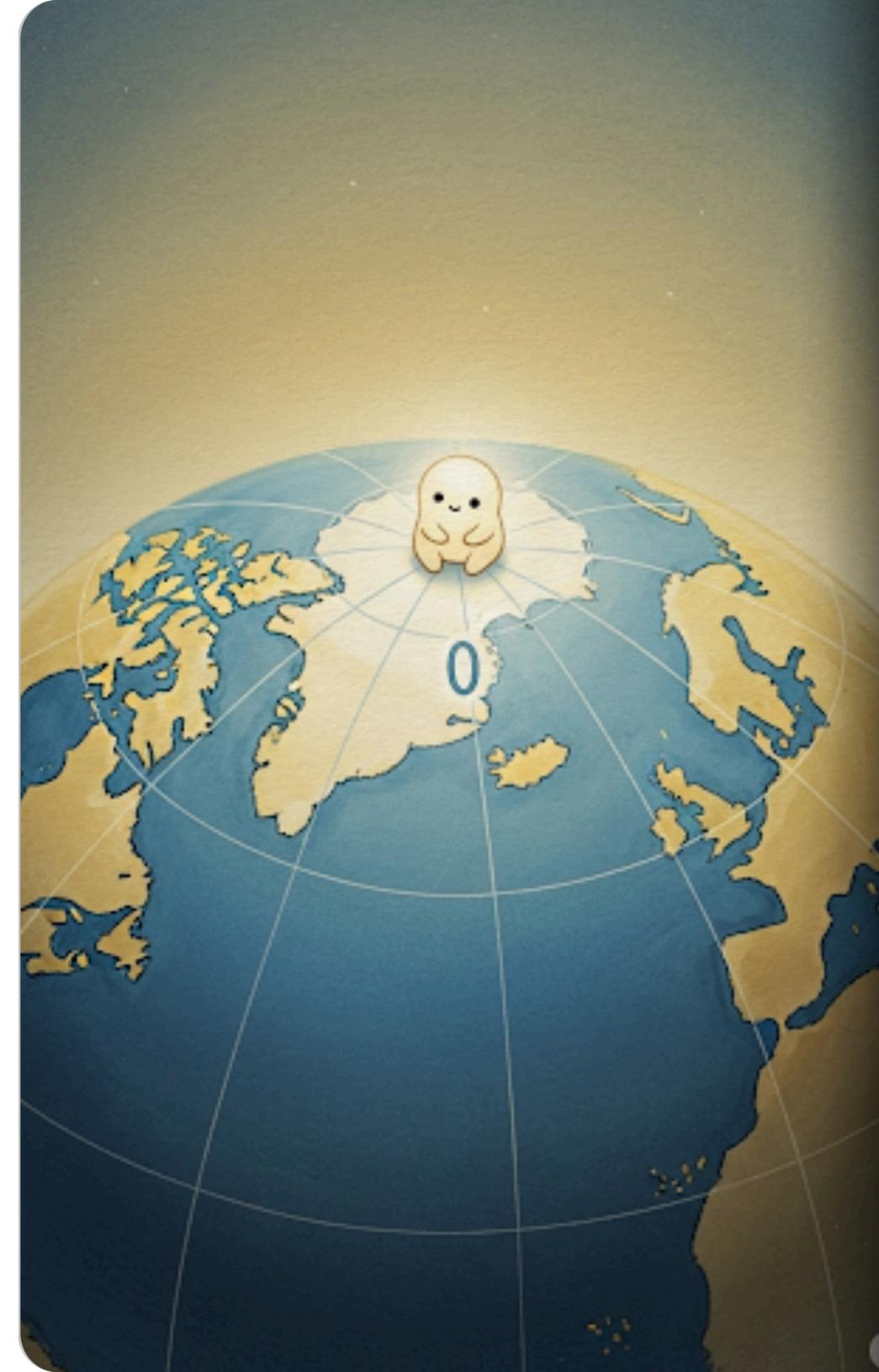


The Superpower of Superposition

By Teja Abhinayasri Chakka



This is Qubi, a tiny particle of light. It lives at the North Pole of a big, round globe. This is its home base, a state called $|0\rangle$.



One day, a visitor arrived. It was a friendly robot hand with a special name: "Hadamard Gate." It reached out to say hello.



The Hadamard Gate gave Qubi a gentle, playful spin. "Whee!" cried Qubi as it zipped around the globe.



When Qubi stopped, it wasn't at the top or the bottom. It was a shimmering, blurry glow spread all around the globe's middle—the equator! This is superposition.

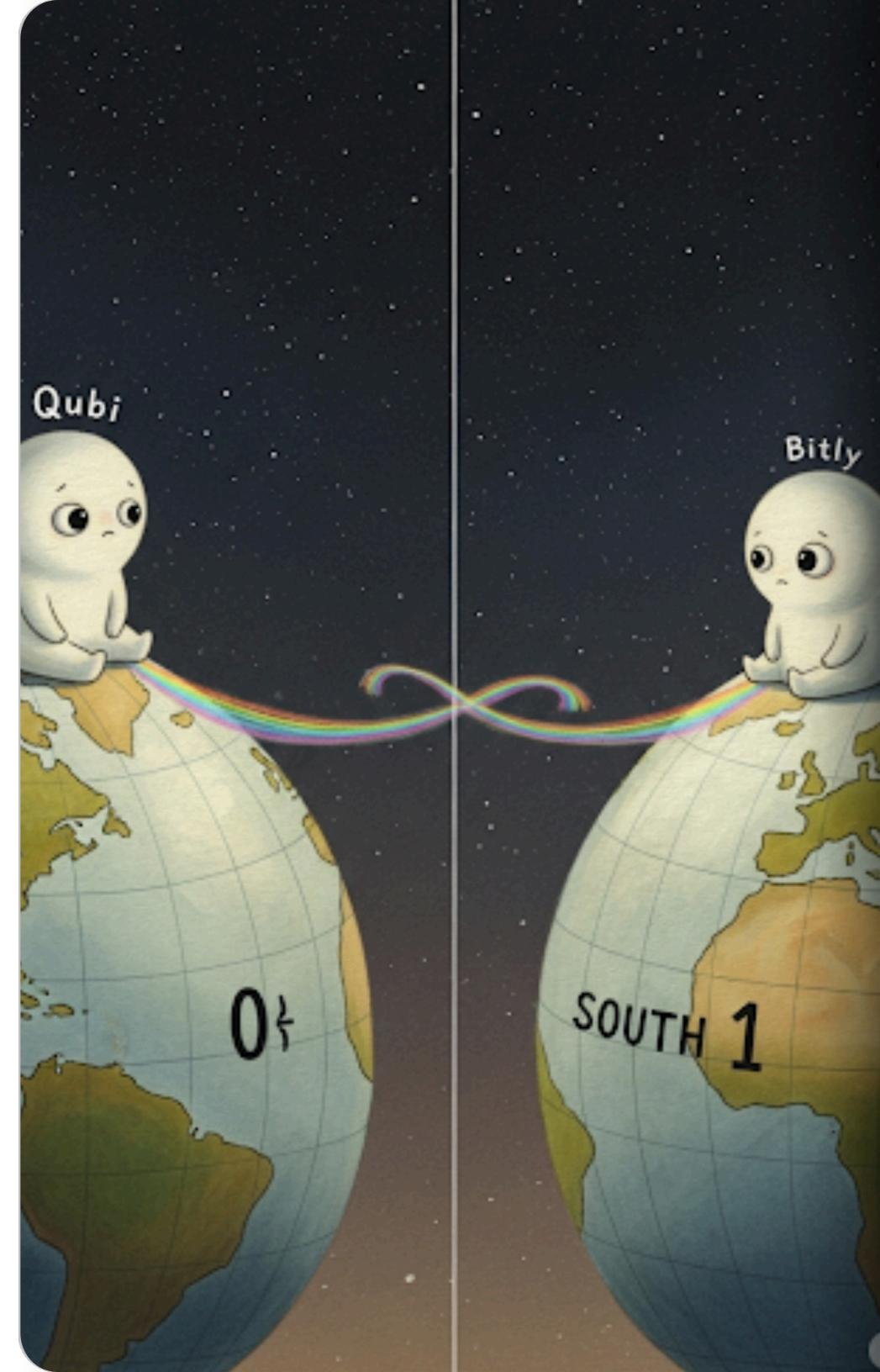


But the moment someone looks to see exactly where Qubi is, it has to choose a spot! A giant, friendly eye labeled "Measurement" appeared in the sky.

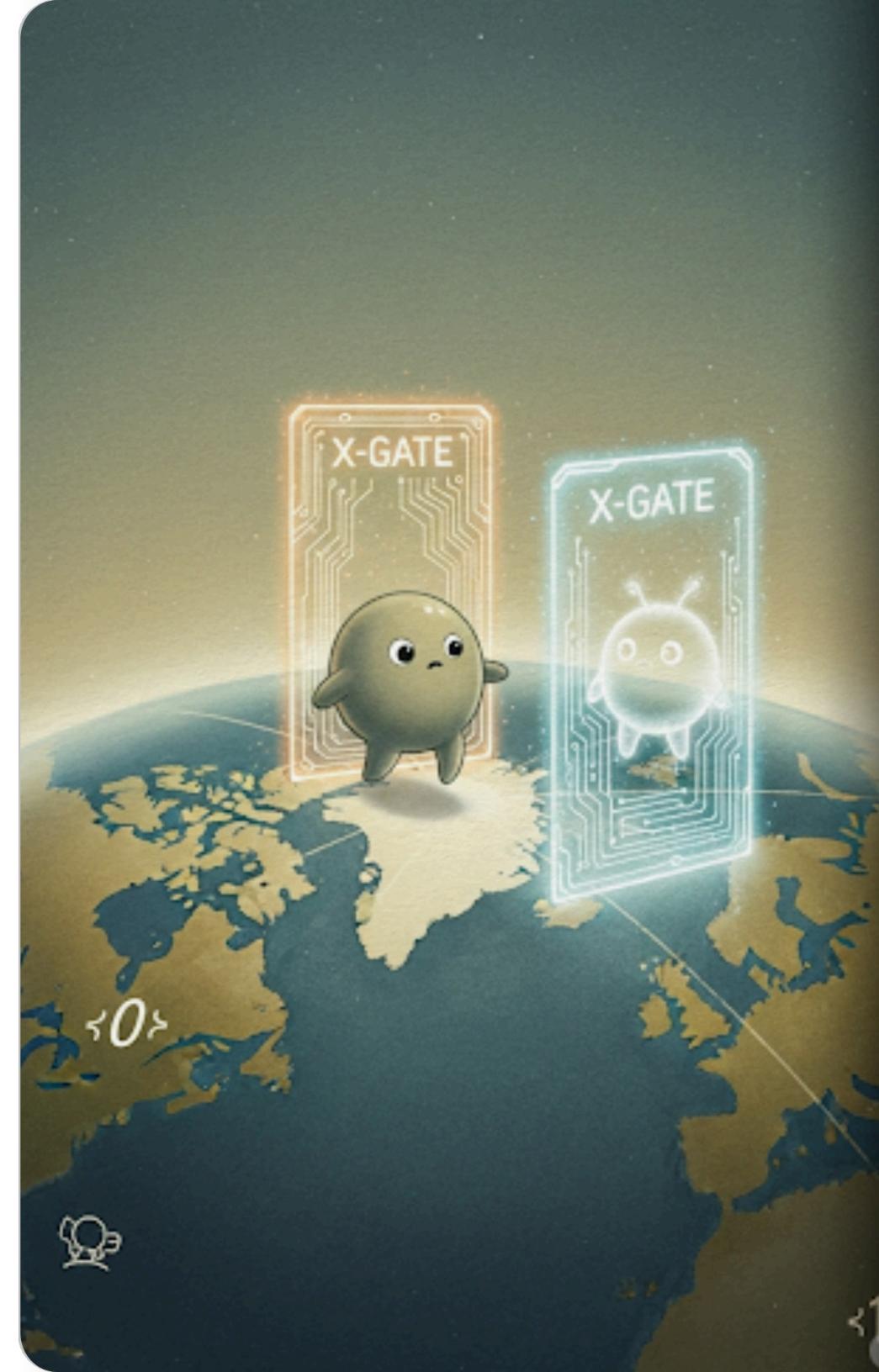


POP! The instant the eye looked, the blurry ring vanished. Qubi was suddenly solid again, sitting right back at the top in the $|0\rangle$ state.

One day, Qubi met another qubit named Bitly. They became the best of friends, linked by a special magic called entanglement.



Now, they were a team! If a measurement found Qubi at the top ($|0\rangle$), Bitly was always at the bottom ($|1\rangle$). They were opposites, forever connected, no matter how far apart they were.



Qubi also loves to play with other "Quantum Gates," which are like special doorways that can flip its state in a flash!

With superposition,
entanglement, and quantum
gates, Qubi can explore
amazing possibilities all at
once. It's not just magic, it's
quantum power!