11 HAWC Issues

as described by Brenda Dingus and Tyce DeYoung

I. Counting House Temperature

- Counting House temp (near ceiling above rack 10) cycles every ten minutes with an amplitude peak around 2 deg C and a mean around 20 deg C. However, FEB crate 1 shows the same period but different amplitude and mean (~1/2 deg C and ~26 C).

II. Calibration Room Temperature

- Calibration Room temp cycles every 60 minutes with an amplitude of around 3 - 4 deg C and a mean around 20 deg C. Rise is fast and fall is slow. It looks like the heater is on. The pattern during the day has fewer cycles. The Laser manual says operating temp should be 20 – 35 deg C. How can we keep the temp more stable in this room? Can we heat the fiber optic table? Does it matter?

III. High TDC Disc Usage

- Noticed TDC disc is 80% full. Is it being taken to UNAM weekly?

IV. Water Level Readouts

- Water level page says 118 tanks are monitored, 48 of these are "under watch". It seems like most of these are not read out, i.e. zero depth. H13 has jumps. J16 appears to be leaking, but it may just be jumps in the readout as well.

V. Scaler Rate Data

- Scaler rate plots look mostly good. As noted by Hermes, the tanks that were open show increased rate on the C PMT which calms down after a few hours. M13B does have big jumps in the rate. L11A noisy before HV was shut off, but good sense then. L14D had a funny rate bump up earlier today. O11A took a while to calm down after the HV shutdown yesterday. O12D is noisy.

VI. TDC DAQ Monitoring

- The plots seem mostly reasonable. One very weird one is the RA and Dec http://private.hawc-observatory.org/hawc.umd.edu/site/run-monitor/online-plots/decVsRa.png. There's a ring of events at what I'd bet is the horizon and there's also a bunch that come out of the earth (i.e. 180 deg off). It seems that the angle fitter should check for these and fix them.

VII. Local On-Line Plots (HAWCMon)

- There is a ~20 min lag between the new data being taken and being made available to the script, which makes it hard to find out how old information actually is.
- No history available

VIII. TDC Rate Histogram (HAWCMon)

- Given in terms of sequential channel number, and so far as we could determine there is no actual record of the map between channel number and PMT position in the monitoring pages (the previous shifters emailed us a .xls file containing the information)
- No history available

IX. Logbook

- Logbook information is frequently unavailable for 20 min at a time

X. System

- The system only covers part of the detector, so that for many tubes one is forced to rely on the "online plots" pages

XI. Off-Site Data?

- The data provided even by the local instance is apparently coming from off-site, so that during the 15- to 20-minute network outages that happen once or twice an hour, we can't see the current state of the detector. This makes debugging any misbehaving tube at the site quite time-consuming and rather frustrating, since one needs to wait 20 to 30 minutes to see the effect of any action. If I am correct in assuming that the main information is created/stored off-site and periodically pulled to the site by the local instance, it might be better to reverse the set-up and do the processing at the site and then pull it down the mountain periodically to the remote sites. (If I am not correct in that assumption, then I do not understand the lag before data is available in the local HAWCMon.)