Cameras, PwrMeter,and MultiMeter rfi

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1.0 Summary

The interference from the power meter, multimeters, and camera system in the gregorian dome was measured in the dome on 5 august 1999 at 430 Mhz with the rf cabinet doors open and on 26 august 1999 with the cabinet doors closed. The results are shown in table 1:

TABLE 1. Birdies with door open and closed

Birdie	Intensity door open [% tsys]	Intensity door closed [% Tsys]
pwrM 433.325	829	250
pwrM 429.158	17	5
multiM 427.485	43	not measured
multiM 429.74	92	24
multiM 430.11	36	11
multiM 430.49	101	8
camera 424.03	48	
camera 429.096	270	
camera 429.550	639	

1. The first column shows the strongest birdies at 430 from the power meter, multi meters, and the camera system. .
2. The current rf cabinet shielding reduces the levels of the birdies but it needs to be improved (or the meters that make the interference should be replaced).

2.0 Setup

On 5aug99 the correlator was run with a 12.5 Mhz bw and 1024 channels. The door to both if/lo cabinets in the gregorian dome were left open. Ten 10 second integrations were taken at each setting (pwrmeter on, camera on, multimeter on, etc.) The spectra were averaged to 30 seconds each and on/off - 1 was computed for each of these records. The off was taken with all the devices shut off and the doors closed. Figure 1 plots the results where groups of 3 records correspond to a particular device being on. The data was clipped to .6 Tsys for plotting purposes. Table 1 contains the actual values.

On 26aug99 the correlator was run with a 1.5625 Mhz bandwidth and 1024 channels. The door to both ifl/o cabinets was shut and the cameras were left on the whole time. Data was dumped for 12 minutes with the power meter and multimeters on. The devices were then turned off and the integration continued for 6 more minutes. Figure 2 and Figure 3 show on/off - 1 for these birdies (as well as all of the other interference that was there).

FIGURE 1. 5aug99 doors open, turning various devices on/off.

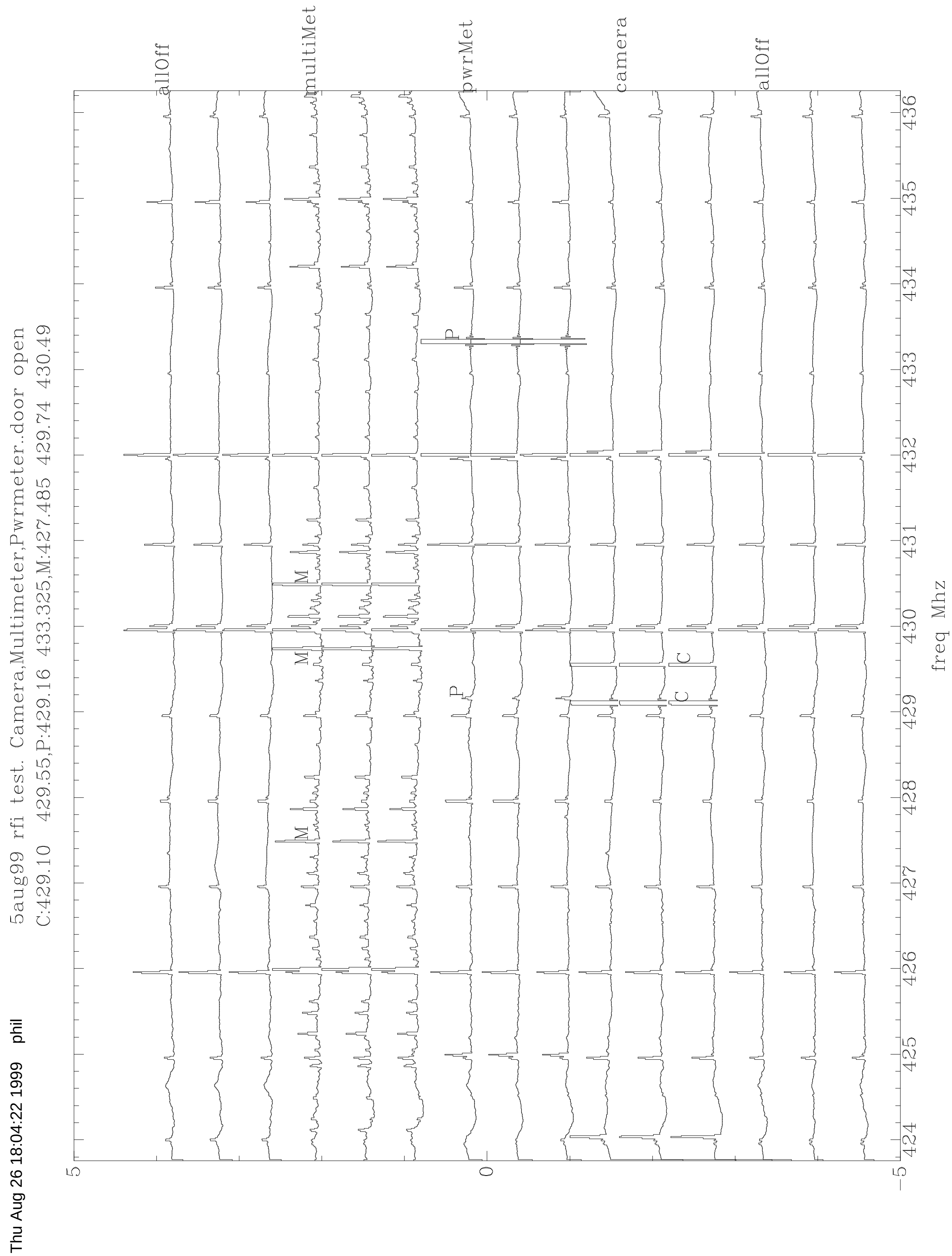

FIGURE 2. Power meter, multimeter birdies with door closed.

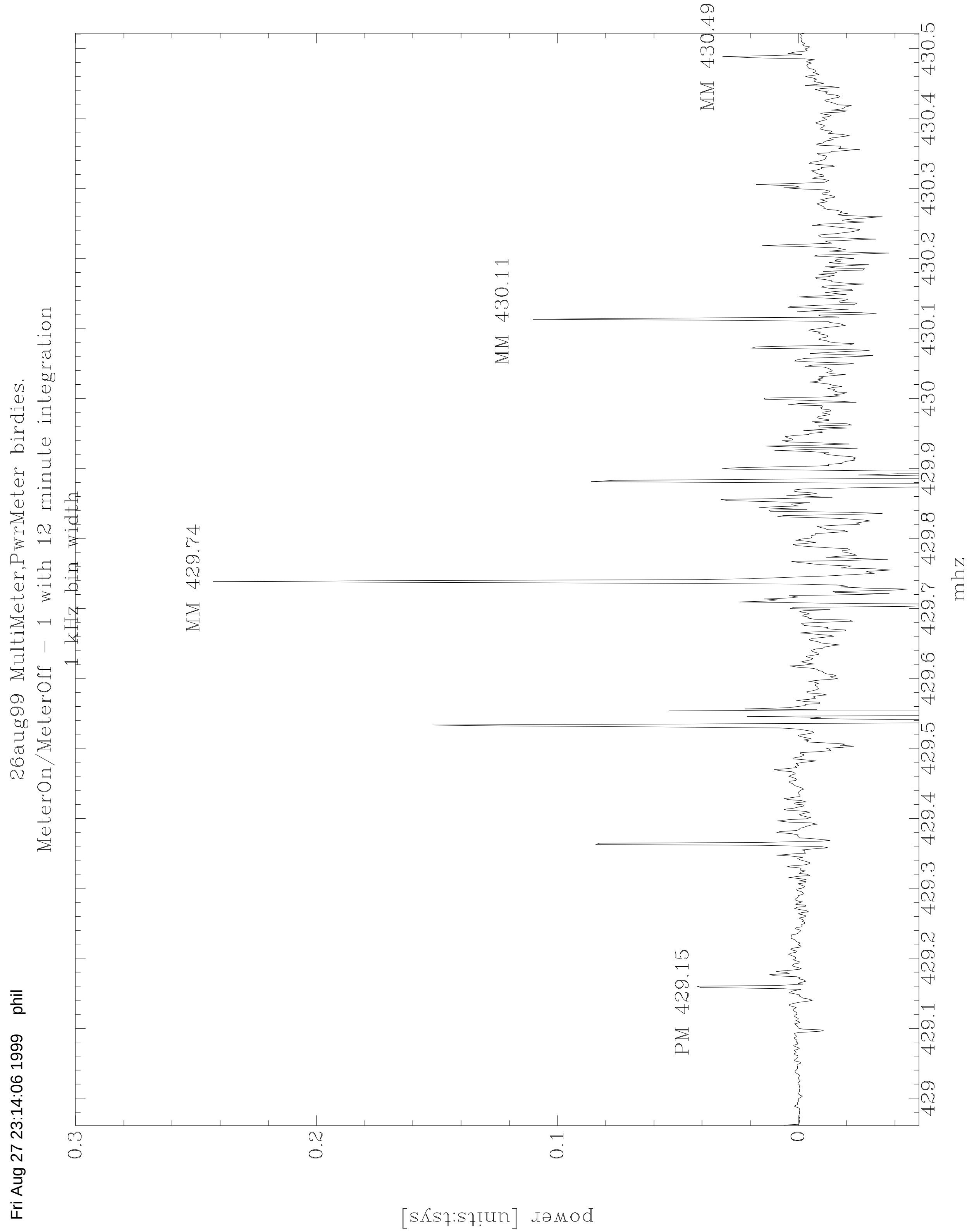

FIGURE 3: Power meter birdie with door closed.