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Mauna Loa Solar Observatory Observer's Log  
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Sun Jul 30 16:41:49 GMT 2006

Year: 06 Doy: 211

Observer: yasukawa

WEATHER COMMENT: Sun Jul 30 16:41:56 GMT 2006

Clear, SE wind 12 mph, temp 39 F.

\_\_\_\_end\_\_\_\_

GONG COMMENT: Sun Jul 30 16:42:31 GMT 2006

GONG turret was still stowed this morning. Unstowed it before starting up.

\_\_\_\_end\_\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 16:43:28 GMT 2006

Non-standard startup this morning. Nahenahe was still logged in as stueben. When logging off and re logging in, KCC wouldn't come up. Powered it down and then re-powered it. Monitor came up in a very wierd state I never saw before. Resetting KCC.

\_\_\_\_end\_\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 16:47:29 GMT 2006

Once VxWorks load dialog completed, CW pulses appeared at Signal Transformation Board. Barrel not moving off 359 degrees. Barrel status LEDs not on. CW Limit is scrolling up akamai window. Barrel CW pulses have stopped and CW limit LED just went on.

\_\_\_\_end\_\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 16:50:06 GMT 2006

Barrel CW and CCW commands both off on Control panel gui. Pressed CCW and CW limit LED went off, CW limit scroll stooped on akamai window.

Barrel CCW pulses at STB (signal transformation board), barrel not turning according to angle readout.

\_\_\_\_end\_\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 16:56:23 GMT 2006

Moved scope upstairs. CCW pulses were at output of line receiver. CCW pulses stopped. Checked to see if CW pulses were occurring and they were. Barrel was also turning--did not notice if barrel was turning while CCW pulses were happening. When I came back downstairs, I noticed that the Barrel angle indicator was not changing, it's still at 359. Strange!!

\_\_\_\_end\_\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 17:03:46 GMT 2006

Tested control panel gui commands and barrel is responding to CW and CCW commands. It is turning correctly but barrel angle indicator on OCP is still at 359 degrees.

Need to think about this. Opening up and starting other instruments.

\_\_\_\_end\_\_\_\_

Sun Jul 30 17:09:46 GMT 2006 CHIP Start Patrol

Sun Jul 30 17:09:59 GMT 2006 PICS Start Patrol

SBM COMMENT: Sun Jul 30 17:09:50 GMT 2006

Observing.

\_\_\_end\_\_\_

PSPT COMMENT: Sun Jul 30 17:11:33 GMT 2006

Starting up.

\_\_\_end\_\_\_

Sun Jul 30 17:11:42 GMT 2006 MKIV Start Patrol

A NEW TAPE HAS BEEN PUT INTO KAIEE DLT DRIVE, Sun Jul 30 17:20:10 GMT 2006

PSPT COMMENT: Sun Jul 30 17:20:30 GMT 2006

Observing.

\_\_\_end\_\_\_

Sun Jul 30 17:22:19 GMT 2006 MKIV End Patrol

\*\*MKIV PROBLEM\*\* : Sun Jul 30 17:22:39 GMT 2006

Reset KCC. Went upstairs to watch barrel. Once VxWorks finished loading, barrel started turning CW. Barrel angle downstairs not changing. CW Limit scrolling on akamai window. CW Limit LED on.

\_\_\_end\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 17:30:24 GMT 2006

Barrel limit switches appear to be working OK -- checked with ohmmeter.

Barrel angle indicator still stuck on 359.

Barrel is turning but eventually goes to CW limit.

\_\_\_end\_\_\_

Sun Jul 30 17:42:06 GMT 2006

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Mauna Loa Solar Observatory Observer's Log

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Sun Jul 30 17:46:25 GMT 2006

Year: 06 Doy: 211

Observer: yasukawa

Sun Jul 30 17:48:12 GMT 2006 MKIV Start Patrol

\*\*MKIV PROBLEM\*\* : Sun Jul 30 17:47:05 GMT 2006

Went thru a nominal end of day shutdown of mk4 and then nominal morning startup. Requesting Patrol.

\_\_\_end\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 17:51:02 GMT 2006

Nothing is happening. Symptoms have been very inconsistent day-to-day. Very frustrating!

\_\_\_end\_\_\_

Sun Jul 30 17:52:19 GMT 2006 MKIV End Patrol

Sun Jul 30 17:52:26 GMT 2006

MkIV

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Mauna Loa Solar Observatory Observer's Log

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Sun Jul 30 18:08:36 GMT 2006

Year: 06 Doy: 211

Observer: yasukawa

\*\*MKIV PROBLEM\*\*:

Sun Jul 30 18:10:50 GMT 2006  
Shut down mk4 again. Rebooted nahenahe -- after standard halt procedure, turned off power and waited a minute. Turned back on. Nahenahe did not reboot automatically, had to type in "boot" to start boot. Rebooted KCC. Same thing, barrel angle still not changing.

\_\_\_\_end\_\_\_\_

Sun Jul 30 18:14:41 GMT 2006 MKIV Start Patrol

\*\*MKIV PROBLEM\*\*:

Sun Jul 30 18:24:07 GMT 2006  
CW limit was scrolling by after Patrol attempt. Selected CCW on gui to stop, let it run CCW. After around two or three minutes, I noticed Barrel angle display was changing (working)... Looks like barrel is scanning again with no apparent help from me except for my messing around with every combination of reboots and resets and probing everywhere.

\_\_\_\_end\_\_\_\_

Sun Jul 30 18:28:05 GMT 2006 MKIV End Patrol

Sun Jul 30 18:28:14 GMT 2006 MKIV Start Cal

\*\*MKIV PROBLEM\*\*:

Sun Jul 30 18:28:27 GMT 2006  
MK4 stopped because I had selected idle once I started the CCW scan in above comment. I was trying to see if scan would stop at a software limit (176). Started Calibration.

\_\_\_\_end\_\_\_\_

Sun Jul 30 18:48:39 GMT 2006 MKIV End Cal

Sun Jul 30 18:48:46 GMT 2006 MKIV Start Patrol

\*\*MKIV PROBLEM\*\*:

Sun Jul 30 18:41:21 GMT 2006  
Only common component I can determine between the tilt plate in/out problems we had earlier, the barrel rotation problem that is ongoing, the barrel angle indicator problem I saw this morning is the Signal Transformation Board (STB). STM101 drive pulses come from VMIC 2540 and the Synchro involves the VMIC 1160A. Barrel and Tilt status (limits) involve a different VMIC 1160A. They all come or go to different boards or components on the spar. They all pass thru the STB.

\_\_\_\_end\_\_\_\_

Sun Jul 30 18:54:55 GMT 2006 MKIV End Patrol

Sun Jul 30 18:55:43 GMT 2006 MKIV Start Patrol

NICE MK4 IMAGE: 1845

NICE CHIP IMAGE: 1846

NICE PICSLIMB IMAGE: 1846

NICE PICSDISC IMAGE: 1845

\*\*MKIV PROBLEM\*\*:

Sun Jul 30 19:14:51 GMT 2006  
Following Allen's suggestion on 7/28 that temperature problem may be causing the troubles we're seeing, I set up a meter on the STB power at the board that can be checked in the morning if the systems are acting up. Other place to check is the Power to the VME chassis--that would be common to the various boards associated with the troubles, although the KCC appears to boot up and run normally indicating that the power supplies for it would be nominally OK.

\_\_\_\_end\_\_\_\_

Sun Jul 30 19:32:05 GMT 2006 PICS End Patrol

Sun Jul 30 19:32:05 GMT 2006 CHIP End Patrol

COMMENT: Sun Jul 30 19:32:24 GMT 2006

Stopping to reconfigure dome shutter.

\_\_\_\_end\_\_\_\_

Sun Jul 30 19:37:09 GMT 2006 MKIV End Patrol

Sun Jul 30 19:41:59 GMT 2006 MKIV Start Patrol

Sun Jul 30 19:42:15 GMT 2006 CHIP Start Patrol

Sun Jul 30 19:42:26 GMT 2006 PICS Start Patrol

\*\*MKIV PROBLEM\*\*: Sun Jul 30 20:02:09 GMT 2006

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SUMMARY OF TODAY'S FUNNIES:

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Aside from the abnormal startup.....

-- CW pulses were appearing at STB-J6 at startup.

-- Barrel angle was not changing at OCP display and on KCC monitor  
(both the readout in the top left corner and the PA ray)

-- At the point where VxWorks finished loading, "CW Limit" began  
scrolling thru the akamai window and the CW Limit LED was on.  
??? Did the barrel rotate to the CW limit while VxWorks was  
still loading (possibly a normal thing)???

-- Barrel CW and CCW pulses appear when CW or CCW is selected at GUI.  
- pulses appear at both STB-J6 and at line receiver output on spar.  
- barrel turns  
- barrel angle readout not changing.

-- Barrel was turning around at software limit (176) when going CCW but  
ran to CW limit when going CW.

-- Barrel and readout "fixed itself" at 1814 UT.

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Things to look at next failure (tomorrow morning?):

-- Where is barrel BEFORE starting up?

- trapezoid box is on west side of barrel back flange when at 176.
- trapezoid box is on east side when in nominal stow (End Day)  
position -- 359 degrees
- trapezoid box is somewhere in between when at hard limit.

-- Does barrel turn during VxWorks startup?

-- Where is barrel (trapezoid box) when CW Limit is scrolling and CW Limit  
LED is lit?

-- Is Barrel Angle display changing when barrel is moving?

-- What are the STB power supply voltages when things are screwing up?

-- Check CW and CCW pulses again.

-- Check barrel angle pulses from synchro into and out of the STB  
(look at the LSB pulses)

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Anything else?

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\_\_\_end\_\_\_

WEATHER COMMENT: Sun Jul 30 20:51:20 GMT 2006

In scattered orographic clouds.

\_\_\_end\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 22:27:48 GMT 2006

soldered pins onto STB connector traces in order to secure scope probes when troubleshooting. scope was rather precariously attached before.

Pin test points for barrel CW and CCW pulses and also for barrel angle synchro (LSB) pulses coming from the synchro and also synchro LSB pulses going from the STB to the VMIC 1160A card.

The second set of pins are to check if the synchro signals are getting to the KCC.

\_\_\_end\_\_\_

\*\*PSPT PROBLEM\*\* : Sun Jul 30 23:06:00 GMT 2006

PICS crashed at 2255 UT. K/restart program but shutting down due to clouds.

\_\_\_end\_\_\_

WEATHER COMMENT: Sun Jul 30 23:06:41 GMT 2006

In solid orographic clouds.

\_\_\_end\_\_\_

Sun Jul 30 23:06:54 GMT 2006 CHIP End Patrol

Sun Jul 30 23:07:10 GMT 2006 PICS End Patrol

Sun Jul 30 23:08:51 GMT 2006 MKIV End Patrol

\*\*MKIV PROBLEM\*\* : Sun Jul 30 23:12:32 GMT 2006

Stopped mk4 with an End Day. Barrel stopped at 359 degrees.

Barrel CW/CCW pulses stopped.

Barrel synchro LSB pulses stopped.

Trapezoid box is on east side of flange where it should be when barrel is at 359 degrees.

CW and CCW limit LEDs are unlit.

Testing shutdown and startup.

\_\_\_end\_\_\_

Sun Jul 30 23:20:56 GMT 2006

MkIV

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Mauna Loa Solar Observatory Observer's Log  
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Sun Jul 30 23:29:59 GMT 2006

Year: 06 Doy: 211

Observer: yasukawa

\*\*MKIV PROBLEM\*\* : Sun Jul 30 23:32:25 GMT 2006

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Hot Start-up

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-- KCC turned on

-- Barrel angle read-out still at 359, trapezoid box still on east side of barrel rear flange (did not move).

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-- No CW or CCW pulses, no synchro LSB pulses at STB.
-- +5 and +20 VDC measured at STB and are nominal.
-- Log in to nahenahe.
-- While logging in, KCC monitor already coming up with the converging
  words. Akamai window displays "connected", no VxWorks load dialog
  scrolls thru.
-- As soon as the KCC monitor comes up with the normal desktop gui,
  barrel begins turning CW, Barrel angle OCP display begins displaying
  the correct barrel angle as barrel turns.
-- CW pulses and barrel synchro LSB pulses are seen on the scope.
-- STB voltages still nominal.
-- Barrel rotates to 176 degrees and stops. Pulses stop.
  Trapezoid box is positioned correctly on west of flange.
-- CW and CCW Limit LEDs remained unlit throughout.
-- Start-up went very normal!

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\_\_\_end\_\_\_

\*\*MKIV PROBLEM\*\* : Sun Jul 30 23:50:45 GMT 2006

End Day selected. Barrel rotated CCW to stow position at 359 degrees.  
 CCW pulses and Synchro pulses seen correctly. Barrel physically  
 rotated correctly and stopped at 359 (trapezoid box at east).  
 CW and CCW limit LEDs remained unlit throughout as they should.

\_\_\_end\_\_\_

Sun Jul 30 23:54:43 GMT 2006

MkIV

18_23.rawmk4	19_42.rawmk4	20_37.rawmk4	21_33.rawmk4	22_33.rawmk4
18_24.rawmk4	19_44.rawmk4	20_40.rawmk4	21_36.rawmk4	22_36.rawmk4
18_45.rawmk4	19_47.rawmk4	20_43.rawmk4	21_39.rawmk4	22_39.rawmk4
18_48.rawmk4	19_50.rawmk4	20_46.rawmk4	21_42.rawmk4	22_42.rawmk4
18_51.rawmk4	19_53.rawmk4	20_49.rawmk4	21_45.rawmk4	22_45.rawmk4
18_55.rawmk4	19_56.rawmk4	20_52.rawmk4	21_48.rawmk4	22_47.rawmk4
18_58.rawmk4	19_59.rawmk4	20_55.rawmk4	21_51.rawmk4	22_50.rawmk4
19_01.rawmk4	20_02.rawmk4	20_58.rawmk4	21_54.rawmk4	22_53.rawmk4
19_04.rawmk4	20_05.rawmk4	21_01.rawmk4	21_57.rawmk4	22_56.rawmk4
19_07.rawmk4	20_08.rawmk4	21_04.rawmk4	22_00.rawmk4	22_59.rawmk4
19_10.rawmk4	20_11.rawmk4	21_07.rawmk4	22_05.rawmk4	23_02.rawmk4
19_13.rawmk4	20_14.rawmk4	21_10.rawmk4	22_09.rawmk4	23_05.rawmk4
19_16.rawmk4	20_17.rawmk4	21_13.rawmk4	22_12.rawmk4	c18_28.rawmk4
19_19.rawmk4	20_20.rawmk4	21_16.rawmk4	22_15.rawmk4	c18_34.rawmk4
19_22.rawmk4	20_23.rawmk4	21_18.rawmk4	22_18.rawmk4	c18_41.rawmk4
19_25.rawmk4	20_26.rawmk4	21_21.rawmk4	22_21.rawmk4	
19_27.rawmk4	20_28.rawmk4	21_24.rawmk4	22_24.rawmk4	
19_30.rawmk4	20_31.rawmk4	21_27.rawmk4	22_27.rawmk4	
19_33.rawmk4	20_34.rawmk4	21_30.rawmk4	22_30.rawmk4	