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--------------------------------------------------------------------------------
                  Mauna Loa Solar Observatory Observer's Log
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          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
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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) pf 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.

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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
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