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Big game hunters made camp at Upward Sun River in central Alaska 11,500 years ago; the genome of an infant from this site reveals the migration of the first Americans.

Eric S. Carlson in collaboration with Ben Potter

## Ancient Americans arrived in a single wave, Alaskan infant's genome suggests

By [Michael Price](#) | Jan. 3, 2018, 1:00 PM

A rare smidgen of ancient DNA has sharpened the picture of one of humanity's greatest migrations. Some 15,000 to 25,000 years ago, people wandered from Asia to North America across a now-submerged land called Beringia, which once connected Siberia and Alaska. But exactly when these ancient settlers crossed and how many migrations occurred are hotly debated. Now, the oldest full genome to be sequenced from the Americas suggests that some settlers stayed in Beringia while another group headed south and formed the population from which all living Native Americans descend.

"This is an important study that significantly narrows the subset of possibilities [for how the Americas were peopled]," says David Reich, a geneticist at Harvard Medical School in Boston. "It's very exciting."

The genome comes from an 11,500-year-old infant found in 2013 at the site of Upward Sun River in central Alaska's Tanana River Basin, a part of Beringia that's still above sea level. The infant, one of two from the site, belonged to a population that likely numbered in the low thousands, who **hunted Beringia's abundant herds and gathered plants.**

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A team led by geneticist Eske Willerslev of the University of Copenhagen and the University of Cambridge in the United Kingdom isolated DNA from bone powder taken from the infant's skull. The researchers sequenced the DNA repeatedly to get a virtually complete copy of the genome. They compared it to that of modern Native Americans, as well as to other ancient and living people across Eurasia and the Americas. By looking at genetic similarities and estimating how long it would take for key mutations to pop up, the researchers assembled a family tree with rough dates.

The infant's group was most closely related to modern Native Americans—but it wasn't a direct ancestor. Instead, **it and modern Native Americans shared common ancestors who must have entered Beringia some 25,000 years ago**, the researchers report today in *Nature*. Perhaps 21,000 years ago, those ancient settlers branched into at least two groups: one that included the infant and another that gave rise to Native Americans.

That supports the idea that Asian migrants lingered in Beringia and became genetically isolated—the so-called Beringian standstill model—says anthropologist Connie Mulligan of the University of Florida in Gainesville. "Because they have the whole nuclear genome, you can really tell a lot about when and where this migration happened," she says. But Reich cautions that date estimates from a single genome are necessarily rough.

Archaeologists excavated the skeletons of two infants and were able to retrieve DNA from one.

Ben Potter

The researchers also found that the ancient Beringian infant is equally related to both the northern and southern genetic subgroups of Native Americans, implying that both descend from

a single migration. The team suggests that a group headed south into North America about 20,000 years ago and only afterward split into distinct subpopulations, perhaps between 14,500 and 17,000 years ago, dates that fit with previous studies.

Why did one group linger and thrive in Beringia while another took off to explore the Americas? A search for fresh resources could have spurred the migrants, Willerslev says, but so could sheer curiosity. "There were people who were happy with what they had, and there were others who looked out at the great ice caps and wanted to see what was on the other side," he says.

That's a compelling speculation, Mulligan says. "Once they got into North America, they really high-tailed it through the continent and down into South America within just a few thousand years," she says. A cultural or genetic penchant for exploration "could help explain why they were in such a hurry."

Posted in: [Archaeology](#), [Evolution](#)

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## Michael Price

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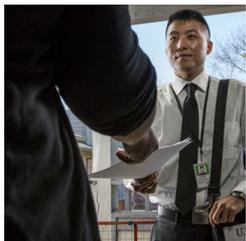
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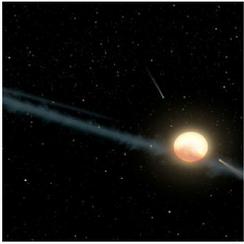


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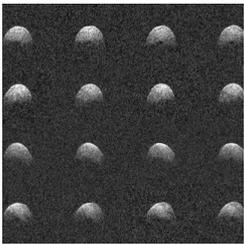
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