

# 32 and 20m sonics these past few nights

The 32 and 20 meter sonics have dropped out for periods of time the last few nights. Here is a period of data from the 20 meter sonic, June 18 23:00 CDT, which is similar to data from the 32m meter sonic the previous night:

```
data_dump -i 1,2100 -H isfs_20130619_040000.dat.bz2 | more
...
2013 06 19 04:00:02.0428 0.04951      12 00 80 00 80 00 80 00 80 3f f0 55 aa
2013 06 19 04:00:02.0917 0.04896      12 00 80 00 80 00 80 00 80 3f f0 55 aa
2013 06 19 04:00:02.1417 0.04994      12 00 80 00 80 00 80 00 80 3f f0 55 aa
2013 06 19 04:00:02.1917 0.05003      12 00 80 00 80 00 80 00 80 3f f0 55 aa
2013 06 19 04:00:02.2418 0.05005      12 9f 02 0e 00 48 ff bc 19 c0 8f 55 aa
2013 06 19 04:00:02.2918 0.05002      12 a1 02 09 00 45 ff c2 19 c1 8f 55 aa
2013 06 19 04:00:02.3417 0.0499      12 a9 02 07 00 41 ff c6 19 c2 8f 55 aa
2013 06 19 04:00:02.3917 0.05003      12 9f 02 06 00 42 ff c9 19 c3 8f 55 aa
2013 06 19 04:00:02.4417 0.05004      12 9a 02 05 00 41 ff ca 19 c4 8f 55 aa
```

The "00 80" hex values are an obvious indication that it is not able to calculate winds.

The leading digit of the hex value before the "55 aa" are the sonic diagnostic bits 12 to 15, where a value of 0 indicates a good status. The value in hex will be the sum of the following hex values:

diagbit	hex	meaning
12	1	low signal
13	2	high signal
14	4	no lock
15	8	difference in speed of sound amongst paths

Note that for sonics with a krypton, the diagbits will be three hex fields before the 55 aa.

In the above data, the diagbits are either "ff" indicating all diag bits are set, or 8 indicating an excessive difference in the speed of sound measurements.

Looking at the wetness and precip plots, this likely is due to moisture on the transducers.