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Mauna Loa Solar Observatory Observer's Log  
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Tue Jun 7 16:56:27 GMT 2011

Year: 11 Doy: 158

Observer: koon

WEATHER COMMENT: Tue Jun 7 16:56:29 GMT 2011

Medium cirrostratus overcast, wind=8mph from the SSE, temp=44F.

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

**\*\*GENERAL PROBLEM COMMENT BY DARRYL\*\***: Tue Jun 7 18:36:57 GMT 2011

The main dome shutter binds badly near the fully opened position, radius of curvature of the dome seems larger than it was before the events of 6/1, and at least one bearing needs to be changed. This takes a lot of iteration going up to the gearbox with the lift and back down to the shutter controls. Stopping for now to get to some other things, will continue ASAP.

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

Tue Jun 7 18:48:18 GMT 2011: PSPT Start Patrol

NOTE BY DARRYL: Tue Jun 7 18:58:37 GMT 2011

Swapped cordless phones back to proper holders, reset answering machine clock that was off due to power outage on the weekend, brought up Gaspro receipt from emergency telephone box at NOAA. Gaspro didn't deliver LN2 last Wednesday due to mixup based on their leaving multiple tanks up here for us, I setup a delivery for tomorrow, until then we can borrow LN2 from dewar next to ours.

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

NOTE BY DARRYL: Tue Jun 7 20:50:19 GMT 2011

Swapped out 2nd bad HDD from mlsoserver at VPort5 (labeled 6 externally) using one of the 2 new HDD Ron sent, RAID is rebuilding now.

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

WEATHER COMMENT: Tue Jun 7 20:51:28 GMT 2011

Cirrostratus is thicker and low clouds are moving in.

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

**\*\*PSPT PROBLEM COMMENT BY DARRYL\*\***: Tue Jun 7 21:30:25 GMT 2011

Crashed, restarted and then closed down due to clouds.

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

WEATHER COMMENT: Tue Jun 7 21:30:43 GMT 2011

Surrounded by low dark clouds.

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

Tue Jun 7 21:31:23 GMT 2011: PSPT Start Patrol

Tue Jun 7 21:31:28 GMT 2011: PSPT Abort Patrol

**\*\*GENERAL PROBLEM COMMENT BY DARRYL\*\***: Wed Jun 8 02:14:48 GMT 2011

I worked on the dome shutter most of the day, it still doesn't function as well as it should. There are areas where it binds when moving it, the shutter is warped. I tried many iterations of various variables, so far I got the best results with the transmission tie-rod extended by 2 revolutions, and I adjusted the L-bracket to be about 1/16" above the top of the rack slide with the top shutter at mid-point, that's also the best place to adjust the tie-rod, I replaced the bearing at the bottom East corner of the top shutter when the

slot is facing South, I also checked and lubed all the other bearings while I was at it, I cambered the bottom 2 bearings for the top shutter because it seems that it might help reduce friction as the shutter reaches the fully opened position - there is still some binding there so don't open the shutter fully, stop about 1 foot before the fully open position. The fully opened position causes the biggest problem, too much L-bracket friction and there is binding, not enough L-bracket friction and the gear slips in the track, the track is worn in that area due to previous slipping and maybe due to slipping on 6/1, the dome also seems to have been warped on 6/1. The key problem that caused all this is that the operators need to watch the shutter while it drives near the open position and we need to avoid sudden shutter direction changes - the motor can't handle it, it will keep going in the same direction it is moving, which means it can drive right past the limit switch and cause the dome to be stuck open, then the shutter needs to be gently manually moved using levers until the limit switch functions correctly again, and if the gearbox slips like it did this time then that means that the shear pin in the gearbox needs to be replaced after the shutter is fully closed using levers one after another in the dome track up at the gearbox area, use one lever as a jam and move the other, then jam the shutter so it won't slide back and move the other lever, back and forth until the dome is closed. Rope or a come-along can be used to lower the shutter to the closed position once the weight shifts. Too much force can warp the dome and we may not be able to fully recover from that. I'll continue trying on Sunday.

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

Wed Jun 8 02:39:01 GMT 2011

MkIV