

## Life in the Atacama Field Journal

September 27 - 30, 2005

Salar de Navidad, Antofagasta, and Guanaco, Chile

### Agenda

- Transfer camp and rover from Salar de Navidad to Mina Guanaco
- Prepare Zoë for Site F investigation
- Finalize landing site

### Status and Progress

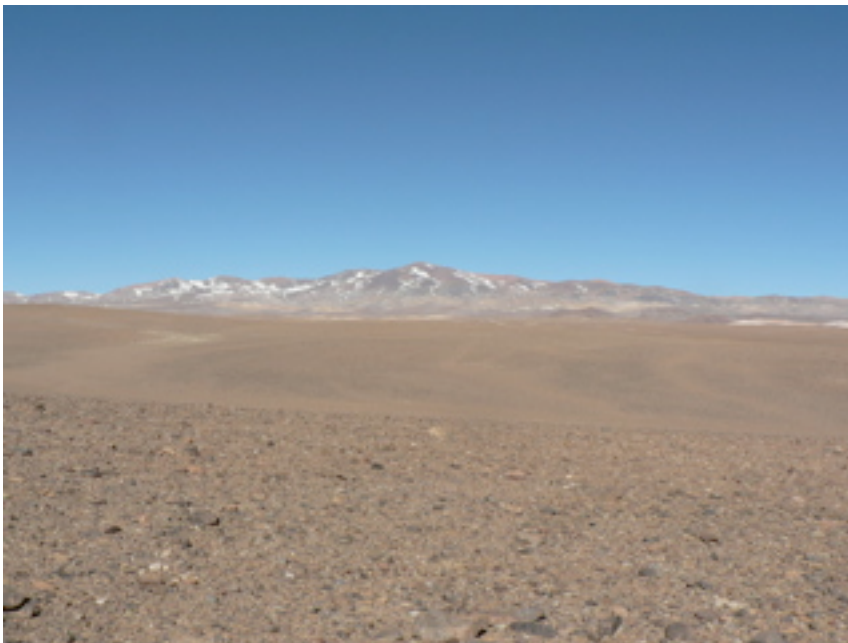
- Drove Zoë on long transect. After concluding the remote science investigation we drove Zoë across the mud flat and up into the hills to the south so that it could be reached by cargo truck. This was the longest autonomous drive today, nearly 6km of continuous motion (5993 meters to be exact) with almost 100 intermediate waypoints.
- Packed camp. Once again we packed camp and loaded everything up to move to our final investigation area of this field season, about 200km to the south.



- Packed Zoë. We loaded Zoë in a small panel van, placed it upon stacks of tires and strapped it down for the slow bumpy ride out to paved road, down south, and into desert at Mina Guanaco. Understand the experience of our last transport, our drive was exceedingly careful, traveling the 25km of rough terrain at 5km an hour.
- Spectrometer out for repair. The visible-to-near-infrared spectrometer that Zoë carries appears to be another casualty of rough ride Zoë experience in the move from Salar Grande (Site D). We have

been unable to get the device to communicate consistently and have step-by-step worked our way through component tests until we now have the instrument disassembled on a table while we look at board level power and signals. In this state the instrument will need to be recalibrated by the manufacturer. In the end, we packed it up and shipped it back to Colorado. Our ground-truth team has a stand-alone VNIR spectrometer which we will use to collect the necessary science data.

- Arrived at Guanaco. We arrived at night after a very long day to find everything perfectly arranged at Mina Guanaco. The mine is inactive right now and only a caretaker staff is present. Gold is mined here and a mountain is being slowly removed to reveal the ore. Here we have a garage for Zoë and kitchen, rooms with beds, and hot showers for us.
- Prepared Zoë for field investigation. Although it was still mostly together, we took a day to disassemble, secure components, test and seal up the Fluorescence Imager. This went smoothly and despite the abuse it has taken the FI is functioning very well. In one mishap the tilt motor for the SPI pan-tilt unit was burned out. The motor “homes” by running against a hardstop, measuring the error build-up in the servo and then moving a fixed amount to its zero position. Either due to a problem reading the encoder or an unexpected condition in software the motor continued to drive against the hardstop burning out the motor. A replacement is on its way, but we will have to set the tilt angle manually until it arrives.
- Finalized landing site. Two quick scouting trips identified potential landing sites for the investigation. In the end we chose an area at higher altitude in the last valley before the peaks of the Domeyko range rise in the east. Quite possibly this area gets a dusting of snow in the winter as we can see snow in the mountains above 3500m (12,000 feet). This will be the highest altitude area we have visited with Zoë and perhaps will represent a different type of arid habitat.



## **Upcoming**

- Conduct Site F remote science investigation

## **Weather**

Everyday: Clear, sunny, light breeze, warm (29C) in Mantos Blanco, cool (10C) at Guanaco.

## **Quote of the day**

“The rover is parked on four dead mule road.”

