

VALLEY WEATHER WIND



Winter 2007

National Weather Service
Omaha/Valley, Nebraska

Phone: 402-359-5166 Fax: 402-359-5368

Web Site: <http://weather.gov/omaha>

E-mail: w-oax.webmaster@noaa.gov

A Newsletter for Emergency Managers, Core Storm Spotters, Media, and Public Officials in Eastern Nebraska and Southwest Iowa

Comments and suggestions are always welcome. Your feedback is very important to us!

Please contact us by telephone, e-mail, or regular mail.

National Weather Service
6707 N 288th Street
Valley, Nebraska 68064

This publication also is available on-line at <http://www.crh.noaa.gov/oax/news/newsletter.pdf>

Chief Editors:
Van DeWald / Cathy Zapotocny



Planning to Travel...Be Prepared for Different Hazards

by Steven Schurr, Meteorologist in Charge

When people travel to other sections of the country or abroad, they often do not consider that weather hazards vary from those that they deal with at home. Their lack of awareness and knowledge of hazards in the place they travel could put them in peril.

Most Nebraskans and Iowans are usually aware of the dangers of tornadoes, severe thunderstorms and winter storms. They know what they should do to get information on developing storms, and the action necessary to remain safe. When we travel to the Gulf or Atlantic Coast, do we make the effort to be aware of developing hurricanes? Do we know what to do if one threatens the area where we vacation? Do we even know about the months that comprise hurricane season?

Many areas of the world are threatened by earthquakes. Yet, when we travel to those areas, most of us have little knowledge of the extent of that danger. When we travel to any seacoast, are we aware of the potential for tsunamis? California normally has great weather, but dry conditions can result in fires that can move rapidly and put lives in danger. Nebraska and Iowa are frequently short of rain, and our occasional flooding causes damage but little threat to life. Flash Flooding in the mountains or even occasionally in the desert can put lives at risk.

The message here is that weather and other hazards vary a great deal from place to place. Travel often puts us in areas that have weather and hazards different from those we are accustomed to. So, when you are away from home make sure you are aware of any potential dangers, and become knowledgeable of actions to take that might save your life. Watch local television stations, listen to the radio and carry a weather radio to help you get information on possible hazards. Some time invested in acquiring knowledge and information just might save a life one day.

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Open House Set for April

The National Weather Service will hold a **public open house** at the Valley office on Tuesday, April 10th from 4 p.m. to 8 p.m. A COOP and Emergency Manager Appreciation Day will also be held this spring. Details regarding the public open house will be posted to the web a couple of weeks before the event.



Devastating Ice Storm Hits Central and Northeast Nebraska

by Cathy Zapotocny, Meteorologist

The severe ice storm that moved through the Plains December 29-31 produced widespread ice damage for central and northeast Nebraska. Ice build-up on the 600 miles of transmission lines from Lexington to Broken Bow and Aurora north to Norfolk resulted in tower and pole failures. 130 miles of transmission lines were on the ground along with at least 1000 downed power poles. A quarter of an inch to one inch of ice was reported in northeast Nebraska...with a half an inch to one inch common across the rest of central Nebraska.



Downed power lines; a familiar sight throughout central Nebraska

Source: Nebraska Public Power district



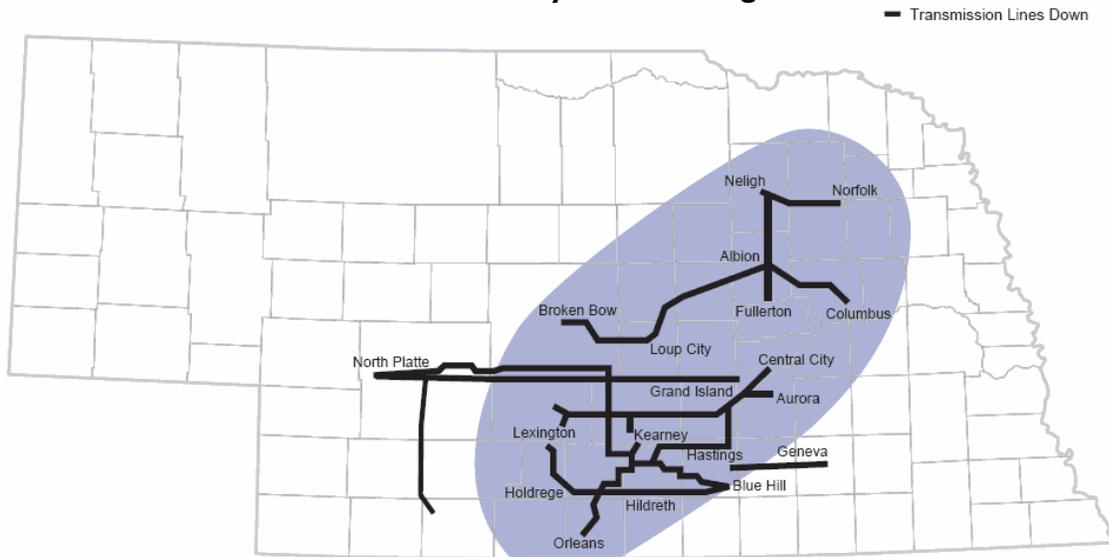
Accumulating ice near Kearney

Photo taken by John Love

The Kearney area had one transmission feed compared to the typical 4 or 5; limiting capacity. The Tuesday following the storm, over 15,000 customers were still without power. The Nebraska Public Power district and South Power districts estimated damage around \$250 million. By January 15th, 1,000 customers remained without power. While snowstorms accompanied by wind, freezing rain, and sleet are a natural phenomenon for those residing in Nebraska and Iowa, this storm will be remembered as one of the most damaging!

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Areas Affected by Power Outages



Source: Nebraska Public Power district

Surviving the Storm

by Van DeWald, Lead Meteorologist

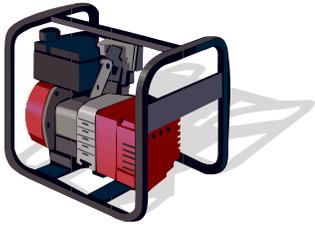
Winter storms have the capability to immobilize portions of states and even entire regions. The immediate effects of a winter storm may last for a day or two, but the aftermath of a storm can linger for many days and even weeks. The two winter storms that occurred before the Christmas and New Years holidays are excellent examples. Due to a significant amount of ice accumulation, up to 3 inches in places, several thousand Midwest residents lost power and did not have electricity restored for many, many days. In fact, the latest storm may have been the worst ice storm in Nebraska history in the past 30 years. Winter storms can be extremely life threatening. Are you prepared for the next big winter storm? Taking preventative steps now and having an emergency action plan could potentially save your life.

Surviving the Storm Con't.

With advancements in meteorology and technology in recent years, our ability to predict winter storms continues to improve. Complex computer models provide important information to forecasters days in advance before the storm strikes. The National Weather Service uses a three-tiered approach to providing details about upcoming winter storms. Typically, 3 to 7 days in advance of a winter storm, we'll provide information in our Hazardous Weather Outlook. We'll give relevant information about when the storm will affect your community, and what type of weather you might expect. Within 12 to 48 hours of the storm, we'll typically issue a Winter Storm Watch which will provide more specific information about the impending winter storm. When we're sure that the storm will happen, we'll typically issue a Winter Storm Warning 6 to 18 hours in advance of the event. For the most extreme cases, a Blizzard Warning or Ice Storm Warning may be issued instead. It's at this point that all of your preparations need to be in place as you'll be putting your emergency plan into action.



To survive the storm, your primary concerns at home need to be loss of heat, power, and communications, and whether you have enough supplies if severe winter conditions last for more than a day or two. You need to make sure that you have enough water available, and plenty of food that doesn't require cooking or refrigeration. For an emergency heat source, consider using your fireplace, a wood stove, or a kerosene space heater. Don't forget though, many modern gas fireplaces typically have an electronic ignition source, thus it may not ignite if you've lost power. Be sure to use only indoor-approved space heaters to avoid carbon monoxide poisoning. If you use heating fuel, oil or propane, consider refueling your system before the storm arrives because suppliers may not be able to reach your location for days.



If you live in a rural or remote area, consider purchasing an emergency generator. These self-contained units can be purchased for a few hundred dollars, with varying amounts of available electricity. Think of the critical items in your home that you would need to maintain during a winter storm. At a minimum, you would need to keep your refrigerator and microwave plugged in, a lamp or two, a portable space heater, and a TV or radio. Larger generators have the capability to power more equipment such as the blower for your gas furnace, or even your entire home. It's important to remember though to never run a generator indoors. Carbon monoxide from the exhaust can be deadly.

Stock up on canned food items, bread, crackers, dried fruits, etc. and make sure you have access to a manual can opener. A camp stove may come in handy as well, or you might be able to use your gas grill to do some cooking too. Flashlights with extra batteries will also be needed, along with an ample supply of candles. But, if using candles, be sure to use extra caution to avoid accidental fires. It's also a good idea to have a battery operated radio or TV so you can continue to get information on the storm from local news media. If you take prescription medicine, make sure you have an adequate supply, along with extra diapers and formula if necessary. During a winter storm, if you lose power, chances are that you may still have water. However, it's best to stock up by bottling water before the storm hits, or buying bottled water from the store.



If you are stranded in your home by a winter storm, stay indoors as much as possible. If you lose electricity, you'll need to close off as many unused rooms as possible to conserve heat. You may also consider hanging blankets over windows and doors to conserve heat loss too. Have everyone wear warm clothing in multiple layers, especially hats. If it gets extremely cold outside, you may need to allow faucets to drip slowly to avoid freezing pipes, and be sure you know where your water shutoff valve is located. Try to avoid opening the refrigerator or freezer, but remember



you could probably store items outside if necessary to prevent spoilage.

Don't forget about relatives, neighbors, and pets who may also be affected by the storm. Help them out if necessary, and keep tabs on family members who might be traveling. Winter storms can be very chaotic, but remember, everyone else is likely going through the same thing as you and your family. If the situation becomes dire enough or your home becomes unsafe to live in, there will often be emergency shelters where you can go for food and heat.

The after effects of large winter storms may linger for many days, even weeks. If power is lost, it may take a long time for necessary repairs to be made. Are you ready? Do you have enough supplies to last the duration? Do you have an emergency action plan? With proper planning and necessary preparations now, you will survive!

Staying Safe When Temperatures are Extremely Cold

by Bryon Miller, Lead Meteorologist

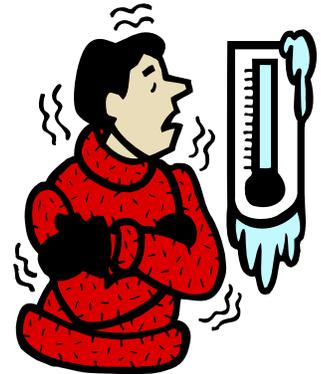
When the body is unable to warm itself, cold-related illnesses and injuries may occur. These can cause permanent tissue damage or even death. Cold related conditions can slowly overcome a person who has been chilled by low temperatures, strong winds, or wet clothing. The two most common cold-related illnesses are hypothermia and frostbite.

Hypothermia:

- ◆ Occurs when the body temperature drops below 95°F.
- ◆ Causes uncontrolled shivering, fatigue, or drowsiness.
- ◆ Causes the skin to become bluish and cool.
- ◆ Can cause slurred speech, clumsy movements, irrational or confused behavior.

Frostbite:

- ◆ Causes freezing in deep layers of skin and tissue.
- ◆ Causes pale, waxy-white skin color.
- ◆ Makes the skin hard and numb.
- ◆ Usually affects the extremities (fingers, hands, toes, feet, ears, and/or nose).



Treating cold related illnesses

- ◆ Move the person to a warm, dry area. Do not leave the person alone.
- ◆ Remove wet or tight clothes that may cut off blood flow to the affected area. Replace with warm, dry clothing or wrap in blankets.
- ◆ Have the person drink warm, sweet beverages, such as hot chocolate, sugar water and sports drinks. Avoid drinks with caffeine in them.
- ◆ Do not rub the affected area if frostbitten. This can cause damage to the skin and tissue.
- ◆ If frostbitten, place the affected area in lukewarm water (105°F) to slowly warm the tissue. Warming takes from 25 to 40 minutes.
- ◆ When normal feeling, movement, and skin color returns, dry and wrap the affected area. Seek medical attention.
- ◆ Eat warm, high-calorie foods such as pasta dishes.

Reference - *NWS Environmental, Safety and Health (ES&H) newsletter*

Omaha/Valley Earns Distinction - #1 out of 91 Sites



The National Weather Service at Omaha/Valley (OAX) was rated the top upper air site in the country for the month of November with a rating of 299.56. A perfect score is 300! OAX was ranked 19th for October and 32nd for September. For the three-month period from September to November, OAX was #14.

There are several factors that contribute to the rating (some of which the staff has very little control over) including:

The % of soundings arriving at the National Center for Environmental Prediction (NCEP) within 3 hours of release

The % of soundings reaching 400mb, 50mb, and 20 mb

The % of temperature levels surface to 400mb rejected by NCEP

The % of wind levels 400mb-1mb rejected by NCEP



The Severe Weather Season is Just Around the Corner



Dates to Remember



Flood Safety Awareness Week: March 19-23rd

NE/IA Severe Weather Awareness Week: April 2-6th

March	Spotter Talks 2007			
6th - Tuesday	Madison County	Norfolk	NE Community College	7 p.m.
7th - Wednesday	Richardson County	TBD		7 p.m.
13th - Tuesday	Shelby County	Defiance		7 p.m.
20th - Tuesday	Cass County		EOC	7 p.m.
24th - Saturday	Lancaster County	Lincoln	Hardin Hall (Severe Weather Symposium)	TBA
25th - Sunday	Saline County		Saline Center	1 p.m.
27th - Tuesday	Sarpy County	Bellevue	Fire Training Academy	7 p.m.
29th - Friday	Douglas County	Boys Town	National Headquarters	7 p.m.
April	Spotter Talks 2007			
2nd - Monday	Nemaha County	Auburn	EOC	7 p.m.
3rd - Tuesday	Cedar County	Hartington		7 p.m.
3rd - Tuesday	Otoe County	Nebraska City	Fire Station	7:30 p.m.
24th - Tuesday	Wayne County	Wayne	Fire Hall	7 p.m.

The 2006 Iowa and Nebraska Tornado Seasons

by Brian Smith, Warning Coordination Meteorologist

Iowa had a below normal year for tornadoes with a total of 38 which is 9 less than the 1980-2005 average of 47. The year started out rather ominous as March and April were very active with a total of 27 tornadoes. This is well above the normal of 8 tornadoes for those two months combined. However, the remainder of the season fizzled with only 11 tornadoes over the next 5 months including **no tornadoes in the month of May**. This is the first time since May 1978 that no tornadoes occurred during the month.

Season Total: 38

Deaths: 1

F-rating Totals: F0 – 23, F1 – 12, F2 – 3, >=F3 0

Injuries: 32

Monthly Breakdown	F-rating	Monthly Breakdown	F-rating
January: 0	None	July: 4	4 – F0
February: 0	None	August: 1	1 – F0
March: 4	4 - F0	September: 3	3 – F0
April: 23	9 – F0, 11-F1, 3-F2	October: 0	None
May: 0	None	November: 0	None
June: 3	2 – F0, 1 – F1	December: 0	None



The 2006 Iowa and Nebraska Tornado Season Con't.

April 13th was the most active day of the year with a total of 12 tornadoes. This included the Iowa City tornado which injured 30 people and did considerable damage to portions of the city. Two other injuries were reported that day along with one death in Muscatine County where a woman was killed in a mobile home near Nichols. April 2nd was also an active day with a total of 10 tornadoes primarily in central and southeast Iowa.

The total of 23 tornadoes in April was the 2nd highest number for April since 1980. The record is 40 tornadoes which occurred in 2001. Out of the last 5 years, 4 of the 5 have had below normal tornado numbers with the exception occurring in 2004 when 120 tornadoes occurred. That total in 2004 was a record number of tornadoes for Iowa in any year since accurate records started in 1950.

NEBRASKA

Nebraska had a below normal year for tornadoes with a total of 22 which is 28 under the 1977-2006 (30 year) average of 50. March and April started out as very active across the eastern part of Nebraska with 8 tornadoes in both of those months. In May, **no tornadoes occurred in Nebraska**. This has never happened since modern statistics have been recorded (1950-present). During the summer months of (June-August), tornadoes were confined to the western portion of the state. Finally, in September, there were 3 tornadoes that occurred in south central and eastern parts of the Cornhusker state.

Season Total: 22

Deaths: 0

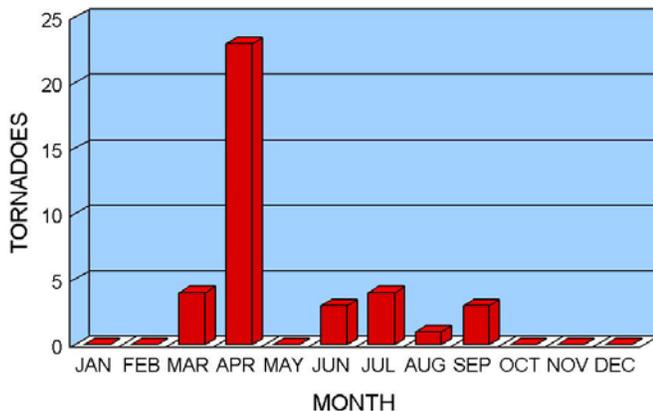
F-rating Totals: F0 – 16, F1 – 4, F2 – 2, >=F3 0 Injuries: 32

Monthly Breakdown	F-rating	Monthly Breakdown	F-rating		
January:	0	None	July:	1 – F0	
February:	0	None	August:	2 – F0	
March:	4	4 - F0	September:	3 – F0, 1-F2	
April:	4	2 – F0, 1-F1, 1-F2	October:	0	None
May:	0	None	November:	0	None
June:	8	5 – F0, 3 – F1	December:	0	None

One of the strongest tornadoes (F2 strength) occurred on April 15th, when a tornado carved a 34 mile long path across Gage and Johnson Counties. Seventy-three homes were affected by the tornado with one home being destroyed and two others receiving major damage. The second F2 tornado occurred on September 15th when a tornado embedded within a downburst wind storm struck the small town of Surprise in Butler County. A mobile home was destroyed and a roof was torn off of a tavern.

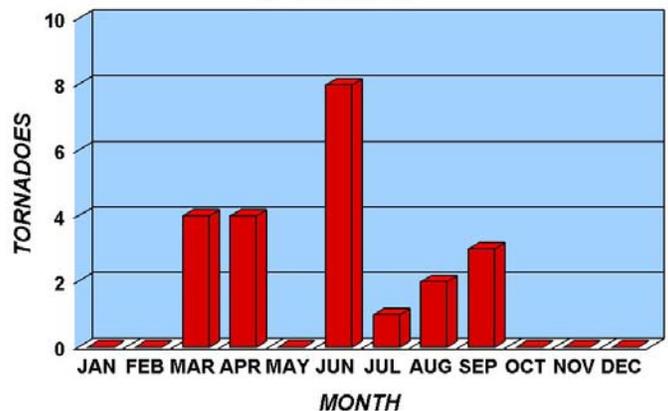
TORNADOES IN IOWA

2006
38 Tornadoes



TORNADOES IN NEBRASKA

2006
22 Tornadoes



What Will the 2007 Severe Weather Season Bring?

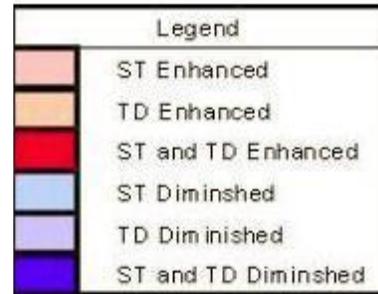
by Cathy Zapotocny, Meteorologist

Preliminary results from a recent study on tornado and severe weather climatology and predictability were presented at the 2006 Severe Local Storms Conference in St. Louis. This study investigated the relationship between El Niño-Southern Oscillation (ENSO) and tornado climatology over the Midwest. For a complete review of the article refer to: <http://ams.confex.com/ams/pdfpapers/117083.pdf>

According to the Climate Prediction Center, since May of 2006 sea-surface temperature (SST) anomalies have increased over Niño areas with most areas still from +1 to +1.2 ° C representing El Niño conditions. The following chart is the signal results based on ENSO phase of the preceding fall and winter. From this study, there appears to be a signal for diminished tornado days for eastern Nebraska and western Iowa.



Impacts on significant tornado and tornado day climatologies during the fall and winter prior to the convective year based on ENSO phase.



ST= Significant Tornadoes
TD= Tornado Days

The Cooperative Observer Program

by Terry Landsvork, Observation Program Leader

With the snow season having arrived across the Heartland, it is time for cooperative observers with the 8 inch standard precipitation gage to remove the 2 inch diameter tube and 8 inch funnel from their gages. This is a precaution to keep any water in the tube from freezing and resulting in a leaky tube. The tube and funnel still need to be used indoors to measure the melted ice/snow that collects in the 8 inch diameter can. Those observers with a large, white recording precipitation gage (Fischer Porter) can discontinue draining the bucket each month. Antifreeze was added to the bucket in the fall and we don't want it to become diluted. You can resume draining the bucket after the NWS employee empties and cleans the bucket next spring.

A few observer changes have occurred at COOP sites in eastern Nebraska and southwest Iowa over the past 12 months. Below is a listing of those observers leaving us and also those new observers coming on board.

<u>Site</u>	<u>Retired</u>	<u>Replacement</u>
Friend	Bill Sand	Larry Eigsti
Humphrey	Doug Eisenmenger	Monica Veick
Madison 2W	Jeff Zessin	none so far
Barada 3SW	Al Eickhoff	none-closed
Shubert 2SW	(new station)	Jennifer James
Oakland, IA	Ken Cohrs	Darrell Busby
Crete	Dave Smith	Brad Elder

Volunteer Observer Needed

Anyone interested in becoming the cooperative observer at Madison, Nebraska should contact us at: W-OAX.Webmaster@noaa.gov or write to:

National Weather Service
6707 North 288th Street
Valley, NE 68064-9443



Congratulations and thanks are in order for the following dedicated cooperative weather observers that celebrated years of service milestones since October 1, 2006:

Bill Sand (Friend) 45 years

Mark & Susan Doehling (Surprise) 20 years

Climatological Data

Compiled by Steve Klemm, Hydro Meteorological Technician

Climatological Data for October, November, and December 2006

Location	Month	Average	Departure	Rain / Snow	Departure	Highest	Lowest
Omaha	Oct	50.0°	-3.2°	0.87" / T	-1.34"	91° (1st)	23° (31st)
	Nov	39.8°	+1.8°	0.26" / T	-1.56"	81° (8th)	9° (30th)
	Dec	33.2°	+7.6°	2.25" / 2.6"	+1.33"	59° (14th)	3° (7th)
Lincoln	Oct	50.5°	-3.0°	0.90" / T	-1.04"	94° (1st)	20° (31st)
	Nov	40.1°	-1.9°	0.09" / 0.0"	-1.49"	84° (8th)	7° (30th)
	Dec	33.5°	+7.0°	3.05" / 7.5"	+2.19"	61° (5th)	3° (1st)
Norfolk	Oct	48.6°	-2.4°	1.62" / T	-0.10"	94° (3rd)	15° (31st)
	Nov	37.2°	+2.1°	0.26" / T	-1.18"	80° (8th)	5° (30th)
	Dec	31.7°	+8.0°	2.62" / T	+1.97"	58° (9th/14th)	1° (7th)

Normal High/Low Temperatures

Outlook for February, March, and April

Location	Feb 1	Mar 1	Apr 1	May 1
Omaha	34/14	44/23	58/34	67/46
Lincoln	35/13	45/22	58/33	69/45
Norfolk	33/12	42/20	55/31	67/42

The outlook for February, March, and April, calls for above normal temperatures for eastern Nebraska and southwest Iowa and equal chances for below, at, or above normal precipitation. For additional details and other outlook information, please visit the Climate Prediction Center website at <http://www.cpc.ncep.noaa.gov/>

Astronomical Calendar

Sunrise/Sunset (http://aa.usno.navy.mil/data/docs/RS_OneYear.html)

Date	Omaha		Lincoln		Norfolk		Times are given in cdt (Central Daylight Time) and cst (Central Standard Time).
	Sunrise	Sunset	Sunrise	Sunset	Sunrise	Sunset	
Jan 1	7:50 am cst	5:05 pm cst	7:51 am cst	5:10 pm cst	7:58 am cst	5:09 pm cst	
Feb 1	7:35 am cst	5:40 pm cst	7:37 am cst	5:44 pm cst	7:43 am cst	5:44 pm cst	
Mar 1	6:59 am cst	6:14 pm cst	7:01 am cst	6:18 pm cst	7:05 am cst	6:20 pm cst	
Apr 1	7:07 am cdt	7:48 pm cdt	7:11 am cdt	7:51 pm cdt	7:13 am cdt	7:55 pm cdt	

Moon Phases

New Moon	First Quarter	Full Moon	Last Quarter
Feb 17	Feb 24	Mar 3	Mar 11
Mar 18	Mar 25	Apr 2	Apr 10
Apr 17	Apr 24	May 2	May 9
Jan 18	Jan 25	Feb 1	Feb 10



Daylight Savings Time Begins 2 am March 11th

Spring Equinox (Start of Spring) March 20th 7:07 pm cdt