Humanity’s Longest Prehistoric Migration Was 20,000km On Foot - And We Now Know Who Took It

This migration was one of the most important journeys ever taken by our species.

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"Interestingly, the group that migrated the farthest—to Patagonia—shows the lowest level of genetic diversity." *Image credit: Denis---S/Shutterstock.com*

Homo sapiens are incredible things. In humanity's longest prehistoric migration, groups of daring people walked over 20,000 kilometres (12,427 miles) from North Asia across to North America and down to the southernmost tip of South America. In a new study, scientists have traced this momentous journey using DNA sequence data from 1,537 people from 139 diverse ethnic groups. The results showed that these early pioneers were essentially Asian in their genetic heritage, as you would expect considering they originated in North Asia.

These groups migrated on foot from Siberia across the Bering Land Bridge, a land connection between Asia and North America that existed during the last Ice Age, and entered the Americas for the first time.

Over thousands of years, they then splintered into numerous groups as they worked their way down into the "new world" and adapted to a wide range of environments, from the dense rainforests of the Amazon and the arid deserts of the Chaco to the high peaks of the Andes and the icy plains of Patagonia.

"We found that the people who arrived in South America spread across different regions of the continent. We identified at least four distinct ancestral groups: the Andean, Amazon, Chaco, and Patagonian populations. These groups became isolated in their own geographic regions, developing unique genetic characteristics over time," Associate Professor Kim Hie Lim, study author from Nanyang Technological University in Singapore, told IFLScience.

"Interestingly, the group that migrated the farthest—to Patagonia—shows the lowest level of genetic diversity," she noted.

By looking at the ebb and flow of genes, the team was able to show that early migrants arrived at the northwestern tip of South America, where modern-day Panama meets Colombia, at least 14,000 years ago.

While the study didn't identify when humans first set foot in the Americas, this timescale aligns with a prevailing view that humans were most likely present across America around the peak of the last Ice Age about 26,000 to 19,000 years ago.

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Assoc Prof. Kim Hie Lim

The researchers note that these insights were only made possible because they had a wealth of data on Asian people. Their work drew upon the GenomeAsia100K project, which is the first attempt to map the deep diversity of Asian populations.

"Asian populations are significantly underrepresented in genetic research, even though they make up a large portion of the world's population and have a high level of genetic diversity. Genetic variants linked to disease can differ across populations due to their unique genetic backgrounds. When Asians are not included in these studies, they may not benefit fully from the findings," explained Kim.

The study also included loads of data from Indigenous groups, which are similarly underrepresented and equally important to the story of humans.

"Indigenous populations often carry distinctive genetic traits, shaped by long-term isolation or adaptation to extreme environments," added Kim.

"Their genomes offer unique windows into early human history in specific regions. Our present-day genomes are shaped by this evolutionary history—we inherit them from our ancestors. So understanding that past helps us interpret genetic variation today," she said.

The new study is published in the journal Science.