

Shocking Facts about Arizona Lightning

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Aizona is world renowned for its spectacular lightning displays. The summer monsoon brings the key atmospheric ingredient of moisture into the state, setting the stage for the development of strong thunderstorms. Intensified updrafts in storms separate electrostatic charges between water vapor and ice particles. These charges build up in different parts of the storm cloud as well as on the ground until the charge separation is too great and an electrical discharge occurs. This discharge is what we know as lightning. Have you ever walked across a carpeted room, touched a doorknob and received a small shock? That static discharge is very similar to lightning on a very small scale.

Lightning Questions and Answers

- How much energy is in the average lightning strike? One cloud-to-ground lightning strike can generate between 100 million and 1 billion volts and reach temperatures of over 50,000°F.
- What is thunder? Thunder is a shockwave generated by the lightning path super-heating the atmosphere around the discharge path. Light is faster than sound, which is why thunder lags behind the lightning flash.
- How many lightning strikes occur on average in Arizona? The National Lightning Detection Network (based in Tucson, Arizona) can monitor all lightning strikes that occur over the continental United States. The average number of strikes in Arizona between 1996 and 2005 was over 600,000 strikes per year!
- When does lightning occur in Arizona? The summer monsoon season (July, August and September) is when Arizona experiences most of its thunderstorm activity, but lightning can occur with storms any month of the year.

- What is heat lightning? Heat lightning is observing lightning from storms too far away for the thunder to be heard. Thunder typically does not travel anymore than fifteen miles away from the originating lightning flash.
- How can I tell how far lightning is away? As soon as you see a lightning flash start counting. It takes thunder about 5 seconds to travel one mile from the originating flash. That means if you count to 5 and then hear the boom of thunder the lightning is approximately 1 mile away. (10 seconds = 2 miles, 15 seconds = 3 miles...). If you hear thunder before you count to 30 seconds lightning is very close and dangerous!
- How dangerous is lightning? Lightning is very dangerous! It is the number two weather related killer in the United States killing an average of 73 people each year. Nine lightning related deaths were recorded in Arizona between 1997 and 2006.
- What should I do if I am working outside and hear thunder or see lightning? Seek shelter immediately! A house with wiring and plumbing offers the greatest protection against a lightning strike. Stay away from electrical appliances, telephones and plumbing during the storm. If housing is not nearby, seek shelter in a vehicle with a metal roof. The metal body of the vehicle will provide a path to conduct electricity away from you in the case of a potential strike. Plan ahead for lightning when working outside.

Much of the information presented here was gathered from the National Weather Service Lightning Safety Webpage.

See www.lightningsafety.noaa.gov/ for more information.