takes a turn for the worse.

Commercial Broadcast Media

Local TV is the primary source of warning information reaching a majority of the people. On air meteorologists can add valuable details to the NWS products through the aid of visual means. In addition, radio stations will often transmit various amounts of weather information. TV and radio are often a great source for urgent weather information, though you must know when to tune in to get it.

Mobile Devices

Smartphones can receive urgent weather information through several different methods. Since June of 2012, all cell phones are equipped to receive Wireless Emergency Alerts (WEA). WEA messages appear like a short text message and convey only basic information. WEA messages are only created for tornado, flash flood, extreme wind, dust storm, hurricane, ice storm, and blizzard warnings.

The Internet

In addition to the NWS website (www.weather.gov), there are a variety of other sites that have access to NWS products.

Other Sources

Sirens, where available, are useful in alerting people who are outdoors that something dangerous is happening and they should take shelter. In addition, **Friends and Family** are often a big reason many people choose to seek shelter, though they should never be a primary method of receiving a warning. **Social Media** is also becoming an ever increasing way to share weather information, though it does also have several drawbacks.

Lubbock National Weather Service

March 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 63 / 33 0.03 89-2006 / 5-1922 Lubbock Records sr 716 am - sunrise ss 644 pm – sunset	**2** 63 / 34 0.03 86-1974 / -2-1922 sr 715 am ss 645 pm	**3** 63 / 34 0.03 88-2009 / 7-1943 sr 714 am ss 646 pm	**4** 63 / 34 0.03 89-2009 / -1-1917 sr 712 am ss 647 pm	**5** 64 / 34 0.04 90-1916 / 11-1989 sr 711 am ss 647 pm  Full Moon	**6** 64 / 35 0.03 87-1934 / 10-1943 sr 710 am ss 648 pm	**7** 64 / 35 0.03 88-2006 / 11-1996 sr 709 am ss 649 pm
8 64 / 35 0.03 87-1918 / 12-1967 sr 807 am ss 750 pm Daylight Saving Time begins	**9** 65 / 35 0.04 88-1911 / 13-1969 sr 806 am ss 751 pm	**10** 65 / 36 0.03 88-1911 / 4-1948 sr 805 am ss 751 pm	**11** 65 / 36 0.03 95-1989 / 2-1948 sr 803 am ss 752 pm	**12** 66 / 36 0.04 94-1989 / 10-1948 sr 802 am ss 753 pm	**13** 66 / 36 0.03 91-1916 / 12-1950 sr 801 am ss 754 pm  Last Quarter	**14** 66 / 37 0.04 86-1972 / 13-1954 sr 759 am ss 754 pm
15 66 / 37 0.03 88-2013 / 17-1947 sr 758 am ss 755 pm	**16** 67 / 37 0.04 87-1966 / 16-1923 sr 757 am ss 756 pm	**17** 67 / 37 0.03 90-2011 / 18-1970 sr 755 am ss 757 pm St. Patrick's Day	**18** 67 / 37 0.04 88-1916 / 11-1923 sr 754 am ss 757 pm	**19** 68 / 38 0.04 87-1995 / 11-1923 sr 753 am ss 758 pm	**20** 68 / 38 0.03 90-1916 / 8-1965 sr 751 am ss 759 pm Spring Equinox (5:45 pm)  New Moon	**21** 68 / 38 0.04 93-1997 / 17-1983 sr 750 am ss 800 pm
22 68 / 38 0.04 86-1935 / 18-1952 sr 749 am ss 800 pm	**23** 69 / 39 0.04 84-2009 / 13-1952 sr 747 am ss 801 pm	**24** 69 / 39 0.04 88-1929 / 22-1965 sr 746 am ss 802 pm	**25** 69 / 39 0.04 90-1998 / 19-2013 sr 745 am ss 803 pm	**26** 70 / 40 0.04 88-1956 / 16-1965 sr 743 am ss 803 pm	**27** 70 / 40 0.04 94-1971 / 12-1931 sr 742 am ss 804 pm  First Quarter	**28** 70 / 40 0.04 90-1963 / 16-1931 sr 741 am ss 805 pm
29 70 / 40 0.04 91-2012 / 18-1944 sr 739 am ss 806 pm	**30** 71 / 41 0.03 91-2010 / 16-1987 sr 738 am ss 806 pm	**31** 71 / 41 0.04 95-1946 / 19-1931 sr 737 am ss 807 pm	 Follow us on twitter at: www.twitter.com/ **NWSLubbock**		NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	 Follow us on facebook at: www.facebook.com/ **NWSLubbock**

HAIL

Above is a picture of a record breaking hailstone that fell in Vivian, SD on July 23, 2010. The hailstone was:

- 8.0” in diameter
- 18.625” in circumference
- 1.9375 pounds

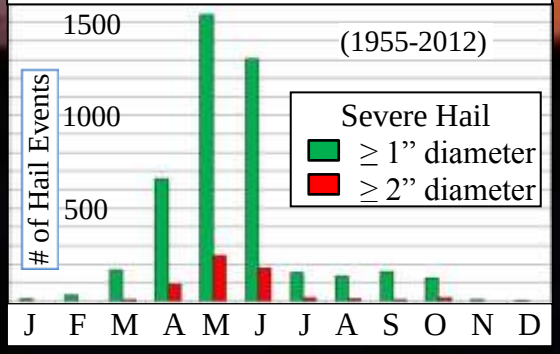
This hailstone broke the record for diameter (previously 7.0” in Aurora, Nebraska on June 22, 2003) and weight (previously 1.67 lbs in Coffeyville, Kansas on September 3, 1970). The Aurora stone maintains the circumference record of 18.75”.

Grapefruit to softball size hail that fell in northeast Lubbock on June 17, 2013.

Rising air in thunderstorms carries water droplets high into the atmosphere where temperatures are well below freezing. Water at these high altitudes will subsequently freeze on contact with frozen water droplets that are already present. The stronger the thunderstorm, the greater the lift to keep a hailstone suspended where it continues to grow through this process. The stone will eventually fall toward the ground once it weighs too much for the rising air to hold it aloft.

Hail Diameter Size	Description
1/4"	Pea
1/2"	Plain M&M
3/4"	Penny
7/8"	Nickel
1"	Quarter
1 1/4"	Half Dollar
1 1/2"	Walnut/Ping Pong Ball
1 3/4"	Golf Ball
2"	Hen Egg/Lime
2 1/2"	Tennis Ball
2 3/4"	Baseball
3"	Teacup/Large Apple
4"	Grapefruit
4 1/2"	Softball
4 3/4"- 5"	Computer CD-DVD

Monthly Hail Reports for the South Plains



Hail damage sustained southwest of Lubbock on April 29, 2012.

April 2015

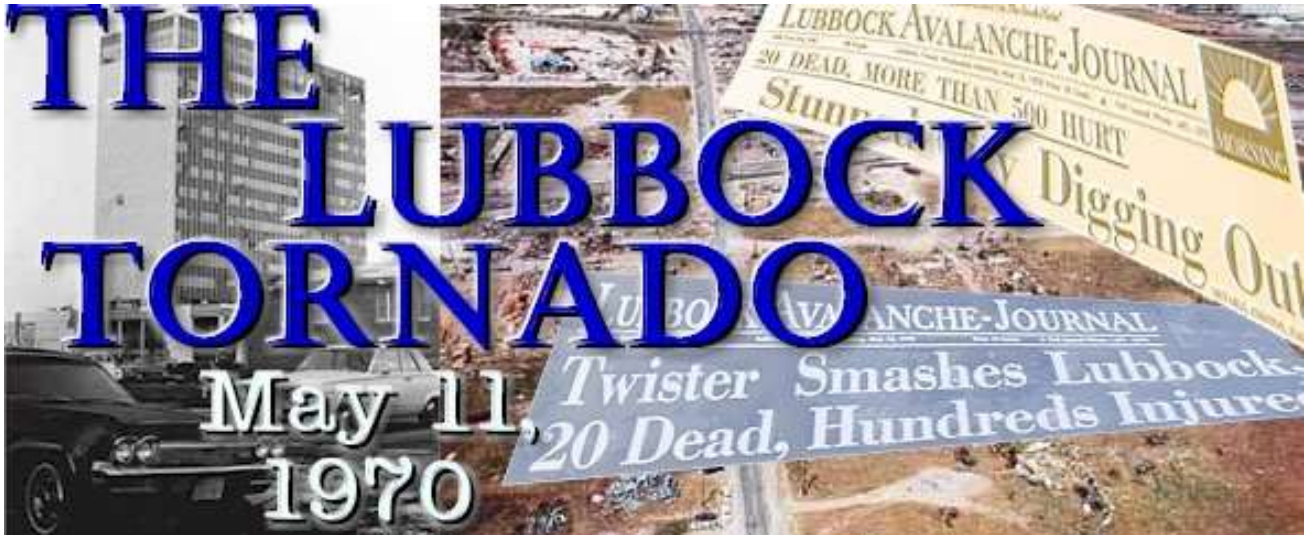
Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			**1** Normals: 71 / 41 0.04 96-1946 / 22-1948 Lubbock Records sr 735 am - sunrise ss 808 pm - sunset **April Fool's Day**	**2** 72 / 41 0.04 92-2011 / 20-1936 sr 734 am ss 809 pm	**3** 72 / 42 0.04 94-2011 / 26-1975 sr 733 am ss 809 pm	**4** 72 / 42 0.04 92-1928 / 18-1920 sr 731 am ss 810 pm Full Moon **Total Lunar Eclipse**
5 72 / 42 0.04 92-2006 / 21-1917 sr 730 am ss 811 pm **Easter Sunday**	**6** 73 / 43 0.04 96-1972 / 21-1936 sr 729 am ss 812 pm	**7** 73 / 43 0.04 93-1930 / 21-1936 sr 727 am ss 812 pm	**8** 73 / 43 0.05 91-1930 / 23-1938 sr 726 am ss 813 pm	**9** 74 / 44 0.04 94-1939 / 23-1973 sr 725 am ss 814 pm	**10** 74 / 44 0.04 93-1972 / 22-2013 sr 724 am ss 815 pm	**11** 74 / 44 0.04 94-1972 / 25-1932 sr 722 am ss 815 pm Last Quarter
12 74 / 44 0.04 96-1972 / 22-1997 sr 721 am ss 816 pm	**13** 75 / 45 0.05 91-2006 / 26-1957 sr 720 am ss 817 pm	**14** 75 / 45 0.04 93-2006 / 27-1933 sr 719 am ss 818 pm	**15** 75 / 45 0.04 92-2006 / 25-2014 sr 717 am ss 818 pm	**16** 76 / 46 0.05 100-1925 / 31-1947 sr 716 am ss 819 pm	**17** 76 / 46 0.05 94-2006 / 23-1921 sr 715 am ss 820 pm	**18** 76 / 47 0.04 96-1987 / 29-1953 sr 714 am ss 821 pm New Moon
19 76 / 47 0.05 92-2001 / 25-2013 sr 712 am ss 821 pm	**20** 77 / 47 0.05 93-1925 / 30-1933 sr 711 am sr 822 pm	**21** 77 / 48 0.04 98-1989 / 28-1918 sr 710 am ss 823 pm **Lynids Meteor Shower (Peak Apr 21-22)**	**22** 77 / 48 0.06 100-1989 / 29-1927 sr 709 am ss 824 pm **Earth Day**	**23** 78 / 48 0.05 97-1989 / 30-1928 sr 708 am ss 824 pm	**24** 78 / 49 0.05 95-1996 / 25-2013 sr 707 am ss 825 pm	**25** 78 / 49 0.06 104-2012 / 35-1927 sr 706 am ss 826 pm First Quarter
26 78 / 49 0.05 96-1943 / 29-1947 sr 704 am ss 827 pm	**27** 79 / 50 0.06 97-1996 / 27-1920 sr 703 am ss 827 pm	**28** 79 / 50 0.06 94-1992 / 35-1994 sr 702 am ss 828 pm	**29** 79 / 50 0.06 97-2011 / 31-1968 sr 701 am ss 829 pm	**30** 80 / 51 0.06 94-2013 / 33-1918 sr 700 am ss 830 pm	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

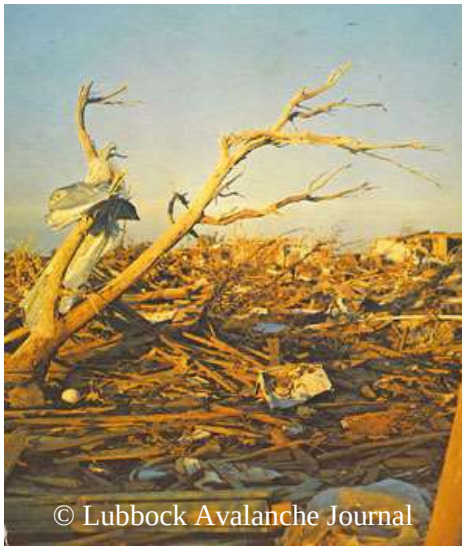
What Happened?

On May 11th, 1970, the Lubbock landscape was forever altered by a devastating tornado. The second of two tornadoes that hit the city that night touched down around 9:30 in the evening southwest of downtown. The tornado moved northeast, destroying buildings, airplanes and taking human lives until it dissipated around the Lubbock Municipal Airport shortly after 10:00 pm.



What Did the Tornado Do?

The tornado killed 26 people and injured more than 1500 along its 8.5 mile long track, and covered about 15 square miles. The tornado caused extensive damage to the northeast side of Lubbock and resulted in approximately 250 million dollars worth of damage (in 1970 dollars), equivalent to about 1.55 billion now.



Interesting Facts:

- The tornado was initially 1 1/2 miles wide, but narrowed to about 1/4 mile wide when it reached the airport
- 10,000 automobiles were damaged or destroyed
- 119 aircraft were demolished at the airport
- 600 apartment units were demolished**,** 250 businesses damaged or destroyed, and 8,800 family units were damaged (430 which were destroyed)
- In downtown Lubbock, an estimated 80% of all plate glass windows were smashed
- 3.25 inches of precipitation (rain and hail) fell at the airport that night, with baseball- to grapefruit-sized hail falling in some locations around Lubbock
- The tornado was rated F5 on the old Fujita Tornado Damage Scale - the highest a tornado can be rated
- No known photographs were taken of the tornado, which is attributed to the fact that the storm occurred after the sun had set
- Dr. Theodore "Ted" Fujita determined that all but one of the deaths occurred along the path of suction spots. These suction spots, which result in localized areas of increased damage, are created when smaller-scale vortices develop and rotate around the larger parent tornado.

Lubbock National Weather Service

May 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 80 / 51 0.05 **1** 96-2012 / 32-1970 Lubbock Records sr 659 am - sunrise ss 830 pm – sunset	80 / 51 0.06 **2** 97-2012 / 30-1967 sr 658 am ss 831 pm
80 / 52 0.05 **3** 98-2012 / 27-2013 sr 657 am ss 832 pm Full Moon	81 / 52 0.06 **4** 104-1947 / 35-1935 sr 656 am ss 833 pm	81 / 52 0.05 **5** 99-2012 / 34-1953 sr 655 am ss 833 pm Cinco De Mayo	81 / 53 0.06 **6** 99-2000 / 32-1917 sr 654 am ss 834 pm	81 / 53 0.05 **7** 100-2009 / 29-1917 sr 654 am ss 835 pm	82 / 53 0.06 **8** 102-1989 / 31-1938 sr 653 am ss 836 pm	82 / 54 0.06 **9** 97-2011 / 38-1961 sr 652 am ss 836 pm
82 / 54 0.06 **10** 99-2000 / 33-1918 sr 651 am ss 837 pm Mother's Day	83 / 54 0.07 **11** 101-2000 / 37-1930 sr 650 am ss 838 pm Last Quarter	83 / 55 0.06 **12** 98-1962 / 35-1960 sr 649 am ss 839 pm	83 / 55 0.08 **13** 100-2006 / 37-1971 sr 649 am ss 839 pm	83 / 55 0.07 **14** 100-1996 / 35-1953 sr 648 am ss 840 pm	84 / 56 0.06 **15** 103-1996 / 34-1967 sr 647 am ss 841 pm	84 / 56 0.07 **16** 102-1996 / 37-1945 sr 646 am ss 842 pm
84 / 56 0.08 **17** 101-1996 / 41-1986 sr 646 am ss 842 pm	84 / 57 0.08 **18** 103-2003 / 42-1916 sr 645 am ss 843 pm New Moon	85 / 57 0.08 **19** 105-1996 / 42-1971 sr 644 am ss 844 pm	85 / 57 0.08 **20** 102-2006 / 40-1931 sr 644 am ss 845 pm	85 / 58 0.09 **21** 101-1989 / 39-1967 sr 643 am ss 845 pm	85 / 58 0.09 **22** 105-1996 / 40-1931 sr 643 am ss 846 pm	86 / 58 0.09 **23** 105-2000 / 45-1917 sr 642 am ss 847 pm
86 / 58 0.09 **24** 109-2000 / 40-1930 sr 642 am ss 847 pm 87 / 61 0.10 **31** 102-1916 / 43-1983 sr 639 am ss 852 pm	86 / 59 0.09 **25** 102-2012 / 44-1924 sr 641 am ss 848 pm Memorial Day First Quarter	86 / 59 0.09 **26** 101-1945 / 43-1950 sr 641 am ss 849 pm	86 / 59 0.08 **27** 103-1984 / 48-1961 sr 640 am ss 849 pm	87 / 60 0.10 **28** 104-2011 / 43-1917 sr 640 am ss 850 pm	87 / 60 0.10 **29** 104-2011 / 38-1947 sr 639 am ss 851 pm	87 / 60 0.09 **30** 103-1998 / 45-1983 sr 639 am ss 851 pm

Number of "observed" tornadoes - 1950 to 2014

Parmer	Castro	Swisher	Briscoe	Hall	Childress
Total 48	Total 57	Total 66	Total 44	Total 46	Total 26
F3+ 3	F3+ 1	F3+ 5	F3+ 3	F3+ 2	F3+ 0
Bailey	**Lamb**	**Hale**	**Floyd**	**Motley**	**Cottle**
Total 50	Total 82	Total 126	Total 56	Total 21	Total 31
F3+ 2	F3+ 7	F3+ 3	F3+ 3	F3+ 2	F3+ 1
Cochran	**Hockley**	**Lubbock**	**Crosby**	**Dickens**	**King**
Total 28	Total 59	Total 94	Total 52	Total 32	Total 19
F3+ 1	F3+ 6	F3+ 3	F3+ 2	F3+ 1	F3+ 0
		F5 1			
Yoakum	**Terry**	**Lynn**	**Garza**	**Kent**	**Stonewall**
Total 25	Total 31	Total 42	Total 19	Total 22	Total 24
F3+ 0	F3+ 0	F3+ 1	F3+ 0	F3+ 0	F3+ 0

South Plains Tornado Trivia

Longest Tracked Tornado:

- From NE of Muleshoe to NE of Pampa on April 17, 1970 = 130 miles
- Entire track in Lubbock NWS area: From NW of Levelland to NE of Muleshoe on June 17, 1980 = 45 miles

Largest Tornado:

- May 31, 1968 – Multiple vortex tornado that tracked near Edmonson was estimated to be 2 miles wide.

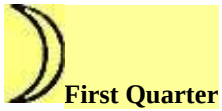
Strongest Tornado:

- May 11, 1970 - F5 tornado tracked through Lubbock and produced $250 million in damage, killed 26 people, and injured 1500

June 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

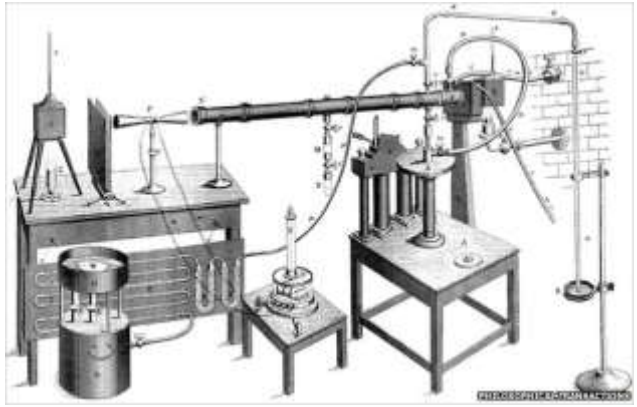
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	Normals: 88 / 61 0.11 **1** 107-1998 / 45-1964 Lubbock Records sr 638 am - sunrise ss 852 pm - sunset	88 / 61 0.10 **2** 107-1998 / 39-1917 sr 638 am ss 853 pm  Full Moon	88 / 61 0.11 **3** 104-1998 / 43-1919 sr 638 am ss 854 pm	89 / 62 0.12 **4** 106-2013 / 47-1970 sr 638 am ss 854 pm	89 / 62 0.11 **5** 106-1990 / 45-1928 sr 638 am ss 855 pm	89 / 62 0.12 **6** 107-1990 / 45-1917 sr 637 am ss 855 pm
89 / 62 0.11 **7** 103-1994 / 45-1915 sr 637 am ss 856 pm	89 / 63 0.11 **8** 106-1981 / 43-1915 sr 637 am ss 856 pm	90 / 63 0.12 **9** 107-1981 / 50-1955 sr 637 am ss 857 pm  Last Quarter	90 / 63 0.10 **10** 105-1917 / 47-1955 sr 637 am ss 857 pm	90 / 63 0.11 **11** 105-2008 / 50-1955 sr 637 am ss 858 pm	90 / 64 0.10 **12** 105-2001 / 53-1951 sr 637 am ss 858 pm	90 / 64 0.11 **13** 105-2011 / 52-1945 sr 637 am ss 858 pm
91 / 64 0.11 **14** 106-1939 / 44-1947 sr 637 am ss 859 pm Flag Day	91 / 64 0.10 **15** 109-1939 / 49-1927 sr 637 am ss 859 pm	91 / 65 0.10 **16** 108-2011 / 49-1981 sr 637 am ss 859 pm  New Moon	91 / 65 0.10 **17** 107-1924 / 53-1999 sr 637 am ss 900 pm	91 / 65 0.10 **18** 107-1924 / 47-1945 sr 637 am ss 900 pm	91 / 65 0.10 **19** 107-2011 / 52-1945 sr 637 am ss 900 pm	92 / 65 0.09 **20** 108-1935 / 49-1973 sr 638 am ss 901 pm
92 / 66 0.10 **21** 107-1981 / 54-1973 sr 638 am ss 901 pm Father's Day Summer Solstice (11:38 am)	92 / 66 0.10 **22** 106-1978 / 50-1927 sr 638 am ss 901 pm	92 / 66 0.09 **23** 107-1980 / 56-1964 sr 638 am ss 901 pm	92 / 66 0.09 **24** 110-1990 / 56-1957 sr 639 am ss 901 pm  First Quarter	92 / 66 0.10 **25** 110-2011 / 54-1940 sr 639 am ss 901 pm	92 / 66 0.08 **26** 112-2011 / 53-1958 sr 639 am ss 901 pm	92 / 67 0.09 **27** 114-1994 / 56-1958 (all-time) sr 639 am ss 902 pm
92 / 67 0.08 **28** 108-1980 / 56-1946 sr 640 am ss 902 pm	92 / 67 0.09 **29** 107-1957 / 57-1948 sr 640 am ss 902 pm	93 / 67 0.09 **30** 106-1957 / 57-1940 sr 641 am ss 902 pm	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on facebook at: www.facebook.com/ **NWSLubbock**	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Influential Climate Change Scientists through history

Decades before becoming the contentious issue of today, principles of climate change were established through laborious scientific methods. And long before the perception of any concern with increasing greenhouse gases, the problem was defined and solutions identified.

This month, we present several historic Climate Change scientists and their discoveries that have moved into the current climate change arena.

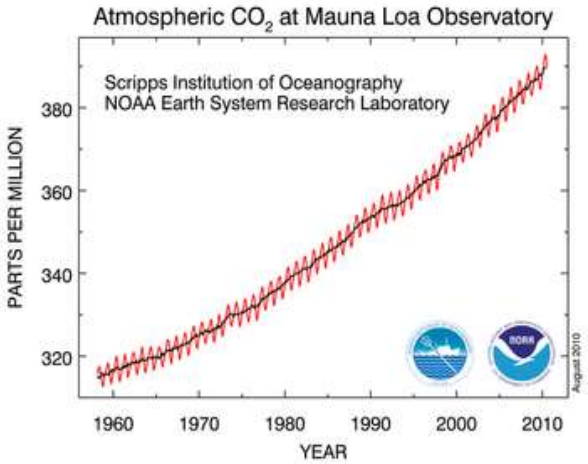
John Tyndall (1820-1893) Tyndall, a prominent Irish physicist, was first to explain the heat in the Earth's atmosphere in terms of ability of various gases to absorb radiant heat (1859). He was first to correctly measure absorptive powers of gases, including water vapor, methane and carbon dioxide (CO_2). Below is a depiction of Tyndall's apparatus for measuring radiant heat and absorption by gases.



Svante Arrhenius (1859-1927) Arrhenius was a Swedish physicist/chemist who calculated how changes in levels of carbon dioxide in the atmosphere would alter the surface temperature through the greenhouse effect.

Arrhenius' greenhouse law (1896): *If the quantity of carbonic acid [CO_2] increases in geometric progression, the augmentation of the temperature will increase nearly in arithmetic progression*

Charles David Keeling (1928-2005) Keeling was an American Scientist who implemented monitoring of carbon dioxide levels at the Mauna Loa Observatory in the 1950s. The Keeling Curve (lower left) shows the progressive buildup of the greenhouse gas and was largely responsible for alerting the world to possible anthropogenic contributions to the greenhouse effect.



President Bush awarded David Keeling the National Medal of Science in 2002 for his work on global climate change

Guy Callendar (1898-1964) Callendar, an English steam engineer and inventor first compiled measurements of temperature and CO_2 concentrations to conclude that global land temperatures had increased and could be explained as an effect of the increase in carbon dioxide. Callendar went on to publish 10 major scientific articles between 1938 and 1964 on global warming, infrared radiation, and anthropogenic carbon dioxide.

Quiz: Who said "This generation has altered the composition of the atmosphere on a global scale through … a steady increase in carbon dioxide from the burning of fossil fuels."?

a) **Barack Obama (2011)**

b) **Al Gore (2006)**

c) **Bill Nye (2013)**

d) **Lyndon B. Johnson (1965)**

If you chose LBJ, you were correct! This was said during a special message to Congress in February 1965.

July 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 93 / 67 0.08 **1** 105-1994 / 56-1924 Lubbock Records sr 641 am - sunrise ss 902 pm – sunset Full Moon	**2** 93 / 67 0.08 106-1989 / 56-1944 sr 641 am ss 902 pm	**3** 93 / 67 0.08 108-1983 / 54-1929 sr 642 am ss 901 pm	**4** 93 / 67 0.07 105-1987 / 56-1924 sr 642 am ss 901 pm Independence Day
5 93 / 67 0.07 104-1971 / 49-1915 sr 643 am ss 901 pm	**6** 93 / 67 0.07 105-1994 / 53-1946 sr 643 am ss 901 pm	**7** 93 / 68 0.07 103-1998 / 51-1952 sr 644 am ss 901 pm	**8** 93 / 68 0.06 106-2009 / 51-1952 sr 644 am ss 901 pm Last Quarter	**9** 93 / 68 0.07 107-2009 / 56-1952 sr 645 am ss 900 pm	**10** 93 / 68 0.06 109-1940 / 58-1968 sr 645 am ss 900 pm	**11** 93 / 68 0.07 104-1970 / 57-1999 sr 646 am ss 900 pm
12 93 / 68 0.06 105-1933 / 57-1999 sr 647 am ss 859 pm	**13** 93 / 68 0.06 107-1933 / 54-1953 sr 647 am ss 859 pm	**14** 93 / 68 0.07 108-1933 / 55-1990 sr 648 am ss 859 pm	**15** 93 / 68 0.06 105-2001 / 58-1926 sr 648 am ss 858 pm New Moon	**16** 93 / 68 0.06 105-2001 / 58-1935 sr 649 am ss 858 pm	**17** 93 / 68 0.06 105-1989 / 59-1930 sr 650 am ss 857 pm	**18** 93 / 68 0.05 103-1978 / 60-1935 sr 650 am ss 857 pm
19 93 / 68 0.06 108-1936 / 55-1947 sr 651 am ss 856 pm	**20** 93 / 68 0.05 105-1936/ 59-1971 sr 651 am ss 856 pm	**21** 93 / 68 0.06 102-1966 / 57-1988 sr 652 am ss 855 pm	**22** 93 / 68 0.05 104-2003 / 55-1915 sr 653 am ss 855 pm	**23** 93 / 68 0.06 104-2001 / 54-1915 sr 653 am ss 854 pm	**24** 93 / 68 0.05 104-1958 / 57-1915 sr 654 am ss 853 pm First Quarter	**25** 93 / 68 0.05 104-1940 / 59-1956 sr 655 am ss 853 pm
26 93 / 68 0.06 105-1995 / 58-1959 sr 656 am ss 852 pm	**27** 93 / 68 0.05 106-1995 / 57-1933 sr 656 am ss 851 pm Delta Aquarids Meteor Shower (Peak July 27-28)	**28** 93 / 68 0.06 105-1995 / 54-2005 sr 657 am ss 851 pm	**29** 93 / 68 0.05 102-1948 / 60-2004 sr 658 am ss 850 pm	**30** 93 / 68 0.05 104-1946 / 60-2000 sr 658 am ss 849 pm	**31** 93 / 68 0.06 104-1934 / 56-1971 sr 659 am ss 848 pm Full Moon	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500

Local Groups Provide Great Information to the National Weather Service

NWS Cooperative Observers (COOP)

The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the nation's weather and climate observing network of, by, and for the people. The COOP was formally created in 1890 under the Organic Act. More than 11,000 volunteers take observations on farms, in urban and suburban areas, in National Parks, on seashores, and on mountain tops. The data are representative of the places people live, work and play.

The NWS Lubbock COOP program has about 40 observers that collect valuable meteorological data every day from around the South Plains, Rolling Plains and Southern Texas Panhandle. The observations are widely used by surrounding NWS offices, River Forecast Centers at Tulsa, OK, and Fort Worth, TX, and the National Climatic Data Center (NCDC). Additionally, dozens more observers send in precipitation information when it rains, sleets or snows.

SKYWARN Storm Spotters

There are over 1000 trained SKYWARN storm spotters across the 24 counties in the South Plains region served by NWS Lubbock. These volunteers come from all walks of life but most are affiliated with their local law enforcement agencies or fire departments. We also have an amateur radio storm spotting team, the South Plains Storm Spotting Team, who cover the majority the region. Most of our spotters attend annual training conducted by the NWS in the spring. The training is geared toward keeping them safe while navigating around and interpreting what they see in close proximity to severe thunderstorms. The vital information from their "eyes on the sky" are relayed to our office and help provide ground truth to what forecasters are seeing on radar and in other meteorological data, and greatly help warning forecasters make their critical decisions.

If you are interested in becoming a spotter or taking a spotter training class in person or online, check the Lubbock National Weather Service web site at: http://www.weather.gov/lub/?n=skywarn-2013. Spotter classes are generally taught between February and April, though several online modules are available year-round.

SKYWARN spotter & NWS employee Bruce Haynie intercepts a tornado near Turkey on March 28, 2007.

In addition to the COOP observers and SKYWARN Storm Spotters, many other groups provide great information to the NWS. These groups include, but are not limited to:

- Sheriff's Offices
- Media
- Emergency Management Officials
- Public

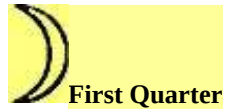
Several people participate in SKYWARN recognition day at NWS Lubbock.

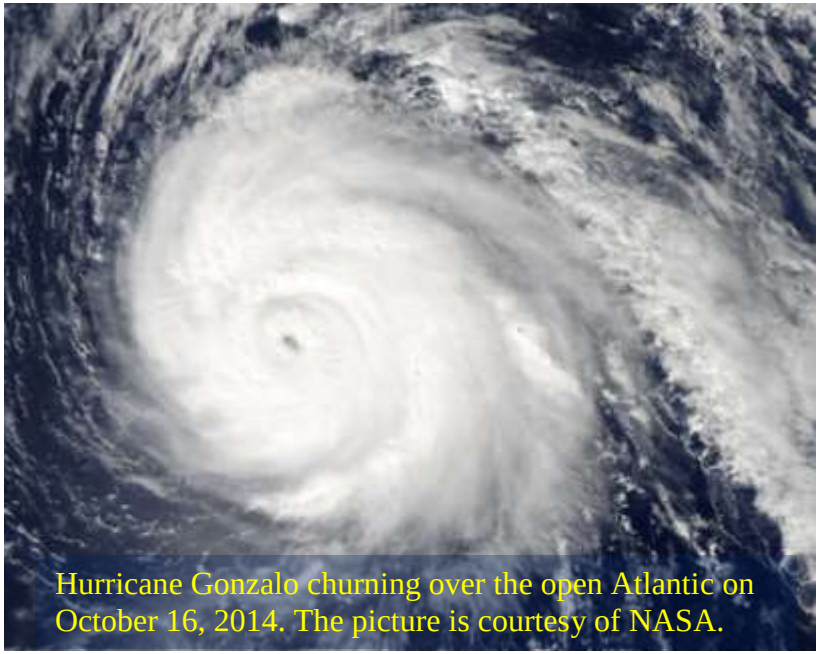
National Weather Service Lubbock would like to express our sincere appreciation to the many COOP observers, SKYWARN storm spotters and to everyone who provides us with valuable information and services!

August 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**			NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 93 / 68 0.05 **1** 106-1966 / 55-1925 Lubbock Records sr 700 am - sunrise ss 848 pm – sunset
2 93 / 68 0.06 105-2012 / 54-1936 sr 700 am ss 847 pm	**3** 93 / 68 0.07 107-1944 / 56-1921 sr 701 am ss 846 pm	**4** 93 / 68 0.06 105-2003 / 57-1915 sr 702 am ss 845 pm	**5** 92 / 68 0.07 102-2011 / 57-1915 sr 703 am ss 844 pm	**6** 92 / 68 0.06 105-2013 / 57-1990 sr 703 am ss 843 pm  Last Quarter	**7** 92 / 68 0.06 104-2003 / 58-1971 sr 704 am ss 842 pm	**8** 92 / 68 0.06 105-2003 / 58-1990 sr 705 am ss 841 pm
9 92 / 68 0.07 103-2011 / 51-1946 sr 705 am ss 840 pm	**10** 92 / 68 0.06 104-2011 / 55-1915 sr 706 am ss 839 pm	**11** 92 / 67 0.06 103-1936 / 56-1931 sr 707 am ss 838 pm Perseids Meteor Shower (peak Aug 11-12)	**12** 92 / 67 0.05 107-1936 / 54-1979 sr 707 am ss 837 pm	**13** 92 / 67 0.06 107-1936 / 54-1920 sr 708 am ss 836 pm	**14** 92 / 67 0.06 103-1946 / 53-1920 sr 709 am ss 835 pm  New Moon	**15** 92 / 67 0.06 103-1982 / 56-1920 sr 710 am ss 834 pm
16 92 / 67 0.06 104-1943 / 55-1931 sr 710 am ss 833 pm	**17** 92 / 67 0.06 103-1978 / 56-1931 sr 711 am ss 832 pm	**18** 91 / 67 0.06 103-1994 / 55-1943 sr 712 am ss 830 pm	**19** 91 / 67 0.05 103-1994 / 58-1950 sr 712 am ss 829 pm	**20** 91 / 66 0.06 103-1943 / 54-1915 sr 713 am ss 828 pm	**21** 91 / 66 0.07 103-1930 / 52-1956 sr 714 am ss 827 pm	**22** 91 / 66 0.06 100-1999 / 58-1967 sr 715 am ss 826 pm  First Quarter
23 91 / 66 0.06 101-1985 / 54-1923 sr 715 am ss 825 pm **30** 89 / 64 0.07 104-2011 / 44-1915 sr 720 am ss 816 pm	**24** 91 / 66 0.06 101-1936 / 51-1916 sr 716 am ss 823 pm **31** 89 / 64 0.07 100-2014 / 43-1915 sr 721 am ss 814 pm	**25** 90 / 66 0.07 105-1936 / 54-1962 sr 717 am ss 822 pm	**26** 90 / 65 0.06 102-1922 / 51-2010 sr 717 am ss 821 pm	**27** 90 / 65 0.06 100-1931 / 53-1926 sr 718 am ss 820 pm	**28** 90 / 65 0.06 103-2011 / 54-1916 sr 719 am ss 818 pm	**29** 90 / 65 0.07 99-1943 / 51-1917 sr 719 am ss 817 pm  Full Moon



Hurricane Gonzalo churning over the open Atlantic on October 16, 2014. The picture is courtesy of NASA.

The Tropics

Water spilling over the Red Bluff Reservoir Dam for the first time in about 20 year. Picture taken on Sep. 24, 2014.

2014 Atlantic Tropical Season

The 2014 Atlantic hurricane season was relatively quiet, producing 8 tropical storms, 6 hurricanes, and 2 major hurricanes (long-term averages are 12, 6, and 2, respectively). Hurricane **Gonzalo** did briefly strengthen to a Category 4 storm, with sustained winds peaking at 145 mph, in mid-Oct. **Gonzalo** was the first Category 4 storm in the Atlantic since **Ophelia** in 2011. Although weakening, **Gonzalo** did strike Bermuda as a Category 2 storm, downing many trees, causing flooding and thousands of power outages.

2015 Atlantic Cyclone Names

Ana	Henri	Odette
Bill	Ida	Peter
Claudette	Joaquin	Rose
Danny	Kate	Sam
Erika	Larry	Teresa
Fred	Mindy	Victor
Grace	Nicholas	Wanda

Tropical Impacts Closer to Home

Texas again escaped without any direct tropical cyclone landfalls in 2014. However, the moisture from the remnants of Tropical Storm **Dolly** in the Gulf of Mexico combined with an upper level moisture tap from Hurricane **Norbert** in the eastern Pacific to bring widespread rains to West Texas in early Sep. Between Sep. 5th and 7th much of the South Plains and Rolling Plains recorded 1-2 inches, with localized 3 inch amounts over the western Texas Panhandle. Even more impressive, a prolonged stretch of periodic heavy rain visited northwest Texas in mid-Sep. when the remnants of eastern Pacific Hurricane **Odile** stalled in southeast New Mexico and West Texas. On the morning of Sep. 20th, one area of rain parked over Gail and dumped an incredible 10.81 inches, most of which fell in a 4 hour period. Parts of southeast New Mexico recorded a foot or more, which led to flooding but also filled Red Bluff Reservoir for the first time since the early 1990s. Lastly, eastern Pacific Hurricane **Vance** was a generous contributor of moisture for a system that brought widespread 1-2 inch rain totals to the South Plains Nov. 3rd-4th.

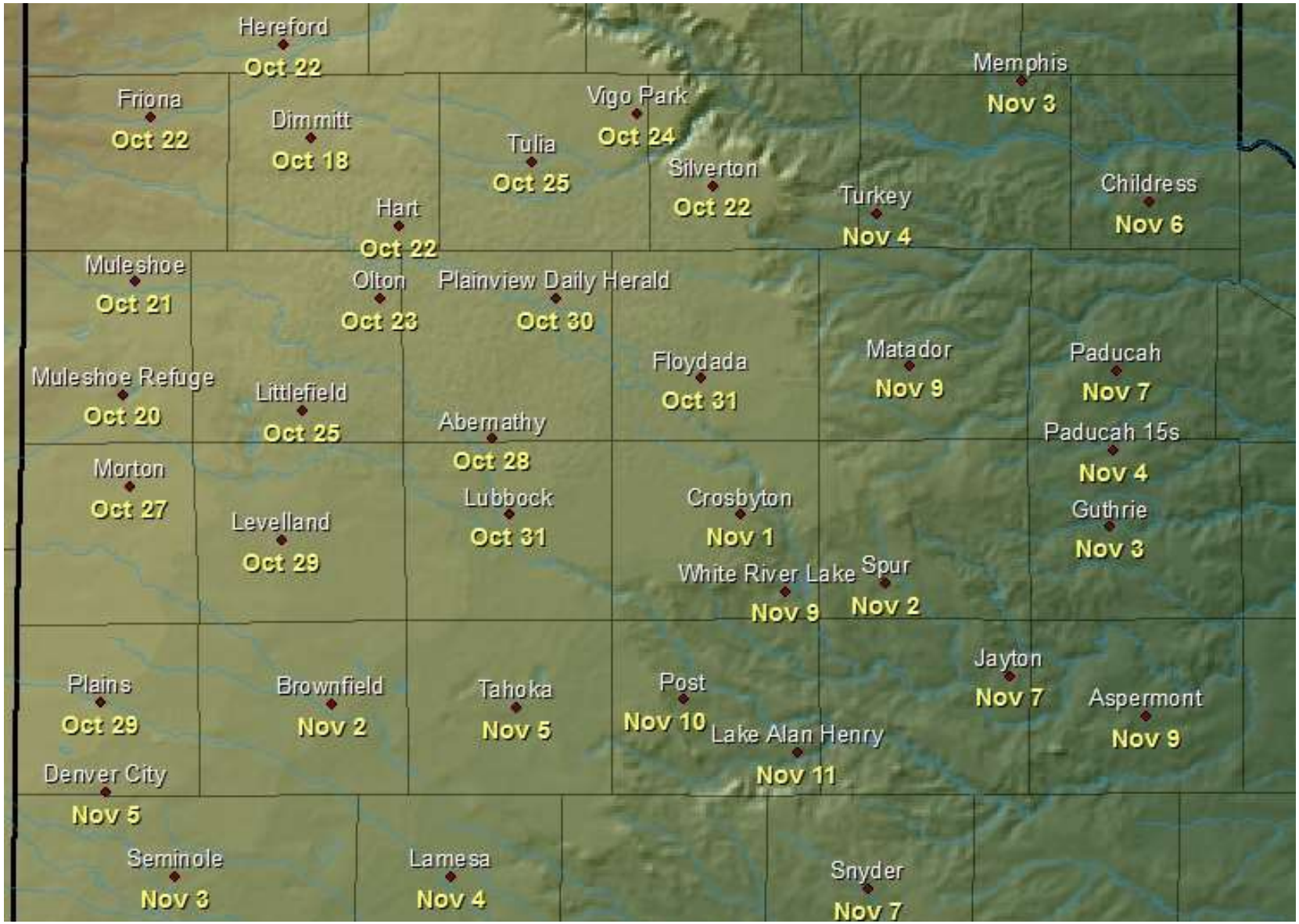
Lubbock National Weather Service

September 2015

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		Normals: 89 / 64 0.08 **1** 104-2014 / 43-1915 Lubbock Records sr 721 am - sunrise ss 813 pm – sunset	89 / 64 0.07 **2** 101-1947 / 50-1955 sr 722 am ss 812 pm	88 / 63 0.09 **3** 101-2000 / 48-1974 sr 723 am ss 810 pm	88 / 63 0.08 **4** 101-2000 / 46-1915 sr 723 am ss 809 pm	88 / 63 0.09 **5** 102-2000 / 46-1961 sr 724 am ss 808 pm Last Quarter
87 / 62 0.09 **6** 103-1948 / 51-1918 sr 725 am ss 806 pm	87 / 62 0.09 **7** 99-2012 / 45-1918 sr 725 am ss 805 pm Labor Day	87 / 62 0.09 **8** 97-1985 / 47-2004 sr 726 am ss 804 pm	87 / 61 0.09 **9** 99-1984 / 47-1956 sr 727 am ss 802 pm	86 / 61 0.09 **10** 100-2000 / 47-1962 sr 727 am ss 801 pm	86 / 61 0.09 **11** 103-2000 / 47-1959 sr 728 am ss 800 pm	86 / 60 0.08 **12** 100-1930 / 44-1959 sr 729 am ss 758 pm
85 / 60 0.09 **13** 101-1930 / 43-1959 sr 729 am ss 757 pm New Moon	85 / 60 0.09 **14** 100-1965 / 42-1945 sr 730 am ss 756 pm	85 / 59 0.08 **15** 99-1965 / 42-1993 sr 731 am ss 754 pm	84 / 59 0.09 **16** 100-1965 / 42-1951 sr 731 am ss 753 pm	84 / 58 0.09 **17** 98-2005 / 42-1951 sr 732 am ss 751 pm	84 / 58 0.08 **18** 98-1997 / 43-1971 sr 733 am ss 750 pm	83 / 58 0.09 **19** 105-1930 / 42-1991 sr 733 am ss 749 pm
83 / 57 0.08 **20** 98-1977 / 41-1991 sr 734 am ss 747 pm	83 / 57 0.08 **21** 98-1998 / 33-1983 sr 735 am ss 746 pm First Quarter	83 / 56 0.09 **22** 98-1977 / 40-1995 sr 735 am ss 744 pm	82 / 56 0.08 **23** 98-1926 / 41-2009 sr 736 am ss 743 pm Autumnal Equinox (3:21 am)	82 / 56 0.09 **24** 97-1953 / 38-1989 sr 737 am ss 742 pm	82 / 55 0.08 **25** 100-2005 / 36-2000 sr 738 am ss 740 pm	81 / 55 0.08 **26** 99-1997 / 36-1926 sr 738 am ss 739 pm
81 / 55 0.08 **27** 100-1953 / 39-1942 sr 739 am ss 738 pm Full Moon Total Lunar Eclipse	81 / 54 0.07 **28** 98-1994 / 36-1918 sr 740 am ss 736 pm	80 / 54 0.07 **29** 97-2011 / 33-1916 sr 740 am ss 735 pm	80 / 53 0.07 **30** 99-1977 / 35-1985 sr 741 am ss 733 pm	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Average First Freeze Dates



In Lubbock, the earliest fall freeze occurred on October 7, 1952.
The latest fall freeze in Lubbock occurred on November 23, 2003.

October 2015

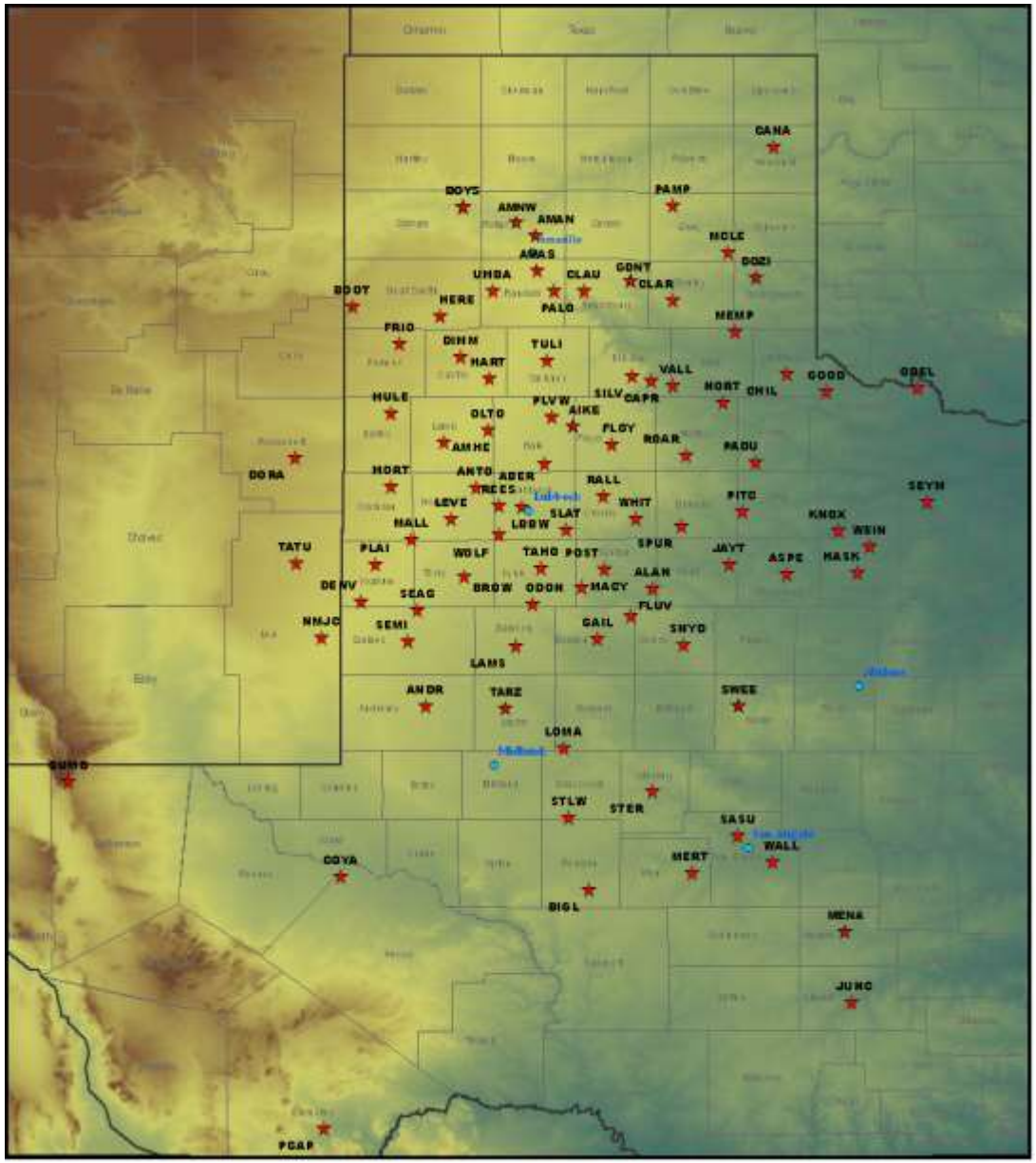
Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**		NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	Follow us on twitter at: www.twitter.com/ **NWSLubbock**	Normals: 80 / 53 0.07 **1** 98-2000 / 39-1985 Lubbock Records sr 742 am - sunrise ss 732 pm – sunset	79 / 53 0.07 **2** 99-2000 / 40-2009 sr 742 am ss 731 pm	79 / 52 0.06 **3** 100-2000 / 35-1961 sr 743 am ss 729 pm
79 / 52 0.06 **4** 96-2000 / 41-1961 sr 744 am ss 728 pm Last Quarter	79 / 52 0.07 **5** 97-1934 / 33-1932 sr 745 am ss 727 pm	78 / 51 0.07 **6** 94-1939 / 34-2001 sr 745 am ss 725 pm	78 / 51 0.07 **7** 98-1979 / 31-1952 sr 746 am ss 724 pm	78 / 51 0.07 **8** 98-1979 / 31-1976 sr 747 am ss 723 pm	77 / 50 0.07 **9** 93-1965 / 29-1970 sr 748 am ss 722 pm	77 / 50 0.07 **10** 93-1965 / 37-2009 sr 748 am ss 720 pm
77 / 50 0.08 **11** 93-1979 / 34-2009 sr 749 am ss 719 pm	77 / 49 0.07 **12** 92-1989 / 33-1969 sr 750 am ss 718 pm Columbus Day New Moon	76 / 49 0.06 **13** 92-1992 / 28-1969 sr 751 am ss 716 pm	76 / 49 0.07 **14** 93-2009 / 31-1969 sr 751 am ss 715 pm	76 / 48 0.07 **15** 92-1965 / 31-1966 sr 752 am ss 714 pm	75 / 48 0.07 **16** 92-2003 / 30-2001 sr 753 am ss 713 pm	75 / 48 0.06 **17** 93-1988 / 32-1999 sr 754 am ss 712 pm
75 / 47 0.07 **18** 90-2001 / 32-1968 sr 754 am ss 710 pm	74 / 47 0.06 **19** 92-1940 / 24-1917 sr 755 am ss 709 pm	74 / 47 0.06 **20** 93-2012 / 25-1916 sr 756 am ss 708 pm First Quarter	74 / 46 0.07 **21** 90-2003 / 26-1917 sr 757 am ss 707 pm Orionids Meteor Shower (Peak Oct 21-22)	74 / 46 0.06 **22** 89-1961 / 28-1945 sr 758 am ss 706 pm	73 / 46 0.06 **23** 91-2003 / 22-1917 sr 759 am ss 705 pm	73 / 45 0.05 **24** 91-1933 / 26-1929 sr 759 am ss 704 pm
72 / 45 0.05 **25** 91-1959 / 30-1955 sr 800 am ss 703 pm	72 / 44 0.05 **26** 91-2014 / 26-1913 sr 801 am ss 701 pm	72 / 44 0.05 **27** 87-1922 / 26-2012 sr 802 am ss 700 pm Full Moon	71 / 44 0.05 **28** 91-1943 / 25-1970 sr 803 am ss 659 pm	71 / 43 0.05 **29** 90-2003 / 20-1917 sr 804 am ss 658 pm	71 / 43 0.04 **30** 90-2010 / 18-1993 sr 804 am ss 657 pm	70 / 43 0.05 **31** 88-1934 / 20-1991 sr 805 am ss 656 pm Halloween

WEST TEXAS MESONET

(http://www.mesonet.ttu.edu/)



The West Texas Mesonet project began in 1999 to provide **free, real-time** weather and agricultural information for residents of the South Plains of West Texas. Over the years the project has grown well beyond the South Plains to include three observation towers in eastern New Mexico, sites in Guadalupe Mountains and Big Bend National Parks, and stations at Palo Duro and Caprock Canyons State Parks. To the left is a map of the West Texas domain which includes 85 mesonet stations (red stars) as of late 2014. Each observation station collects temperature, moisture, wind, pressure, solar radiation, and precipitation data, with most sites also sensing soil temperature and moisture at several depths. The data are not only valuable for the agriculture community; they are a tremendous resource for the National Weather Service.

West Texas Mesonet Station and a towering cumulus cloud

November 2015

Lubbock National Weather Service

WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 Normals: 70 / 42 0.04 85-1994 / 23-1951 Lubbock Records sr 706 am - sunrise ss 556 pm – sunset Daylight Saving Time Ends	**2** 69 / 42 0.04 85-2012 / 19-1991 sr 707 am ss 555 pm	**3** 69 / 41 0.04 88-2005 / 7-1991 sr 708 am ss 554 pm Election Day Last Quarter	**4** 69 / 41 0.04 86-1916 / 20-1950 sr 709 am ss 553 pm	**5** 68 / 40 0.03 86-1924 / 22-1959 sr 710 am ss 552 pm	**6** 68 / 40 0.03 85-1975 / 16-1959 sr 711 am ss 551 pm	**7** 67 / 40 0.03 89-1916 / 19-1947 sr 712 am ss 550 pm
8 67 / 39 0.03 88--2005 / 20-1943 sr 712 am ss 550 pm	**9** 67 / 39 0.02 90-2006 / 21-1943 sr 713 am ss 549 pm	**10** 66 / 38 0.03 85-1927 / 19-1950 sr 714 am ss 548 pm	**11** 66 / 38 0.03 82-1956 / 16-1950 sr 715 am ss 547 pm Veterans Day New Moon	**12** 65 / 37 0.03 85-1995 / 19-2014 sr 716 am ss 547 pm	**13** 65 / 37 0.02 82-1973 / 14-1976 sr 717 am ss 546 pm	**14** 64 / 37 0.03 85-1933 / 4-1976 sr 718 am ss 545 pm
15 64 / 36 0.03 85-1965 / 10-1916 sr 719 am ss 545 pm	**16** 63 / 36 0.02 83-1966 / 11-1916 sr 720 am ss 544 pm	**17** 63 / 35 0.03 85-1966 / 10-1959 sr 721 am ss 544 pm Leonids Meteor Shower (peak Nov 17-18)	**18** 62 / 35 0.02 82-1999 / 16-1951 sr 722 am ss 543 pm	**19** 62 / 34 0.03 85-1996 / 14-1937 sr 723 am ss 543 pm First Quarter	**20** 62 / 34 0.02 88-1996 / 17-1937 sr 724 am ss 542 pm	**21** 61 / 33 0.03 84-1927 / 18-1956 sr 725 am ss 542 pm
22 61 / 33 0.02 82-2006 / 6-1957 sr 725 am ss 541 pm	**23** 60 / 33 0.03 84-1965 / -1-1957 sr 726 am ss 541 pm	**24** 60 / 32 0.02 82-1915 / 7-1938 sr 727 am ss 541 pm	**25** 59 / 32 0.03 86-1965 / 15-1993 sr 728 am ss 540 pm Full Moon	**26** 59 / 32 0.03 82-1970 / 8-1980 sr 729 am ss 540 pm Thanksgiving Day	**27** 59 / 31 0.02 81-1949 / 12-1976 sr 730 am ss 540 pm	**28** 58 / 31 0.03 83-1949 / 5-1976 sr 731 am ss 540 pm
29 58 / 30 0.03 80-2014 / 1-1976 sr 732 am ss 540 pm	**30** 58 / 30 0.02 81-2012 / 10-1918 sr 733 am ss 539 pm End of the Atlantic Hurricane Season		Follow us on twitter at: www.twitter.com/ **NWSLubbock**	NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES: Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	NATIONAL WEATHER SERVICE	Follow us on facebook at: www.facebook.com/ **NWSLubbock**

THE KLBB WSR-88D

At a glance

The WSR-88D is the workhorse of the National Weather Service. Using data from these radar systems, meteorologists can ascertain severe storm, flooding, and damaging wind potential.

What else have we seen? Wind farms, chaff from military exercises, trains, re-entering space junk, and meteor trails.

Our primary radar is located at the Lubbock International Airport with a maximum range of 285 statute miles.

Inside the radome and equipment shelter at the Lubbock radar site

Lubbock National Weather Service — December 2015 — WWW.WEATHER.GOV/LUBBOCK

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Follow us on facebook at: www.facebook.com/ **NWSLubbock**	**NOAA WEATHER RADIO CAN BE FOUND AT THE FOLLOWING FREQUENCIES:** Lubbock 162.400 Dimmitt 162.500 Plainview 162.450 Childress 162.525 Dickens 162.500	**1** Normals: 57 / 30 0.02 79-2012/ 12-1918 Lubbock Records sr 734 am - sunrise ss 539 pm – sunset	**2** 57 / 30 0.03 81-1995 / 13-1985 sr 734 am ss 539 pm	**3** 57 / 29 0.02 82-2010 / 15-1967 sr 735 am ss 539 pm Last Quarter	**4** 56 / 29 0.02 81-1958 / 15-1921 sr 736 am ss 539 pm	**5** 56 / 29 0.03 79-1939 / 10-1950 sr 737 am ss 539 pm
6 56 / 28 0.02 83-1939 / 1-1950 sr 738 am ss 539 pm	**7** 55 / 28 0.03 79-2007 / 8-2005 sr 738 am ss 539 pm	**8** 55 / 28 0.03 78-1970 / 3-1917 sr 739 am ss 539 pm	**9** 55 / 28 0.02 80-1939 / 5-1978 sr 740 am ss 539 pm	**10** 55 / 28 0.03 81-1933 / 5-1917 sr 741 am ss 540 pm	**11** 54 / 27 0.03 80-1939 / 6-1917 sr 742 am ss 540 pm New Moon	**12** 54 / 27 0.02 82-1937 / 6-1961 sr 742 am ss 540 pm
13 54 / 27 0.03 79-1921 / 5-1917 sr 743 am ss 540 pm Geminids Meteor Shower (peak Dec 13-14)	**14** 54 / 27 0.03 82-2010 / 8-1987 sr 744 am ss 541 pm	**15** 54 / 27 0.02 80-2010 / 2-1987 sr 744 am ss 541 pm	**16** 54 / 27 0.03 77-2006 / 3-1987 sr 745 am ss 541 pm	**17** 53 / 27 0.03 78-1980 / 5-1932 sr 746 am ss 542 pm	**18** 53 / 27 0.02 77-1980 / 6-1996 sr 746 am ss 542 pm First Quarter	**19** 53 / 26 0.03 76-1921 / 0-1924 sr 747 am ss 542 pm
20 53 / 26 0.02 80-1921 / 3-1924 sr 747 am ss 543 pm	**21** 53 / 26 0.03 78-1981 / 2-1983 sr 748 am ss 543 pm Winter Solstice (10:48 pm)	**22** 53 / 26 0.02 79-1969 / -2-1989 sr 748 am ss 544 pm	**23** 53 / 26 0.03 80-1964 / -1-1989 sr 749 am ss 544 pm	**24** 53 / 26 0.02 80-1955 / 0-1983 sr 749 am ss 545 pm	**25** 53 / 26 0.02 76-1955 / -1-1924 sr 750 am ss 546pm Christmas Full Moon	**26** 53 / 26 0.02 77-2005 / 0-1918 sr 750 am ss 546 pm
27 53 / 26 0.03 76-2006 / 3-1918 sr 750 am ss 547 pm	**28** 53 / 26 0.02 81-1928 / -2-1924 sr 751 am ss 547 pm	**29** 53 / 26 0.02 77-1920 / -1-1939 sr 751 am ss 548 pm	**30** 53 / 26 0.02 80-2008 / 7-2000 sr 751 am ss 549 pm	**31** 53 / 26 0.02 76-2011 / 8-1923 sr 752 am ss 549 pm New Year's Eve	NATIONAL WEATHER SERVICE	Follow us on twitter at: www.twitter.com/ **NWSLubbock**

Severe Weather Safety Tips

Prepare a Home Severe Weather Plan—

- Pick a place where family members could gather if a tornado is headed your way. It could be your basement or, if there is no basement, a center hallway, bathroom, or closet on the lowest floor. Keep this place uncluttered.
- If you are in a high-rise building, you may not have enough time to go to the lowest floor. Pick a place in a hallway in the center of the building.

Assemble a Disaster Supplies Kit containing—

- First aid kit and essential medications.
- Canned food and can opener.
- At least three gallons of water per person.
- Protective clothing, bedding, or sleeping bags.
- Battery-powered radio, flashlight, and extra batteries.
- Special items for infant, elderly, or disabled family members.

When a Severe Thunderstorm or Tornado WATCH is issued—

- Listen to NOAA Weather Radio, local radio and TV stations for further updates.
- Be alert to changing weather conditions.

When a Severe Thunderstorm or Tornado WARNING is issued—

- If you are inside, go to the safe place you picked to protect yourself from glass and other flying objects.
- If you are outside, hurry to the basement of a nearby sturdy building or lie flat in a ditch or low-lying area.
- If you are in a car or mobile home, get out immediately and head for safety (as above).

After the Severe Thunderstorm or Tornado passes—

- Watch out for fallen power lines and stay out of the damaged area.
- Listen to the radio for information and instructions.
- Use a flashlight to inspect your home for damage.

Conduct periodic Severe Weather drills so everyone remembers what to do. Stay tuned for warnings—

- Listen to your local radio and TV stations for updated storm information.
- Be especially alert to the weather when Severe Thunderstorm and Tornado WATCHES are in effect and take action when WARNINGS are issued.
- Know what a Severe Thunderstorm or Tornado WATCH and WARNING means:
  - A Tornado/Severe Thunderstorm WATCH means a Tornado/Severe Thunderstorm is possible in your area.
  - A Tornado/Severe Thunderstorm WARNING means a Tornado/Severe Thunderstorm has been detected and may be headed for your area. Go to a safe location immediately.