log\_10 running time in seconds, n=439. D-Wave times exlude setup. D-Wave V5, McGeoch n=439 set D-Wave V6, McGeoch large n=439 set Prog-QUBO-S1, Set 1 (n=439) -0.5 -1.5 -2 -2.5 -3 -3.5

60

Hardness rank, p, from 1 to 100

100

80

-0.5

-1

-1.5

-2

-2.5

-3

-3.5

-4

0

20

40

log\_10(TTS(p)/1 second)