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14 Aug 2014 (1215-0015 UT) OPERATOR: mcb
WEATHER INFO: Winds-> 1.1 mph @ 125, 17.9 C, 95.0% RH, 612.8 Torr, monsoon

ARO 12-Meter Recommissioning:

1. Tom, Nick, Mike and Martin are on site.

2. We continued troubleshooting the az-encoder initialization problem. With the now-repaired, spare encoder installed first one way and then rotated by 180 degrees, tests of the individual read heads with the PCU showed the fault always to lie with the pair of encoders closest to the pedestal doorway. That (along with the fact that the spare encoder was behaving the same as the original) led us to conclude that the problem was not with the encoder itself but was more likely mechanical. On the theory that the 4-legged support spider for the encoder might be vibrating laterally, Nick installed an angle-iron brace between the mount and the adjacent wall. This eliminated the servo oscillations when moving in PCU mode, using encoder heads that previously had not worked. Nick was able to re-induce the oscillations at will simply by loosening the clamp holding the brace. With the clamp tightened once more, we finally succeeded in initializing the encoder and driving the telescope under computer control!

   The plan now is to investigate why the spider is flexing so much and work out a more permanent solution...

   Tom inspected the flexures at the ends of the spider legs and found no evidence of cracks or other structural issues.

   Nick made some improvements to the prototype version of the brace.

3. As a result of troubleshooting of the encoder problem, we now know that we do have a working, spare encoder. Probably...

4. After swapping encoders multiple times, we have reached a point where the designation "spare" has become ambiguous. The serial numbers for the 3 encoders are X 9420 11924, X 9434 10369 and X 18 414 320. We can identify them thus:

   "X9420" is and always has been the elevation encoder.

   "X9434" is the current azimuth encoder (as of 8/13/2014). It was the unit tested at the VLA and then sent to Heidenhain for assessment. Heidenhain sent it back marked "Returned Not Repaired", with the read heads de-soldered and missing one mounting screw for the board. Before reinstalling it, we cleaned it up a bit, replaced the seal, and Tom re-soldered the heads. It’s still missing the one screw.

   "X18" was the original spare unit at the VLA. It was installed as the az encoder at the start of recommissioning due to the supposedly poor state of X9434. Once we got it aligned, it worked fine for a few weeks before we ran into the most recent initialization problem. With X9434 currently in use, X18 is the spare.

5. Rain and stormy weather began at lunch time.

6. Martin continued work on wiring the cabin for lighting, utility and UPS power.

7. George arrived at ~15:00. He brought up the receiver rack and the engine stand.

8. Yesterday we removed the membrane from the cabin and stowed it in the lab.

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14 Aug 2014 (0015-1215 UT) OPERATOR:
WEATHER INFO: Winds-> 2.3 mph @ 42, 20.0 C, 78.4% RH, 612.8 Torr