

Announcements

Email me instructions for PCB soldering

Progress update — Harry Van Horn

Cosmic board & PCB probing in lab

Continuation of web scripting example

Protocol for 3D printing appointments

- Email me to cancel if you have any illness symptoms.
- Meet outside southern entrance to Broida at appointed time.
- I will let you in and then we will go to Broida 5223.
 - Note: No operational restrooms or drinking fountains in Broida.
- Start your print.
 - Bring the gcode file on a USB stick.
 - We have 3 printers so you can split your parts over 3 files for speed.
- Then you can play with the scope while you wait on it...
- I will escort you back out of Broida and handle the "paper work" for logging access.

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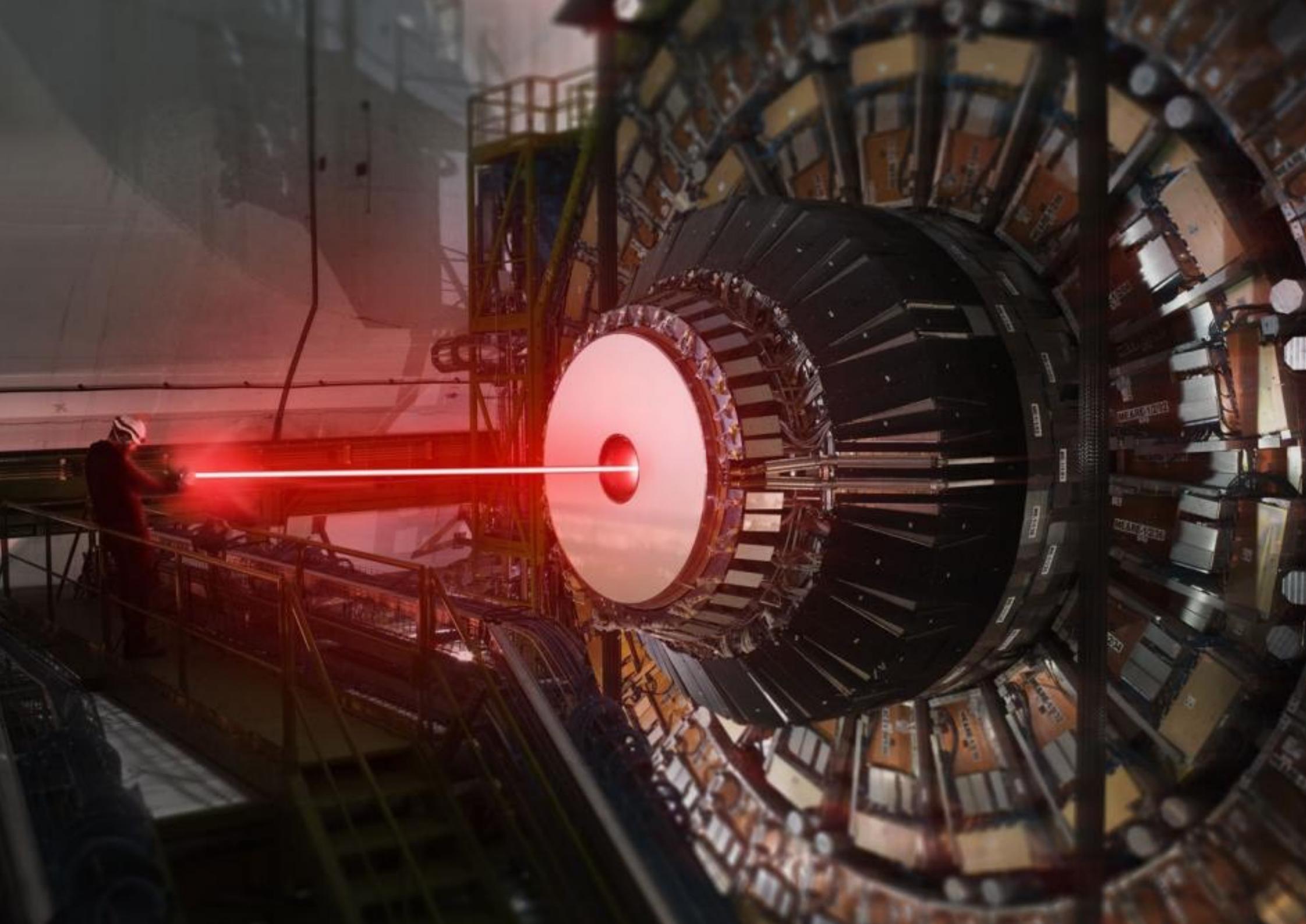


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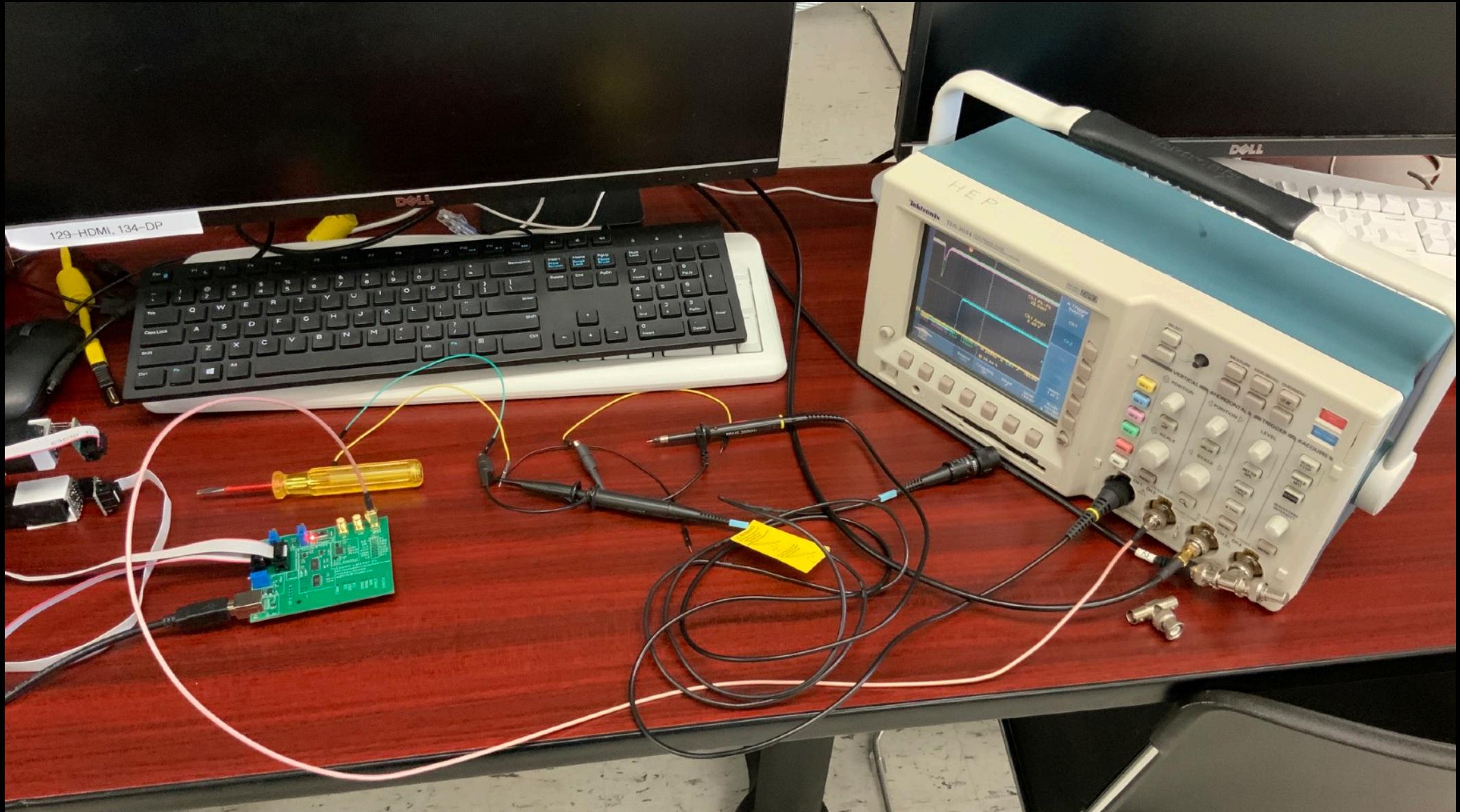


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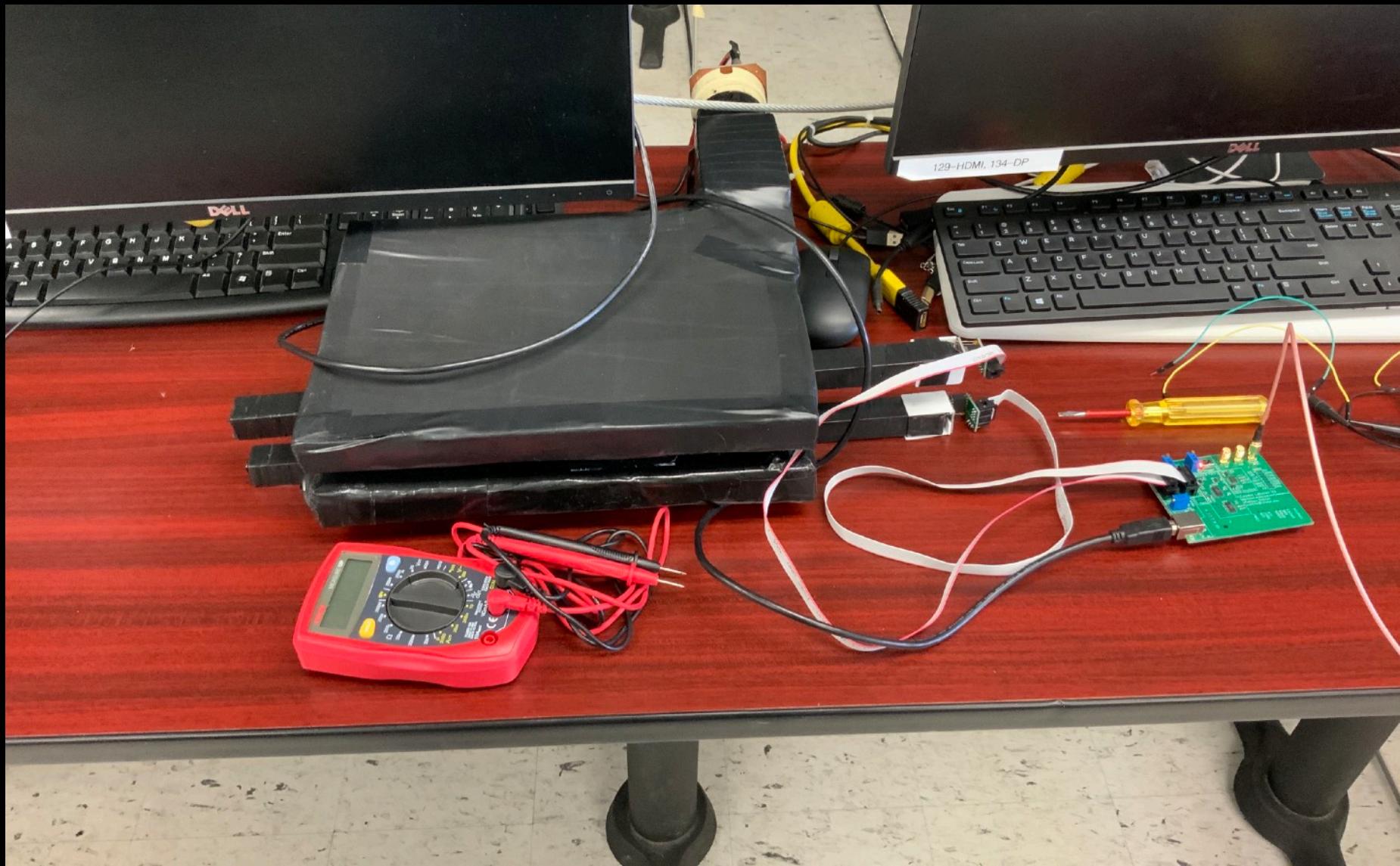


I have a scope in the lab that you can play with while waiting for your 3D print. It has scope probes and an SMA cable. You should look at the analog signals (A1 and A2) and the discriminator outputs (D1 and D2) and the logic signals (OR, AND, STRETCH) to make sure you understand how they work.



I also have two "slabs" with PMTs attached. You can compare the PMT signals to the bar signals.

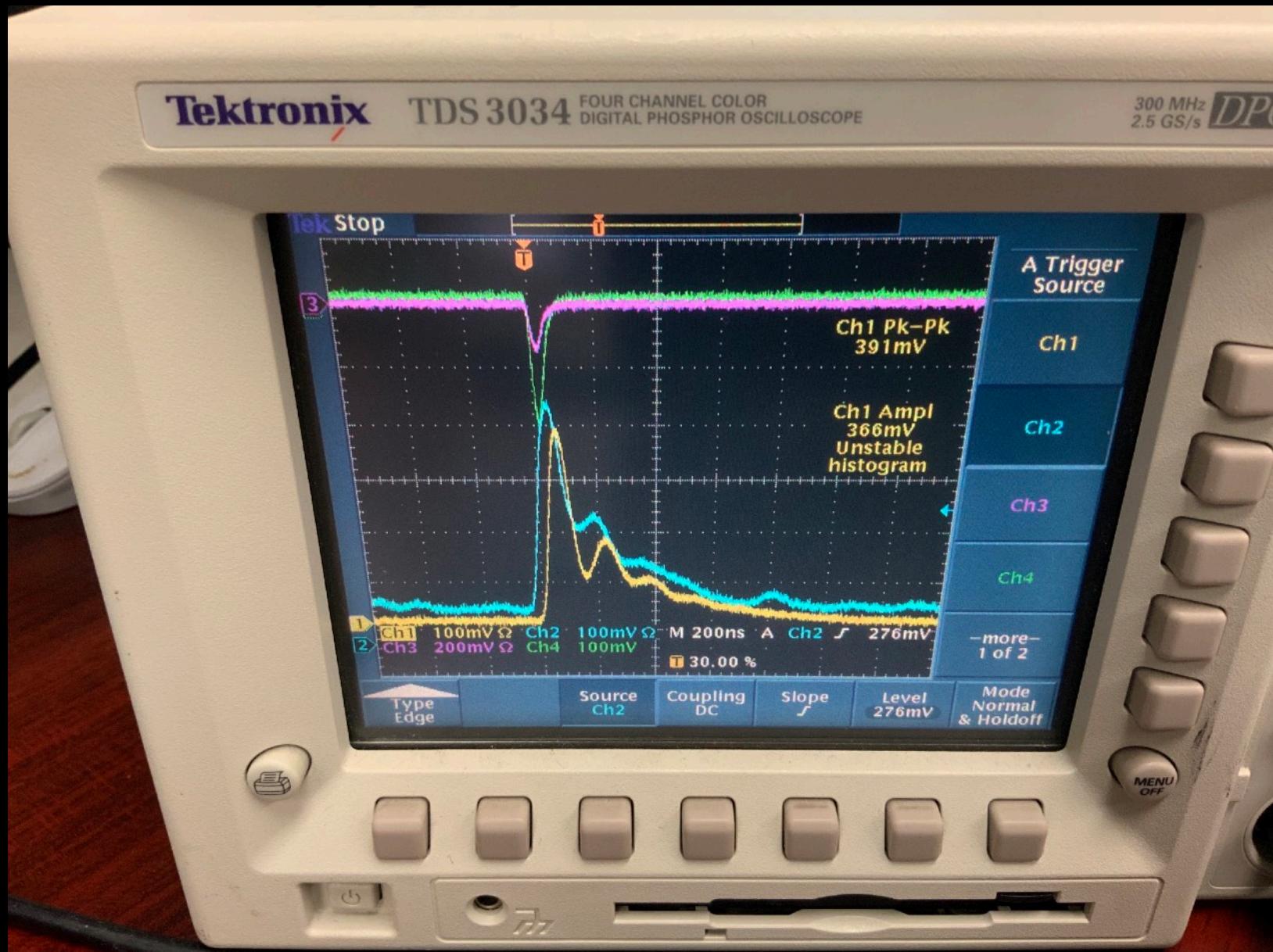
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- Faster PMT signals
- 50 Ohm termination



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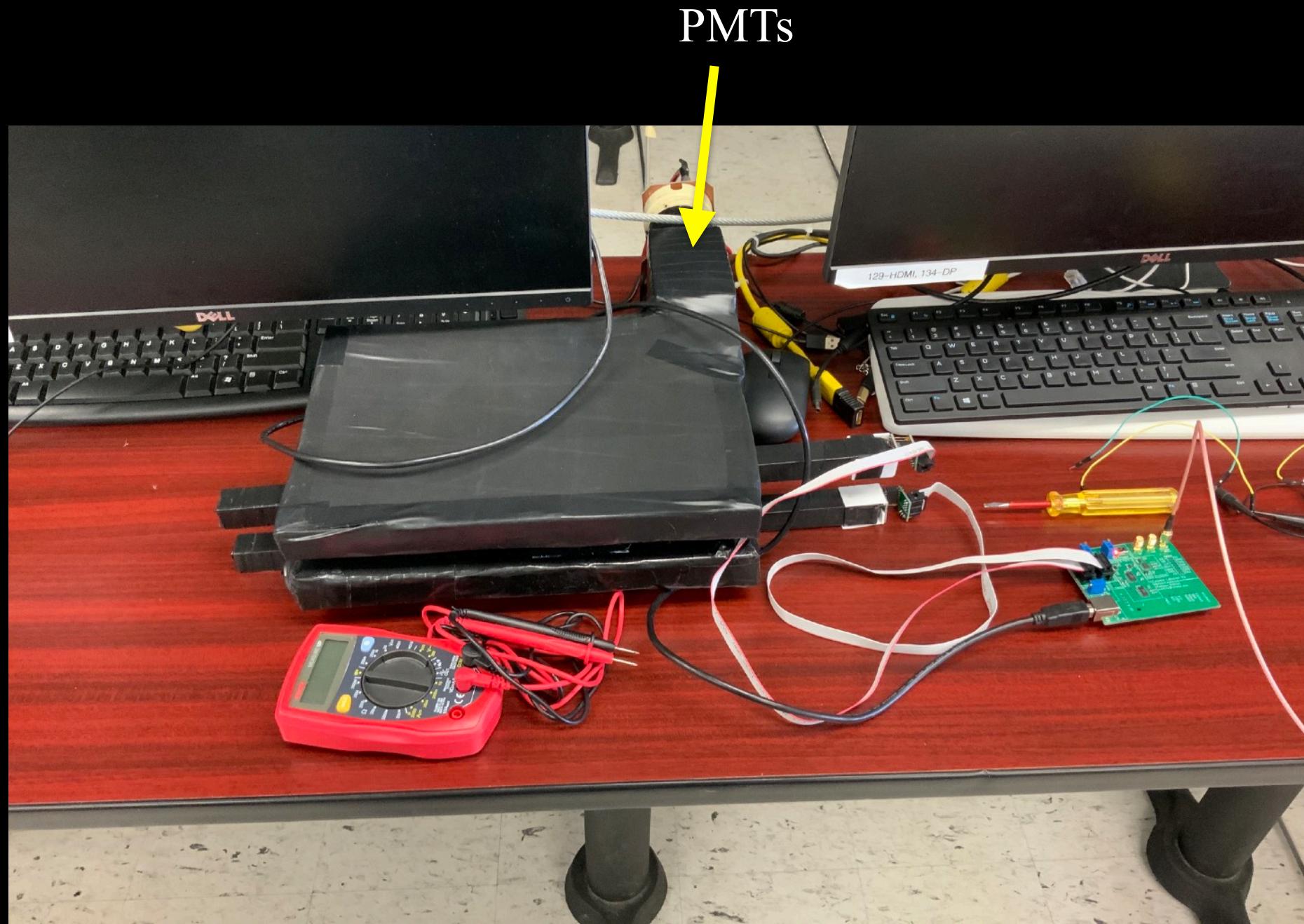
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Think through the mix of coincidences in terms of cosmic ray paths.
Change stack up as appropriate to see if it behaves the way you expect.

PMTs need rather high voltage.

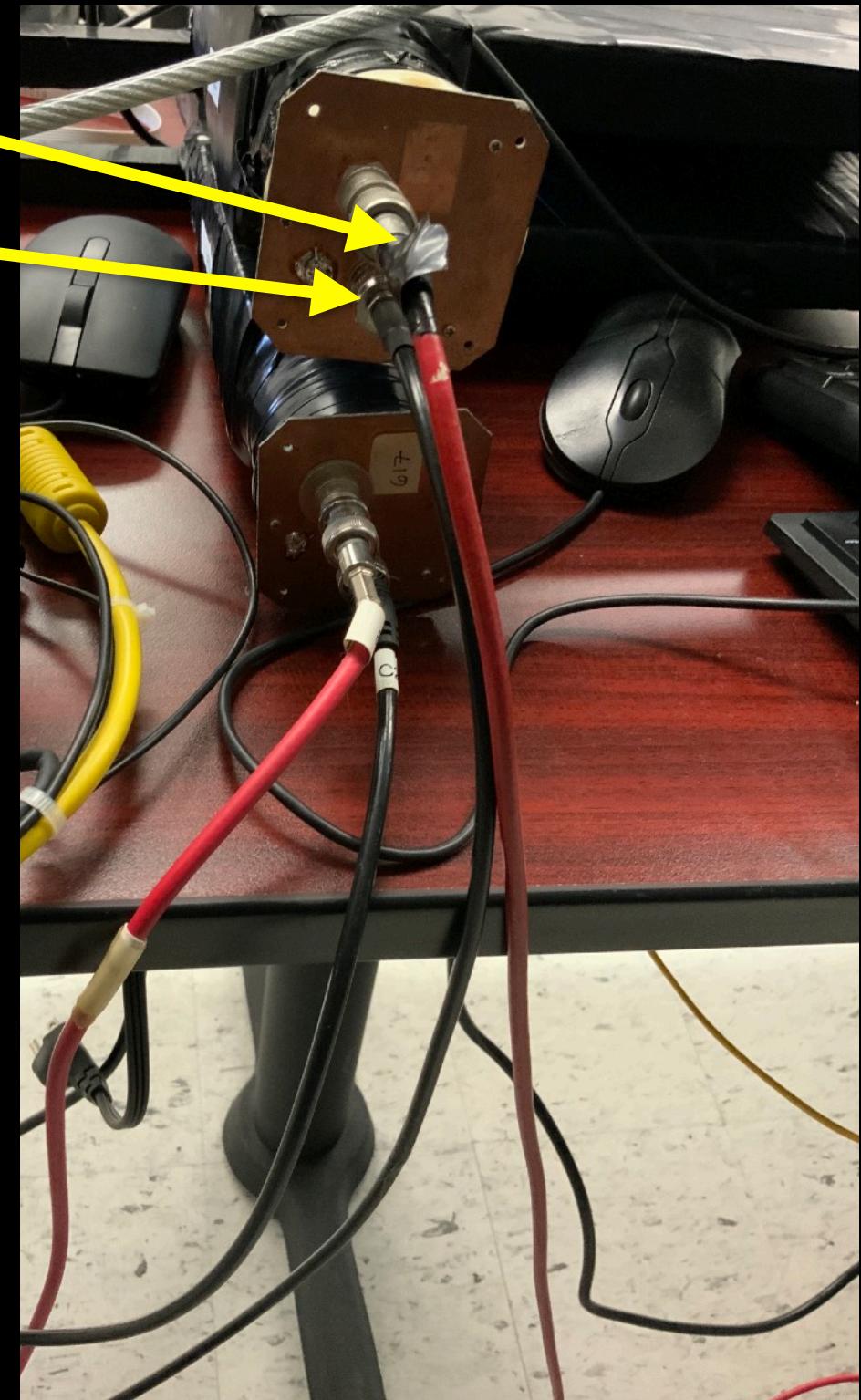
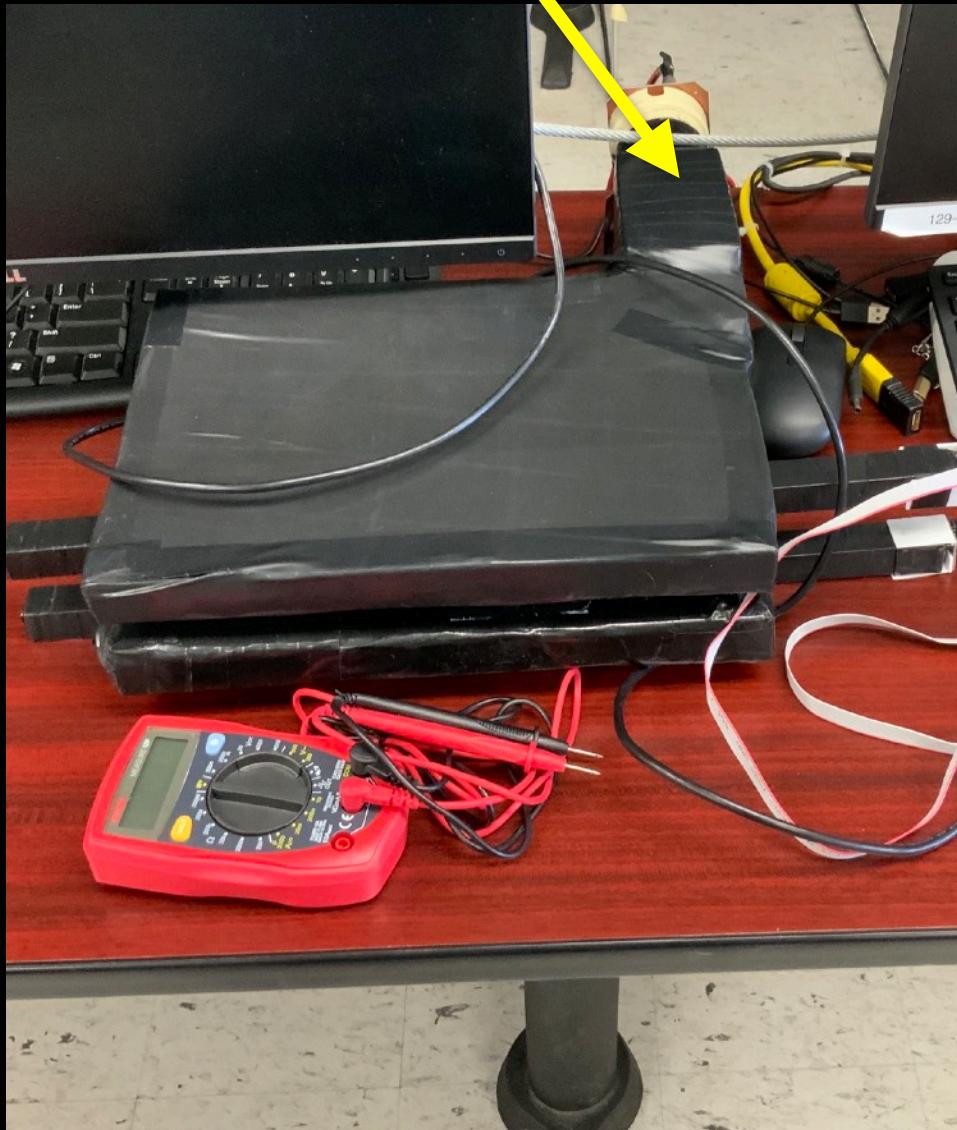


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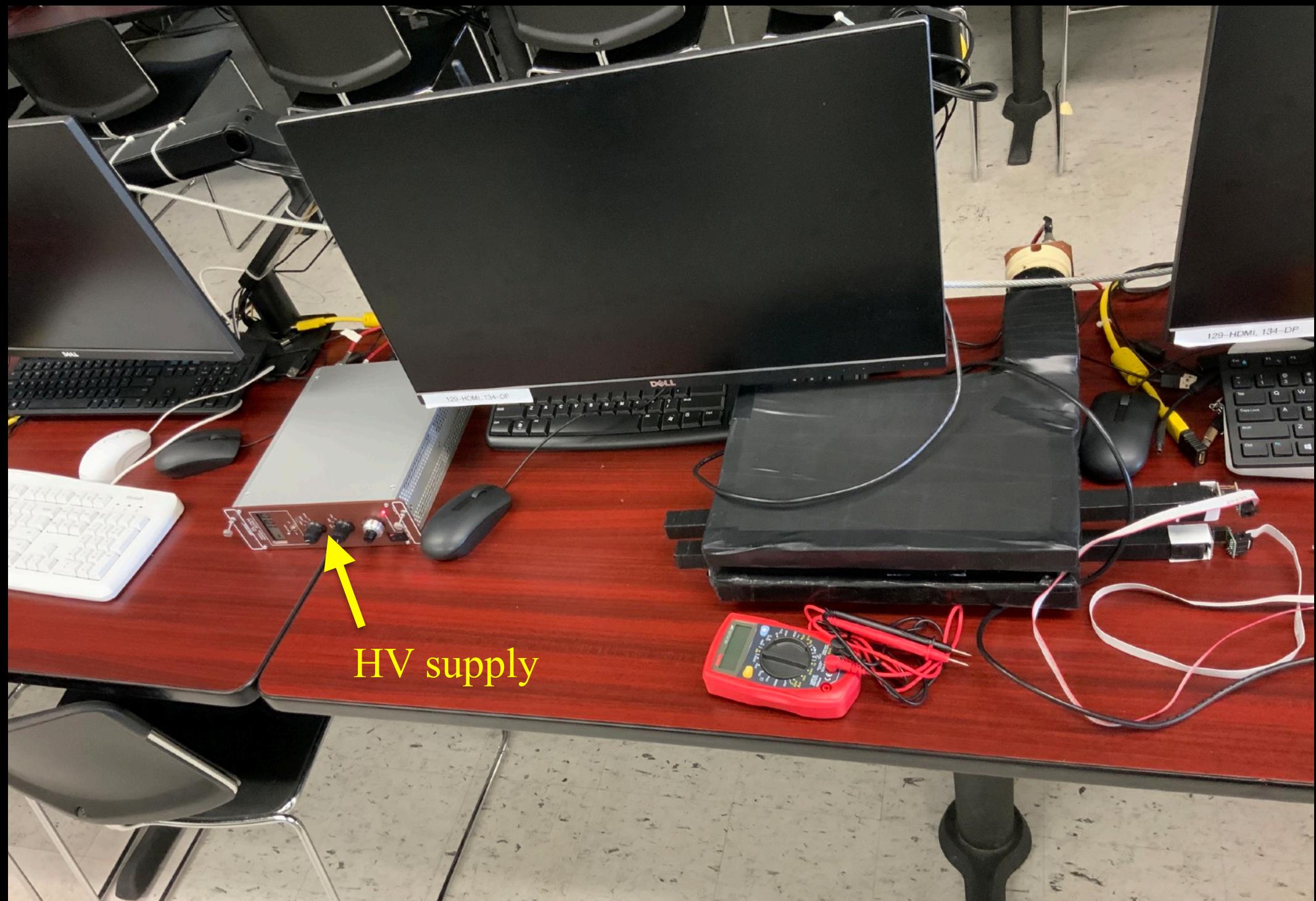
PMTs

SHV cable

BNC cable



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Please don't change the HV setting.
Just turn on and off



I will walk through the scripts, but you should download it to your pi and play along.

Do that with:

```
cd /home/pi/150/bin/  
curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/CosmicSupervisor > CosmicSupervisor  
chmod +x CosmicSupervisor  
curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/mycrontab > mycrontab  
curl -s http://dstuart.physics.ucsb.edu/Lgbk/pub/E40915.dir/cgi/files.tgz > files.tgz  
cd /usr/lib/cgi-bin/  
sudo tar xzf /home/pi/150/bin/files.tgz  
rm /home/pi/150/bin/files.tgz  
sudo chown root.root Cosmic CosmicForm CosmicCommand  
sudo chmod +x Cosmic  
sudo chmod +x CosmicForm  
sudo chmod +x CosmicCommand  
sudo mkdir cmd  
sudo chown www-data cmd
```

But maybe first you want to backup everything from your pi. Do that on your laptop with:

```
mkdir ~/pibackup200225  
cd ~/pibackup200225  
scp -r pi@MYPI.local:/home/pi/150 ./  
scp -r pi@MYPI.local:/usr/lib/cgi-bin ./  
scp -r pi@MYPI.local:/var/www/html/index.html ./  
cd -
```

Homework assignment:

Play with this to gain familiarity.

To make it specific, modify the web control panel so that each of the Display commands are separate buttons rather than a pull-down list.

Due in ELog by Monday next week.