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Study of Higher Gap Volts at Injection

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Experimenter(s) E. Gill, L. Ahrens, E. Raka, J. Woods, W. Frey

Reported by E. Gill

Subject Study of Higher Gap Volts at Injection

Observations and Conclusion

The purpose of this test was to see effect on capture of first 20 ms running the rf at higher voltages than normal operation. Reference to Plot A the sum gap volts were at 325 KV total average 7.38 KV/GAP it was noticed that some stations were running close to 9 KV. This limited us on going higher than we would like to reach, but good enough for a test. Plot B is normal running at 275 KV.

The plot of capture vs. time can be seen on Plots C & D. It was also noted that the bunch width at 20 ms was not changed by a large factor.

Some conclusions can be reached from looking at losses from the two plots. At 70 ms the intensity was 1.85×10^{13} with the highest voltage Plot C. It was also noted that maximum losses were over in 5 ms.

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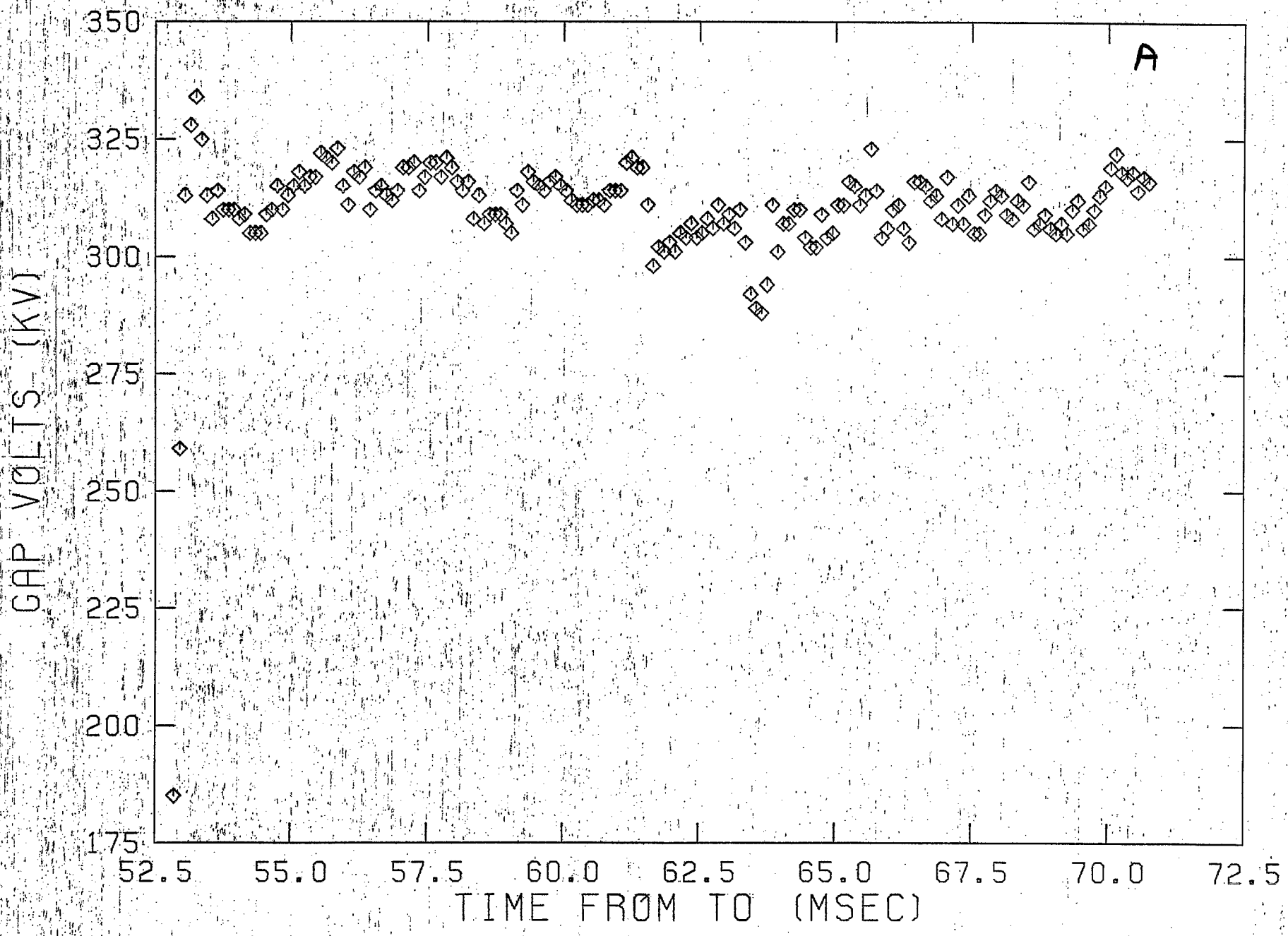
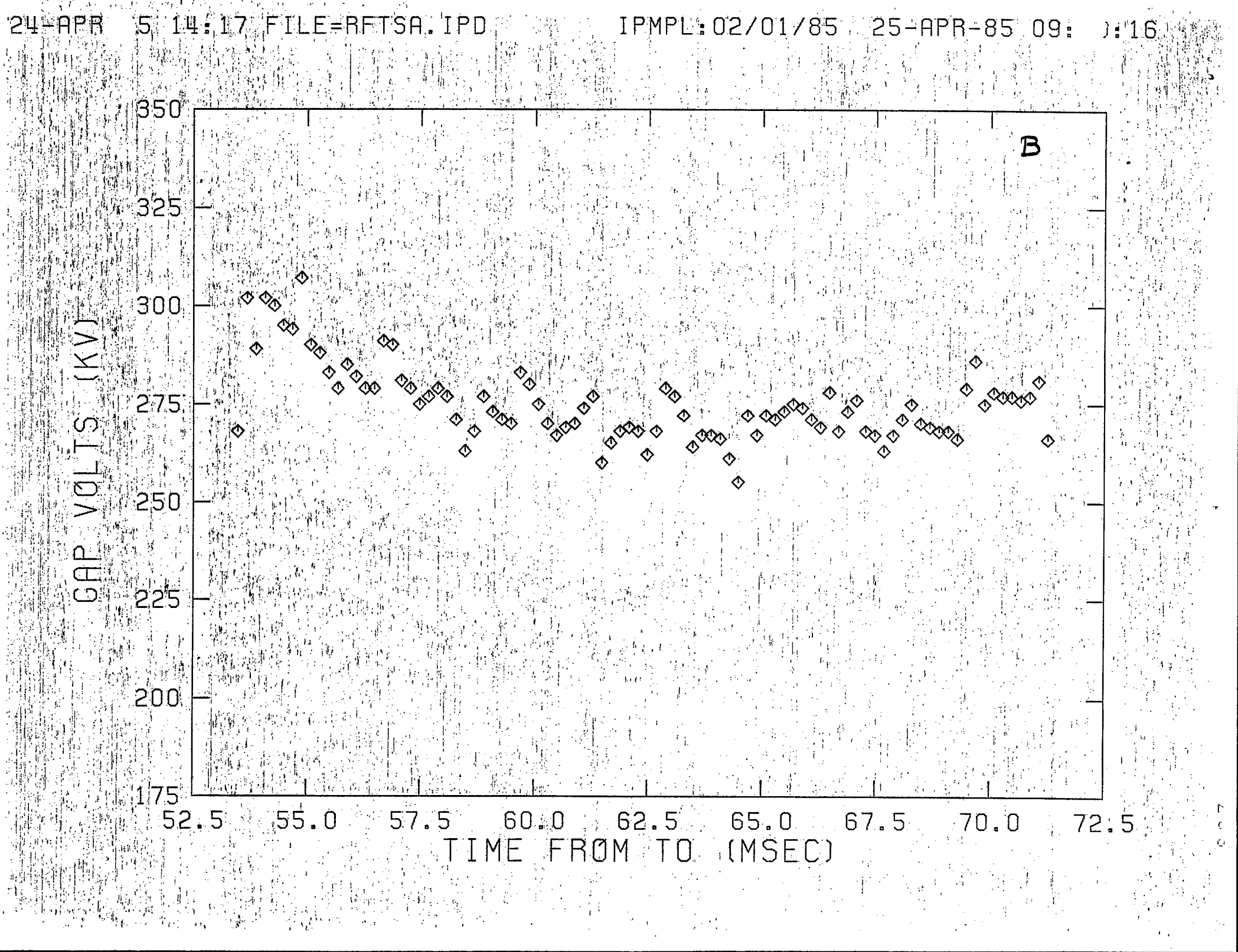
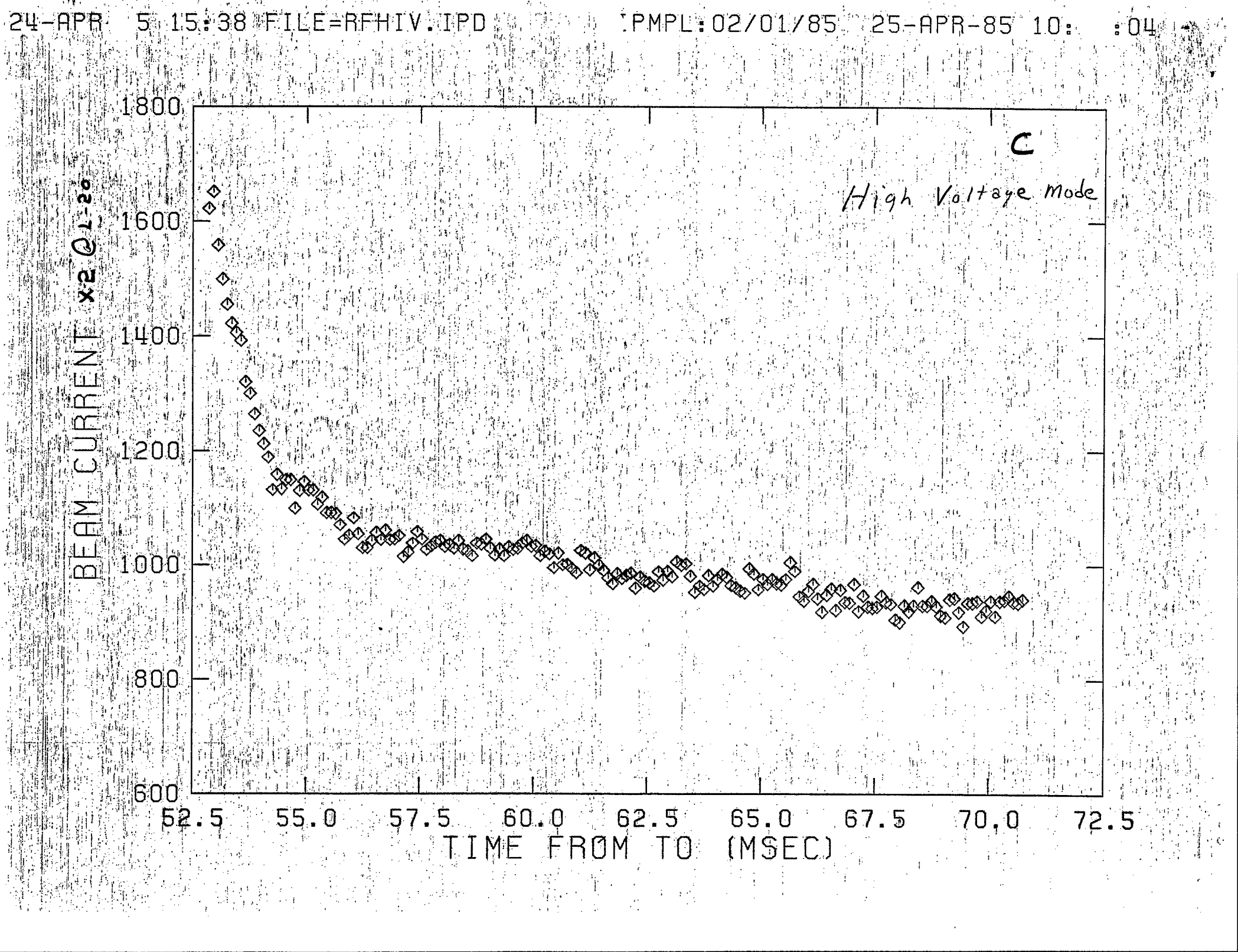
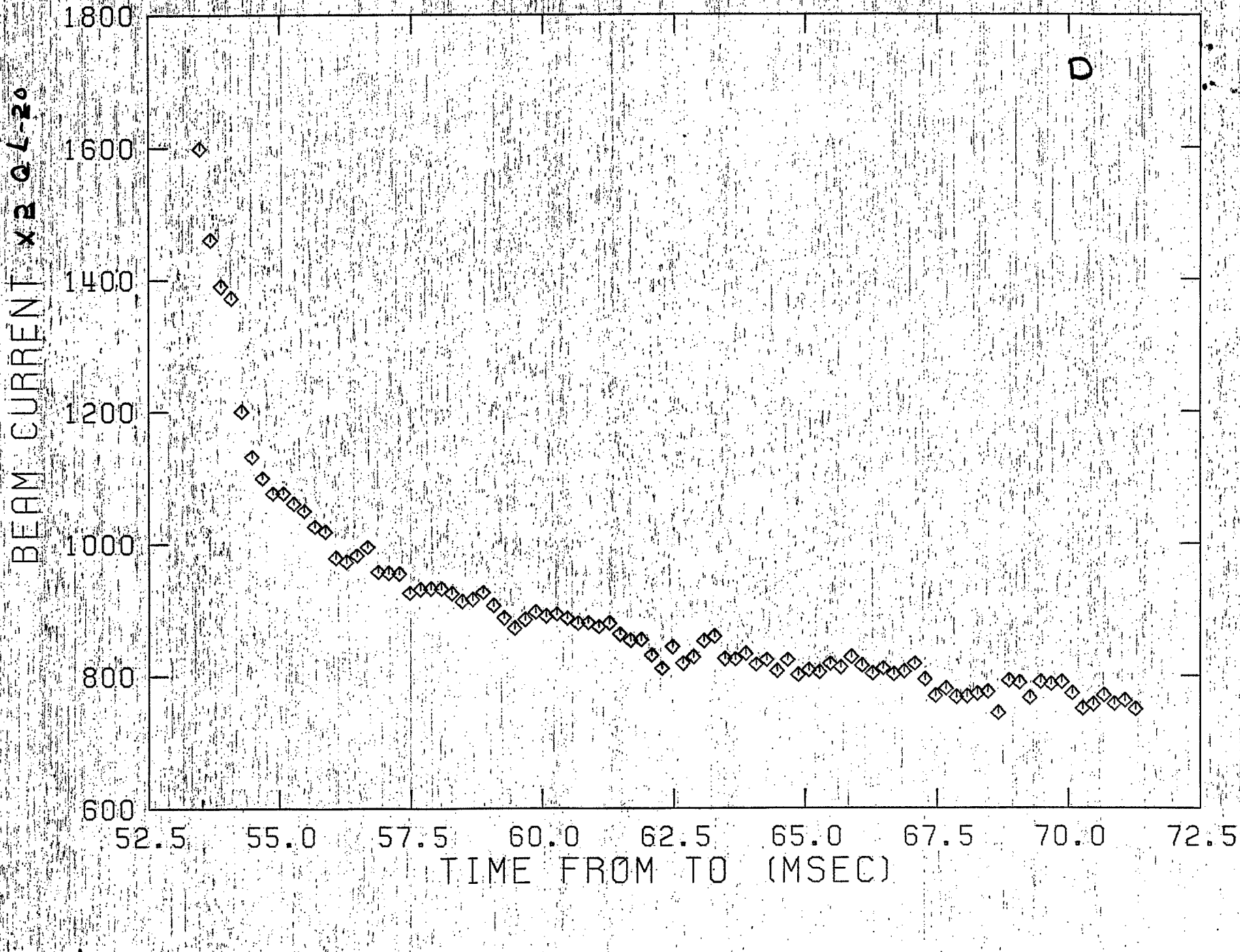

A
350
325
300
275
250
225
200
175
GAP VOLTS (KV)
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
TIME FROM TO (MSEC)


B
350
325
300
275
250
225
200
175
GAP VOLTS (KV)
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
TIME FROM TO (MSEC)


C
High Voltage Mode
BEAM CURRENT x2 @ 1.2e
1800
1600
1400
1200
1000
800
600
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
TIME FROM TO (MSEC)


D
BEAM CURRENT x2 @ L-2
1800
1600
1400
1200
1000
800
600
52.5
55.0
57.5
60.0
62.5
65.0
67.5
70.0
72.5
TIME FROM TO (MSEC)