

## **A Conference and a Pilgrimage, Mel Bartels**

The air at the top of Mauna Kea at 14,000 feet is exhilaratingly thin. Dark blue, almost violet skies surround us with clouds floating in the distance far below our height. A few steps, climbing a ladder leaves us strangely out of breath moments later.

We're here for an insider's tour of the giant telescopes at Mauna Kea, Hawaii. First, the 10 meter Keck, then the 3.6 meter CFHT, ending with the impressive 8 meter Gemini North telescope, occupy our afternoon.

The lasting impression is one of overwhelming size. It's impossible to describe how big the domes and telescopes really are up close. We walk slowly beneath the giant telescopes, sit in the control room's chair and shiver in the dome's cold air despite our coats and hats, kept air conditioned for night time temperatures. We see the coating chamber for the 8 meter Gemini telescope mirror. We're told that it is a secret weapon of the observatory, keeping the mirror in top condition.

The views from high up the observatory catwalk took what breath we have remaining away. We could see Maui across the ocean and the smoke from the Kilauea volcano on the south side of the island maybe 70 miles away.

We travelled from CFHT headquarters where the conference was held, to the VIS – the Visitor Information Center of the Onizuka Center for International Astronomy at Hale Pohaku at 9,000 feet. We noted the beauty of travelling through several climate zones. We relaxed while we were provided a buffet styled lunch. The climb up from the 9,000 visitor center to the 14,000 foot summit is quite something. Deeply wash boarded with many steeply cut switch backs, the not very wide road climbs upward at an impressive angle. In only a couple of minutes, the VIS re-appears far below us at a steep angle. We grind and rattle up the hill in 4 wheel drive, climbing through a desolate landscape that reminds us more of Mars than the Moon. As with many observatories, a turn around the final bend suddenly brings the observatories into view. They are lined up and they are huge. Overall, it's close to a four hour trip including lunch from the Waimea headquarters to the Mauna Kea summit.

It was the closest thing to the starry firmament and a pilgrimage that will stay with us for the rest of our lives.

The three day conference, held Jan 20-22, was about 1-3 meter class telescopes. I gave two talks, "The Nature of Telescope Design" and "A New Way to See Things". About 25 scientists, engineers and several amateurs attended the conference. Howard Banich and Dan Gray (both from Portland) also gave presentations, Howard on visual drawing and Dan on retrofitting old observatory telescopes. Many of the scientists and engineers fondly recalled their homebuilt scopes when younger. Besides the interesting, even inspiring presentations, many lively discussions ensued. The conference was organized by the AltAzInitiative group (see <http://www.altazinitiative.org/>). The group is looking for ways to make 1-3 meter telescopes at an order of magnitude less cost.



Leaving the snow in Cottage Grove Oregon for the warm breezes of Kona Hawaii.



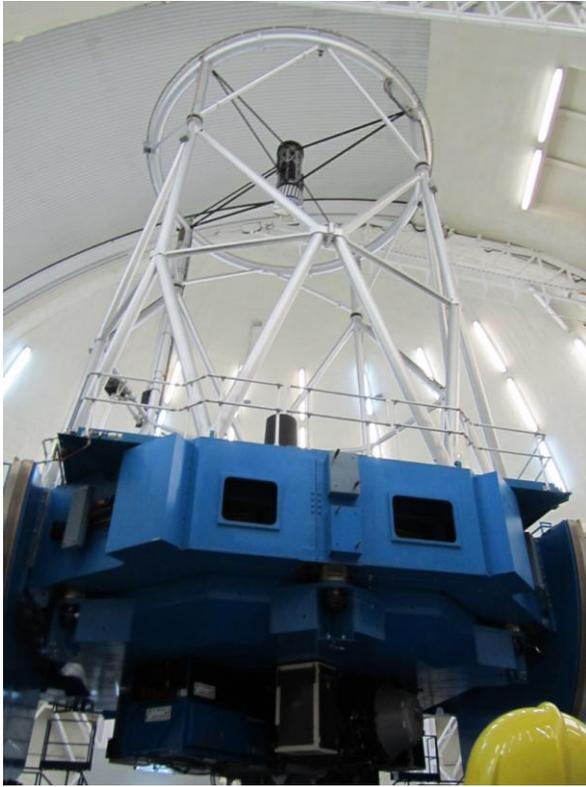
The CFHT3.6 meter and the 8 meter Gemini North dominate the view to the left. To the right, Mel and Barb in front of one of the 10 meter Keck telescopes – gigantic.



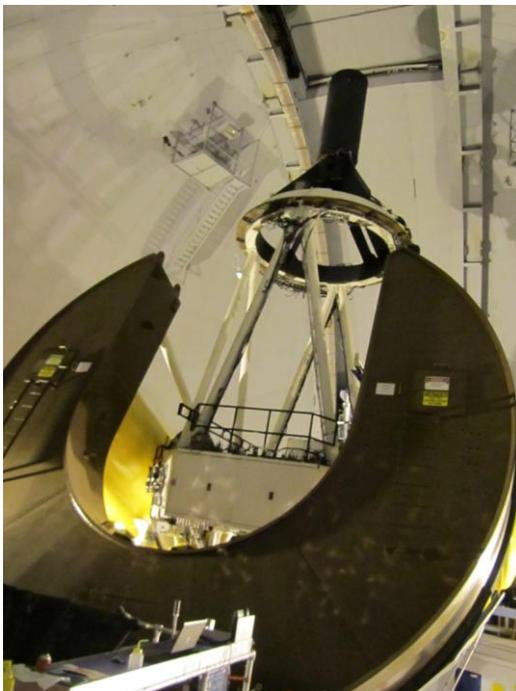
The twin Keck telescopes; the Gemini telescope.



In the control room and high on the catwalk.



The Gemini scope from the floor of the dome and the coating chamber, five floors down.



The 3.6 meter CFHT (note the observer's area at the top of the scope where early astronomers guided their plates from, sitting in the cold and accessed only by the perilous stairs high up on the dome). The server room for the telescope at the remote controlled Waimea headquarters building.