
Mauna Loa Solar Observatory Observer's Log

Fri Apr 21 16:41:56 GMT 2006

Year: 06 Doy: 111

Observer: yasukawa

WEATHER COMMENT: Fri Apr 21 16:42:00 GMT 2006

In extensive, thick cirrostratus overcast, S wind 5 mph, temp 35 F.

____end____

pics_PROCESSING PROBLEM : Fri Apr 21 17:19:00 GMT 2006

Network connection went down briefly only on keiki and kenobi.

Mssrestore got disrupted. Restarted mssrestore once network connection came back up.

____end____

WEATHER COMMENT: Fri Apr 21 17:55:11 GMT 2006

Cirrostratus thinning, opened domes.

____end____

COMMENT: Fri Apr 21 17:55:36 GMT 2006

Guider left on overnight.

____end____

Fri Apr 21 17:57:53 GMT 2006 CHIP Start Patrol

Fri Apr 21 17:58:58 GMT 2006 PICS Start Patrol

WEATHER COMMENT: Fri Apr 21 17:59:35 GMT 2006

Started up but patch of thick stuff moved over again, guiding may be iffy.

____end____

Fri Apr 21 18:00:16 GMT 2006 PICS Flat

Fri Apr 21 18:01:51 GMT 2006 CHIP LSD

Fri Apr 21 18:02:27 GMT 2006 PICS End Flat

Fri Apr 21 18:02:32 GMT 2006 PICS ReStart Patrol

Fri Apr 21 18:03:33 GMT 2006 CHIP End LSD

Fri Apr 21 18:03:39 GMT 2006 CHIP BiasLSD

Fri Apr 21 18:04:18 GMT 2006 CHIP End BiasLSD

Fri Apr 21 18:04:24 GMT 2006 CHIP Bias

Fri Apr 21 18:05:04 GMT 2006 CHIP End Bias

Fri Apr 21 18:05:09 GMT 2006 CHIP ReStart Patrol

PSPT COMMENT: Fri Apr 21 18:08:25 GMT 2006

Observing.

____end____

MLSO PROBLEM : Fri Apr 21 18:10:03 GMT 2006

Declination appears to be drifting. Signal on guider monitor is dropping down from usual middle position. PICS image, though, remains centered and stable at this time.

____end____

MLSO PROBLEM : Fri Apr 21 18:24:04 GMT 2006

Hoiike images indicating declination drift.

____end____

PSPT PROBLEM : Fri Apr 21 18:28:55 GMT 2006

PSPT crashed at 1817 UT. K/r

____end____

MLSO PROBLEM:
Fri Apr 21 18:31:08 GMT 2006

Guider monitor o'scope dot slowly moving back to nominal position.
Guider still not pointing well but that also could be due to the very thick clouds I'm in at this time.

____end____

Fri Apr 21 18:55:48 GMT 2006 CHIP End Patrol

WEATHER COMMENT: Fri Apr 21 18:55:58 GMT 2006

Stopping due to thick overcast.

____end____

Fri Apr 21 18:56:10 GMT 2006 PICS End Patrol

Fri Apr 21 20:41:40 GMT 2006 CHIP Start Patrol

Fri Apr 21 20:41:51 GMT 2006 PICS Start Patrol

MLSO PROBLEM:
Fri Apr 21 20:35:52 GMT 2006

In September 1991, the gearing in the declination Vernitron motor failed, producing a similar lazy-to-no response in the guiding declination.

At that time the motor was replaced with a spare and the old motor was sent back to Boulder for repair.

This motor problem occurred again in May 1995 and in January 2001.

There is a good tip on removing the motor in the 01d022 observer log.

A refurbished motor is currently in the spares inventory.

I also wired up an interconnect to make the motor replacement less contortional.

Opened spar and checked gearing between motor assembly and dec drive worm gear. Gears feel OK, albeit a bit tight. Removed motor and checked it.

The motor also appears OK, spinning without resistance with no load.

Reassembled dec drive mechanism and took some photos of it and the PICS

C1 assembly while it was exposed for photo-documentation effort.

____end____

MLSO PROBLEM:
Fri Apr 21 20:49:04 GMT 2006

Although sun is still behind moderate to thick cirrostratus and altocumulus, the guiding still appears to drift -- based on o'scope trace.

____end____

MLSO PROBLEM:
Fri Apr 21 20:58:29 GMT 2006

Declination worm screw was closer to one limit than the other. Tried pushing spar in opposite direction and reset the guider and dec to see if I could

drive dec closer to center and see if it behaves any better over there.

Declination did not drive spar toward centering screw nor the image over the

occulter. It looks like the electronics may not be providing any drive

voltage to the dec motor and the drift we are seeing is just static

drift of the sun's path relative to the static dec position of the spar.

____end____

WEATHER COMMENT: Fri Apr 21 21:32:28 GMT 2006

In thick orographic clouds.

____end____

Fri Apr 21 21:32:48 GMT 2006 CHIP End Patrol

Fri Apr 21 21:33:16 GMT 2006 PICS End Patrol

MLSO PROBLEM:
Fri Apr 21 23:52:12 GMT 2006

Checked guider motor voltages at MS connector on spar. 115 VAC is OK.
When dec is reset, pins C to D is 26 VAC. When limit switch is pressed,
C to D goes to 36 VAC (should be 39 VAC). When center switch is pressed,
C to D goes to 0 VAC (dec relay is released). When dec is reset again,
C to D goes to 26 VAC.

Voltages to motor/tach appear to behave properly except that the recenter
voltage is a bit low.

____end____

WEATHER COMMENT: Sat Apr 22 00:08:13 GMT 2006

In fog, closing domes.

____end____

MLSO PROBLEM: Sat Apr 22 01:17:17 GMT 2006

Revisited the motor and gear train. Softened up the worm gear grease a bit
with a shot of WD-40. (could not find the grease gun) No change in
problem. Checked motor operation under no load with declination power on
and it appeared to run OK at the different voltages (run and recenter).
I could stop the output gear with my finger at either voltage. Checking
it against the spare motor/tach in the cabinet, both motors behaved
similarly so I installed the spare. The spare would not run the
declination gear train. I could feel it vibrating (running internally).
A quick shot of WD-40 on the bearings of the gearbox between the
motor/tach and the worm gear box did the trick, the motor started turning the
gear train and the declination system began moving as it should.
Tested the limit switch behavior and the dec recentered itself and
turned itself off.

Think it is working now. We will have to check the bearings
in the intermediate gearbox for wear and the overall lubrication,
regreasing the worm drive with some real, fresh grease sometime soon.

____end____

NICE CHIP IMAGE: 1814

NICE PICSLIMB IMAGE: 1824

NICE PICSDISC IMAGE: 1814

WEATHER COMMENT: Sat Apr 22 01:45:49 GMT 2006

Still in thick overcast.

____end____

COMMENT: Sat Apr 22 02:17:09 GMT 2006

10 man-hours on site.

____end____

Sat Apr 22 02:17:48 GMT 2006

MkIV