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Mauna Loa Solar Observatory Observer's Log  
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Wed Dec 27 17:21:32 GMT 2000

Year: 00 Doy: 362

Observer: koon

Wed Dec 27 17:26:32 GMT 2000 CHIP Startup--Initializing new tape

Wed Dec 27 17:27:10 GMT 2000 PICS Start Patrol

Wed Dec 27 17:27:12 GMT 2000 CHIP Start 7 Passband Patrol

WEATHER COMMENT: Wed Dec 27 17:27:35 GMT 2000

Clear sky, wind=10 mph from the West, temp=36 F.

Wed Dec 27 18:03:03 GMT 2000 PICS Flat

Wed Dec 27 18:06:44 GMT 2000 PICS End Flat

Wed Dec 27 19:03:44 GMT 2000 MKIV Start Patrol

Wed Dec 27 20:01:56 GMT 2000 CHIP LSD

Wed Dec 27 20:04:38 GMT 2000 CHIP End LSD

Wed Dec 27 20:04:52 GMT 2000 CHIP BiasLSD

Wed Dec 27 20:05:42 GMT 2000 CHIP End BiasLSD

Wed Dec 27 20:05:53 GMT 2000 CHIP Bias7

Wed Dec 27 20:06:46 GMT 2000 CHIP End Bias7

\*\*MLSO PROBLEM\*\* Wed Dec 27 21:32:05 GMT 2000

Spar lost tracking while I was working on the ECHO QWP.

Wed Dec 27 22:44:14 GMT 2000 PICS End Patrol

Wed Dec 27 22:44:44 GMT 2000 CHIP End Patrol

\*\*ECHO PROBLEM\*\* Wed Dec 27 22:47:41 GMT 2000

I've finished working on the ECHO and hopefully it is back to normal regarding the images at the 0 QWP position. I found that the top gear was fixed to the shaft OK but the gear and shaft would rotate as I turned it, because it was the geneva component at the end of the shaft that was slipping on the shaft. I aligned the QWP to give the most even intensity between the double images. I replaced the small gear setscrew with a big screw, like I did several years ago for the slipping Harmonic Drive. I also tightened the loose geneva setscrew and put a drip of Loctite on the top of the setscrew. I had to disassemble things a bit to get to the geneva setscrew but it went OK. The black cloth Eric bought can be stretched across the front cover mount to the front cover edge (leave it about 1 foot past the camera on the rail length) and taped in place to give enough dark to get images. I had to rotate the QWP about 10 degrees CCW from the position I found it to get the best intensities. The MOF1 is set to 122.0, the MOF2 is set to 138.0, I restarted the QWP rotation, and I restarted taking data. By the way, I couldn't put a big screw as a replacement for the geneva setscrew due to lack of clearance with other geneva components.

\*\*ECHO PROBLEM\*\* Wed Dec 27 23:16:15 GMT 2000

I had to restart taking data by quitting the Echosys program and bringing it back up and choosing "Take Data". For some reason the program stalled after I paused taking data then started QWP then restarted taking data earlier. I checked the QWP and it is rotating to 4 different positions, maybe about 22, then about 180, then about 270, then back to the starting position where I

aligned it. I hope that sounds right to the people who know what the actual QWP positions should be. I just checked it again and there is a problem with that first position of the 4 positions of the QWP. The plate ends up somewhere between about 20 and about 60 degrees but probably should be getting to 90 I guess. The geneva positioning uses 2 limit switches to read indentations on a pair of disks, every position that works has at least one indentation on one of the disks for the limit switches to read, but that first position has no indentations on either disk which makes positioning difficult. Maybe this is planned, I don't know, and it is now too late to reach anyone at Boulder to ask about it. But if that first position needs to be exactly 90 degrees then the limit switches need to be modified to be activated by something probably.

Wed Dec 27 23:50:53 GMT 2000 CHIP FrontEnd finished.

\*\*ECHO PROBLEM\*\* : Thu Dec 28 00:31:43 GMT 2000

OK, now I Really think it's fixed ;) you can check the data from this time on. I fixed the indexing problem, which was probably the original problem. There is another limit switch used on a disk that rotates once per each of the four QWP positions, it activates to stop the geneva mechanism when it finds the small dip sector of the disk, but it was thinking that it was always in that dip because it was never switching on the high part of the disk. So the QWP was stopping as soon as the coarse double-switch position reading was switched, instead of waiting for the following switch to tell it to stop in the right place, because that switch was saying it's always the right place. So I adjusted that 3rd limit switch and everything is working nicely. It is amazing that it positioned so well on 3 out of 4 of the QWP positions without the fine switching. I realigned the gear to the QWP to match my mark for the best alignment in the new indexed locations, it was very slightly off. Now all should be well.

\*\*ECHO PROBLEM\*\* : Thu Dec 28 01:36:49 GMT 2000

Just finished closing up cover and putting away everything. ECHO seems to be working great.

Thu Dec 28 01:37:59 GMT 2000

MkIV

17_27.rawmk4	18_35.rawmk4	20_00.rawmk4	21_02.rawmk4	22_04.rawmk4
17_30.rawmk4	18_42.rawmk4	20_03.rawmk4	21_05.rawmk4	22_07.rawmk4
17_33.rawmk4	19_03.rawmk4	20_06.rawmk4	21_08.rawmk4	22_10.rawmk4
17_36.rawmk4	19_06.rawmk4	20_09.rawmk4	21_11.rawmk4	22_13.rawmk4
17_39.rawmk4	19_09.rawmk4	20_11.rawmk4	21_14.rawmk4	22_16.rawmk4
17_42.rawmk4	19_12.rawmk4	20_15.rawmk4	21_17.rawmk4	22_19.rawmk4
17_44.rawmk4	19_15.rawmk4	20_17.rawmk4	21_20.rawmk4	22_22.rawmk4
17_47.rawmk4	19_18.rawmk4	20_20.rawmk4	21_23.rawmk4	22_25.rawmk4
17_50.rawmk4	19_21.rawmk4	20_23.rawmk4	21_26.rawmk4	22_28.rawmk4
17_53.rawmk4	19_24.rawmk4	20_26.rawmk4	21_29.rawmk4	22_31.rawmk4
17_56.rawmk4	19_27.rawmk4	20_29.rawmk4	21_32.rawmk4	22_34.rawmk4
17_59.rawmk4	19_30.rawmk4	20_32.rawmk4	21_35.rawmk4	22_37.rawmk4
18_02.rawmk4	19_33.rawmk4	20_35.rawmk4	21_37.rawmk4	22_40.rawmk4
18_05.rawmk4	19_36.rawmk4	20_38.rawmk4	21_40.rawmk4	22_43.rawmk4

18_08.rawmk4	19_39.rawmk4	20_41.rawmk4	21_43.rawmk4	22_46.rawmk4
18_11.rawmk4	19_42.rawmk4	20_44.rawmk4	21_46.rawmk4	c18_26.rawmk4
18_14.rawmk4	19_45.rawmk4	20_47.rawmk4	21_49.rawmk4	c18_32.rawmk4
18_17.rawmk4	19_48.rawmk4	20_50.rawmk4	21_52.rawmk4	c18_38.rawmk4
18_20.rawmk4	19_51.rawmk4	20_53.rawmk4	21_55.rawmk4	
18_23.rawmk4	19_54.rawmk4	20_56.rawmk4	21_58.rawmk4	
18_29.rawmk4	19_57.rawmk4	20_59.rawmk4	22_01.rawmk4	