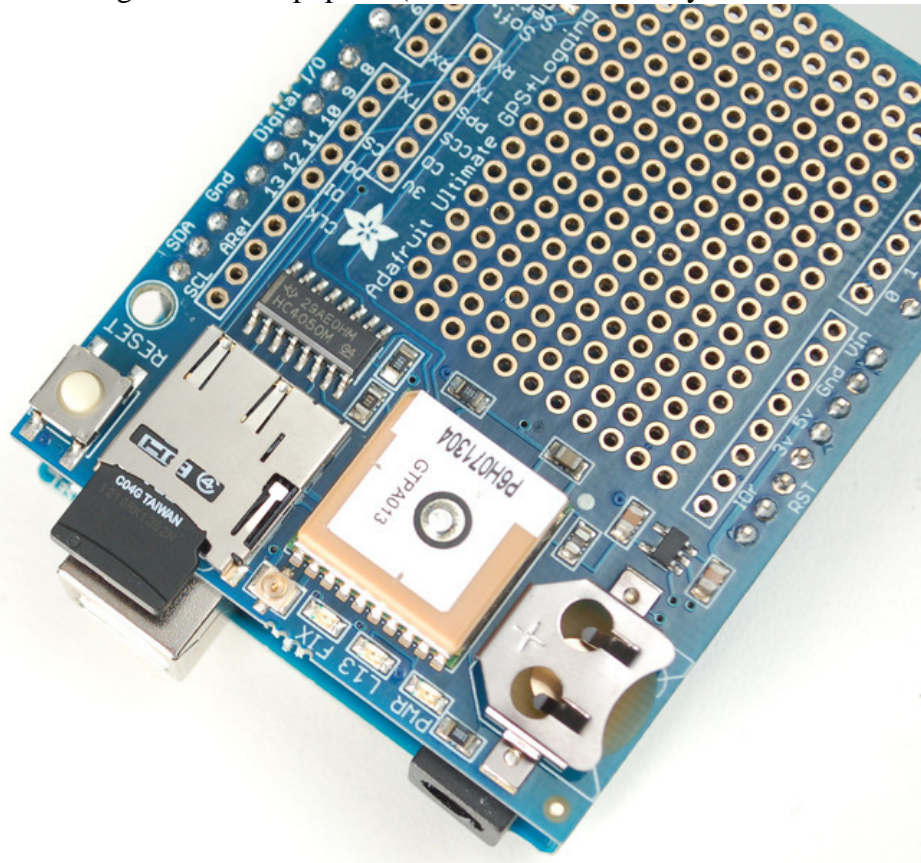


SD Logging

Finally we get to the fun stuff! Its time to log data from the GPS onto an SD card. First up we'll do a basic test to make sure the SD card system is working.

You'll need a microSD card to log data onto. Any capacity will do. Slide the microSD card into the silver socket. You can push it in and you'll feel it latch and click

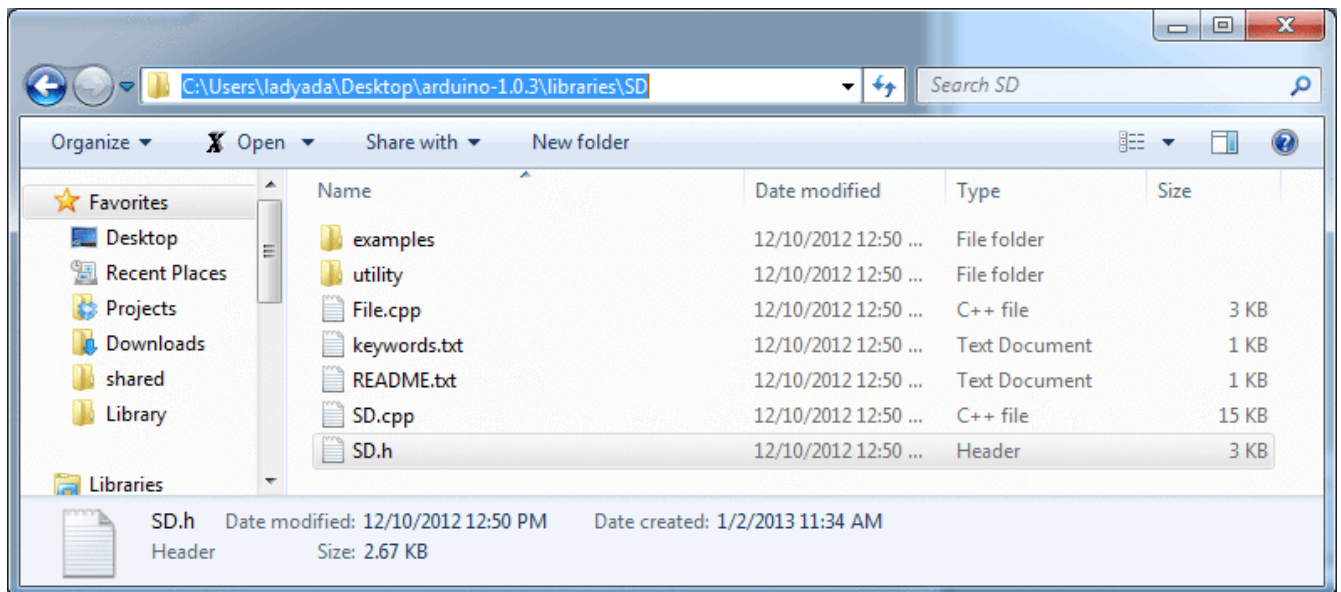
To remove, push on the edge and it will pop out (be careful it doesn't fly across the room!)



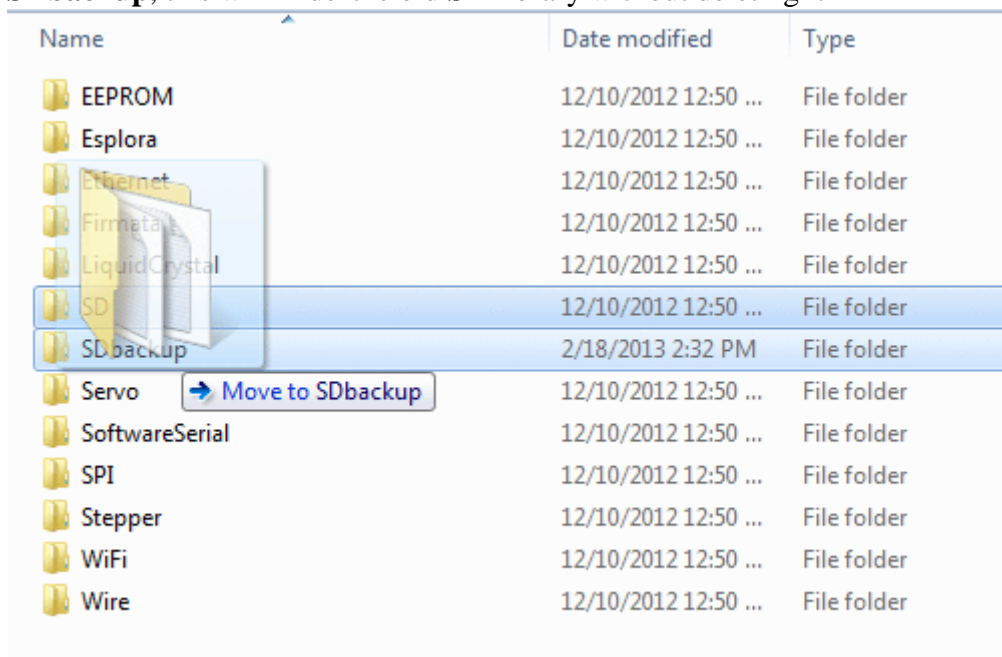
SD Card Library Update

If you are using an Leonardo or Mega, you will have to update the SD card library to add 'SD card on any pin' support. If you have an Uno/Duemilanove/Diecimila, this is not required.

First, find the "core libraries" folder - if you are using Windows or Linux, it will be in the folder that contains the **Arduino** executable, look for a **libraries** folder. Inside you will see an **SD** folder (inside that will be **SD.cpp** **SD.h** etc)



In the **libraries** folder, make a new folder called **SDbackup**. Then drag the **SD** folder into **SDbackup**, this will 'hide' the old **SD** library without deleting it



Now we'll grab the new SD library, visit <https://github.com/adafruit/SD> and click the **ZIP** download button, or click the button below

Uncompress and rename the uncompressed folder **SD**. Check that the **SD** folder contains **SD.cpp** and **SD.h**

Place the **SD** library folder your sketchbook libraries folder. You may need to create the libraries subfolder if its your first library. For more details on how to install libraries, [check out our ultra-detailed tutorial at http://learn.adafruit.com/adafruit-all-about-arduino-libraries-install-use](http://learn.adafruit.com/adafruit-all-about-arduino-libraries-install-use)

Once installed, restart the IDE. Then open up the **Adafruit_GPS->shield_sdlog** sketch and upload it to your Arduino.

If you're using a Leonardo, uncomment the line

```
// while (!Serial);
```

in the top of the **Setup()** function - this will help make debugging easier.

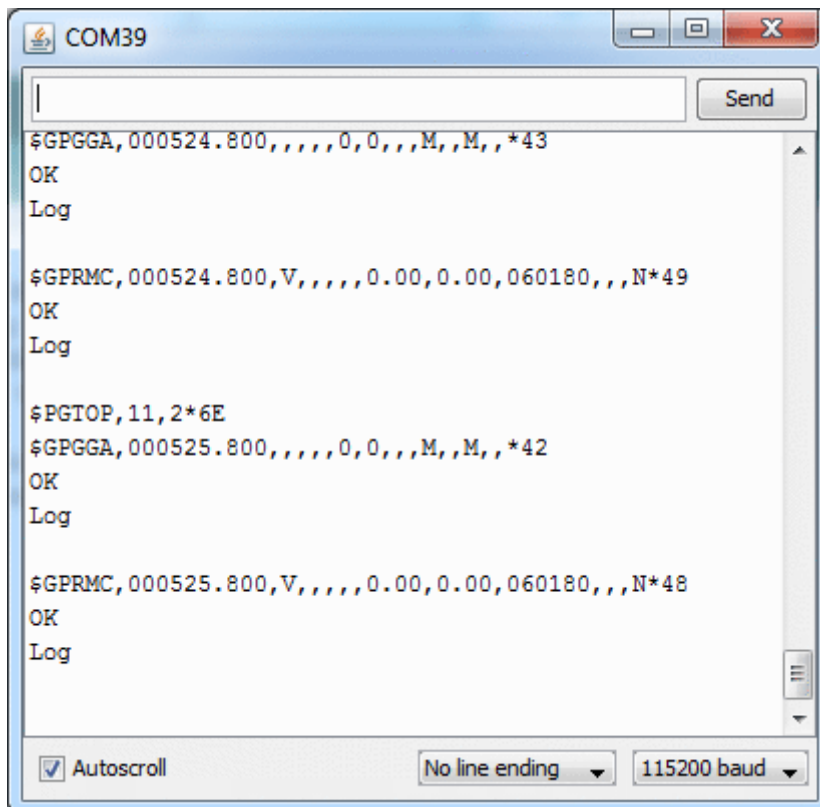
If you are using an Uno/Duemilanove/Diecimila or compatible, Find these two lines

```
if (!SD.begin(chipSelect, 11, 12, 13)) {
```

```
//if (!SD.begin(chipSelect)) { // if you're using an UNO, you can use this line instead
```

And comment out the first one and uncomment the second one.

Make sure you have the switch set to **Soft Serial** and open up the serial monitor and check that you're connected at 115200 baud (or you'll get gibberish)



If the SD card was initialized OK, it will read a sentence from the GPS, check the checksum and if its a proper sentence, and then log it.

You can customize this basic example by changing the **sendCommand** in the top of **setup()**, for example you can turn on different sentences (although RMC and GGA are the most desirable, we've found). Or change the update rate to 5Hz instead of 1Hz

You can also set it so only 'fixed' data is logged - that is, there has to be valid location data. Doing so reduces power usage and saves space but its harder to debug because you don't get the timestamps that are in the RMC sentences.