Micius Satellite

Micius is the world’s first quantum communications satellite, launched by China in 2016. The satellite serves as the source of pairs of entangled photons. Recently, it has sent light particles to the Earth to establish the world’s most secure communication link. It has successfully brought entanglement-based quantum cryptography to its original ground stations 1,200 km apart by sending simultaneous streams of entangled photons to the ground stations to establish a direct link between the two of them.

The satellite provided entangled photons as a convenient resource for the quantum cryptography and the two ground stations then used them according to their agreed protocol. Until now, this had never been done via satellite or at such great distances. It has not been specified how the messages were transmitted in this instance but in theory it could be done by optical fibre, another communications satellite, radio or any other agreed method.

Scientists have started using quantum encryption for securing long-range communication and Micius has been at the forefront of quantum encryption for several years.

Entangled Photons

- Entangled photons are twinned light particles whose properties remain intertwined no matter how far apart they are.
- If one of the photons is manipulated, the other will be similarly affected at the very same moment.
- It is this property that lies in the heart of the most secure forms of quantum cryptography (the study of concepts like encryption and decryption).
- If one of the entangled particles is used to create a key for encoding messages, only the person with the other particle can decode them.

For QUANTUM TECH: https://www.aspireias.com/daily-news-analysis-current-affairs/Quantum-Supremacy