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                  Mauna Loa Solar Observatory Observer's Log
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          Fri May 23 16:44:54 GMT 2003
Year: 03  Doy: 143
Observer: yasukawa
WEATHER COMMENT: Fri May 23 16:44:58 GMT 2003
Cool, clear, no wind.
COMMENT: Fri May 23 16:45:58 GMT 2003
Read HELCO meters on the way up this morning.
Fri May 23 16:52:08 GMT 2003    CHIP     Start Patrol
Fri May 23 16:52:16 GMT 2003    MKIV     Start Patrol
Fri May 23 16:52:20 GMT 2003    PICS     Start Patrol
MKIV COMMENT: Fri May 23 16:52:24 GMT 2003
Centered O1 at startup.
MKIV COMMENT: Fri May 23 17:45:27 GMT 2003
Centered O1.
Fri May 23 18:01:40 GMT 2003    CHIP     LSD
Fri May 23 18:03:16 GMT 2003    MKIV     End Patrol
Fri May 23 18:03:29 GMT 2003    MKIV     Start Cal
Fri May 23 18:03:31 GMT 2003    CHIP     End LSD
Fri May 23 18:03:44 GMT 2003    CHIP     BiasLSD
Fri May 23 18:04:27 GMT 2003    PICS     Flat
Fri May 23 18:04:46 GMT 2003    CHIP     End BiasLSD
Fri May 23 18:05:01 GMT 2003    CHIP     Bias
Fri May 23 18:06:01 GMT 2003    CHIP     End Bias
Fri May 23 18:06:59 GMT 2003    PICS     End Flat
Fri May 23 18:22:15 GMT 2003    MKIV     End Cal
Fri May 23 18:22:26 GMT 2003    MKIV     Start Patrol
MKIV COMMENT: Fri May 23 18:40:09 GMT 2003
Centered O1.
**PSPT PROBLEM**: Fri May 23 19:31:40 GMT 2003
Remounted dome shutter drive gear platform.  By using the hand crank to
check out the mesh between the main gear and the track, the force needed
to move the dome shutter near its closed position is greater than
at its open position--may be gravity but could be difference in track
to side-rail differences causing more friction.
Fri May 23 19:36:42 GMT 2003    PICS     End Patrol
COMMENT: Fri May 23 19:36:50 GMT 2003
Stopping to reconfigure dome shutter.
Fri May 23 19:36:46 GMT 2003    CHIP     End Patrol
Fri May 23 19:39:14 GMT 2003    MKIV     End Patrol
MKIV COMMENT: Fri May 23 19:43:38 GMT 2003
Centered O1.
Fri May 23 19:44:23 GMT 2003    MKIV     Start Patrol
Fri May 23 19:44:39 GMT 2003    CHIP     Start Patrol
Fri May 23 19:44:50 GMT 2003    PICS     Start Patrol
MKIV COMMENT: Fri May 23 21:03:56 GMT 2003
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Centered O1.
PSPT PROBLEM: Fri May 23 21:28:14 GMT 2003
Wired up the start capacitor and reinstalled new motor and wiring.
Tested open/close function and it worked well.
Darryl's and Allen's wiring analysis concurred and were correct.
Buttoned things up, put away tools and updated documentation.

!!! That toolbox and tool set we acquired was sure worth it !!!

WEATHER COMMENT: Fri May 23 21:31:19 GMT 2003
In scattered orographic clouds.
PSPT COMMENT: Fri May 23 21:40:08 GMT 2003
Observing!
-- Uh... I'll need to stop program for a bit. Wire retaining ring holding
the rubber bumper onto diffuser/dustcap fell off upon opening--may have
abraded it off manipulating cables and ladders on the platform during
dome shutter repair. I also found the blue wire nut I lost (replaced with
one from inventory). Must have been on or near the dust cap.
PSPT PROBLEM: Fri May 23 21:51:30 GMT 2003
Reattached wire retaining ring.
PSPT COMMENT: Fri May 23 21:52:12 GMT 2003
Resume observations.
MKIV COMMENT: Fri May 23 21:53:56 GMT 2003
Centered O1.
COMMENT: Fri May 23 22:14:17 GMT 2003
Manually rotated dome thru tight fit at midday.
MKIV COMMENT: Fri May 23 23:25:01 GMT 2003
Centered O1.
WEATHER COMMENT: Fri May 23 23:29:33 GMT 2003
Gusty winds.
MKIV COMMENT: Sat May 24 00:18:05 GMT 2003
Centered O1.
PSPT PROBLEM: Sat May 24 02:10:13 GMT 2003
Not sure what initial cause of the shutter motor failure was, but windings
in old motor appear OK, there may be shorts due to burnt enamel insulation
between wires in winding, though. No shorts between start winding and
run windings. Capacitor blew because it was energized for too long a
period when the motor stalled and centrifugal switch remained closed,
energizing the start windings. Centrifugal switch mechanism is made
of plastic and it was melted due to the heat of the windings I would guess,
and that disabled it's function preventing the switch to open and remove the
current to the start windings and to the capacitor.

My guess is the shutter or gearing slowed the motor enough (>75%) so that
the centrifugal switch closed the start circuit and blew the capacitor
after a while. The heat from the now stalled motor windings, melted the
centrifugal switch plastic parts.

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COMMENT: Sat May 24 02:20:20 GMT 2003
Spar has reached the cable stretch point.  Losing guiding.
Shutting down.
Sat May 24 02:20:43 GMT 2003     CHIP     End Patrol
Sat May 24 02:22:48 GMT 2003     PICS     End Patrol
Sat May 24 02:24:47 GMT 2003     MKIV     End Patrol
PSPT COMMENT: Sat May 24 02:25:12 GMT 2003
Aborted PSPT observations and shutting it down.
PSPT COMMENT: Sat May 24 02:29:07 GMT 2003
Dome closed OK.
Sat May 24 02:29:29 GMT 2003
        MkIV


00_00.rawmk4    01_54.rawmk4    18_28.rawmk4    20_28.rawmk4    22_23.rawmk4
00_03.rawmk4    01_57.rawmk4    18_31.rawmk4    20_31.rawmk4    22_26.rawmk4
00_06.rawmk4    02_00.rawmk4    18_34.rawmk4    20_34.rawmk4    22_29.rawmk4
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00_12.rawmk4    02_06.rawmk4    18_40.rawmk4    20_40.rawmk4    22_34.rawmk4
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00_18.rawmk4    02_12.rawmk4    18_45.rawmk4    20_46.rawmk4    22_40.rawmk4
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01_37.rawmk4    18_00.rawmk4    20_10.rawmk4    22_05.rawmk4    c18_03.rawmk4
01_40.rawmk4    18_06.rawmk4    20_13.rawmk4    22_08.rawmk4    c18_09.rawmk4
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01_46.rawmk4    18_18.rawmk4    20_19.rawmk4    22_14.rawmk4
01_49.rawmk4    18_22.rawmk4    20_22.rawmk4    22_17.rawmk4
01_52.rawmk4    18_25.rawmk4    20_25.rawmk4    22_20.rawmk4
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