



# Astrobiologist/Geologist



**Nathalie Cabrol**  
Astrobiologist, Planetary Geologist  
NASA Ames Research Center

I am a planetary geologist. I study Mars, more specifically ancient lakes on Mars. I took an active part in the selection of Gusev crater for the Spirit rover mission and I am a member of the science team for the Mars Exploration Rover (MER) mission. I am developing science exploration strategies for autonomous rovers that will in the future search for life on Mars. I am also exploring terrestrial analogs to ancient martian lakes. I dive in very high altitude lakes in the Andes where the environment is very similar to the time when Mars had liquid water at the surface and I try to understand if/how life could have survived on Mars if it ever appeared there.

## My areas of expertise

- Planetary Geology
- Field Geology
- Astrobiology

## How I first became interested in this profession

I never really wanted to do anything else. It seems that this goes back as far as me being able to talk (Just ask my mom).

## What helped prepare me for this job

I was very focused on my goal. My parents were very supportive. However, it was far from being all rosy. I started on my career path in a country (France) where, at that time (it is different now) there were no real planetary programs or career options in planetary science. I had to be really motivated to stay on course, with no support from the labs. Only when I left for the US was I really able to take my chance. Here, I suppose that my ability to stay focused and believe in myself and in my dream made a difference in my career. I also encountered lots of support here in the US. The result was that the site on Mars that my husband and I have been working on for 12 years, Gusev crater, was selected for the Mars Exploration Rover mission as the landing site for the Spirit rover. I am now also able to make projects happen, whether in astrobiology or robotics. So, what helped prepare me for that job? I suppose lots of challenging circumstances encountered very early and the will to keep going and reach my goal.

## My role models or inspirations

My parents were key. They did not know too much about astronomy or planets (before I started to educate them) but they knew that I had a dream and they did everything in their power to help me fulfill it.

## My education and training

- M.S. (1986) and Ph.D. (1991) in Planetary Sciences from the University of La Sorbonne in Paris

## My career path

- Post-doctoral study at the Observatory of Paris-Meudon
- Post-doc at NASA Ames Research Center
- I have been at Ames since 1994. I became an NRC fellow between 1996-1998. I was working on the feasibility of a mission...in Gusev crater! My husband and I brought Gusev "in our suitcase" with us from France. We completed our work on it here. The rest is history. Gusev was selected in 2003 as the landing site for Spirit.

## What I like about my job

It is never the same. I do not think about it as a job. To me, it is a passion and I can make my dreams reality. It is always surprising to see ideas on papers turn into projects and then reality in the field. But best of all, the power of science is that when you test your ideas in the field, they are often incomplete. Nature gives you ways to improve your knowledge by presenting new challenges all the time. Science is not necessarily about having all the answers, but asking the right questions. We learn that with time.

## What I don't like about my job

Paperwork...but that does not stop me from being happy about what I do. You always appreciate something because of its opposite :)

## My advice to anyone interested in this occupation

Keep at it. Having a goal in life is priceless. This is a treasure that needs to be protected, fought for, and cherished. This is your strength. Never let anybody discourage you. This is like high mountaineering: Sometimes tough, sometimes painful; but once you are at the summit, enjoy the view and, by the way, never think you are done with climbing. Just make your mountain higher.