

## **The Night The Stars Fell –The Great Leonid Meteor Storm of November 13, 1833**

The Leonids meteor shower is one of the biggest meteor showers of the year. This year's shower will have its best viewing conditions beginning around 11:45 PM the night of November 17, and for several hours afterwards until dawn.

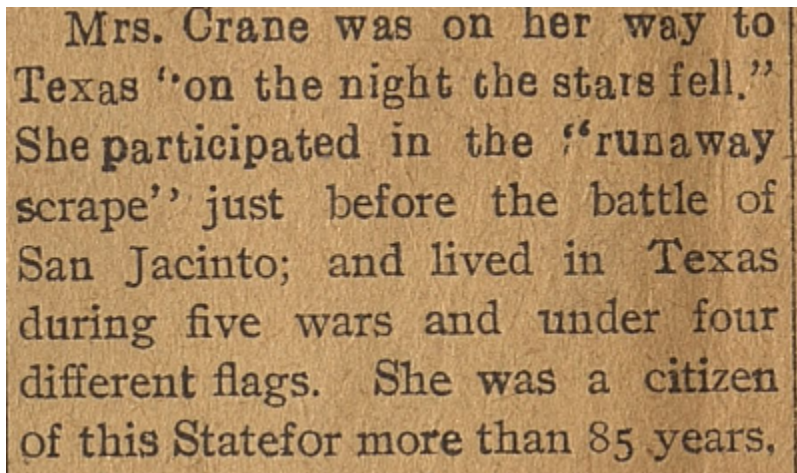
Every 33 years, however, it becomes even more intense as the comet 55P/Temple-Tuttle makes its closest approach to the Earth and Sun. The Great Leonids Meteor Storm of 1833, however, was unusually prolific and became one of the most spectacular astronomical sights ever seen in the modern era, with many people believing that the world was coming to an end. It also occurred at a time before electric street lights had been invented, and the Moon had set in the early evening providing North America with an unobstructed view of the sublime celestial phenomenon.

Though meteor showers are common, no one predicted the explosion of shooting stars that illuminated the night sky on November 12, 1833. Just before dawn, people threw on clothes and gathered in roads and fields to watch the thousands of meteors – estimates range from from 72,000 to 240,000 meteors per hour fell to Earth (about 120 to 400 per second), and which according to one observer caused the night sky to radiate so bright with falling stars that “people were awakened believing that their house was on fire!” Though many were spellbound, not all rejoiced in the cosmic celebration. At the time, the South was a hotbed for the national religious revival known as the Second Great Awakening. Some awoke terrified, fearing it was the End of Days, as predicted by a Bible verse: “and the stars of heaven shall fall.”



THE FALLING OF THE STARS.

Carolyn Clay Thornhill's childhood recollections reflect that her Grandmother told the story that the Seward Family was emigrating to Texas from Adams County, Illinois when "the stars fell." To have been a witness to the event was something so noteworthy that it was usually mentioned as a highlight of a person's life in their obituary:



Mrs. Crane was on her way to Texas "on the night the stars fell." She participated in the "runaway scrape" just before the battle of San Jacinto; and lived in Texas during five wars and under four different flags. She was a citizen of this State for more than 85 years.

*Obituary of Susan B, Crane, Shiner Gazette (Shiner, Tex.), Vol. 26, No. 43, Ed. 1 Thursday, July 24, 1919.*

Texas frontiersman, Adam Lawrence, camped on the coastal prairie near the Brazos river, saw the 1833 storm and remembered "a Timberwolf uttered a doleful howl, then the heavens seemed to be on fire, and the stars fell in showers."

In 1930, 110 year old Julia Palmer Robertson was interviewed by the Houston Chronicle and remembered clearly when "the stars fell."

*"I was about 15 years old, then," she said. "We lived in Shelby County, three miles from a neighbor. We were eating supper, when suddenly I decided to go out on the front porch and get a drink of water. When I opened the door, I was startled by streaks of fire flying in every direction. It looked like millions of stars were shooting down to the ground."*

*Several yards from the side of the house, we had a hog pen, and it seemed like most of the stars were falling right in on top of our hogs. "I screamed to father. The whole family came rushing out. For a moment, father gazed at the scene of falling fire. I could see his face as the flashes lit up everything, and it had a look I shall never forget. " `Children,' he said, `the world is coming to an end. We had better have a little prayer meeting.' Together we knelt, and father asked the Lord to help us. We were all scared to death, and every minute, as the stars showered down, we expected to see the flames leaping out of the tall pines and burning up the world and us, too. We did not sleep that night, but morning still saw the world standing. There was no trace anywhere that any of the falling stars hit the ground.*

The 1833 meteor storm led scientists to investigate previous historical accounts, and they deduced that the storms occurred every 33 or 34 years and must come from a celestial body. This overturned a 2,000-year-old doctrine developed by Aristotle that held that meteors were the fiery sparks of the remains of enormous gas bubbles that rose into the air, before exploding high above the ground.

Waiting to test their discovery, astronomers eagerly anticipated the return of the Leonids. Caleb Forshey, an engineer and scientist in Galveston, inspired by his vivid memories of “the grand spectacle of a lifetime” (he viewed the 1833 meteors as a cadet at West Point), predicted the return of the storm for November 1866, and possibly 1867. He wrote in the Galveston News:

*Those who would not miss a natural phenomenon, so extraordinary and rare in its recurrence, so resplendent in its grandeur, will not grudge half a night of slumber, in observation, for two years, both of which may be expected to repay observation.*

In November 1866, scientists in Great Britain did observe a storm with up to 5000 meteors an hour. However, the activity died down before the constellation Leo rose in American skies. The *Southern Intelligencer*, an Austin newspaper, pronounced on November 22, 1866 for all the prediction’s failure. They imagined Forshey, with “opera glass in hand, on somebody’s house in Galveston,” and mocked his efforts:



*We see him in our mind on the top of that house, his brass buttons shining in the star-light, watching impatiently for the old lion to wink over the horizon; but nary a spark from Leo's eyes that night.*

Then, in the early morning of November 17, 1966, after another century of being relatively quiet, the Leonids stormed again. Newspaper headlines heralded the event: "Shooting Stars Galore" (*Abilene Reporter News*), "Texas Skies Light Up Like a Roman Candle" (*Lubbock Avalanche-Journal*), and "Texans View Spectacular Shooting Stars Display" (*Midland Reporter-Telegram*).

Nathan Fain, the night assistant at McDonald Observatory in the Davis mountains of West Texas, said that the meteors had fallen at a rate of "at least 10,000, and perhaps 50,000, an hour. They were coming from directly overhead. Some were small; some were large; somewhere fireball; some left trails like skyrockets. It was spectacular. There is no other way to describe it."

All over Texas wherever skies were clear, from the Panhandle to West Texas, from the Piney Woods south to the Gulf Coast, early rising Texans marveled at the heavens.

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The practical effect of this is therefore that once every 33 years, Earth encounters such a high-density debris trail within the broader trail, which is what happened in 1833, 1866, 1899, 1933, 1966, and 1999, with the next major storm expected to occur in 2031 or 2032.

Nevertheless, the Leonids on dark night can still produce a wonderful show. As you are waiting around for 2031-32, go ahead and watch the Leonids this year on the night of November 17th, starting around midnight until the early morning. More information on the shower is at the following link: <https://www.timeanddate.com/astronomy/meteor-shower/leonids.html>