



# THE WEATHER OBSERVER

## 2009 Spring Edition

Welcome to the spring edition of News 8's Weather Observer, written specifically for those who enjoy watching and learning more about Central Texas weather! Our most turbulent weather comes this time of year, in the severe weather season. We'll learn all about it and have some fun exploring with a weather word search, earthly maze, and other activities. Let our team of News 8 meteorologists prepare you and your family with specific ideas for preparation at home, school, and everywhere in between. Thanks for taking the time to become **STORM READY!**

We've set a huge goal of visiting 10,000 students this calendar year! Students, be sure to read through the Weather Observer prior to our visit and prepare your weather questions. Tell your friends to invite us to their campus, too!



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### NOAA All-Hazards radio

Truly a personal tornado siren for your home, the NOAA All-Hazards radio can be your lifeline when severe storms are near your neighborhood. Maureen McCann says it's easy to program your radio for your specific county.



Photo by Debra Jahns

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We hear a lot of tips for homeowners but apartment dwellers need a plan of action before the next round of storms, too. Rich Segal makes us think about the safest part of any building.

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### Spring Showers

A Texas-sized drought began in the fall of 2007. Adam Krueger updates our latest status. And will El Nino come to the rescue anytime soon? The forecast finally looks up.

### News 8 Austin's Storm Cruiser 8

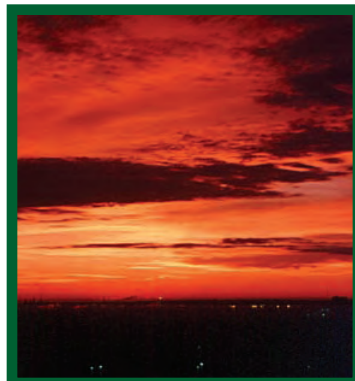
is a customized Dodge Grand Caravan featuring a 12-foot LED sign and a full array of weather instruments providing temperature, heat index, wind chill, wind speed, wind direction, wind gusts, and more.



If you have questions, we're always available at [feedback@news8austin.com](mailto:feedback@news8austin.com). We hope you enjoy reading.

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Red skies at morning mean you should take warning, right? Marc Gomez puts the forecast in motion through poetry and weather lore.



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**NOAA Radio: Your personal Tornado Siren**  
--Maureen McCann

Do you have a smoke detector in your home? How about a carbon monoxide detector? You probably answered yes to those questions. Now, do you have a weather radio? If you answered no to that one, now is the time to go out and buy one! It is just as important to keep yourself safe from violent weather as it is to keep yourself safe from a fire. This small purchase (usually less than \$30) carries a big role in helping keep you and your family safe when severe weather threatens. NOAA weather radio, also known as "The voice of the National Weather Service," is essentially a direct hotline to receive word of stormy weather approaching.

No matter what the forecast is, the radio airs continuous weather information 24 hours a day, providing listeners with up-to-the-minute information from the National Weather Service.

The most important feature to NOAA weather radios is that it is capable of sounding an alarm when a warning is issued for your area. Don't worry, you won't have to leave on the radio to hear the forecast in order to get the warnings. The radio will sound a tone as long as it is switched into "alert" mode.



Weather radios are even capable of being programmed to only get warnings for your county through SAME technology. SAME stands for Specific Area Message Encoder. Each county is designated a 6-digit code that you can punch into the keypad on your weather radio. Check with your specific model for more detailed instructions.

It is especially important to have a weather radio for when severe weather threatens at night, while you are sleeping.

A new study published by the American Meteorological Society reveals that

between midnight and sunrise, tornadoes are 2.5 times more likely to kill than those occurring during the daytime. People are more vulnerable at night because

tornadoes are more difficult to see, people are more likely to be asleep, and people are more likely to be in weaker structures such as mobile or manufactured homes as opposed to sturdy buildings like schools and office buildings. (Source: Walker Ashley, Northern

Illinois University/AMS)

Meteorologist Joe Arellano of the NWS New Braunfels agrees that having an NOAA weather radio is a necessity. "NOAA weather radio is one of the only ways – in fact, it is the only way – an individual can get warnings at night. You can set it to be automatically turned on when we issue a warning," he said. "So if you're asleep at night, unaware the warnings are coming, or thunderstorms are on their way, the weather radio will be able to wake you up and put you on alert that something is coming."

During the height of severe weather season it may prevent you from getting a good night's sleep, but it's safer than sleeping through something that could take your life.

**Family Disaster Plan**

The most important thing you can take away from this edition of the Weather Observer is that PREPARATION is your key to winter weather readiness. Create your own family disaster plan then run through it – practice! Make sure each family member know where to go.

These are the items that most emergency management officials and the American Red Cross feel are necessary to keep on hand for a grab-and-go kit:

- A NOAA all-hazards weather radio
- Flashlight with Fresh batteries
- A properly stocked First Aid kit, with bandages, gauze, antiseptic, disposable gloves, scissors, eye wash, alcohol prep pads and aspirin.
- A 3-to-5 day supply of drinking water with a 3-to-5 year shelf life
- A 3-to-5 day supply of non-perishable foods
- A 3-to-5 day of necessary medications
- Necessary supplies to care for the elderly and/or handicapped
- Baby supplies, Toilet paper, Plastic rubbish bags, Duct tape

It's also important to make sure that a similar number of supplies are made available for children, the elderly, and those around you who may need assistance.

County	SAME	Local Transmitter
Bastrop	048021	Austin
Bastrop	048021	La Grange
Bell	048027	Milano
Bell	048027	Waco
Blanco	048031	Austin
Blanco	048031	Llano
Burnet	048053	Austin
Burnet	048053	Llano
Caldwell	048055	Austin
Caldwell	048055	Gonzales
Caldwell	048055	Seguin
Coryell	048099	Waco
Gillespie	048171	Kerrville
Gillespie	048171	Llano
Hays	048209	Austin
Hays	048209	Seguin
McLennan	048309	Waco
Travis	048453	Austin
Williamson	048491	Austin
Williamson	048491	Milano



## Ongoing Drought

--Adam Krueger

As we are well aware, it's been a long time since we've been in a wet weather pattern. While March brought some relief, it was minimal in the grand scheme. Amazingly, our current drought dates all the way back to September 2007. Looking at data from Sept. 2007 through Feb. 2009, the 18-month dry spell has earned a significant place in the record books as a top 3 drought (going by Camp Mabry's records dating back to 1856):

- 1) 22.93" Sept 1955 to Feb 1957
- 2) 24.53" Sept 1916 to Feb 1918
- 3) 25.21" Sept 2007 to Feb 2009

Over this 18 month stretch, Austin averages almost 50 inches of rain, meaning that there's only been about half of the normal rainfall.

While March 2009 brought more than 3 inches to Austin, the worst drought in the country still exists right here across parts of central and south central Texas, including Austin and San Antonio. The National Weather Service is describing the drought as "exceptional," which is the worst category that exists.

### When will we see relief?

We've certainly been hearing this question from many people lately. To answer it, we look at Pacific Ocean temperatures to give us an indication of possible long-term trends in our weather

pattern. The Climate Prediction Center suggests that we may be in the early phase of a warmup in the Pacific... this is something that helped play a role in our wet weather pattern in early 2007.

In the meantime, beware of dry and windy days... the National Weather Service will give you a heads up on these days by issuing a RED FLAG WARNING for a high fire risk.



## El Nino to Return??

--Burton Fitzsimmons

As Adam alluded to above, experts at NOAA who monitor the Pacific phenomenon known as El Nino say we may be in for a turnaround: the drought-inducing La Nina appears to be subsiding and El Nino conditions could return by the end of the year.

For Central Texas, this means possible drought relief sooner than later!

Spring showers will make a difference in this year's crops and area reservoirs heading into summer, but it's the long term return to El Nino conditions that offer the best promise for wetter conditions across the Southern Plains.

An ensemble of computer models used specifically to monitor El Nino (the Southern Oscillation, technically speaking) indicate our current La Nina will end here this spring and that warmer than normal sea surface temperatures can be expected across the equatorial Pacific late this year. If that forecast

turns true, a full El Nino could be declared by the start of 2010.

Looking back, scientists have drawn strong connections between periods of El Nino in the years of 1998, 2003, 2007 and wetter-than-normal spells in our weather.

Learn much more about how data from NASA's TOPEX/Poseidon and Jason missions provides critical observation that allow forecasters to predict future developments. <http://topex-www.jpl.nasa.gov/science/el-nino.html>

*. And don't forget: Texas droughts almost always end with floods. Be prepared!*

## WEATHER ALERTS

When spring gets rough, you can count on the News 8 Austin weather team to keep you informed. Our weather computers constantly monitor conditions worldwide and receive all advisories from the National Weather Service. As weather alerts are issued, we make sure you get the message via:

- direct e-mail from our servers (sign up at <http://n8a.com/notify>).
  - a red text alert crawl at the bottom of your television screen.
  - a red text alert crawl now at the bottom of the Non-Stop Weather HD screen.
  - a complete list of any & all active alerts at [news8austin.com/weather](http://news8austin.com/weather).
- Types of spring weather advisories we hear from the National Weather Service:**

**FLASH FLOOD/FLOOD WARNING** is issued when flooding is being reported or is imminent. Take necessary precautions at once and move to higher ground. You may only have seconds!

**FLASH FLOOD/FLOOD WATCH** is issued when flooding is possible within the designated area. It is issued in advance to give people the time to move property and livestock to higher ground. Be alert!

**FLOOD ADVISORY** is issued by the National Weather Service when there is a potential for periods of heavy rain causing flood problems. An ADVISORY will be issued well in advance of the flood threat.

### RED FLAG WARNING

A critical combination of dry (low humidity, low soil moisture) and windy weather conditions that presents a significant and imminent high to extreme fire danger in a given county. Typical conditions include winds greater than 15 mph, relative humidity around or less than 25%, and temperatures generally greater than 75 degrees. Thunderstorms with dry lightning also prompt this warning. May be issued when confidence is high Red Flag conditions will occur within the next 24 hours.

### RIVER FLOOD WARNING

is issued when flooding is occurring or is imminent at one or more forecast points along a river.

### SEVERE THUNDERSTORM WARNING

is issued when severe thunderstorms are occurring or about to move in to the area. Get to a safe place immediately. Issued when thunderstorms produce any and all of the following weather features: Hail 3/4 inch in diameter or larger, wind gusts to 58 mph or greater and/or tornadoes.

**SEVERE THUNDERSTORM WATCH** is issued by the Storm Prediction Center when strong to severe thunderstorms are expected within the next several hours. Keep an eye to the sky and make sure you have a sturdy shelter nearby should storms approach. Stay alert for possible weather warnings.

**TORNADO WARNING** is issued when a tornado has been sighted or indicated by weather radar and/or the Skywarn spotter network. Tornado Warnings are issued by the National Weather Service. When a Tornado Warning is issued where you live you should get to a safe place immediately.

**TORNADO WATCH** is issued in advance of possible tornadoes and severe thunderstorms. Remain alert for approaching storms, and make sure you have a sturdy shelter nearby.

**URBAN SMALL STREAM FLOOD ADVISORY** is issued when local flooding of small streams, streets, ditches, arroyos, or low-lying areas such as railroad underpasses is occurring or imminent.

**WIND ADVISORY** is issued when there is a potential of sustained winds of 25 to 39 mph and or sustained gusts of 40 to 56 mph during a given time period.



**Staying Safe During Spring Storms**  
--Rich Segal

We have been taught that there are four seasons during the year ... spring, summer, fall and winter. However, a fifth season, a "season within a season" is upon us. It's called the Spring Storm Season, a time of transition from winter to spring, cold to warm, dry to, hopefully, wet.

Cold fronts that come through our area during this season at times will be accompanied with showers and thunderstorms. Some of the thunderstorms could become severe weather with strong winds, hail, lightning and, possibly, tornadoes.

Last year, the weather office received an email from a viewer who lives in an apartment and wasn't sure what to do with a storm warning is issued. We want to address that for those of you who do live in an apartment or one of the high-rise condos that have sprung up around the area.

The first tip to remember is that you want to be on the lowest floor in the smallest room possible. So, if you're not on the first floor of the apartment complex or the high-rise, here are the best tips we can offer:

1. Make friends with a neighbor on the first floor. Ask if you can take shelter in their apartment when storms are moving through the area. You can return the favor when flooding is imminent and that first-floor occupant needs to get to higher ground.
2. If that's not an option, then find a place in the building/complex in which you live that is small and on that lowest floor. You want to make sure that you're not

in a room with a lot of glass, light fixtures, or with a tall floor-to-ceiling span. The best suggestion here is to discuss this with your apartment manager or landlord and have them physically show you where to go.

There's a safety tip that says if these two options are not available to seek shelter in your most interior room free of glass. I'm not very comfortable with that but if it is the safest place you can find, make sure you're protected.

Two more thoughts come to mind here. Number one, no matter where you go, have a NOAA All-Hazards Radio with you to get updated weather information. Now is a good time to put fresh batteries in it. Second, if when you speak to an apartment manager/landlord and they can't tell you what to do, suggest to them that they find those places necessary to keep their tenants safe. Write to us at [weather@news8austin.com](mailto:weather@news8austin.com) for more information.

Finally, spring ushers in the beginning of the baseball season. Several of you will take to the ballparks across the area to watch one of our national pasttimes. Each and every sporting venue should have an action plan in place to make sure fans get to safety when storms are imminent during play. Videos are played and/or announcements are made telling fans where to go to seek safety. If this ever happens to you, remain calm and head to the designated shelter area.

Enjoy your spring ... and think rain!



## Storm Cruiser Visit

News 8's Storm Cruiser roams campuses across Central Texas through the spring semester and beyond, so sign up now for a visit. You can request one of our staff meteorologists to present to your group, large or small, or attend your community event. It's a chance to ask a burning weather question! See [www.news8austin.com/cruiser](http://www.news8austin.com/cruiser) for more information.

## Storm Spotter Tips

We would always rather have measurements of hail stones but that's not always possible. Use this chart to help you estimate the size of hail:

- Pea = 1/4 inch diameter
- Dime/Mothball = 1/2 inch diameter
- Penny = 3/4 inch diameter - hail penny size or larger is considered severe
- Nickel = 7/8 inch
- Quarter = 1 inch
- Ping-Pong Ball = 1 1/2 inch
- Golf Ball = 1 3/4 inches
- Tennis Ball = 2 1/2 inches
- Baseball = 2 3/4 inches
- Tea cup = 3 inches
- Grapefruit = 4 inches
- Softball = 4 1/2 inches

Remember, the larger the hail, the stronger the storm!



Photo from Mary Roberts last May

# STORM SAFETY

News 8 Austin wants you to be prepared when bad or severe storms strike but it's up to you to devise a plan to keep your family safe. Using the information below, develop a plan today for your home, work, school and for outdoors. Be ready to act when good weather goes bad; it could be the most important decision you'll ever make.

## Severe Storms

Depending on their strength, some thunderstorms produce large hail and gusty winds, leading to property damage, injuries and sometimes death. All storms are dangerous!

So what should you do when thunderstorms approach? Remain indoors away from windows, which can break, and electrical appliances, which can conduct electricity. Use a cordless or cell phone – they pose virtually no threat because you are not connected by any conductor (like wire) to the outdoors. If you're caught outside, stay low and run to a low spot. Keep contact with the ground limited, and avoid being the tallest object.

## Flash Flooding

Central Texas has been called the flash flood capital of the entire United States! Why? The Texas Hill Country is made up primarily of limestone and rainwater easily and quickly makes its way as "runoff" down the sides of those hills into valleys, creeks and dips in roadways. It doesn't take long, sometimes just a few minutes to hours of excessive rainfall, to cause a flash

flood. Surprisingly enough, more weather deaths can be blamed on flash flooding than anything else, and nearly half of all flash flood fatalities are auto related. The key to survival during flooding is to avoid water when it flows over roads, such as you might find at low water crossings. Drive cautiously and never go through barricades. Turn around, don't drown!

Remember, some flooded roadways may not yet be blocked off (particularly in rural areas) so watch for water over the road - water as little as one foot deep can carry your car off the road. Be extra cautious at night when darkness makes it especially hard to see water over the road. Finding an alternate route may cost you time but it could definitely save your life. If you live in a flood-prone area, make a family evacuation plan and prepare to move to higher ground with little notice.

## Tornadoes

Tornadoes are one of nature's most violent storms they occur frequently in Central Texas. Fortunately, NEXRAD radar allows News 8 meteorologists to detect and warn you before tornadoes hit the ground. The majority of tornadoes are quite weak, causing little damage, but the strongest tornadoes can

annihilate everything in their paths.

Look out for a dark, greenish sky, large hail, a "wall" cloud, or a loud roar (described like a freight train). Keep in

mind, some tornadoes are visible and some are quite hard to see.

If you think you're in the path of a tornado get to a secure home or sturdy building.

Avoid mobile homes. Head for the storm shelter or basement - if you have one - or the lowest floor, in the center of the building, away from windows. A bathroom or central closet offers better protection. Use blankets or a mattress to protect yourself and others from flying debris. If caught outside or in a vehicle, do not try to outrun the tornado in your car. As a last resort, lie flat in a nearby ditch or depression.



# HEAT STATISTICS

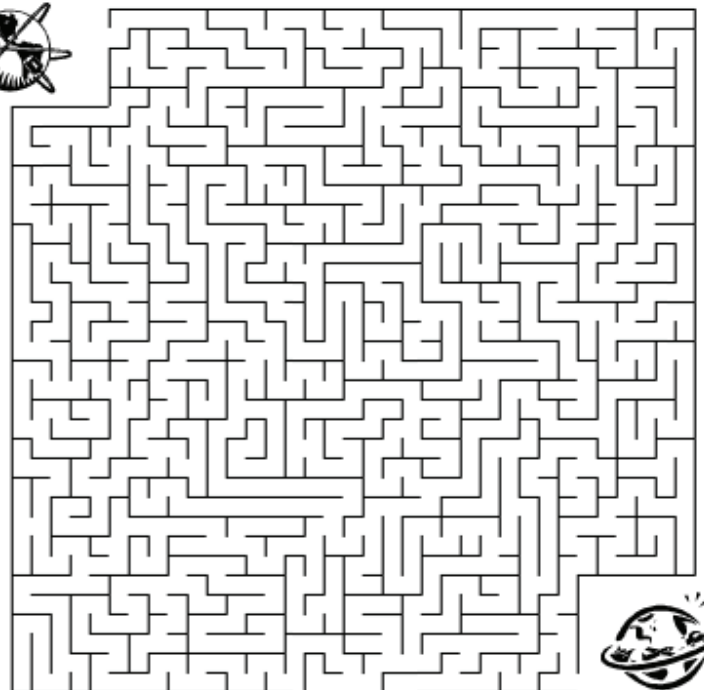
## ..Autin..

Average First 90 degree Day (1898-2004): April 19  
Earliest 90 degree day in any year since 1898: 90 on January 30, 1971  
Latest first summer 90 degree day: 91 June 29, 1907  
Average number of 90 degree days per year: 109.3  
Record number of 90 degree days per year: 159 in 1925

Average First 100 degree Day (1898-2004): July 11  
Earliest 100 degree day in any year since 1898: February 21  
Latest 100 degree day in any calendar year: October 2  
Average number of 100 degree days per year: 11.4  
Record number of 100 degree days per year: 69 in 1925

## ..Waco..

Average First 100 degree Day (1902-2008): July 5  
Earliest 100 degree day in any year: March 28, 1971  
Latest 100 degree day in any calendar year: October 4, 1983  
Average number of 100 degree days per year: 20  
Record number of 100 degree days per year: 63 in 1980





Before Doppler and Computer models, watching weather carefully was all we had. So, as you craft your observation, some advice: no lowly worm, no stray cloud, no subtle breeze, no habit of bird should go unnoticed

## Weather Lore

--Marc Gomez

You probably remember hearing your grandparents recite sayings and rhymes about weather. They are usually observations that were artfully crafted to be remembered and passed through time.

I call this "weather wisdom" because it is generally true and logical in its advice.

Any experienced fisherman might know or has heard:

Nature is the most telling forecaster of what weather we will get... So, it's best that on birds and bees and clouds and wind and everything nature.... our eyes should be set



When the wind is blowing from the north,  
No fisherman should set forth.  
When the wind is blowing from the east,  
'Tis not fit for man nor beast.  
When the wind is blowing from the south,  
It brings food to fish's mouth.  
When the wind is blowing in the west,  
That is when the fishing is best!

Or, this from a farmer:

When the Dew is in the Grass,  
Rain will never come to pass...  
When Grass is dry at morning light,  
look for rain before the night...

And the simple:

No weather is ill, if the wind be still.  
The louder the frog, the more the rain.

Perhaps the most well known lore saying is:

red sky at night, sailors delight!  
red sky in the morning,  
sailors take warning!

## ...AUSTIN SPRING FACTS...

### RAINFALL STATS

Month	Avg.	Maximum	Minimum	Avg. # Rainy Days	Most Rainy Days
April	2.51"	9.93" - 1957	0.06" - 1984	7.2	13 - 1997
May	5.03"	9.98" - 1965	0.73" - 1998	9.5	16 - 1986, 92
June	3.81"	14.96" - 1981	Trace - 1967	7.5	14 - 1993, 2004

### SPRING WINDS

Month	Mean Speed	Prevailing Direction	Maximum 5-Sec. Gust (mph)	Dir.	Year(s)
April	9.6mph	SSE	58	NW	1983
May	9.0mph	SSE	71	N	1997
June	8.4mph	SSE	54	N	1988, 90

### TEMPERATURE STATS (30 YEAR NORMALS)

Month	Normal Daily Max.	Record Daily Max.	Normal Daily Min.	Record Daily Min.
April	78.9	98 - 2002	57.6	35 - 1973
May	84.8	102 - 1998	65.4	43 - 1954
June	90.9	108 - 1998	71.1	53 - 1970

### WARMEST/COLDEST AVERAGE MONTHLY TEMPS

Month	Warmest	Coldest
April	75.9 - 1967	51.4 - 1867
May	80.6 - 1996	66.9 - 1907
June	86.4 - 1998	78.6 - 1907

## ...WACO SPRING FACTS...

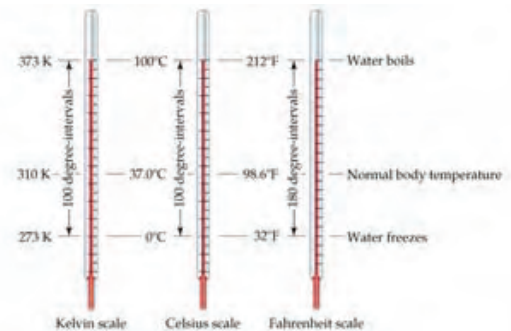
Warmest Spring (March-May) on Record: Average 72.8F in 1925  
 Coolest Spring: Average 62.9F in 1983  
 Wettest Spring: 29.78" in 1905  
 Driest Spring: 3.48" in 1925

More at: [weather.gov/Austin](http://weather.gov/Austin) or [weather.gov/waco](http://weather.gov/waco)

## F OR C: Which one for me?

Celsius is the scale used in the metric system (and by scientists across the globe) to measure temperature. The freezing point is 0C and the boiling point is 100C.

The Fahrenheit scale is used here in America to measure temperature in the English system. The freezing point is 32F and the boiling point is 212F...not as easy to remember.



What about Kelvin? Kelvin units are the same size per degree as Celsius but the scale has been moved to measure extremely cold temperatures with 0K known as absolute zero, meaning the object has no molecular motion (and, hence, no heat!)

C E G I F M A R C T V V N I U Y S U L W X Q E Q A D D R S Z  
Z R L B E Y X I N J E O U A R K H B M T Y L H A A P B A U P  
G I S R I S O T C W Z O F C S K Y W A R N E K S O N P D T O  
T U J F Q L X E L H K X X D K Q U Q T L W D A E N G G A A D  
S A T E L L I T E R C W C R E A J S U O L B Q V V O G R R A  
T R E L P P O D C R M W A A L R N M I A R S V E B W K Q T N  
T P E Q K P E I T L X C H L X Y E E C O D D L R R Z S C S R  
G N I N R A W W P Z H V T M L Y T C M Z Q A Y E X W K U T O  
S O L V F Z Y Q Q P Y B H O E C H I H O T A M X R L G M T T  
V T N O R F D L O C A H R O S S L T O O M B J J N E N U F Z  
F G R O T A T I O N C Q E C B E O O Q Z W E R R L Y N L L R  
U A H Y Y B N G W C P H G G U D J C U H G T T F P E X O F Z  
B I A Y R M O Z I H S J G I U J M M Y D L O L E Y X C N Y H  
T Q I R I Y E U N O H B O M O A I P N C J I N N R Q V I A G  
T C L N C B N T D W K A U E O S G W C O L E U E C K O M L P  
P K S M H D K M V D G L U R M H D N A O I O H F E T A B E E  
Q P T X V N D X A W C V W F T O C V I F M M N A D R U U R I  
X K O Q X N W Z N A T A N Z P O W H S A E T Y E T T U S T K  
B D R U J B O W E T F U S Y W R N D E L R B B R K B K A R S  
U L M N C D O P F C J V A K R E T T O P S K L R D S L Y M I  
V E A U K I I Y T H N A I Y I G R L X V N R A R U K A A H H  
M V U E J Q M L O D Y W T B Z A R B K K L O V F V Q I C P E

ADAM  
ALERT  
ANEMOMETER  
BURTON  
COLD FRONT  
CUMULONIMBUS  
DERECHO  
DOPPLER  
HAILSTORM

MARC  
MAUREEN  
MESOCYCLONE  
NOAA  
RADAR  
RAIN GAUGE  
RICH  
ROTATION  
SATELLITE

SEVERE  
SKYWARN  
SPOTTER  
STRATUS  
TORNADO  
WALL CLOUD  
WARNING  
WATCH  
WIND VANE

Sources: NOAA & National Weather Service Austin/San Antonio; City of Austin; Austin History Center; Austin-American Statesman; Lower Colorado River Authority; American Red Cross.