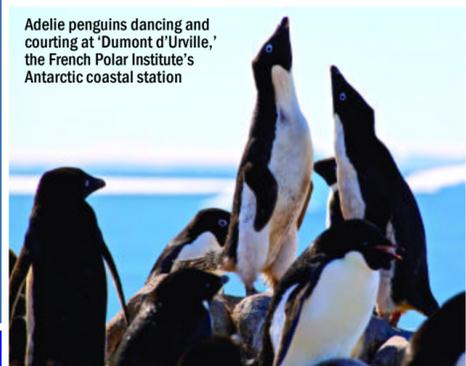


British-Indian doctor **Alexander Kumar** has lived out a year in Antarctica on a mission for the European Space Agency. He pulls us into the place most of us will never see in person in this fascinating conversation with **Monali Sarkar**



Adelie penguins dancing and courting at 'Dumont d'Urville,' the French Polar Institute's Antarctic coastal station

**D**r Alexander Kumar has had an unlikely address for the past year: Concordia station, Antarctica. The British-Indian doctor has been there for a year working for the Institut Polaire Francais as the station doctor whilst conducting research for the European Space Agency.

Kumar is on a mission to understand the effects of human space travel, physical and psychological, particularly the role of

extreme isolation. And Concordia — a place so isolated that you can only enter and exit it for three months in a year — is probably the closest simulation of the isolation of space travel.

With his Rajasthani charm and English satire, Kumar shares his experiences of what he describes as the "Worst Winter in the World" and how it might be a stepping stone to a manned mission to Mars.

What drew you to a mission like this? I was working long shifts in Intensive

Care in UK and came across an advertisement for the coldest and most isolated job in the world — stating that the candidate would live in a team more isolated than astronauts onboard International Space Station.

Alongside the European Space Agency's screening for Astronauts, every year they post a call to recruit a Research MD to spend a year, including a winter, at Concordia Station in Antarctica.

This appealed to me as much as when I first read (polar explorer Ernest) Shackleton's fabled advertisement: 'Safe return doubtful.'

I came to Antarctica to follow Dr Edward Wilson's legacy of science. He was (polar explorer Robert Falcon) Scott's doctor — the first doctor to the South Pole — and he died beside Scott. But the legacy he left in Antarctic science burns brightly, even today.

A century ago, Wilson attained his dream of standing at the true geographical South Pole. Man would not step foot on the moon for another 50 years.

Hundred years on, I sit in my own modern biomedical laboratory located at Dome C — one of the most remote and extreme environments on earth, dreaming of a manned mission to Mars.

Antarctica, an alluring and unexplored continent, remains a magical refuge and sanctuary for scientists and wildlife alike; it is a place of both dreams and nightmares.

Today, it provides global warnings of a changing climate, melting ice caps and the discovery of a damaged ozone layer, loosely protected by the Antarctic treaty. It is thought of as an unexplored sanctuary by some and by others an answer to the world's continuing growing energy needs.

I now know, if the world climbs aboard Antarctica, it will sink. It is crucial the Arctic and Antarctic remain free from exploitation and natural resource exploration.

My only wish is that 100 years from now, another doctor can stand where Dr Wilson once stood and where I have stood, and in taking an icy breath in the



Dr Alexander Kumar at Antarctic crossroads looking for directions to Mars



Freezing after swimming at -158°F in the Antarctic station's melt water supply tank



Dr Alexander Kumar waits for the first sunrise in mid-August

PHOTOGRAPHS: DR ALEXANDER KUMAR



you have to go through a general interview, psychological testing, psychological interview, medical screening and a short training course before you are ready to lift off.

I remember walking out of a late shift, my last shift, in Oxford's emergency department late last year, thinking this would be the adventure of a lifetime, a new exciting chapter.

But there was still so much preparation. How do you pack your mind, never mind belongings for one year away from home, family and life as you know it?

I left London Heathrow at the turn of the new year, traveling for nearly three weeks all the way around the world — London-Singapore-Sydney-Hobart — before arriving by boat in Antarctica, at the French coastal station DDU.

Crossing the Southern ocean was fun with waves the size of houses! And then a 5-and-a-half-hour flight inland by a Twin Otter aircraft.



The coldest science in the world: Kumar in his biomedical laboratory at the bottom of the world