



**Figure 13: Timing sequence diagram.** The chopper signal is treated to measure the time between the first and second blades. (a) TTL signal from light sensor. There are two notched pulses per revolution. (b) Inverted signal from the sensor. (c) Output of a one-shot circuit that gives a 1.1 ms long square wave. (d) The signal is divided by two in counter 1 of a data acquisition card (National Instruments, PCI-1200) and gives a square wave whose length is half the period of the chopper. (e) Clock signal of Counter 0, which is fixed at 2MHz. (f) Counter 0 starts at 50 000 and counts down while signal (d) is high, this way the difference between 50 000 and the final value is the time between the blades of the chopper in halves of microseconds.