

Monster meteorite found in Texas

November 7 2016, by Bob King



Clarendon (c) meteorite. Credit: Ruben Garcia

On April 6, 2015, Frank Hommel was leading a group of guests at his Bar H Working Dude Ranch on a horseback ride. The horses got thirsty, so Hommel and crew rode cross-country in search of a watering hole. Along the way, his horse Samson suddenly stopped and refused to go any further. Ahead of them was a rock sticking out of the sandy soil. Hommel had never seen his horse act this way before, so he dismounted to get a closer look at the red, dimpled mass. Something inside told him

this strange, out of place boulder had to be a meteorite.

Here's the crazy thing—Hommel's hunch was correct. Lots of people pick up an odd rock now and then they think might be a meteorite, but in nearly every case it isn't. Meteorites are exceedingly rare, so your chances of happening across one are remote. But this time horse and man got it right.

The rock that stopped Samson that April day was the real deal and would soon be classified and named the Clarendon (c) stony meteorite. Only the top third of the mass broke the surface; there was a lot more beneath the soil. Hommel used a tractor to free the beast and tow it to his home. Later, when he and his wife DeeDee got it weighed on the feed store scale, the rock registered a whopping 760 pounds (345 kilograms). Hommel with others returned to the site and recovered an additional 70 pounds (32 kilograms) of loose fragments scattered about the area.

At this point, Frank and DeeDee couldn't be certain it was a meteorite. Yes, it attracted a magnet, a good sign, but the attraction was weak. Frank had his doubts. To prove one way or another whether this rusty boulder came from space or belonged to the Earth, DeeDee sent a photo of it to Eric Twelker of Juneau, Alaska, a meteorite seller who maintains the [Meteorite Market website](#). Twelker thought it looked promising and wrote back saying so. Six months later, the family sent him a sample which he arranged to have tested by Dr. Tony Irving at the University of Washington.



DeeDee and Frank Hommel pose with the 760 pound (345 kilogram) Clarendon (c) meteorite discovered on their land. The stony meteorite may be the second

largest single chondrite ever found in the United States. It displays dark fusion crust on the topside; the bottom side, which faced down in the soil, is covered with caliche (ka-LEE-chee), a cement-like mineral deposit of calcium carbonate. Credit: Ruben Garcia

Irving's analysis revealed bright grains of iron-nickel metal and an abundance of [chondrules](#), round grains composed of minerals that were flash-heated into a "fiery rain" in the solar nebula 4.5 billion years ago. When they cooled, the melted material congealed into small solid spheres several millimeters across that were later incorporated into the planetary embryos that grew into today's planets and asteroids. Finding iron-nickel and chondrules proved beyond a shadow that the Himmels' rock was a genuine stone from space.

In an e-mail communication, Twelker recounted his part of the story:

"I get about six to a dozen inquiries on rocks every day. I try to answer all of them—and give a rock ID if possible. I have to say my patience gets tried sometimes after looking at slag, basalt, and limestone day after day. But if I am in the right mood, then it is fun. This one made it fun. Over the years, I've probably had a half dozen discoveries this way, but this is by far the most exciting."



This photo was taken of the Clarendon (c) meteorite before it was removed from the ground. There appear to be several broken fragments at lower and center left. The meteorite is a chondrite, composed of rock found in the crust of asteroids. Credit: Frank and DeeDee Hommel

Irving pigeonholed it as an L4 chondrite meteorite. L stands for low-iron and chondrite indicates it still retains its ancient texture of chondrules that have been little altered since their formation. No one knows how long the meteorite has sat there, but the weathering of its surface would seem to indicate for a long time. That said, Hommel had been this way before and never noticed the rock. It's possible that wind gradually removed the loosely-bound upper soil layer—a process called deflation—gradually exposing the meteorite to view over time.

Once a meteorite has been analyzed and classification, the information is

published in the [Meteorite Bulletin](#) along with a chemical analysis and circumstances of its discovery. Meteorites are typically named after the nearest town or prominent geographical feature where they're discovered or seen to fall. Because it was found on the outskirts of Clarendon, Texas, the Himmels' meteorite took the town's name. The little "c" in parentheses after the name indicates it's the third unique meteorite found in the Clarendon area. Clarendon (b) turned up in 1981 and Clarendon (a) in 1979. Both are H5 (high metal) unrelated stony chondrites.

When Clarendon (c) showed up in the Bulletin late last month, meteorite hunter, dealer and collector Ruben Garcia, better known as [Mr. Meteorite](#), quickly got wind of it. Garcia lives in Phoenix and since 1998 has made his livelihood buying and selling meteorites. He got into the business by first asking himself what would be the funnest thing he could do with his time. The answer was obvious: hunt meteorites!



This view of the 760-pound meteorite shows relatively fresh fusion crust from melting of the outer millimeter or two of the meteoroid during its heated passage through Earth's atmosphere. You can also see lots of thumbprints or regmaglypts (left side), which form when softer materials in the rock are ablated away by brief but intense heat and pressure experienced during the fall. Credit: Ruben Garcia

These rusty rocks, chips off asteroids, have magical powers. Ask any meteorite collector. Touch one and you'll be transported to a time before life was even a twinkle in evolution's eye. Their ancientness holds clues to that deepest of questions—how did we get here? Scientists zap them

with ion beams, cut them into translucent slices to study under the microscope and even dissolve them in acid in search of clues for how the planets formed.

Garcia contacted the Hommels and posed a simple question:

"Hey, you have a big meteorite on your property. Do you want to sell it?"



The Bar H Dude Ranch run by DeeDee and Frank Hommel, finders of the Clarendon (c) meteorite. Credit: Ruben Garcia

They did. So Mr. Meteorite put the word out and two days later a buyer was found: Texas Christian University (TCU) in Ft. Worth, home to the famous [Monnig Meteorite Collection](#). After a price was agreed upon,

Garcia began making plans to return to Clarendon soon, load up the massive missive from the asteroid belt on his trailer and truck it to TCU where it will be put on public view, a centerpiece for all to admire.

"How amazing to walk into a dude ranch and see a museum quality specimen," said Garcia on his first impression of the stone. "I've never seen a meteorite this big outside of a museum or gem show." Ruben joined Frank to collect a few additional fragments which he plans to put up for sale sometime soon.

So how does Clarendon (c) rank weigh-wise to other meteorite falls and finds? Digging through my hallowed copy of Monica Grady's [Catalogue of Meteorites](#), it's clear that iron meteorites take the cake for record weights among all meteorites.



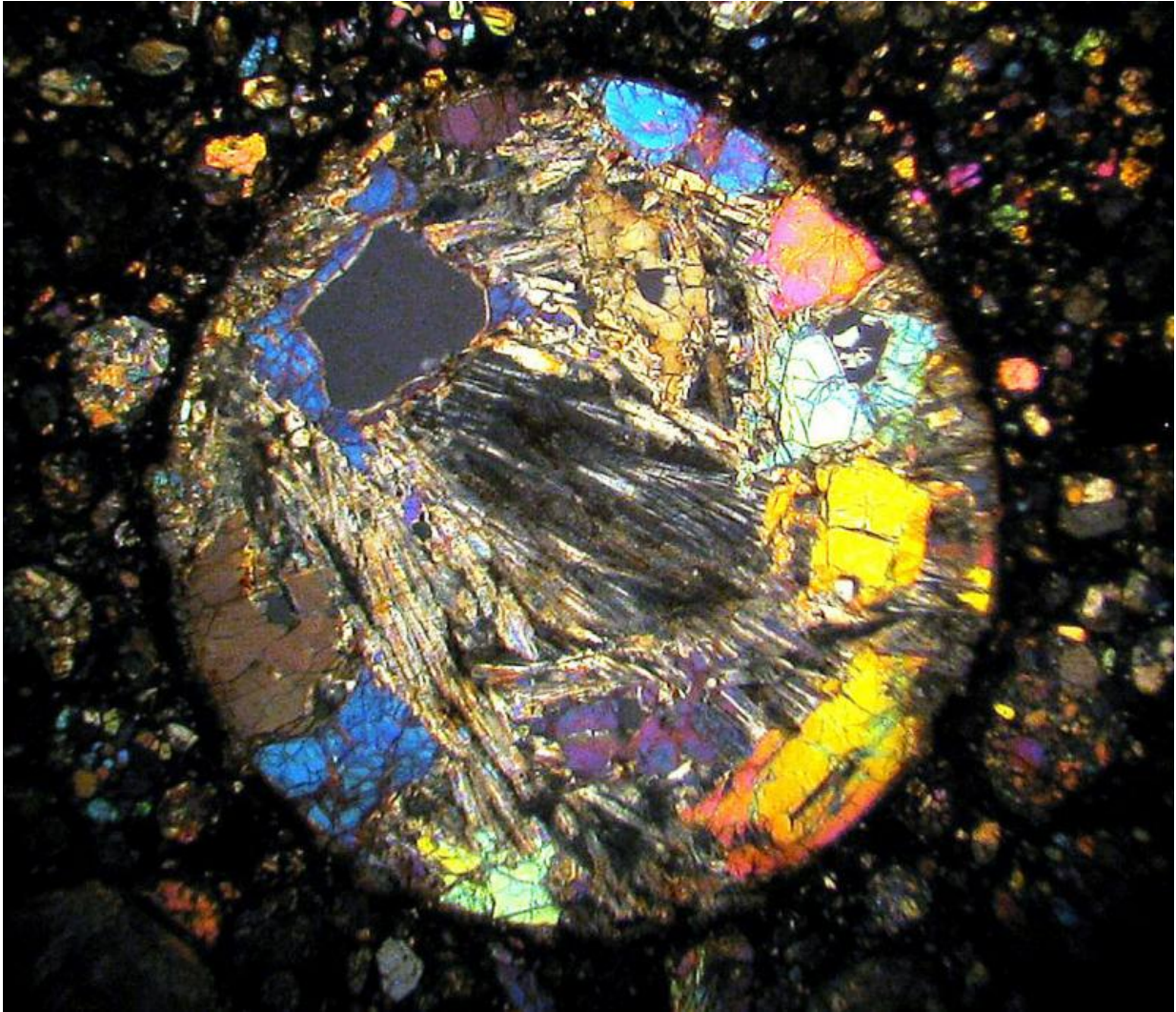
This small slice of Northwest Africa 2793, an L4 chondrite, is similar to Clarendon (c). Flecks of iron-nickel metal give the cut surface a sparkly appearance. Several round chondrules are visible, especially near the bottom edge. Credit: Bob King

But when it comes to stony chondrites, Clarendon (c) is by far the largest individual space rock to come out of Texas. It also appears to be the second largest individual chondrite meteorite ever found in the United States. Only the [Paragould meteorite](#), which exploded over Arkansas in 1930, dropped a larger individual—820 pounds (371.9 kg) of pure meteorite goodness that's on display at the [Arkansas Center for Space and Planetary Sciences](#) in Fayetteville. There's truth to the saying that everything's bigger in Texas.

Every meteorite has a story. Some are witnessed falls, while others fall unnoticed only to be discovered decades or centuries later. The Clarendon [meteorite](#) parent body spent billions of years in the asteroid belt before an impact broke off a fragment that millions of years later found its way to Earth. Did this chip off the old block bury itself in Texas soil 100 years ago, a thousand? No one can say for sure yet. But one April afternoon in 2015 they stopped a man and his horse dead in their tracks.



Ruben Garcia, a.k.a. Mr. Meteorite, arranged the sale of the Clarendon (c) meteorite to Texas Christian University. Courtesy of Ruben Garcia



A single chondrule in a thin section of the meteorite NWA 4560 is seen through a polarizing microscope at a magnification of 10x. Crystals of olivine (bright colors) and pyroxene (darker) are visible. Astronomers believe chondrules were among the first solid material to form in the early solar system when some form of flash heating melted nebular dust. The dust congealed into tiny spheres that were later incorporated into planetesimals and ultimately the planets. Credit: Bob King

Source: [Universe Today](#)

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