

First Face of America Video Transcript

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NARRATOR: Deep underground, in a flooded Mexican cave system, divers make an amazing discovery.

ALBERTO "BETO" NAVA (Cave Diver and National Geographic Grantee): The feeling is like one of those outer space black hole that suck all your light.

ALEX ALVAREZ (Cave Diver): I see no reflection of my light...the heart starts to beat very hard.

NARRATOR: At the bottom of a vast sunken pit; a forest of prehistoric bones; in their midst, the skull of a girl.

BETO NAVA: It's just incredible to see another human in, in this environment. It's amazing.

DOMINIQUE RISSOLO (Co-Director, Hoyo Negro Project): He said, "You just can't tell anyone, because we've never really seen anything quite like this before."

NARRATOR: Who was she? How did she die?

ESKE WILLERSLEV (Natural History Museum of Denmark): It's kind of a missing link, right? And suddenly you are sitting with that.

NARRATOR: The mystery of the girl in the cave leads scientists on a journey into the world of the very first humans to arrive in the Americas. Who were they? How did they get here?

Finally, there are answers.

BLAINE SCHUBERT (East Tennessee State University): It's the most remarkable project I'll probably ever work on.

NARRATOR: They discover the way of life of an Ice Age people.

JAMES ADOVASIO (Harbor Branch Oceanographic Institute): Rapidly moving big game hunters...

NARRATOR: But it all begins with the story of a girl who lived 13,000 years ago,...

VERA TIESLER (Autonomous University of Yucatan): ...between 15 and 16 years of age.

JIM CHATTERS (Co-Director and Principal Investigator, Hoyo Negro Project): We know a lot more about the early lives of the Americans than we would ever know without her.

NARRATOR: and what happened on the day she died.

JIM CHATTERS: Fracture at death.

NARRATOR: Astonishing new finds and a glimpse of the First Face of America, right now, on NOVA.

In a dark cave, deep under water, a cache of prehistoric bones, Ice Age animals that walked the earth thousands of years ago. Among the ancient bones: the skeleton of a girl, one of the very first Americans.

Her skeleton is so complete, it will allow scientists to reconstruct her life and death in amazing detail, providing answers to questions that have long puzzled them about the peopling of the Americas.

JIM CHATTERS: In her death, she left us this incredible record of the life of these earliest people.

NARRATOR: Thirteen-thousand years after she died, a young girl launches an exciting archaeological adventure, finally unlocking a great mystery: how and when did humans first enter the New World?

In the remote jungles of Yucatan, in Mexico, a team of cave divers, intrigued by reports of prehistoric bones, is on its way to explore a system of underground "cenotes." It's a dangerous undertaking. Beneath the surface of the Yucatan Peninsula, the cenotes are a vast

network of underground caves and tunnels. They stretch for hundreds of miles through the limestone bedrock of the peninsula. They were once dry, but flooded at the end of the last Ice Age, about 10,000 years ago. Only a fraction of the network has been explored. The possibilities of getting trapped, lost or running out of air are ever present. Over the years, dozens of experienced divers have drowned in these flooded sinkholes.

Because they don't know how big the cenote system is, they've prepared carefully. Their tanks have a special mix of oxygen, nitrogen and helium that will allow them to dive deep. They also have rebreathers that recycle their air, extending their dive time.

Propelled by underwater scooters, they travel along submerged tunnels for almost an hour. In the first passages of the cenote, they notice that guidewires have been laid, a sign that someone has explored these tunnels before them. But before long, the lines end. They are now in a part of the cenote system that is completely unknown.

With no idea of what lies ahead, they press on. Suddenly the floor and walls of the tunnel drop away.

BETO NAVA: At the end of this tunnel, we can see darkness, and then everything was black.

ALEX ALVAREZ: I was in front. When I see no reflection of my light, wasn't...then the heart starts to beat very hard.

NARRATOR: They find themselves suspended in a vast watery pit.

BETO NAVA: The feeling is like we were faced with one of those outer space black hole that suck all your light.

ALEX ALVAREZ: Then I'm floating in the dark. You can't even see the floor; you can't even see the next wall.

NARRATOR: The black hole, "Hoyo Negro," is so big the beams of their flashlights cannot find its floor. Breathless with excitement, they begin their descent.

Finally, at a depth of over a hundred feet, their flashlights detect the bottom and reveal a treasure trove of ancient bones, beyond their wildest dreams.

BETO NAVA: All of a sudden, we start finding bones. We see this huge pelvis. And there was a beautiful broken femur on top of a rock.

ALEX ALVAREZ: Big, big bones, we knew could be something similar to a, to an elephant.

NARRATOR: Here is the massive thighbone of an extinct elephant, the skull of a cave bear, a giant sloth. The floor of the hoyo is littered with over 20 skeletons of long-extinct Ice Age species. But the most amazing find comes last.

BETO NAVA: Just as we thought it couldn't get any better, all of a sudden, we go a little bit up, there's this human skull. It's amazing. I mean this is the discovery of, of our lifetime. It's not going to get any better than this.

NARRATOR: The rest of the skeleton is not far away.

A whole human skeleton, surrounded by the bones of Ice Age megafauna, has never been found before. Who is it? How did this person get here? And when?

For many months, the divers explore the hoyo, taking bone samples and photos. Finally, they decide to send them to the director of subaquatic archaeology at Mexico's National Institute of Anthropology and History, Pilar Luna.

PILAR LUNA ERREGUERENA (National Institute of Anthropology and History, Mexico): (Translation from Spanish): In 2009, Alejandro Alvarez got in touch with me about an extremely important find in a place called Hoyo Negro. The news was very exciting, because I had always believed that there is much to be discovered in this area of the Yucatan Peninsula, about the past and the first people to populate the Americas.

NARRATOR: Pilar decided to send a C.D. of the divers' photos to the scientist who has studied more ancient human remains from the Americas than any other, Jim Chatters.

JIM CHATTERS: I said, "I've been looking at your C.D. Do you want to know what you have?" And she said, "Yes, no one's been able to tell us." And I said, "Well, you have an adolescent female." And she said, "Would you like to take over the study of the human skeleton?"

To work with ancient humans and extinct animals at the same time? Nobody's been able to do that before.

NARRATOR: Knowing that the skeleton they have found is a young girl, the divers give her the name of a mythological water nymph, Naia.

BETO NAVA: And you get a connection, and you get more respect if we have a name. And Naia was a kind of water nymph. It's a little bit related to the spirits of the cave.

NARRATOR: Jim must wait to examine Naia's skeleton until the divers retrieve her, but from a few bone and tooth fragments they bring him, he can at least try to find out how long ago she lived.

He hopes a radiocarbon dating lab will give him the dates he needs.

It proves to be difficult. To get radiocarbon dates, it's necessary to extract proteins such as collagen, which contain carbon. But her long sojourn under water has destroyed all the collagen in Naia's bones.

JIM CHATTERS: The problem we have is in tropical environments, bone does not produce good radiocarbon dates. The protein part of the bone is dissolved away by bacteria and the warm, warm weather. And so, what we're trying is, sort of, second best, which is the tooth enamel. The tooth enamel's being a very tight crystalline matrix has the best chance of having a non-contaminated material we can work with.

NARRATOR: The key is to find the radioactive isotope, carbon-14, present, along with other elements, in the cells of all living things. The molecules of this form of carbon are unstable, slowly losing protons to become nitrogen. They do this at a steady rate measured as a half-life, the time it takes half the carbon-14 to decay.

Once an organism dies, the carbon-14 in its tissues stops being replaced. So, its density in the tooth, relative to other more stable isotopes, will give Jim a reading on Naia's age.

First of all, they dissolve the tooth fragment, then heat the solution until it becomes gaseous carbon dioxide. Once frozen and purified, the solution becomes a fine carbon graphite powder. A mass spectrometer will then be able to measure the amount of carbon-14 in the powder, if it's there in the first place.

At the end of the process, the mass spectrometer gets a carbon-14 reading and compares it to a stable form of carbon in the tooth. That will give its age.

JIM CHATTERS: Okay, so it's nearly stabilizing now.

LAB TECHNICIAN: It's about two half-lives.

JIM CHATTERS: Yep.

NARRATOR: At the end of the analysis, the tooth proves to be almost 13,000 years-old.

JIM CHATTERS: It's really exciting. It makes her one of the oldest human skeletons yet found in the Americas. So, I couldn't be happier about that result.

NARRATOR: The radiocarbon date tells Jim he is dealing with a sensational find. Naia lived at the dawn of human life in the Americas. Thirteen-thousand years ago, the Americas were the only habitable continents that had not been settled by our species. Since leaving Africa some 80,000 years ago, homo sapiens had spread through the Middle East, Europe, Australia and Asia, but had not yet reached the New World.

When sea levels fell, during the last Ice Age, to create a land bridge between Siberia and Alaska, they could finally enter the Americas.

Who were those first humans to arrive in North America? For a long time, scientists believed that it was the Clovis people.

Known principally by the distinctive stone spear points they left behind, the Clovis people have long been a mystery. Who were they? Were they the ancestors of modern day Native Americans?

Speculation about the Clovis people began in the 1930s, when archaeologists first discovered their stone tools near Clovis, in New Mexico, a site dating to around 13,000 years ago. At that time, the Bering land bridge still connected Siberia and Alaska.

When Clovis points started showing up at sites all over North and Central America, archaeologists decided that the people who made them must have been the first Americans, who used them to hunt bison and Ice Age animals, like woolly mammoths.

JAMES ADOVASIO: Because Clovis points were widely distributed in most of un-glaciated North America on down into Central and parts of South America, the notion appeared that the makers of those points were the very first people in the New World.

NARRATOR: The Clovis people left their stone tools in many sites, but only a handful of bones. So, in 1968, when workers started turning up Clovis points at a site in Montana, followed by the bones of a 13,000-year-old child, it was extremely exciting.

Called "Anzick child," the one-year-old boy had been buried with a huge cache of Clovis blades and provided enough D.N.A. to be sequenced. Here, for the first time, was a link between the Clovis technology and an actual person.

Would Naia also be revealed as one of the Clovis people, as her age would seem to suggest?

JIM CHATTERS: Naia and five other mostly partial skeletons are the only ones we know of that are older than 12,000 years. It's an extremely small club. They are our window into who those early people were.

NARRATOR: Naia's skeleton promises to be a treasure trove of information about those first Americans. Jim wastes no time in going to Mexico and organizing a dive to bring her up.

But it won't be easy. He knows that the bones will be extremely fragile. Susan Bird is the diver tasked with picking up Naia's skull and bringing her to the surface.

JIM CHATTERS: So, what I've got them set up as...this is the best orientation, toward you. They're designed that way, to have more room at this end for your arms to come in.

NARRATOR: Jim is nervous, as he and Susan rehearse with plaster casts of the bones.

JIM CHATTERS: So, you'll slide your hand under and support it that way.

SUSAN BIRD (Cave Diver): All right.

JIM CHATTERS: Your strongest part is here.

SUSAN BIRD: Mmmhmm.

JIM CHATTERS: Your weakest points are here and here, so we want to protect them. Then, just gently, chin first, release.

SUSAN BIRD: On the day of the dive, there was so much tension, so many people on the verge of freaking out. The stress level, the tension was palpable.

NARRATOR: The entire operation will be carefully documented, photographed and filmed. Underwater lights have been set in the hoyo and almost half-a-mile of cabling to power them.

BETO NAVA: People don't see that you go there, it's pitch black. That's why it's called "negro"; it's 200-foot dome and it's totally dark. But with all of this technology that we're bringing, now we can finally see. It's amazing.

MIKE MADDEN (Leader, Underwater Camera Crew): Hey, Dominique, tell me how much slack you want.

NARRATOR: Leader of the underwater camera crew, Mike Madden rehearses the divers and photographers one last time.

MIKE MADDEN: You pick up the skull, you come around here, and you try to stay at, try to be at the level of the table, and set it in there.

SUSAN BIRD: Okay.

MIKE MADDEN: Okay.

Once you put her in the box, she's in the box. You do whatever you've got to do, you put the top on the box.

NARRATOR: Finally, the moment arrives.

MIKE MADDEN: All right, rock and roll man!

BETO NAVA: Good, let's do it!

CREW MEMBER: F55 coming down.

NARRATOR: As the divers set off carrying the box for Naia's skull, Jim is left to anxiously wait. He feels a heavy burden of responsibility. Naia has lain for 13,000 years at the bottom of Hoyo Negro. In a few hours, he'll know if she makes it back out safely.

Deep in the cenote system, the divers are moving through a world they have only dimly seen before. The huge underwater lights reveal the full dimensions of the hoyo.

As Susan approaches Naia's skull, with Beto and Alex behind her, she, too, is nervous. After 13,000 years in the water, the bone is brittle. It would be so easy to let Naia's skull slip.

Finally, she has the skull safely in her hands. Naia is ready for her return to the surface. It will take time; the divers must make at least three decompression stops to avoid the bends.

Finally, for the first time in 13,000 years, Naia emerges from the water and into the light of day.

Gingerly, she is carried away from the cenote. A four-by-four is waiting to take her across the province, to the labs of the National Institute of Anthropology and History, in Campeche, Mexico.

With conservator Diana Arano, Jim lifts Naia's skull onto the bed of a C.T. scanner. It will give him basic information about the state of her bones.

JIM CHATTERS: Oh, wow. Her skull is in very good condition. She's fossilized to a degree, which greatly strengthens the bone. It's what I was thinking I might see, and it's even better than I expected it to be. So yeah, it's fantastic.

NARRATOR: After the scan, her skull is put in a tank with chemicals to protect it from further exposure to air after thousands of years under water.

Meanwhile, the rest of Naia's skeleton is brought up bone by bone for forensic analysis.

Finally, in Mexico City, at the National Museum of Anthropology, Naia's skeleton is assembled. Jim and his colleague Vera Tiesler examine it for clues to her life.

VERA TIESLER: We have a set of attributes in her skeleton that tell us that she was between 15 and 16 years of age. Let's talk about the teeth, for example, the lower jaw. Basically, her permanent dentition is erupted, except for the third molars, which are about to erupt. She is past her growth spurt, but she's still in puberty, she's still adolescent.

NARRATOR: The third molars, which haven't erupted yet, are Naia's wisdom teeth, so that's consistent with an age of about 16.

JIM CHATTERS: Let's talk a little bit about what's going on with her pelvis here.

VERA TIESLER: Well, if we take a look at the sacrum, the segments are not fused yet, and some of them are lacerated, they're open. There's a lot of indication for trauma. She must have had a childbirth, a pregnancy, at an age where, when her pelvis was not prepared to hold or, well, produce a child.

NARRATOR: As more details of her life emerge, they start to provide clues to what happened on that day that Naia entered the cave. What was she looking for?

Thirteen-thousand years ago, the cenotes were dry. It was the last Ice Age, so much of the world's water was locked up in glaciers. Sea levels were lower, so the system where she was found was a vast cave. But in the recesses of that cave, there was water.

JIM CHATTERS: The environment of the Yucatan, at the time of Naia's life, appears to have been very dry, particularly seasonally dry. The only way you're going to get at water is to find it inside the caves, during the dry season. So, she entered the cave almost certainly looking for water.

NARRATOR: Even if she knew the cave well, she would have been wary. She would have known that humans were not the only things that look for water in caves.

BLAINE SCHUBERT: I think it's common knowledge, when you're human on the landscape and you have predators, that they use caves for denning. Large scavengers will use caves for denning. Cats use them, all across the world. And so, entering a cave is a dangerous thing to do. Naia would have had that on her mind going into the cave, I'm sure.

NARRATOR: But Naia was tough; that she was used to extreme physical activity is clear from the muscle attachments on her bones.

JIM CHATTERS: We're learning from the muscle developments in her arms and legs that she was constantly on the move: running, walking. She has the leg-muscle development more like a 35-year-old man than she has like a 16-year-old girl.

NARRATOR: Naia's physique seems consistent with the nomadic life of a people always on the move in search of food.

She was also no stranger to violence.

JIM CHATTERS: She's been through a rough life. She's got a fractured left forearm; this bone is definitely not the right shape. It's got a number of jogs to it. It's spiral-fractured. It's consistent with being forcibly twisted by another individual.

VERA TIESLER: And pulled.

JIM CHATTERS: Yeah, twisted and pulled, which is what often causes these in modern individuals. So, it's, sort of a, what we might refer to as an "abuse fracture."

NARRATOR: Naia's abuse fracture is no surprise to Jim. He has studied around two dozen of the oldest skeletons found in the Americas. Many of them bear the signs of interpersonal violence, like a 9,000-year-old skeleton called "Kennewick Man," with trauma, likely from fighting.

JIM CHATTERS: There are a lot of head injuries in the front of the head. We have individuals with spear wounds. Kennewick Man, for example, had a big spear point healed in his pelvis. So, we'll see a lot of violence between the males, but we also see some of that violence transferred over to the females.

NARRATOR: Jim is convinced that extreme male aggression was common in these ancient hunter-gatherer populations.

As recent arrivals in an unknown continent, theirs was a dangerous and precarious life. Women died young, often in childbirth, and this may have intensified male rivalry.

JIM CHATTERS: Females are dying in their early 20s. Males are dying in their mid- to late 30s. And that's increasing the competition for females among the males, because the males are living a lot longer. There are more of them proportionate to the females.

NARRATOR: Twenty years ago, when Jim started reconstructing the physical features of these very earliest Americans, he noticed something perplexing. Their facial structure was different from modern Native Americans.

Scientists have long assumed that these earliest people must be the ancestors of today's Native Americans, so he was surprised.

JIM CHATTERS: If we compare them to modern Native Americans, they look quite different. And that's been a major question that I've been struggling with for 20 years. Why do they look different from each other?

NARRATOR: Jim's first exposure to this difference was when he worked on the 9,000-year-old skeleton called Kennewick Man. When he reconstructed the face, it was clear Kennewick Man looked very different from a modern Native American. And he was not the only one.

JIM CHATTERS: Here's Kennewick, Washington. He's 9,500 years; Spirit cave from Nevada, he's about 10,500; a Horn Shelter male from Texas, or close to 12,000 years old; and here's Naia, from Mexico, at 13,000. And what's distinctive about these early individuals, they're much more ruggedly built than modern people: heavy brows, big muscle attachments, just generally much more massive and much more projecting, in their form.

NARRATOR: By contrast, modern Native American males all have much smaller heads and finer features.

JIM CHATTERS: You see the much smaller head, the roundness of the back of the skull, less prominent muscle development in the face. He's also got a longer face, and if you hold him in a similar position, his face is tucked in. It's not projecting anymore.

NARRATOR: What did Naia look like? As Jim and sculptor Tom McLelland set out to anatomically reconstruct her face, the mystery of these very first Americans deepens. Were these people ancestral to today's Native Americans? If so, how can these differences be explained?

JIM CHATTERS: Some folks have suggested that they're different because they come from different parts of the world. Perhaps some come from Europe; perhaps some come from Asia, earlier than the arrivals that later became Native Americans. So, that's been a question that needed to be answered.

NARRATOR: Finally, answers are emerging in the place where those early humans entered the western hemisphere for the first time, Alaska.

In the Tanana Valley of central Alaska, archaeologist Ben Potter and his team are discovering campsites made by those early nomads, as they crossed over from Siberia. This is the heart of the land bridge that once connected Asia and North America.

BEN POTTER (University of Alaska Fairbanks): People think of the Bering Land Bridge as a bridge that you might fall off of, when, in reality it's a landmass that's stretching a thousand miles or more, north and south, that's connecting Asia and North America. It persisted for a long time.

NARRATOR: This lost continent that for at least 20,000 years connected what is now Siberia and Alaska has been given a name, Beringia.

It was cut off from the rest of the Americas by the ice sheets covering northern Canada, a vast territory of tundra, mountains and grasslands. For thousands of years this was the first home of those very early immigrants from Asia.

At campsites in the Tanana valley, some 14,000 years ago, they hunted, fished and collected roots and berries, before moving on, following the herds that wandered Beringia.

BEN POTTER: We have evidence that they're hunting mammoth, possibly horse, and later on, they're definitely subsisting on bison.

NARRATOR: There was a way of life that left few traces, but they did leave some of their stone tools. These have given Ben important clues to who they were.

The tools are stored at the museum of the University of Alaska at Fairbanks.

BEN POTTER: What we see, going back at least 20,000 years ago, in parts of northern China, Mongolia, southern Siberia is the emergence of very sophisticated stone tool technology that we think partly allowed them to expand northward. And we see some of that same material here in Beringia, in some of the very earliest sites.

NARRATOR: Their stone blades and spear points tell the story of an immigrant population that had changed very little since arriving from Siberia.

BEN POTTER: What we have here is a representative collection of some of the Beringian material that we have. Some of the earliest people coming across into this region are making material that are quite similar to what we find in Asia. So, microblade cores like this, microblade technology, quite distinctive. So, we connect them really well with the Asian antecessors.

NARRATOR: But their tools are completely different from the distinctive spear points found in North America, south of the ice sheets, the hallmark of the Clovis culture.

BEN POTTER: If you compare this Clovis point to some of the points that are being made up here, they're quite distinct. So, this has been one of the problems that we're trying to grapple with is how do we derive Clovis from some of this Beringian material, which looks quite Asian?

NARRATOR: What is the relation between these Beringian Asians and the Clovis people? And where do Naia and modern Native Americans fit in? The answer would come from Ben's most remarkable discovery, on the banks of Alaska's Upward Sun River: the grave of two infants.

Clearly loved, these children had been carefully buried with symbolic artifacts and red ochre. Dating revealed that they were over 11,000 years old, making this one of the oldest ceremonial burials ever discovered in the Americas. Here, at last, was a window on the belief system of those first humans in the New World.

Even more important for the archaeologists, the children provided enough bone to retrieve their D.N.A. Would their genes allow scientists to untangle the connections between those first immigrants to Beringia, the Clovis people, Naia and today's Native Americans?

Ben sent samples to Copenhagen, to the Danish geneticist who is one of the leaders of the ancient genomics revolution, Eske Willerslev. His research is providing remarkable insights into the early peopling of the Americas.

ESKE WILLERSLEV: Ancient genomics have completely transformed our ability to reconstruct the biological history of human beings, including the biological history of early peopling of the Americas.

NARRATOR: At his lab in the Museum of Natural History, Eske and his team extracted D.N.A. from the bones of one of the Upward Sun children. Then, using massive computer power to piece together the D.N.A. data, the team was able to painstakingly reconstruct the entire genome.

The results revealed distinctive patterns of D.N.A.'s chemical bases, known as A, C, T and G. These so-called markers can link a particular individual to both ancestors and living descendants.

Now, Eske's team compared the genome of the Upward Sun child with other D.N.A. results: from the Anzick child, the only human remains definitively identified as Clovis; from Naia's D.N.A., studied by Jim and his team; and from modern Native Americans.

The results were momentous. They showed that the Upward Sun people, known as ancient Beringians, provide links to the ancestors of all Native Americans.

ESKE WILLERSLEV: The Upward Sun sample is extremely important, in the sense that it's the oldest skeleton found in Alaska. And when we did the genome of Upward Sun, it became even more interesting, because it turns out to be basal to all Native Americans.

NARRATOR: The genomic analysis indicated the existence of a single population of ancient Asian hunters in Beringia some 25,000 years ago, who were the ancestors of all Native Americans, ancient and modern.

Educator Shane Doyle views these results from his perspective as a member of the Crow tribe.

SHANE DOYLE (Apasáalooke [Crow] Educator): What happened was the ancestors of tribal people all were able to come to a confluence at the Bering, about 25,000 years or more ago, and all these people brought their own genetic profiles with them. They all had their own skin color, their own eye color, their own size, they have all their own phenotypes. And after they had children together, these ancient peoples, they produced a new group of people, and that is who American Indian people are.

NARRATOR: For many years, Shane has worked to bridge the gap between scientists and Native American spiritual leaders. He was instrumental in bringing them together for the reburial of the Anzick child, in 2012.

Eske's discoveries are important to him because they establish a clear Native American identity.

SHANE DOYLE: There's not Native American D.N.A. on the other side of the Bering Strait. Nowhere else in the world is there Native American D.N.A., except for the Americas. And so that was one of the most profound things that came from the study.

NARRATOR: So, at last, the story is clear. Arriving in Beringia from different parts of Asia, about 15,000 years ago, groups of those very first Native Americans left and began the long trek south, exploring a land that no human had ever seen before.

Once south of the ice sheets, these same people developed a new way of making stone tools and weapons, the distinctive Clovis culture. Their descendants are today's Native Americans.

Naia's people were part of that great southward migration. When Naia lived, Jim believes her people were recent arrivals in Yucatan.

A micro C.T. scan of her jaw and her teeth reveals evidence that they were not familiar with their environment.

JIM CHATTERS: We're setting up a micro-C.T. scan of Naia's mandible, her lower jaw. And the focus is on the teeth. We want to look at density variations in the teeth to look at growth patterns.

NARRATOR: Density variations are clues to periods of malnourishment. They soon become obvious in both Naia's teeth and jawbone.

JIM CHATTERS: Yeah, so you want to pick right up...

LAB TECHNICIAN: Mmmhmm.

JIM CHATTERS: ...there.

From the growth patterns in her bones, there is periodic growth interruption. That is, one season every year she doesn't get enough protein to eat. If her people were well adapted to the place they lived, they'd been there a long time, they would have known how to feed themselves protein year round. They don't, they're new.

NARRATOR: Naia has already told scientists so much about her people. Her skeleton has one last piece of information for them. It's about the day she died.

JIM CHATTERS: This is the most indicative. See the fracture of, of the bone and the jagged character of that fracture? Jagged-edged breaks occur in relatively fresh bone if not fresh bone.

VERA TIESLER: Mmmhmm.

JIM CHATTERS: So, that jagged fracture is consistent with fracture at death.

NARRATOR: Jim has thought a lot about that day, the day she walked into the cave 13,000 years ago, the last day of her life.

JIM CHATTERS: It's hard—when you know someone this well, you get to learn their life so much—not to become attached to them and have a sense of them. That's why it's hard to tell her story.

NARRATOR: What happened on that fateful day? At some point, she must have gone deeper into the cave in search of water. The pit where she was found is a long way from the nearest entrance to the cenote system.

Deep in the system's recesses, the hoyo was dry, with a shallow pool of water at its base.

JIM CHATTERS: I think, like the animals, she got lost.

NARRATOR: How did she get lost? Jim can only speculate.

JIM CHATTERS: She probably had a torch to go in with, in order to see her way around in the cave. If she lost control of the fire, lost her light, unlike the animals, she can't scent-orient to find her way out.

NARRATOR: She might have wandered for hours, perhaps even days.

JIM CHATTERS: She's wandering in this cave for quite a while, and at some point, she simply takes a fatal step, and the bottom is no longer there.

NARRATOR: Her pelvis was almost certainly broken by the fall.

JIM CHATTERS: She fell a hundred feet. And there's a good chance she struck something. I don't think death took long, if it were not immediate.

NARRATOR: Over the centuries and millennia, other animals fell into the pit, just like Naia did. Ten-thousand years ago, the cave system flooded, as sea levels rose, preserving them all in the anoxic environment at the bottom of the hoyo.

And there they lay until divers discovered the cenote, a time capsule preserving a unique record of Ice Age life on this continent.

Scientists will be studying this treasure trove of material for many years to come, but it is Naia who has opened a window on the world of a mysterious people.

JIM CHATTERS: Naia lived a very difficult life but, in her death, she left us this incredible record of the life of these earliest people.

NARRATOR: Carefully reconstructed, Naia has revealed to us the First Face of America.