



## Where I work Nathalie Cabrol

**I** define myself as a 'grounded mystic': that's how I feel when I am in the desert. I'm trying to understand the Universe we are living in and how to search for life in it. That's the 'grounded' aspect. The 'mystic' part is that I'm not afraid of letting my mind wander in those spaces.

I am an astrobiologist who specializes in planetary science, and my team and I study analogues of early Martian environments that might have been habitable for life as we know it. We want to understand the distribution and abundance of life in very, very harsh conditions – similar to what Mars might have been like 3.5 billion years ago – to determine how life forms survived under intense ultraviolet radiation. And we want to know how to detect and identify those life forms.

I love the barren aspect of the Altiplano in South America (this picture was taken at Salar de Pajonales in Chile, at the southwestern edge of this vast Andean plateau). In deserts, you have to be face-to-face with yourself – there is nothing else. That gives me the space I need to get thinking. There are no limitations or constraints or boundaries.

In my most recent research trip to Salar

de Pajonales this autumn, we worked more on understanding the distribution patterns of microbial life there. Life's distribution is fractal in nature and repeatable, but you have to understand the starting pattern. We are learning how to decode where to find extreme microbial life. We can then apply these codes to future missions to Mars.

In 2006, we went scuba diving in the crater lake of the Licancabur volcano, on the boundary between Chile and Bolivia. I was in completely transparent waters. The colours ranged from pale blue to dark blue, and you could see each ray of sunlight diffracted in the lake. Suddenly, it was as if the boundaries between me and that lake had completely disappeared. It was complete peace.

In science, you have to find reasons: the whys and the hows, the whats and the whens. And this moment was without time, without space. The lake was not hostile, and there was no separation between it and me.

**Nathalie Cabrol** is director of the SETI Institute's Carl Sagan Center for the Study of Life in the Universe in Mountain View, California. **Interview by Josie Glausiusz.**

Photographed by  
Andrea Frazzetta/INSTITUTE.