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## ROLEX AND NATIONAL GEOGRAPHIC PERPETUAL PLANET AMAZON EXPEDITION: ATOP THE ANDES MOUNTAINS

BAKER PERRY AND TOM MATTHEWS  
CLIMATE SCIENTISTS INSTALL HIGHEST WEATHER  
STATION IN PERU

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National Geographic Explorers Baker Perry, Tom Matthews and Ruthmery Pillco Huarcaya along with local scientists, guides and elite female Bolivian climbers, known as the Cholitas Escaladoras, celebrate after installing the weather station just below the summit of Peru's Nevado Ausangate mountain.



Senobia Llusco, a member of the Cholitas Escaladoras team, climbing to high camp on Nevado Ausangate.



Just below the summit of Nevado Ausangate, some of the team rest and take in the Ausangate Valley. The data gathered by the weather station will ultimately be used to improve future projections of glacier extent and water availability downstream.

It's pitch dark, and the temperature hovers around a bone-chilling  $-10^{\circ}\text{C}$ . Accompanied by a team of Aymara and Quechua mountain guides, National Geographic Explorers Baker Perry and Tom Matthews have made their way to the dizzy heights of Nevado Ausangate in order to install a weather station on the mountain's peak. At 6,385 metres, it is the highest weather station in the tropical Andes, and the data it collects will provide a crucial understanding of the effects of climate change in the region.

Battling the effects of soroche (altitude sickness), the team takes turns to dig a three-metre hole in the snow in which to plant the monitoring system's central mast. Once connected, the station will transmit a live feed, providing information on everything from air temperature and relative humidity to wind speed, snow depth, and shortwave radiation (i.e. how much sunshine is reflected by the surface below). Information of this kind for high-altitude sites across the globe has historically been thin on the ground. Thanks to a combination of inaccessibility and extreme atmospheric conditions, Perry thinks no scientific studies had been undertaken on Nevado Ausangate until the recent Rolex and National Geographic Perpetual Planet Amazon Expedition.





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It might seem surprising to find an expedition with “Amazon” in its name working among the peaks of the Andean cordillera. As Matthews explains, however, there’s a logic behind this apparent contradiction.

Ausangate is, in his words, a “sentinel location” when it comes to deciphering weather patterns in this part of the world. It’s an example of a “natural water tower”, storing water in the form of ice and snow, which is gradually released in the dry season. The Vilcanota or Urubamba river, nourished by snow melt from Ausangate, is one of the primary sources of the Amazon basin and constitutes a vital resource for downstream communities that depend on it for irrigation, drinking water, and hydroelectric power.

For millennia, this has been a stable and renewable process – but climate change is now disrupting it. Fast-retreating glaciers mean decreased water flow down into the Amazon, but as Perry points out, “it’s a two-way street”: evaporating moisture in the Amazon Basin rises to the high Andes, where it falls as snow. However, rampant deforestation also means a drier ecosystem. With less vegetation comes less evaporation, less snow on the cordillera, and dwindling glaciers. The first step in protecting this fragile cycle is understanding it and that’s just what Perry and Matthews have set out to do, aligning their mission perfectly with the Rolex Perpetual Planet Initiative’s commitment to exploration and discovery for the sake of the planet.

Matthews first worked with Perry as part of the meteorology team on the 2019 Rolex and National Geographic Perpetual Planet Expedition to Mount Everest, installing five weather stations, one of which (at more than 8,000 metres) became the highest in the world. “Baker and I are great partners, with skill sets that complement each other. Between us we’re well placed to understand the connection in the water cycle between evaporation in the Amazon and what’s precipitating out over the Andes.”

The Ausangate weather station has already revealed some remarkable, if alarming facts. The intensity of the sunshine at these altitudes is “as intense as anywhere that’s ever been measured”, according to Perry, meaning that even at below-freezing temperatures substantial melt is likely to occur. Additionally, microplastics were found in samples of snow that the team collected during the installation, apparently transported there from the nearby urban centre of Cusco.

However, the pair remain hopeful. With support from the Rolex Perpetual Planet Initiative, Perry and Matthews can continue braving the heights of the world’s tallest peaks, furthering our understanding of some of our planet’s most extreme and vital weather systems, and providing answers that could help in the struggle against climate change world-wide.

“It’s incredibly exciting, and surreal actually, to scale these remote mountain peaks and witness the changes in real time,” said Matthews. “But really what drives us and the Rolex Perpetual Planet Initiative, is the desire to preserve and protect these resources”.



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### ABOUT THE PERPETUAL PLANET INITIATIVE

For nearly a century, Rolex has supported pioneering explorers pushing back the boundaries of human endeavour. The company has moved from championing exploration for the sake of discovery to protecting the planet, committing for the long term to support individuals and organizations using science to understand and devise solutions to today's environmental challenges.

This engagement was reinforced with the launch of the Perpetual Planet Initiative in 2019, which initially focused on the Rolex Awards for Enterprise, as well as long-standing partnerships with Mission Blue and National Geographic Society.

The initiative now has more than 30 other partnerships in an expanding portfolio. They include, for example, Cristina Mittermeier and Paul Nicklen, Rewilding Argentina and Rewilding Chile, offspring organizations of Tompkins Conservation, the Under The Pole expeditions, the Monaco Blue Initiative, and Coral Gardeners.

Rolex also supports organizations and initiatives fostering the next generations of explorers, scientists and conservationists through scholarships and grants, such as Our World-Underwater Scholarship Society and The Rolex Explorers Club Grants.

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