

Stranger History of Four Hills Area

Notes for the September 3, 2026 Four Hills Neighbors Luncheon Talk by Rusty Goetz

1) We live on a second Earth and a Quick Rundown of Rocks You can see in our Neighborhood

A. 4.5 billion year ago solar system looked more like roller derby than our current nicely organized system. While the First Earth was cooling its still molten crust, a mars-sized planet careened into it and both planets were completely destroyed. As multiple gravitational forces spun and recombined the mixture of both planets, a glob of this mass was flung out and formed a second much smaller second planet. Today these two new planets have cooled and become our Earth and Moon. Look online to see NASA's 2026 animated model of the Earth/Moon creation.

- Based on analysis of over 840 pounds of moonrocks, both planets have identical chemical makeup of rocks.
- Argument if Moon is a linked dwarf planet or a moon
 - Moon is very big and spherical- larger than Pluto.
 - Moon does not actually orbit around Earth. Instead, the Moon and the Earth each orbit around a central mathematically calculated mass point located within the Earth on the side facing the moon. This mathematical point is called the "Barycenter". It is a moving point, located within the Earth's mantle about three quarters of the way outside the center of the Earth towards the moon- or about 1,000 miles below the Earth's surface. Because the Moon's distance from the Earth's surface is an average of 238,855 miles, or about 30 Earth widths, the Moon winds up circling Earth.
 - Earth and Moon are in a linked orbit around the Sun, each tugging on the other.
 - Moon's orbit around the sun looks like the looping white icing on a Hostess chocolate cupcake.

- Earth wobbles in its orbit around the Sun like a drunken sailor.
- But, because the Moon does go around the earth, it is currently still a “moon”.
- Think how difficult the math is to get rockets to the moon and back!

Tie to NM- Apollo astronauts trained on NM volcanic fields, Harrison Schmidt, only geologist sent to moon, became a NM US Senator.

B. Geology you can see from Four Hills Village listed in order of years created before present

- 1.7 Billion -Rincon Mountain (north end of Sandias) and Tijeras Canyon metamorphic rocks
- 1.45 Billion -Sandia Granite (Sandia, Manzano, and Four Hills Mountains)
- 1 Billion to Present -Tijeras Canyon Faults form and continue moving
- 75-5 Million -Uplift of Four Corners region/Colorado Plateau in 3 stages (about 1 mile up)
- 30-26 Million -Rio Grande Rift formation, a chain of mile-high mountains and 15-20,000 ft deep basins from Colorado to Mexico (5th largest active rift on land today)
- 5 Million -Rio Grande develops (river deposits sands filling in rift basins- great aquifers!)
- 4-1 Million -Mt Taylor eruptions
- 1.25 Million to 40 Thousand- Jemez erupts (3rd largest super volcano in US)
- 155-70 Thousand -West Mesa volcanoes erupt

NM has 3rd most volcanoes of any state in US. Many volcanoes, including Mt Taylor and Jemez, are active but are classified as “dormant”.

Because of its complex geology and glaciation, NM has the greatest number of diverse biologic habitats of any state in the US.

2) First Documented Babysitting in USA

At the height of last Ice Age, basins formed by the Rio Grande Rift were filled with lakes, swamps, and forests. One of these was Lake Otero in the Tularosa Basin, near Alamogordo. The modern-day evaporated remains of this lake are the gypsum sands of White Sands.

Within the park, miles-long fossilized tracks of Ice Age Giant Ground Sloths, Mammoths, Dire Wolves and Sabretooth Tigers have been found along the preserved marshy shoreline of the lake.

In 2016 a discovery of hundreds of fossilized footprints found out in the middle of the park was confirmed to be of those human toddlers and teenagers.

The human footprint age date of 23-20,000 years ago has been confirmed by 3 completely different methodologies, two of which showed the earlier date. This blows the arrival dates of humans in North America back 10,000 years earlier than any other previously documented sites.

The tracks show groups of teenagers and toddlers, walking back and forth along in the soft muddy shore of the lake. There are hand and knee prints of toddlers playing in mud puddles and evidence of other older children carrying weight (toddlers, containers of water?). One set of tracks shows the slip of a foot as a female(?) teenager twisted her body to reached down to pick up one of the toddlers playing in a mudpuddle... the kicker is that some of the mudpuddle were the pizza-pie-sized foot prints of a mammoth that had passed through the area shortly before the children came to gather water and play.

Tie to Four Hills is that most likely these people came from the north and followed the chain of rivers and lakes on their way south, possibly passing close by our area.

3) Fourteenth Century Tijeras Canyon Real Estate Boom

For decades the number and scale of the pre-conquest pueblos located within and about the Rio Grande Valley has been extremely underestimated. Chiefly because the pueblos were built with mostly mud brick techniques that eroded away quickly if not maintained.

Earliest dwellings are dated to 900-1100 CE. Then in 1200, development of major pueblo sites began in earnest. By 1300, and throughout the Fourteenth century, the local Valley population grew to about 15,000, the size of most cities in Europe at the time. Ruins of least 5 major pueblos with hundreds to over a thousand rooms with multiple plazas and kivas have been located within the Albuquerque /Rio Rancho/Bernalillo area. Hundreds of smaller pueblos were located in the tributary canyons. Over 40 have been found within the Tijeras Canyon drainage.

What happened in the 1200's to triggered a population boom in the 1300's?

- Major droughts, starvation, and vicious wars occurred throughout regions outside of the Rio Grande Valley. Archeologists have found burned out sites, broken weapons, and evidence of cannibalism. They have documented the regional collapsed of many settlements including; Chaco Canyon, Mesa Verde, Gila, Estancia, Zuni and Acoma areas.
- Surviving members of these societies migrated to settled areas along permanent water supplies, including the Rio Grande Valley and its related tributaries. This put pressure on the dwelling construction and food supplies.
- The Little Ice Age of 1300-mid 1800's began and initially cooler temperatures and more snow pack created better settlement conditions in the mountain canyons. However, the Little Ice Age also created conditions for prolonged droughts lasting 10-25, even more than 50 years at a time.

Tijeras Canyon was a logical choice for new settlements because of its size and function as the E-W trade route between the Valley and the East Mountain pueblos and Eastern Plains tribes. Most of the new pueblos were 3-10 rooms and were repeatedly occupied, either seasonally or reestablished after droughts. Larger multistoried pueblos were also built. The 4 largest were Singing Arrow Pueblo, and Carnuel Pueblo (room sizes of these are still unknown because of damage done overlying later settlements), Tijeras Pueblo (mother to Isleta and Sandia pueblos) at 130+ rooms, and San Antonio de Padua Pueblo at 30-80+ rooms. Paa-ko with 200+ rooms, was the southernmost Galisteo pueblo and was apparently in close contact with the Tijeras pueblos.

Basically, any areas with a patch of land big enough to support some crops, near a spring or semi-permanent water source, had a pueblo built on it. Later, in the 1600s the Spanish would put settlements and mission churches near or on top of the largest pueblos for the same reasons.

Only domestic animals known at this time were dogs for companionship and turkeys for their feathers, meat, and bones (tools). Crops usually had to be hand irrigated and included squash, beans, and corn within the Canyon. Cotton was also grown in the Valley and in canyons to the west. Meat was supplied by hunting and by trading with the Plains tribes. Salt was acquired from the Salt Pueblos in the Estancia/Abo areas.

Archeological excavations in these pueblo sites showed evidence of mining local minerals, smelting copper, and construction of weaving looms. Long range trading was confirmed by the presence of shell beads made for shells found in south Texas creeks and the Gulf of California.

Evidence for the inward migration and acceptance of outside groups includes individual pueblos with multiple styles of art work, room construction, and kivas that have been age-dated to the same times. In 2021 new evidence for inward migration was found by archeologists revisiting the origin of very high-quality red/black and white/black pottery sherds at Tijeras Pueblo. They found proof that that instead of the pottery being traded in from western and southwestern regions, the potters themselves had come. The proof was in microscope and neutron activation studies of the minerals/clays and slips used in making the pots. The Tijeras pot clays and slips were chemically and atomically tied to clays and minerals found very locally in the Tijeras area.

By early 1400's, a century before the arrival of Coronado and the Spanish, the Tijeras Canyon pueblos and many others had been abandoned. The cause appears to be multifold: climate change and war. Major cold drought cycles returned 1425-1600 and caused crop failures and sickness. In about 1400, large bands of the war-like hunter/gatherer Athabasca tribes (Dine (Navajo) and Apache) arrived from the north, and Comanche tribes from the west, began to raid the pueblo villages up and down the mountain canyons and Rio Grande Valley. Pueblo

numbers and populations were significantly reduced throughout central New Mexico.

4) The Moorish Touch: Water Laws, Najas, Blue Doors/Window Frames, and Spices

Vazquez de Coronado left the Royal Spanish colony of Mexico in 1540 looking for gold and ostensibly spreading Christianity among the natives. He was at the head of 1,100 Spanish soldiers (+3 wives), at least 800 “Mexican” native soldiers (armed with deadly slingshots) plus 5,000 sheep, goats, cattle and horses. He entered the region in today’s southern Arizona and in about 3 years crossed into western, central, and northern New Mexico, across the eastern NM Plains, the panhandle of Texas, and into Kansas. In 1542, he backtracked his path and returned to Mexico with about 100 men, no gold, and had left a long trail of angry indigenous pueblos and tribes.

The pueblos and tribes of NM have very little good to say about the Spanish Conquest. They do however give the Spanish points for bringing dairy animals (cows, goats, sheep). Up until that time, bone disease, due to lack of calcium, was a major cause of death among the indigenous population. The Spanish settlers also brought us several Moorish customs that we still cherish today.

- Water laws- in 960 CE the Moorish Caliphate of Valencia, Spain held the world’s first Court of Water where the community decided how to allocate water. That court is still functioning. The Spanish brought those laws to the New World and in New Mexico found that they worked in sympathy with the existing Pueblo water use rules. In 1691 Acequias were mentioned in a letter about flooding along the Rio Grande. We still use many of those laws.
- Spices- many of the spices we use in our local cooking originated in North Africa. These and chili from Mexico were carried with the Spanish settlers
- The Naja symbol used so commonly in Squash Blossom necklaces is a Moorish symbol of protection. The upside-down horseshoe was originally the encircling hands of the Prophet Mohamad’s kind daughter, Fatima. The Moorish warriors brought the symbol to Spain when they invaded and the Spanish adopted it as the arms of Mary. The Spanish conquistadors carried

it to the New World as a protection symbol, usually made of silver, and placed on the headband of their horse bridles. Later the Navajo warriors would grab the Najas from the Spanish as a way of “Counting Coup” and proudly wear them on a leather thong, and, of course, when the Navajo took up silversmithing, it became a common piece of jewelry.

5) Original Spanish Name for Tijeras Canyon and the Land Grant

The oldest recorded Spanish name for Tijeras Canyon was found in records kept by General Diego da Vargus. In 1704 he reported sending soldiers to the mouth of “Canon de Carne” to fight off Apache who had stolen sheep from the settlers. Presumably, the name “Meat Canyon” referred to the butchered stolen sheep.

The more recent usage of “Tijeras Canyon” seems to have originated around 1856 after a family group surnamed “Tijeras” founded a small village at the intersection of the “Canyon de Carne” with “Cedro Canyon”.

In 1763, 18 Spanish settler families petitioned for a 90,000-acre Land Grant within Tijeras Canyon and including lands to the east and west of the Canyon. The Grant was to be named the “Carnuel Land Grant”. Present day Four Hills Village would have been located on the western end of the Grant. The Alcalde of Albuquerque granted it with the stipulation that the settlements serve as a defensive buffer from Apache and Comanche raiders. The Carnuel Land Grant was remarkably unsuccessful because the region lacked good soil and water and the group of settlers was too small to stop the raids. The only successful crop was cut wood sold to the Valley settlers. By the 1848 the Land Grant was reduced to 4,800 acres within the Canyon proper. Carnuel Land Grant is still in existence but continued litigation and difficulties have reduced to 2,000 acres.

The current official Bernalillo County seal has 8 sheep on it, one for each original Land Grant.

6) Civil War in Albuquerque and Tijeras Canyon

In 1861 the Confederate army invaded the Mexico/Arizona Territory to gain access to gold mines and a possible Pacific port. In NM, the Confederates, called

“Texans” in the Union reports, came up the Rio Grande valley from El Paso. In early spring, after the Texans had captured the two Union forts of south of Albuquerque the Union commander sent messengers ahead to warn residents of Albuquerque of the impending invasion. Residents fled to the foothills with their livestock and whatever they could carry. Many probably hid in this area. The Union Quartermaster, based in Old Town Plaza, gave orders to either damage or burn all the supplies the Texans were hoping to capture.

The Texas army arrived in Old Town and rested a few days before continuing on Santa Fe where they encountered Union troops and in late March fought the Battle of Glorietta Pass about 20 miles east of Santa Fe.

Initially it appeared that the Texans had won the battle but a group of Union soldiers had slipped behind the Texan lines and managed to totally destroy all the Texan wagons and supplies, and kill all 1,100 mules.

April 8-11, the Texans retreated south, along the west side of the mountains to regroup in Old Town while the northern Union forces retreated east to Fort Union to gather additional troops. From Fort Union, Union troops marched south, down the east side of the mountains, to setup camp in Tijeras Village. Meanwhile Union forces in the south regrouped and moved north to the Albuquerque Barillas neighborhood. On April 11 they engaged in a short artillery duel with the Texans in Old Town.

That evening the southern Union troops moved east through Tijeras Canyon to unite with the larger Ft. Union forces at a camp in Carnuel. The Texans, out of supplies and with few mules, realized they were being trapped, opted to start a retreat back to El Paso. They buried 12 of their light Howitzer cannons in a vegetable garden on the NE side of the plaza and in the morning of April 12 divided their army to move down both sides of the Rio Grande. The combined Union Army gave chase and at Peralta engaged the Texans in a last “sharp skirmish” where the eastern group of Texans retreated to the west side of the Rio Grande. The next day both armies moved down the Rio Grande in sight of each other. That night while encamped near Bernardo (I-25 and US 60), the Texans built up large camp fires and then slipped away up the Rio Salado riverbed, to

begin the rough country journey back to Texas. The Union ordered its forces to pull back and allow the Texans to continue on to El Paso rather than risk further loss of life.

Kirtland Air Force Base and 3 Military Aircraft Accidents That Changed History

1928- Oxnard Field was built on the East Mesa by a couple of guys with a bulldozer and a yen to fly. It became Albuquerque's first commercial airport- TWA was born there.

1942 -The US Government acquired Oxnard Field and surrounding land to build the Albuquerque Army Base. Later, it became Four Hills/Manzano Air Force Base.

1947- The area around the Four Hills Mountains was made highly restricted and was renamed "Site Able". It became the heart of Air Force Nuclear Weapons activity.

1950- First of 3 accidents: on April 11 at 9:40 PM a B-29 Super Fortress bomber out of Roswell, with 13 personnel onboard, crashed at full takeoff speed into the highest of the Four Hills Mountains. The plane was totally destroyed in a huge fire and all personnel died. The Air Force reported the flight as a routine training mission and that the accident was due to crew being unfamiliar with the local terrain and having miscalculated their rate of climb in a right-hand turn toward the mountains.

1952- The Four Hills on Kirtland base were renamed "Manzano Base" and were tunneled out to create storage areas for nuclear weapons and a "Presidential Emergency Relocation" complex. Question: Why would you store President Eisenhower next to atomic bombs in a highly recognizable topographic feature next to a city? (Too easy to find and everybody in the area knew it was there!)

1957- Second air accident: on May 22, at 11:50 AM a B-26J Peacemaker bomber was on short approach to the Base runway at 1,700 AGL when a bomb came loose from the weapons bay and fell, taking the bomb-bay doors with it. The bomb hit the ground on Kirtland Base. It did not explode but the impact created a crater 25 ft wide and 12 ft deep, less than 3 miles from the airport control tower. No one was hurt and the flight was described as routine training flight.

In 1986 the US government finally acknowledged that both the 1950 and 1957 accidents were classified as “Broken Arrow” events. Both planes were carrying nuclear bombs, but neither had detonators in place so the thermonuclear explosions could not occur on impact.

The Four Hills residential area now has the dubious honor of being the only US neighborhoods that have had 2 nuclear bombs dropped within 5 miles of their locations.

1977- The third accident occurred on September 14 at 11:45 PM. An Air Force four-engine jet used for personnel transport crashed into the very top of the tallest of the Four Hills 3 minutes after takeoff. All 20 onboard were killed. The crew had flown out of North Carolina in the morning, had participated in complex training flights all day and was then taking off to fly to Nevada that night. Cause of the crash was ruled as probable extreme exhaustion of the crew. This crash had reverberations across worldwide aviation and, as a result, pilots and crews are now restricted to a maximum of 8 hours flight time per 24 hours.

1992- Manzano Base was deactivated and the weapons were moved to a more secure location on the western side of the base. The tunnels are now primarily used for Sandia Labs document storage and an occasional experiment requiring full isolation.

8) Little Beavertown Amusement Park

Little Beavertown was a short lived 44 ac. theme park located due north of Four Hills Village between the north side of Tijeras Canyon and Rt 66. It was based on the popular newspaper comic characters, Red Ryder and Little Beaver, of Albuquerque cartoonist Fred Harmon. The \$3MM venture opened in 1961 to a crowd of 15,000. The amusements include a western town, Indian villages, shootouts with cowboy actors, Indian artisans, Fred Hartman’s studio, stagecoach rides, and a miniature steam railroad that ran a loop to the Western Skies hotel.

Harmon and his investors envisioned that park would become similar to Disneyland. Unfortunately, they miscalculated. The park closed in 1963 due to

the public's waning interest in the western genre and the having its entrances partially blocked by the new I-40 construction.

Harmon personally paid off all the park's debts to preserve the good names of Red Ryder and Little Beaver. The park was sold to investors who changed it into Sage Movie Studio and a rock concert venue. Fires and vandalism soon forced its closure.

In December 2010 the City acquired the park site as part of the expansion of Open Space. It is now being developed as a trailhead and parking for horse trailers & RVs, and will have full ADA access to trails and shade structures. Red Ryder and Little Beaver should be happy...

Finally

History doesn't stay static. It changes every day as new discoveries are made in science that allow new interpretations of older data. Lost documents and records recorded by firsthand witnesses are always being found in libraries and attics around the world. Computers and optical systems are now allowing researchers to "read" damaged documents and inscriptions that were previously considered unsalvageable. This "new" knowledge improves our understanding of how our ancestors dealt with each other, their environments, disasters, and daily life. History just isn't just what you remember, it's what you keep learning about and use to make life better.