
Mauna Loa Solar Observatory Observer's Log

Wed Dec 3 17:05:38 GMT 2003

Year: 03 Doy: 337

Observer: yasukawa

WEATHER COMMENT: Wed Dec 3 17:05:42 GMT 2003

Cool, in broken orographic clouds, no wind.

WEATHER COMMENT: Wed Dec 3 17:12:39 GMT 2003

Sun behind large cumulus cloud. Standing by.

A NEW TAPE HAS BEEN PUT INTO KAIEE DLT DRIVE, Wed Dec 3 17:21:14 GMT 2003

****ECHO PROBLEM****: Wed Dec 3 17:48:58 GMT 2003

Reset guide head to vertical (zenith) using SX control command "Move Hour Angle to an angular position". This angular position turned out to be 28 degrees. Reset Hour angle to zero using "Set the current position of HA to zero (use caution)". This corrected the hour angle error that occurred after the stall tests performed yesterday. Thanks Alice, for advising us on the fix.

Restarted data taking.

ECHO COMMENT: Wed Dec 3 17:54:38 GMT 2003

Time OK.

WEATHER COMMENT: Wed Dec 3 17:55:23 GMT 2003

Sun still behind large cumulus cloud.

****ECHO PROBLEM****: Wed Dec 3 18:50:11 GMT 2003

Alice claims ECHO is not taking data.

Exited echosys program and restarting--actually doing a partial shutdown procedure.

WEATHER COMMENT: Wed Dec 3 18:55:26 GMT 2003

Sun just cleared cloud. Starting up.

Wed Dec 3 18:55:44 GMT 2003 MKIV Start Patrol

MKIV COMMENT: Wed Dec 3 18:55:50 GMT 2003

Centered O1.

Wed Dec 3 18:56:12 GMT 2003 CHIP Start Patrol

Wed Dec 3 18:56:22 GMT 2003 PICS Start Patrol

ECHO COMMENT: Wed Dec 3 18:56:45 GMT 2003

Time OK.

PSPT COMMENT: Wed Dec 3 19:06:37 GMT 2003

Observing.

Wed Dec 3 19:07:53 GMT 2003 MKIV End Patrol

Wed Dec 3 19:08:04 GMT 2003 MKIV Start Cal

Wed Dec 3 19:27:40 GMT 2003 MKIV Start Patrol

****ECHO PROBLEM****: Wed Dec 3 19:50:22 GMT 2003

After restart, guider head was pointing about 30-degrees below where sun was in the sky. Alice is speculating a set screw may be loose.

I tried applying a little bit of torque to the head but it appeared tight.

Alice is looking for Clarke for any advice and directions (no mechanical documentation for ECHO at MLSO).

****ECHO PROBLEM****: Wed Dec 3 20:16:39 GMT 2003

Alice and I ran another set of fix attempts and found that the "Set the current position of HA to zero (use caution)" instruction was not working. May be commented out. When we checked position of head and current HA position after initializing HA and Dec, a step we did not do the first go-around, the head was still pointing up and the HA position was at 27.98-degrees according to the "Check HA position" window. Alice is looking thru the code to re-enable the zeroing code.

ECHO PROBLEM
Wed Dec 3 20:24:03 GMT 2003

Alice found a command that was commented out, we entered "2PZ" in the "Send command to SX compumotor" window and checked the HA position, both physically and in the Check HA position window. Head was pointing up and position indicated 0.00 degrees.

Re-initializing HA and DEC.

ECHO PROBLEM
Wed Dec 3 20:36:06 GMT 2003

Restarted echosys and started observations. Head still went to about 30 degrees below where sun is. Alice will contact Clarke and we may try to open ECHO up and look for a loose set screw.

MKIV COMMENT: Wed Dec 3 20:41:05 GMT 2003

Centered O1.

**** EVENT COMMENT ****
Wed Dec 3 20:48:49 GMT 2003

CME at PA 230-270 from 2034 UT.

ECHO PROBLEM
Wed Dec 3 21:08:04 GMT 2003

Found a protractor level and measured the head angle. It is currently at 44.5 degrees above horizon. Gui not updating so I will restart it and measure head angle again.

WEATHER COMMENT: Wed Dec 3 21:18:54 GMT 2003

In orographic clouds.

ECHO PROBLEM
Wed Dec 3 21:22:54 GMT 2003

Restarted echosys and took down HA encoder value on gui (it is changing normally). HA encoder was -11.880. Measured head with protractor level less than a minute later, reading was 48 degrees.

ECHO PROBLEM
Wed Dec 3 21:41:03 GMT 2003

HA encoder value was -7.689, a few seconds later, the head measured at 52 degrees. Due to the accuracy of the protractor vs the encoder and the time between logging the measurements, the difference was around 60 degrees for this and the earlier measurements. The head IS moving at the correct rate. The problem appears to be an offset somewhere between the encoder and the actual head position on the compumotor shaft.

ECHO PROBLEM
Wed Dec 3 21:47:33 GMT 2003

I checked again and I cannot budge the head using nominal pushing or pulling force by hand. Without opening things up, it is my opinion that the set screws are quite tight.

Wed Dec 3 23:30:28 GMT 2003 CHIP End Patrol

WEATHER COMMENT: Wed Dec 3 23:32:29 GMT 2003

Fog is threatening. I am outside dealing with ECHO, racing the weather. Closed domes and halted observations as a precaution.

Wed Dec 3 23:34:01 GMT 2003 PICS End Patrol

Wed Dec 3 23:34:34 GMT 2003 MKIV End Patrol

****ECHO PROBLEM****: Thu Dec 4 01:36:19 GMT 2003

The good news--ECHO is working. Images are appearing in image window.

I finally found the set screw after opening a bunch of hatches--there was some confusion about up/down, top, etc. Alice finally found and faxed a drawing to me and things moved along. I removed the compumotor cover and loosened the setscrew after setting the HA to zero and turning off the echosys program. I loosened the set screw (which was snug, but not tight) and removed the motor without turning anything. Next, I turned off instrument power and rotated the guide head until it was pointing straight up. This step was quite difficult. The head rotated in a choppy manner and it appeared to seize up near vertical. I could not turn it either way, nor could I get the set screw to align with the access hole. Sprayed some WD-40 into the bearings and removed part #29. Cleaned and lubed part 29. I aligned the guider head to zero degrees with part 29 off and wedged a tool under the head to maintain position. I rotated the set screw around to face the access hole when part 29 would be replaced, and replaced part #29. Inserted compumotor shaft back into the guide head coupler and tightened down the set-screw.

Now the bad news--when I tried to tighten the set screw with the short end of the allen wrench inserted, the set screw head just twisted off with not very much torque. Definitely not enough torque to twist apart a stainless steel screw. The screw must have been defective or someone must have really applied a lot of torque to tighten or loosen it sometime before.

I think the set screw was tight before twisting apart. Reassembled the head and restarted echosys. Tested SX movement and convinced myself that things were moving in both directions and that I could get back to zero and the head angle was confirmed with the protractor-level.

When I restarted the observation program, I could sight over the top of the guide head and see the sun aligned with the head. There were no images, though. I did a partial shutdown and started back up. IMAGES!!

****ECHO PROBLEM****: Thu Dec 4 02:11:36 GMT 2003

Ugh, images not appearing on gui again. Checked head pointing with HA on gui and the angle corresponds nicely. I can visually sight the sun over the top (side) of the guide head so I am comfortable that the HA is correct and the SX is driving the head OK with no slip. Sun is in the clear at this time, btw.

****ECHO PROBLEM****: Thu Dec 4 02:39:19 GMT 2003

Restarted from partial shutdown again. This time the first partial images appeared near the left edge of the image window and were gone by the second image. HA slipping by small but significant amounts?

Turning ECHO off for the night (quitting echosys).

COMMENT: Thu Dec 4 02:41:49 GMT 2003

Shutting down the rest of the way (domes still closed and instruments just halted) and going home.

Thu Dec 4 02:47:46 GMT 2003

MkIV

18_55.rawmk4	20_02.rawmk4	20_58.rawmk4	21_54.rawmk4	22_50.rawmk4
18_58.rawmk4	20_05.rawmk4	21_01.rawmk4	21_57.rawmk4	22_53.rawmk4
19_01.rawmk4	20_08.rawmk4	21_04.rawmk4	22_00.rawmk4	22_56.rawmk4
19_04.rawmk4	20_11.rawmk4	21_07.rawmk4	22_03.rawmk4	22_59.rawmk4
19_11.rawmk4	20_14.rawmk4	21_10.rawmk4	22_06.rawmk4	23_01.rawmk4
19_17.rawmk4	20_17.rawmk4	21_13.rawmk4	22_09.rawmk4	23_04.rawmk4
19_23.rawmk4	20_20.rawmk4	21_16.rawmk4	22_12.rawmk4	23_07.rawmk4
19_27.rawmk4	20_23.rawmk4	21_19.rawmk4	22_14.rawmk4	23_10.rawmk4
19_30.rawmk4	20_26.rawmk4	21_22.rawmk4	22_17.rawmk4	23_13.rawmk4
19_33.rawmk4	20_29.rawmk4	21_25.rawmk4	22_20.rawmk4	23_16.rawmk4
19_36.rawmk4	20_32.rawmk4	21_28.rawmk4	22_23.rawmk4	23_19.rawmk4
19_39.rawmk4	20_35.rawmk4	21_30.rawmk4	22_26.rawmk4	23_22.rawmk4
19_42.rawmk4	20_38.rawmk4	21_33.rawmk4	22_29.rawmk4	23_25.rawmk4
19_45.rawmk4	20_41.rawmk4	21_36.rawmk4	22_32.rawmk4	23_28.rawmk4
19_48.rawmk4	20_44.rawmk4	21_39.rawmk4	22_35.rawmk4	23_31.rawmk4
19_51.rawmk4	20_46.rawmk4	21_42.rawmk4	22_38.rawmk4	c19_08.rawmk4
19_54.rawmk4	20_49.rawmk4	21_45.rawmk4	22_41.rawmk4	c19_14.rawmk4
19_57.rawmk4	20_52.rawmk4	21_48.rawmk4	22_44.rawmk4	c19_20.rawmk4
20_00.rawmk4	20_55.rawmk4	21_51.rawmk4	22_47.rawmk4	