# 1 Attiny Solar Energy Harvest Tests

- I have the following:
- Solar panels
- Attiny 10

To this list, I will add a supercap, and an energy harvesting IC. The goal being to load the super cap during the day, and to run 24/7. I will need an exceptionally low power micro. The super cap will need to be about 3.3V or 5V.

### 1.1 Micro Considerations

The Arduino Atmega328P is not an option. I'm looking to have a current draw of only 1mA max, (ideally 500uA) when active. Moteino is also not an option for this. Those are made for batteries. I want to be battery free. A super cap, however can be used to store energy. I'll get to that shortly.

For micros, I have some Attiny10 on hand, and these have a reasonably low power pull in active mode. Let's build those up first. What will the micro do? No idea. I haven't a clue.

#### 1.1.1 Micro Notes

Must run at 1.8V / 1MHz per front page of data sheet, for 200uA draw in active mode.

### **1.2 Energy Storage**

I don't want a battery. Let's go with a super cap. The solar panels will only be active some of the time, so I will want to harvest energy with some kind of IC into the cap when the sun is out.<sup>1</sup>

## 1.3 Make parts, not scrap

I will want to make sure that all parts I build are perf board parts, not breadboard scrap (to be torn down and rebuilt again). This is an Attiny, so no need to test much, yet.

<sup>&</sup>lt;sup>1</sup>Reference: www.analog.com/media/en/technical-documentation/technical-articles/solarenergyharvesting.pdf is a start. I'll need to do more research.