



India Abroad November 23, 2012

Into the Great White Silence

The Sun melts onto the horizon for the last time over Concordia, leaving the station in complete darkness for over 3 months

ALEXANDER KUMAR



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Tell us about living at Concordia.

The station was built in 2005 and is a French-Italian run research outpost located in the most extreme environment on earth.

It consists of two three-story cylindrical buildings linked by a central insulated corridor — the main living quarters and laboratories — and then is surrounded by research shelters dotted around a 1-2 km (0.6-1.2 miles) perimeter around the base.

The living conditions are very comfortable. Of course, there is no escaping the stress of confinement and life in close quarters with others, but it would be the same as living inside your family home, closing the door for a year.

We have our own compact bedrooms, a video/movie room, a pool table, a dining room, kitchen, lounge and small gym.

Just past the front door there is the great outdoors, but it's rather extreme to my family home in UK — the wet green temperate fields of Derbyshire!

Concordia has among the best food in Antarctica, with fine wines and seven-course lunches (according to the Lonely Planet Antarctica Travel Guide. And no, tourists can't visit).

While over-wintering in Antarctica, food is vital, not just to regulate the body clock during those months, but to also bolster team spirit.

The food has to be prepared carefully to make sure there are no nutrient deficiencies or food poisoning.

So, having a good chef and a good mechanic, I think, is more important than having a good doctor here. This year our winter chef is Giorgio Deidda from Italy.

All of us also contribute, sharing food from our heritage. I have helped prepare an Indian-themed evening and hosted the world's coldest, most extreme and remote Diamond Jubilee tea party, baking scones, in honor of Queen Elizabeth II — at a temperature of -100°F.

I even made the crew Mango Lassi, before we ran out of fresh fruit.

Preparing food here presents unique challenges — since Concordia is at about 12,500 feet equivalent altitude, water boils at about 189°F, so boiling food to ensure its safety can take longer than when cooking at sea level.

Each week is different. It was difficult holding onto a normal sleep cycle during winter, not just because of the eternal dark-

ness, but more so because of two reasons.

First, due to my research role, which involved sleep studies, and so I ended up living in other peoples' time zones between the station plumber (early bird) and astronomer (night owl) and being on call 24 hours a day for 9 months as the station doctor.

I have been kept busy, but fortunately with few serious events. I look forward to returning home to the normal early rise and early bedtime I once lived.

Down here though, sleep is a bit like cricket down here, 1 hour is ok, hitting a four is great and a six even better. I am grateful for even four hours of sleep.

You have now over-wintered in Antarctica. Tell us about Earth's coldest winter.

The inland Antarctic winter on the Plateau is to me simply 'the worst winter in the world' — it is the best of times and the worst of times.

It is harsh, challenging, extreme and even desperate at times — providing a very different experience to the coastal stations dotted around Antarctica.

On the other hand, it is incredibly desolate, beautiful and like no other place on earth. Having traveled so much myself, including to the Arctic, Amazon and more, I would consider this one of the greatest journeys in the world.

It is an incredible mixed bag of feeling as the last plane leaves you standing breathing the freezing air in the Great White Silence, waving away your last link to civilization.

Imagine it; there are simply no words to describe it. That's when one of the greatest journeys on the planet begins.

It's something the station's 'summer tourists' will never experience, unless you have the confidence and curiosity to dare to test yourself to stand on the other side of the airplane window, on 'the ice,' when that last plane leaves you.

This is a personal journey, and there is no turning back. It's a roller-coaster ride like no other, except it continues on no matter how tired or nauseous you get.

You have to have the self-confidence to know you can deal with anything it throws at you; I describe it as a psychological marathon. It will dredge the ocean depths of your mind and it can be an unforgiving and unrelenting torture.

A few members really struggled. But I have enjoyed the complete winter darkness more than the summer months, which are distracted and busy, being frequented by

tourists and scientists.

How did you feel seeing the last sunset in May and the first sunrise in August?

Living here is like living in the Ice Age in so many ways. I took a long walk alone under our last sunset in May, which to me felt like an apocalypse.

In many millions of years our sun will die. It's only down here, when you live through its absence, do you really appreciate it. It is very unsettling, but at the same time, depending on the type of person you are, I found it to be exciting — the start of an unknown and unique journey.

Words cannot describe the return of the sun after so long an absence. But once the sun rises for the first time, it sets after a short time. The days remain smothered in darkness.

Slowly more light is added to each day until by the end of the year (the height of the Southern Hemisphere summer) the Station is bathed in 24-hour sunlight. It's the greatest seasonal change anywhere on the planet.

This is the first time since the station's creation in 2005, that there is only one doctor overwintering at Concordia. What challenges have you faced?

In January, the scheduled station doctor chose not to winter and returned home. I was left with an incredibly difficult decision — just 3 weeks before winter began and the last plane left — to accept the offer of the position as the winter doctor.

It has been one of the most challenging jobs in my life, as a 28-year-old doctor with just 3 years postgraduate experience.

I traveled to the US Antarctic Program's McMurdo station to get dental training. A last minute substitution occurred bringing a nurse to the base — our only female member.

But ultimately as isolated as you are here — you are under the lenience of Antarctica — and anything can happen to anyone, anytime.

To me, it is as if I am Médecins Sans Frontières (doctors without borders) in Antarctica — it's a challenging unforgiving environment.

Prevention can never prevent accidents or appendicitis. It's just one of the understandings you have to make with yourself in over-wintering — knowing that there is a chance you may never come home.

I was told there would be no opportunity for evacuation, to consider a mid-winter evacuation as being impossible.

It's hard, but it's life. And life for me is worth living; what's life without adventure! I have always travelled and worked in dangerous environments under the same understanding — this is no different.

This is Antarctica; you have to roll with the punches. Sure they hurt and I am tired and had low points myself during the winter, but that's all part of a winter experience and serious medical and team hurdles have been crossed fortunately and successfully.

I can only be happy having fulfilled the dual role, station doctor and research MD, to the best of my ability under extremely difficult last minute circumstances and everyone of our team is still standing — the only promise I had made to myself when the last plane took off into the sunrise.

What are some of the most striking aspects of the landscape and animalscape there?

The coast was beautiful, packed with penguin colonies and teeming with life — over 60,000 Adelie penguins cause quite a stink. And certainly crossing the Southern Ocean was incredible.

Where we are now is inland in the world's largest, coldest, highest, driest and most remote desert in the world — the Antarctic Plateau — and with that there is no flora or fauna for over 1,000 km (621 miles) in most directions.

In fact, our closest neighbors are astronauts on board the ISS!

As I look out over the Plateau — it is white as far as the eye can see, spattered with Sastrugi (sharp irregular grooves or ridges formed on a snow surface by wind erosion and deposition).

What is the impact of such isolation? Is isolation the biggest challenge here or have you discovered it is something else?

Time keeps dragging on. Everyday you feel like you are fighting in a war against yourself, sometimes others, but mostly the spell, deceptive charm and curse of winter.

Some see it as an 'ice prison' — a Gulag lost in time and misplaced in Geography.

You keep your eyes fixed on the horizon by what is known as 'The Thousand Yard Stare.' Though the landscape never changes, your dreams do.

All you ever hear others speaking about is 'when I get out of here, I'll do this or that' and that makes you think about it too.

When the sun has gone, it sometimes feels like your soul has departed as well.

Joseph Conrad in The

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Heart of Darkness said it best, 'We live as we dream, alone.' I say, if

God ever lived in Antarctica, he left a very long time ago.

Every day you wake up and it takes some time to screw your head into place.

I am quite used to waking up in a tent at 4,000 meters or above, from previous expeditions, but now I can isolate the general feeling of hypoxia from the other factors at play — the sensory deprivation, isolation and loss of the day light cycle.

Winterover is like living in a sinking boat, a continual struggle to keep the mind afloat from drowning. Everything comes to a grinding halt up here alone in inland Antarctica in the darkness.

During the winter, I remembered writing how overwintering whilst it isn't masochism, it's really just 'madness.'

Here we are actually more isolated than astronauts on board the ISS, with only a 10,000th of the training for our mission. That's why we call it 'madness.'

The challenge of overwintering can be likened to climbing a very high mountain, like Everest. You don't need muscles; you need willpower, inner strength and a little luck with the weather.

Overwintering at Concordia to me is as if I had rolled up late one evening to a small, remote and isolated youth hostel in rural Romania. Once entering, someone then shut the doors and said you can only all come out in a year.

There are 13 other random European folk who you've never met before. Some speak English; some do not. There is enough food and fuel to survive until they open the doors again.

All you have to do is to survive, together. You soon realize where everyone's skills are and each find your own role to make the environment a safe and healthy one. If you can find fun, then you are very lucky indeed.

Down here at 4 am, with difficulty sleeping watching the world from afar, as if viewing the problems from another planet, we hold a unique, but challenging perspective, to deal with and lay such demons to rest, that is.

Toiling over why so far away others are fighting, others are living so excessively, starving in their minds, whilst others on the other side of the planet are starving in their bodies. Meanwhile, no one seems to be paying attention to the decaying state of our planet.

Reading, chewing and digesting the news every so often, I ponder the world's problems and that's what keeps me awake at night, having seen so much of it first hand in my jam-packed 29 years.

The monsters of your mind start to awake under your bed. You hear footsteps on the stairs, approaching your room, your heart beats faster, and the possibility of sleep backs further away into the morning, scared. There is no escape.

I have coined my own term for my and fellow crew member's similar feelings I have experienced in desperate times in the past down here on the ice. It is 'hysterical despair.'

Where things go rotten, can't be helped and all you can do is laugh, and so it begins, a period of hysterical laughter, that spreads to the point that people are laughing, can't stop and yet don't find their predicament particularly amusing.

In fact, it's devastatingly, frustratingly, more stuck than a stuck person who finds himself in a very sticky place whilst visiting 'stuck land,' which in case you missed the point, is a very sticky place indeed.

In being the only British-Indian member of this crew, last night for an informal dinner, we were all sat in the lounge. I was sat in the middle, in the natural great divide, in-between the French members of the crew talking on my right, and the Italian members on my left, each speaking their own language and referring to their own cultural references.

I sit in the middle, as a bridge of sorts over a social crevasse of sorts, making an effort to

ties — where modern media, including Skype, Twitter, Facebook, satellite phones — air drop targeted bombs of devastating news into isolated communities, whether it be a break up in relationship, loss of a loved one, or otherwise.

There is no release here. Sometimes, I wish we were as isolated as Shackleton's men were.

Certainly some members have remained 'disconnected' from our group, instead remaining connected with their previous comparatively complicated lives at home.

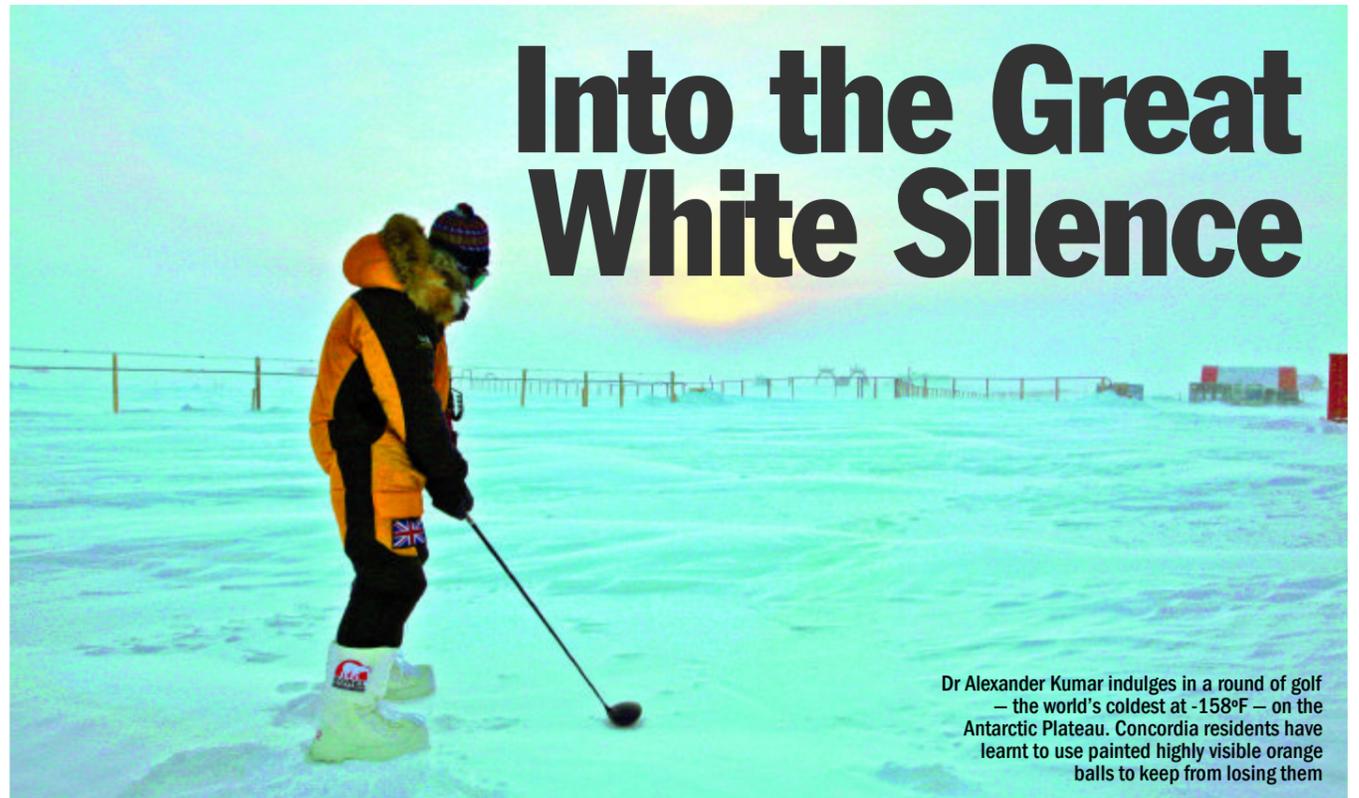
Down here, you can sulk about football scores, follow civil wars and access digital banking. Satellite communications have

bers of the group. Captain Scott had made his last diary entry in a tent exactly 100 years ago.

Midwinter is a special time in Antarctica and has been celebrated since the first explorers to overwinter. We have a week of celebrations — including themed dinners, extravagant costumes, music and dance. I found a quiet time to dwell on the past 100 years of Antarctic history.

While on the subject, you turned 29 in Antarctica. How did you celebrate?

I have celebrated the past eight of 10 birthdays away from home, abroad. My 29th was the most unusual — down here in Antarctica it was the coldest of my life — where the chef



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Dr Alexander Kumar indulges in a round of golf — the world's coldest at -158°F — on the Antarctic Plateau. Concordia residents have learnt to use painted highly visible orange balls to keep from losing them

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understand each group's different culture.

You know its there, but until finding it by falling into it, didn't know where it would be. Most people help each other as a team through difficult times when they arise, but mostly its one to your own. But in desperate times, we unconsciously stick to our own, it's that simple.

There are many cultural barriers here. But I find as I have always found, the only real and honest way to break them down is with a sense of humor, even if I am staring down the barrel of it.

In the meantime you remain adrift in this sea of ice, not knowing if or when you will ever 'hit land.'

Although you dream of washing up on that tropical beach, surrounded by warm gentle surf, you know South Georgia is still a long way away, in the middle of the ocean, without a compass, you just hope you will chance upon it.

You have said that technology that helps you stay connected with Earth doesn't help overcome isolation...

The abundance of modern technology is beneficial, but also can be the cause of many problems in Antarctic wintering communi-

changed the face of Antarctic winters in so many ways for the better, but possibly, in my own opinion more so, for the worse.

How do you relax?

It is extremely difficult to relax here. I am always on call in case of medical problems day or night.

Over the winter I slowly immersed myself in keeping busy igniting a love for writing and taking photographs. On Sunday, perhaps a spot of golf indoors or outdoors.

Over the winter I have read my way through 100 years of polar history and listened to the past century's jazz favoring Charlie Mingus, Miles Davis and John Coltrane as well as rediscovering Jerry Lee Lewis' rock'n'roll.

Alongside a fellow team member we set a record for playing the coldest game of tennis in the world in -70°C (-158°F).

I have furthered my interest and skills in photography — learning Astrophotography — how to take astronomical photos of the magnificent night sky here in -80°C (-176°F).

To celebrate the Scott Centenary this year, in March I organized and set up and slept in a tent outside in -70°C with two other mem-

surprised me by rustling up an English Breakfast! Later, we had a multi-course dinner and cake.

You are almost at the end of your research. What has this journey taught you about human resilience?

From traveling through jungles to deserts to the polar regions, I have met some incredible people, tribes and indigenous populations, as well as witnessing some incredible feats of survival.

Despite a rapidly modernizing world, traits of past civilizations remain and we have learnt from previous mistakes.

Overall, I now know, I am certain that humans can adapt and survive anywhere, no matter how extreme.

But whilst this is beneficial to ourselves and our own species survival, in overpopulating areas of the world, dominating and being so resilient in many ways to compromise, instead following excess and greed, we will cause damage and the extinction of many other species alongside the exhaustion of finite natural resources, perhaps changing our planet irre-

One day, I suppose

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← **M10** soon, will surpass a point of no return, a point no longer sustainable, tipping a precarious balance in life, as our global population heads on strong for 10 billion.

What conclusions have you arrived at regarding how far a human being can go with regards to a manned mission to Mars?

Living in Antarctica is the closest anyone can come to living on another planet.

Though the average Martian surface temperature is around -55°C (-67°F), similar to Concordia, there are significant differences — surface gravity, atmospheric pressure, cosmic rays in space, surface radiation on Mars, storms of dust or fines (particles smaller than dust), and human factors including psychological issues.

Tim Peake, the UK's only current astronaut-in-training, has reminded me that 'Remaining healthy will be the greatest challenge for an astronaut travelling to Mars, both physically and mentally.'

He pointed out that even over short periods weightlessness could affect balance, cardiovascular health, and muscle mass and bone density.

Another thing that will need to be kept in mind was pointed out by Romain Charles.

A crew member of the Mars 500 experiment, he spent 520 days in isolation simulating a mission to Mars and said there could be no such thing as a one-way mission to Mars.

The astronauts, he said, must have a plan to come back to earth, even if the hope is small. The hope has to be there, to remain sane.

In terms of the crew, I believe the mission needs a psychologically and physically screened diverse, multinational crew. They should ideally have past space experience or experience of having spent time at a place like Concordia.

All this will take a lot of time. Tim Peake pegs the earliest opportunity for humans to visit Mars as the 2030s.

When do you leave Concordia, and what are the things you are looking forward to doing when you get back home?

Alongside catching up with friends and family — where I will be home for Christmas, which is a special time — I most look forward to feeling rain, having a hot bath and seeing if my Siberian Husky puppy remembers me!

But it will all be short-lived, as I will be traveling back to Antarctica for a new adventure at the end of December.

I leave here in late November, but it will be a busy time traveling where I have several talks/presentations lined up even on stopovers on my way home — in museums in New Zealand and at the Hong Kong Royal Geographical Society, alongside further talks into the future.

Tell us about growing up in Britain. How did the Indian part of your upbringing mould you?

I am equally proud of my British-Indian heritage.

My dad was born in Mirpur, Jammu. Both my parents are retired professors of cancer research and live in the UK. They have



Dr Alexander Kumar, sitting center, with the 12 other members of DC8 (the eighth team to winter at Dome C) at the height of mid-winter celebrations

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always supported me, inspired my adventurous curiosity in science and started me trekking and traveling the world from a very young age.

I feel I have been given some excellent qualities to aspire and live up to — from two of the world's countries with the greatest and most colorful histories.

I take my Indian and British flags everywhere unusual I go; they have been through the Amazon and up to a few hundred miles from the North Pole.

I remember members of a tribe in the Amazon, asking where it was from. When I explained that I was 'Indian' like them (just not of South 'American' Indian descent), they invited me in for local tea as opposed to curare!

What was the first country you traveled to outside Britain? What sort of impact did it have on you?

India. I traveled to India often as a child. Now I am back at every opportunity. I enjoy staying with my family in Delhi, traveling and seeing the country and its people. I don't know about desi; my dad calls me Sahib. Sometimes I feel like a character from an R Kipling novel.

You eventually worked in India. Tell us about that time.

I have learnt important lessons in life and in medicine from all the places I have worked around the world. More so, I have learnt to work effectively in different cultures.

A few years ago, I worked at AIIMS (the All India Institute of Medical Sciences, Delhi) — Asia's largest public hospital. It was

an incredible experience and will last for the rest of my lifetime.

I felt more connected to India than ever before. It involved long and hard days immersing myself in the people of India and the problems in health suffered by those who had travelled from all corners, to seek specialist care. I listened intently to every story they brought.

I was extremely impressed by the standard of medicine and research performed at AIIMS — something I continue to strive towards myself.

One day, I hope to live and work in India. I am always looking for opportunities to come across and get involved with life — whether it be to conduct research on snakebite or spaceflight.

When I have children, I would like them to speak Hindi and, importantly, get to know India and my family there as well as I have.

I have brought my own, albeit limited collection of Bollywood movies and music to Antarctica. I would love to act in Bollywood.

How do you perceive the country?

India is a magical kingdom, which has a mountainous share of beauty, but also harbors excess and suffering. The world is divided and so too is India.

Although young, I am delighted and inspired by the recent aims put forward by organizations from India's Antarctic Programme to the Indian Space Research Organization and look forward to seeing it blossom, following the success of the Chandrayaan missions and culminating in completing a manned mission to the moon that is planned.

It seems there is no stopping India — we have proven a launch capability for unmanned mission, an allocated budget, technical expertise and more importantly, a dream and vision to guide taking yet another 'giant leap for mankind.'

I certainly would like to contribute in any way I can, lending some of my knowledge, skills, experience and enthusiasm from working in extreme environments, towards these upcoming missions.

It's very exciting to see India strive to become the fourth country in the world to send its own manned space missions into orbit and the great beyond! Even ahead of the UK!

I always try to keep up to date with updates in regard to India's space program. In fact, in Cambridge, UK, I have just joined a new network called the Indian Polar Research Network.

The polar regions are continually being used as space analogue environments. I would be keen to initiate contact with the ISRO and help to explore shared research opportunities.

I spend a lot of time here looking up into the night sky and universe. It's incredible to think I could get to the moon — in fact in just 3 days — faster than I could travel to Delhi or London!

Have you visited Maitri, India's station in Antarctica?

I have never visited the Maitri station, but very much would like to. I admire anyone that chooses to overwinter in Antarctica and am equally curious about all the other cultures and research at the many different multinational Antarctic stations.

I would love to work with the Indian Antarctic program to set up human science research with them — it would be dream to work with them and any time spent on the ice in Antarctica is a further blessing!

You have visited more than 60 countries. Which are your five favorite spots in the world?

I guess in many ways I can be described as a dromomaniac, but what drives me restlessly around the world isn't simply adventure, but more so scientific exploration — an innate urge and need to act on my curiosity to seek answers to many of life's unanswered questions in science.

Since I was a young boy having spent a great deal of time with family and exploring in India, I have always held India closest to my heart and I have to list India as number one.

I have visited India many times — from Arunachal Pradesh to Ladakh to Tamil Nadu and have never not been surprised by finding a new side to 'Incredible India!'

After India, there are so many other places, including the Arctic — in particular the Canadian Arctic — where the local Inuit have always impressed me.

The Amazon is next for its sheer unrivalled diversity and abundance of life in every form imaginable. There lie incredible discoveries in medicine and science.

I truly believe most, if not all, of the world's cures lie hidden there. My dream is to help to find them, before it's

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all cut down and gone. Another place in Asia I hold as a favorite is Nepal. For me, it is the people that make the place.

I have been to Nepal three times and lived there for 6 months teaching English in a village. Life has never been simpler.

It was whilst living there that I came across my first case of snakebite — with the loss of a child's life — which opened my eyes and drove me to strive to want to become a specialist in toxinology, learning to piece together like a puzzle a person's physiology in intensive care as it falls apart suffering from the effects of envenomation. I like puzzles, especially in medical diagnosis and treatment.

Last year, I was particularly caught by the raw and rugged beauty of Oman, having locked myself and my partner out of our vehicle in the vast expanse of its main jewel in its crown — the Rub' al Khali (Empty Quarter) and the country's unexplored lengthy rustic coastline. There was nothing to do but admire our spectacular surroundings.

To those of us who read about you, you seem fearless. In all your adventures, what scared you the most?

I am very used to seeing guns held by various people, even children, in some of the areas in the world I travel and work. But there was one occasion when I was at gunpoint in Cambodia.

I have never had the same feeling, sick to my stomach that someone is holding a trigger over the sanity and well-being of your loved ones by threatening your life, when staring down the barrel of a gun held to your face.

Time seemed to stop at that point and afterwards, obviously such an experience can be traumatic for some, but after some time it made me appreciate life even more and provide a new focus.

The one rule I have always traveled by is to carry sensitivity to the culture I may be visiting and a sense of humor wherever I go. It has bridged many gaps or crevasses and broken down many language barriers. But in the Cambodian instance, I didn't dare use it.

What next (he was to leave Antarctica November 15)?

I generally live one or two or even three years in advance of myself. It's a bit strange to explain, but I am continually working in the future on science and research projects and expeditions.

I had asked to leave the Concordia Station at the earliest reasonable opportunity having felt honored to have been invited to be the doctor for Sir Rannulph Fiennes' upcoming Coldest Journey in the World — to cross Antarctica in winter, departing in January.

Although I will not be joining the expedition, working in partnership with extreme physiologist and doctor explorer Mike Stroud, I have co-organized the human science research for the expedition, which will form part of my PhD in extreme physiology. I have titled it 'White Mars.'

It seems although I will arrive home at the beginning of December, 'the ice' has a strange and mysterious attraction.

At the end of December, I will be on my way to the other side of Antarctica, chasing polar history, for a few months.

A window into heaven: The Aurora Australis and Milky Way above the Concordia Station during the winter darkness



ALEXANDER KUMAR & ERICK BONDOUX ESA/IPEV/PRNA

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I will be joining Australian-British explorer Tim Jarvis on his next 'Shackleton Epic' expedition, recreating Shackleton's famous escape from Elephant Island in a replica of the James Caird and also crossing South Georgia.

I will be in a support role and organizing some interesting human science research looking at the state of his six-man team as they recreate this historic and epic undertaking and in doing so will make my first television appearance!

I also have some time planned in Southern Central Africa, teaching intensive care medicine and anaesthetics, followed by a long placement in tropical medicine in Asia.

I will be training for a man-haul sled crossing of Antarctica by foot, in the Imperial TransAntarctic Centenary Expedition, where our team of six will complete the original planned route by Shackleton exactly 100 years on. I will be the expedition doctor and scientist for this expedition departing in late 2014.

I will also be lecturing and presenting around the world and am planning a route around various schools and institutes around India.

I have an Arctic adventure in the initial stages of planning, working in conjunction with a charity I hold a great deal of respect for: Guide Dogs for the Blind Association. If there is ever a lesson from polar history it is to take dogs and not ponies or machines!

After seeing so much of the planet, and becoming a Hivernaut, have you considered becoming an astronaut?

I am fascinated by space and the growth of space tourism and the private sector of space travel. If an affordable opportunity presents itself, I will be the first to step up to blast off.

But right now, I am more grateful for my British-Indian heritage and upbringing, which has provided me with the direction more towards home — our planet has

enough of its own problems, neglected tropical diseases, including snakebite for example, which occupy the majority of my thoughts. I would need to tackle these before I can justify floating around in space.

Right now, a hot bath would do me just as well and is all I crave having spent a year surviving and writing from the coldest place on Earth.

And if a manned mission to Mars happens soon, do you want to be in it?

Only if I can take my Siberian Husky, Mishi-bear.

I would like to think by the time we are old, all people will have the opportunity to travel not only the world, but into space and also to the moon or Mars.

With companies taking the initiative like Virgin Galactica, we are entering a new era of space tourism.

Then there is 'Deep Space Expedition Alpha' organized by Space Adventures Ltd, which has sold one of its two tourist seats for \$150 million for a circumlunar voyage around the moon planned in 2015.

I hope such ventures not only expedite the arrival of new technology, but also incorporate scientific analysis into their missions, leading to new discoveries to benefit mankind.

Like when the propeller became the jet engine — I am never sure what the future may bring but as a doctor, I am left to hope it benefits all of mankind with minimal impact on the planet and that another doctor can stand in the same spot as I and Edward Wilson have stood 100 years from now and admire, be inspired by and appreciate the same Great White Silence.

What is your main realization from spending a year in Antarctica?

As strange and surprising as it may sound, living down here at the end of the world, away from the strangulating reach of the world's problems has reminded me and rein-

forced the reason why I went into medicine — to help find solutions to the problems suffered by the 'bottom billion' living through civil wars, malaria, starvation and now the effects of climate change. This list goes on, many times around the world from Sub-Saharan Africa to India.

It has always been my intention to honor my joint British-Indian heritage to try in every way humanly possible to help balance the inequality in access to health care throughout the world.

Whilst space exploration is interesting, fascinating and indulges ones imagination, my only hope is that mankind's investment in spaceflight exploration and research, will provide new technology to help solve the world's problems — from finding an alternative reliable and renewable fuel source, curbing climate change, to new cures and more.

I have come away from living, practicing remote medicine and researching psychology and physiology in the world's most extreme environment with many lessons, which I can adapt to my future career and direction.

Sometimes you have to take a step back, albeit as far back as Antarctica, to view and better understand the bigger picture in order to jump back in and make the most valuable, directed and constructive contribution you are able.

In the future I aim to concentrate on such problems — as the saying goes, 'out of the frying pan and into the oven.'

Next stop tropical medicine and research.

Alexander Kumar is always willing to share his unique experiences from the Amazon to Antarctica, presenting to schools, businesses and societies. You can connect with him via AlexanderKumar.com or follow him on Twitter @DrAlexKumar.

