

Life in the Atacama Field Journal

September 3-6, 2005

Salar Grande, Chile

Agenda

- Move Zoë to Site D landing site.
- Begin science ops

Status and Progress

Successfully moved Zoe to the landing site. This is done by mounting the robot on top of a pickup truck (see picture). Four people lift it up, then we strap it down tight. It is an interesting experience watching your robot driven in this way. Site D is about 55 km from camp, so this trip took a long time. On the way there our truck caravan was intercepted by a team of three ferocious dogs. One of them was particularly hungry, playful or stupid, and followed us for a very long time. This dog was fast and ran right up against the tires of Zoë's truck. Eventually, not the speed but the endurance of our trucks caused the dogs to give up. But we arrived safely and tightened some parts that had loosened during the trip. The robot was unloaded a few kilometers from the official landing site, and driven there autonomously. Science ops began smoothly.



The next day was called "Sol 1" since NASA missions refer to Martian days as "sols". On this day Zoe did not drive far but took numerous science readings. This included several

FI readings, SPI panoramas, VNIR spectra and navcam images. Things were going smoothly so we took a “break” for debugging in the early afternoon. This included improving the focus/aperture/exposure settings on the workspace cameras, testing the sun tracker, and taking FI calibration images of several targets.

On “Sol 2”, Zoë was commanded to perform “early morning ops”, meaning that the robot would begin operation at sunrise. This is interesting to the scientists to understand what happens overnight, when humidity can be much higher than during the dry days. Unfortunately, our recurring problem with powering up the Compact PCI computers again reared its ugly head. While on previous days swapping power supplies enabled the computers to come online, this morning the computers were cold and powerless. We attempted many fixes, from changing batteries to warming up the power supplies to simply waiting. After four hours of attempts, and of working on several other issues, we gave up and headed back to camp. Some of us traveled to Iquique to purchase a PC power supply, which could be used as a workaround to our problem. In Iquique we also had several flat tires repaired, and picked up some equipment for the spectrometer team. We returned to camp before dinner, in time to test our new Compact PCI power “design”. Fortunately, it worked reliably.

On “Sol 3”, we returned to Zoë and inserted our PC power supply and the Compact PCI computer. After checking everything, the system powered up without incident. So Zoë started executing the daily plan. Zoë carried out all science and driving commands very nicely. Operating the robot was nice and smooth with things progressing autonomously. All went fine until around 12:30 pm when we noticed that Zoë’s navigation cameras were not functioning properly. The images were not being captured correctly, which prohibited Zoë from autonomously detecting obstacles. We attempted to debug the problem with no success for the next two hours. Eventually, we decided to let Zoë continue executing the plan, but to do so without stereo vision and therefore obstacle detection. Someone followed the robot closely to ensure it was safe. The robot drove several kilometers this way, ably climbing over the few obstacles in its way. The end of the day approached and a final panorama and FI data set were collected. Tomorrow we debug the navcam problem

Weather

Mornings: Foggy, cloudy and cool at camp. Temperature may be increasing slightly. At "Site D" there is no fog but it is cooler.

Afternoons: We've been spending afternoons at Site D, where the temperature is moderate. Wind varies from still to very windy. Very sunny.

Evenings: Clear, cool, the moon is coming out.

Quote of the Day

“WOOF! WOOF! C'mon dogs, get aht-a here!”