

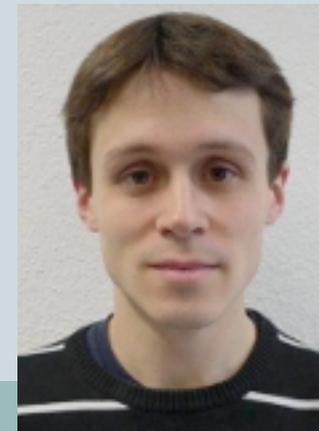
UV Laser update



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AEC, LHEP, UNIVERSITY BERN

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Outline

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- Feedthrough test
- Laser Table Update
- Plans for the coming months

Our mechanical workshop team



Prototype is
manufactured

Test performed, while
mounted on medium
Argontube cryostat:

Vacuum Tightness warm

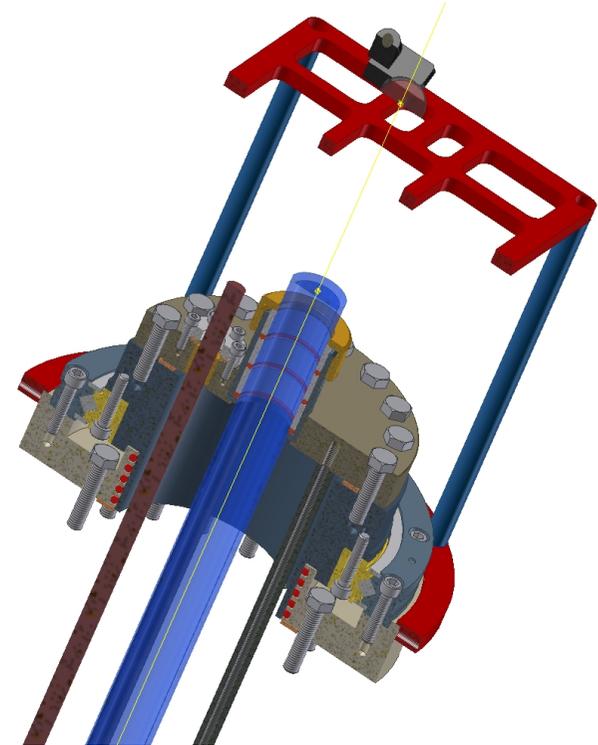
Vacuum Tightness
moving

Cool down

Vacuum Tightness cold

Vacuum Tightness
moving

TBD: Steering Laser in a
small Test TPC and
collect tracks in different
positions (master thesis
M. Luethi)



Feedthrough test Matthias & Michael



Mounting test setup

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Camera in liquid
(Sebastian)

Image from the camera



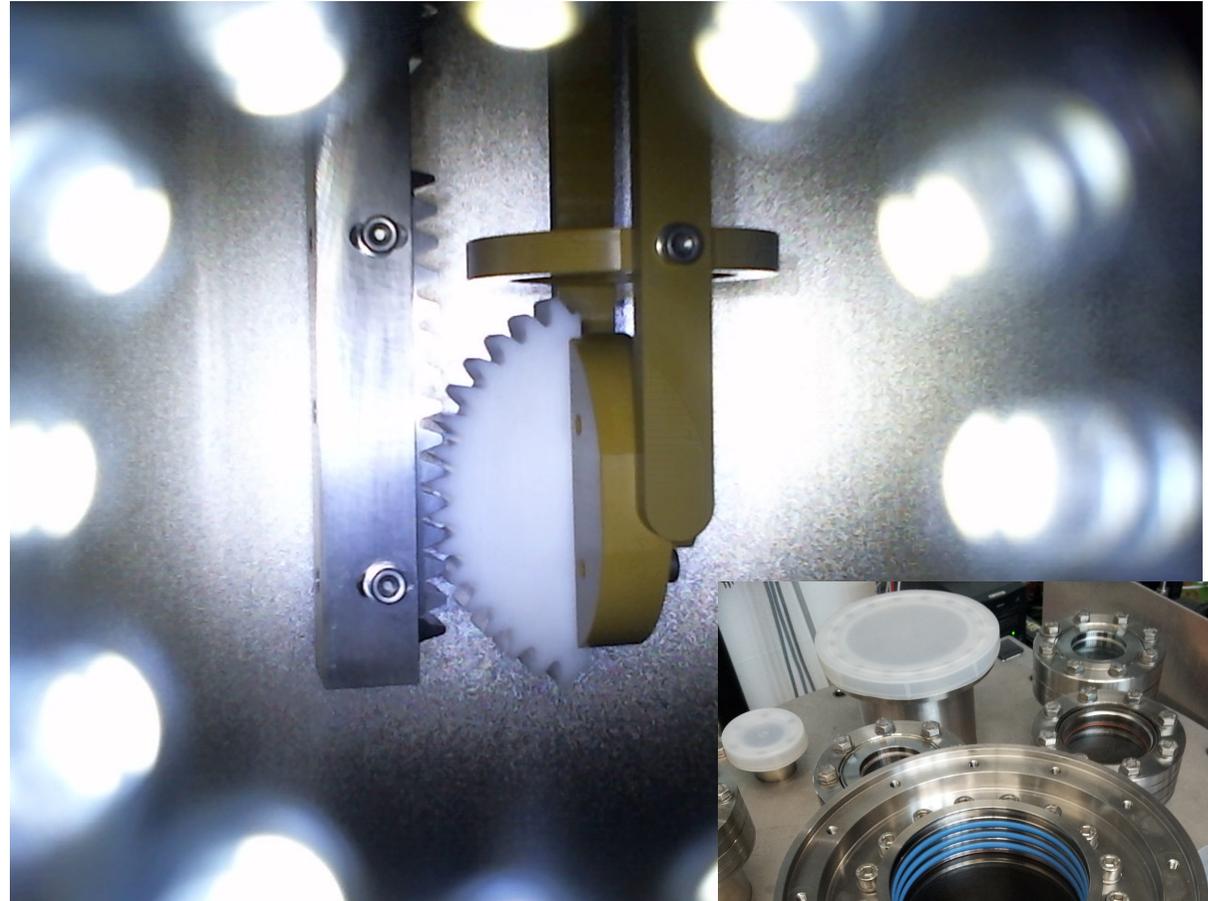
EXO
experiment



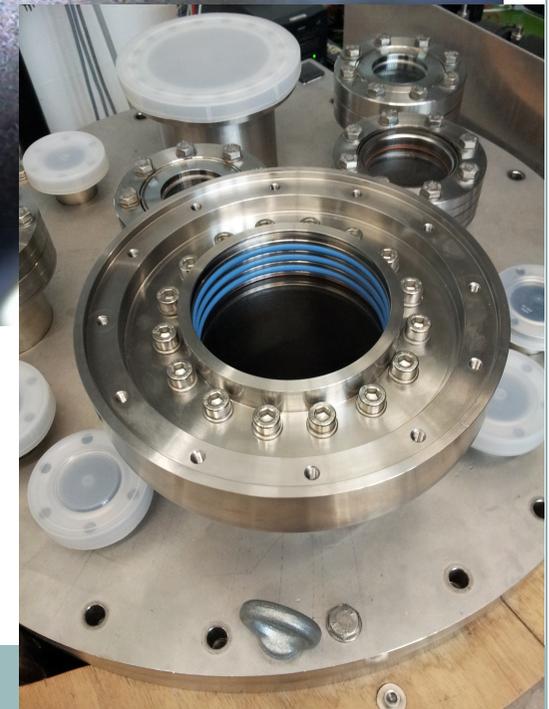
4 - Movement of the mirror as recorded by camera in warm (with illumination)

3 - Movement of the mirror as recorded by camera in warm (no illumination)

11 - Movement of the mirror as recorded by camera in cold (no illumination)



Movies



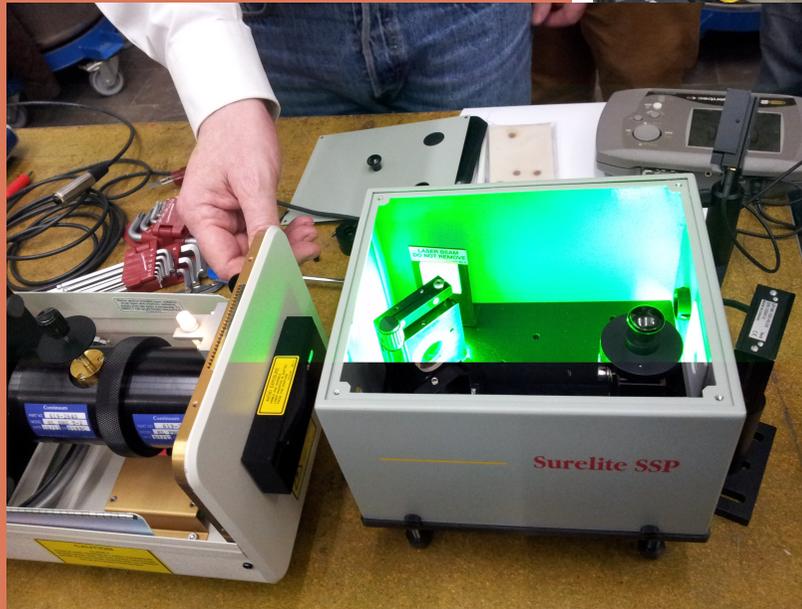
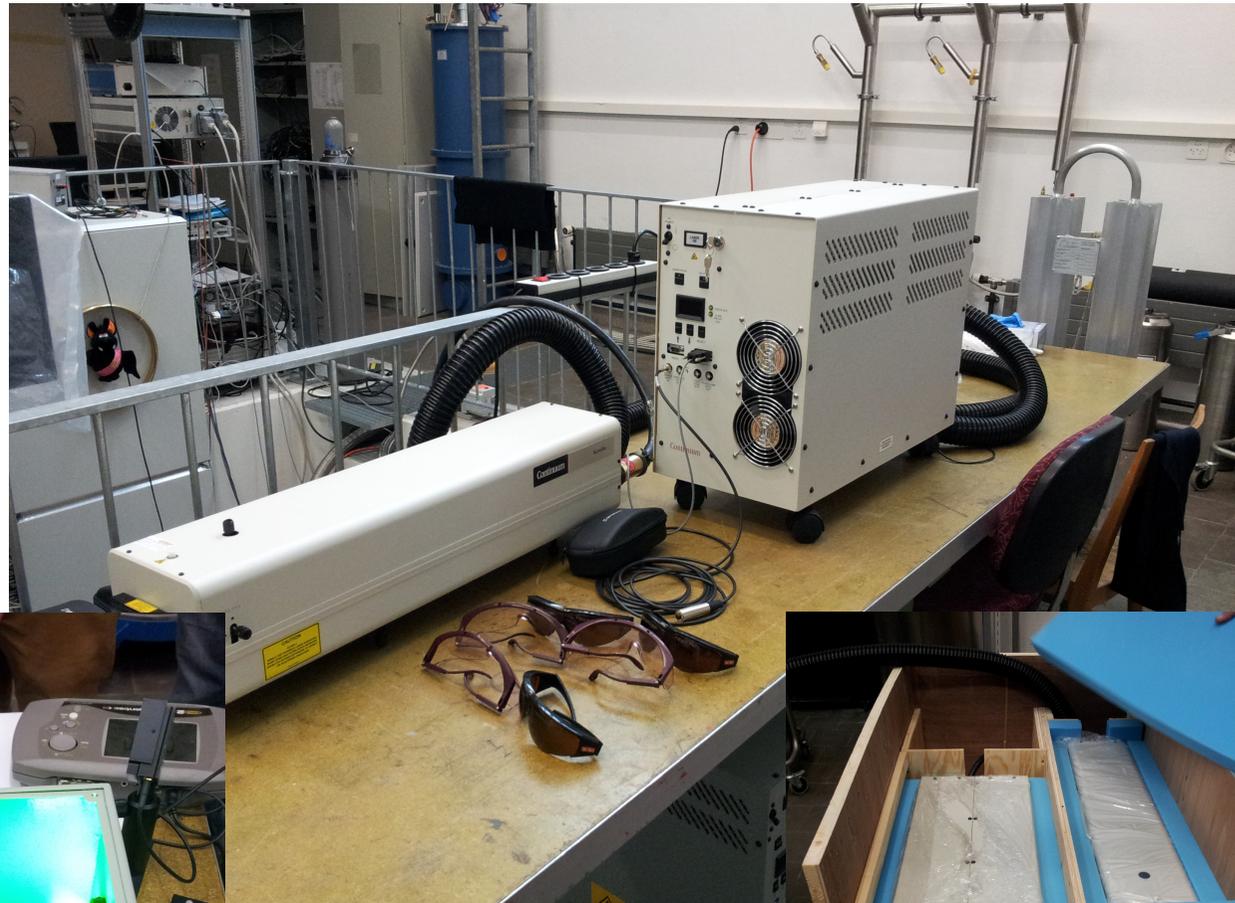
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Continuum

Surelite I-10

Modified for our
purpose:

6m extension for
between laser head and
power supply



**1st Laser
is
delivered**



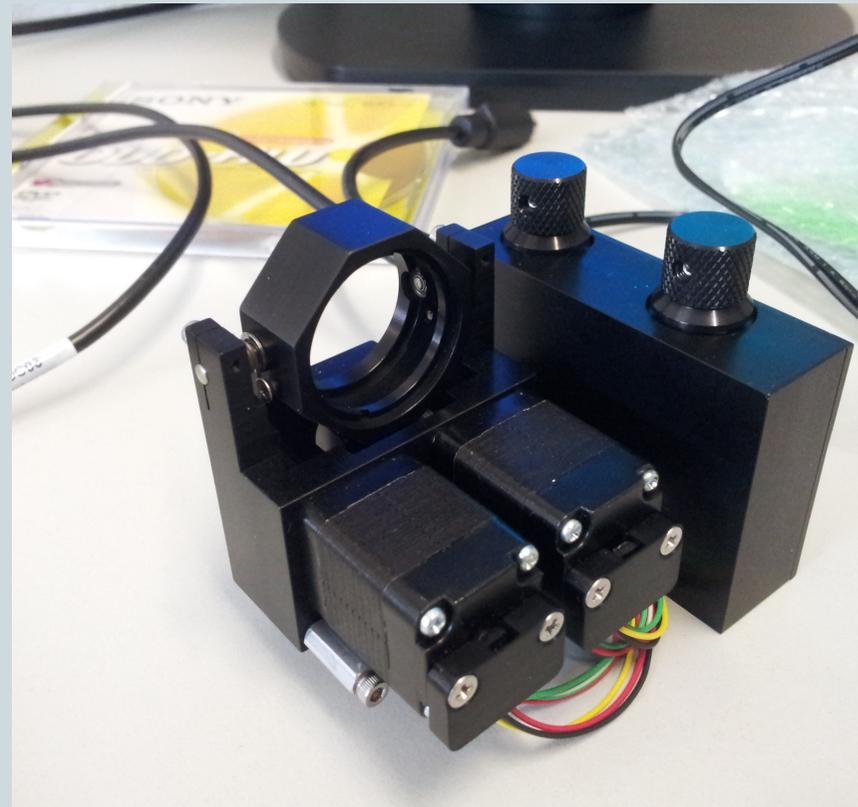
Further components

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Automatic Iris



Moveable Mirror Mounts



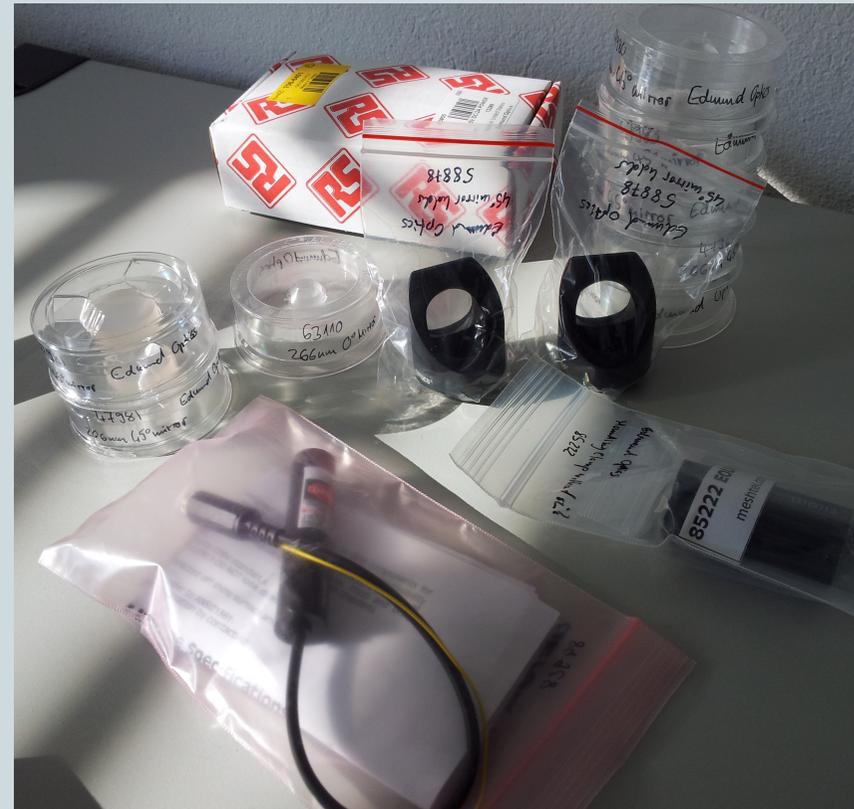
Further components

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Motorized Attenuator



Mirrors, Alignment laser



Goal:

Press button solution for shifter to start a laser run

Talk to all components via RS-232

Setting up an Epics interface to talk with motors

In contact with Glenn & Sowjanya

The image shows three software windows and a terminal window. The top row contains three windows: `asynRecord.adl`, `asynOctet.adl`, and `asynRegister.adl`. The `asynRecord.adl` window shows a configuration for a device named 'norum:asyn' with an address of 0 and a reason of 0. The `asynOctet.adl` window shows a configuration for the same device with a timeout of 5.0000 seconds and a transfer mode of 'Write/Read'. It displays output in ASCII format: `0x00x01x00x00x00x00` with a length of 6. The `asynRegister.adl` window shows a configuration for the same device with a timeout of 5.0000 seconds and a transfer mode of 'Write/Read'. It displays output in ASCII format: `0x00x01x00x00x00x00x00` with a length of 12. The terminal window at the bottom shows a bash prompt with the following output:

```

bash serialTest ... medm
0, 35, 254, 255]
2, 17, 255, 255]
dev/tty.usbserial
225-173-195:python scripts thomasstrauss$ python test_tomg2.py
dev/tty.usbserial

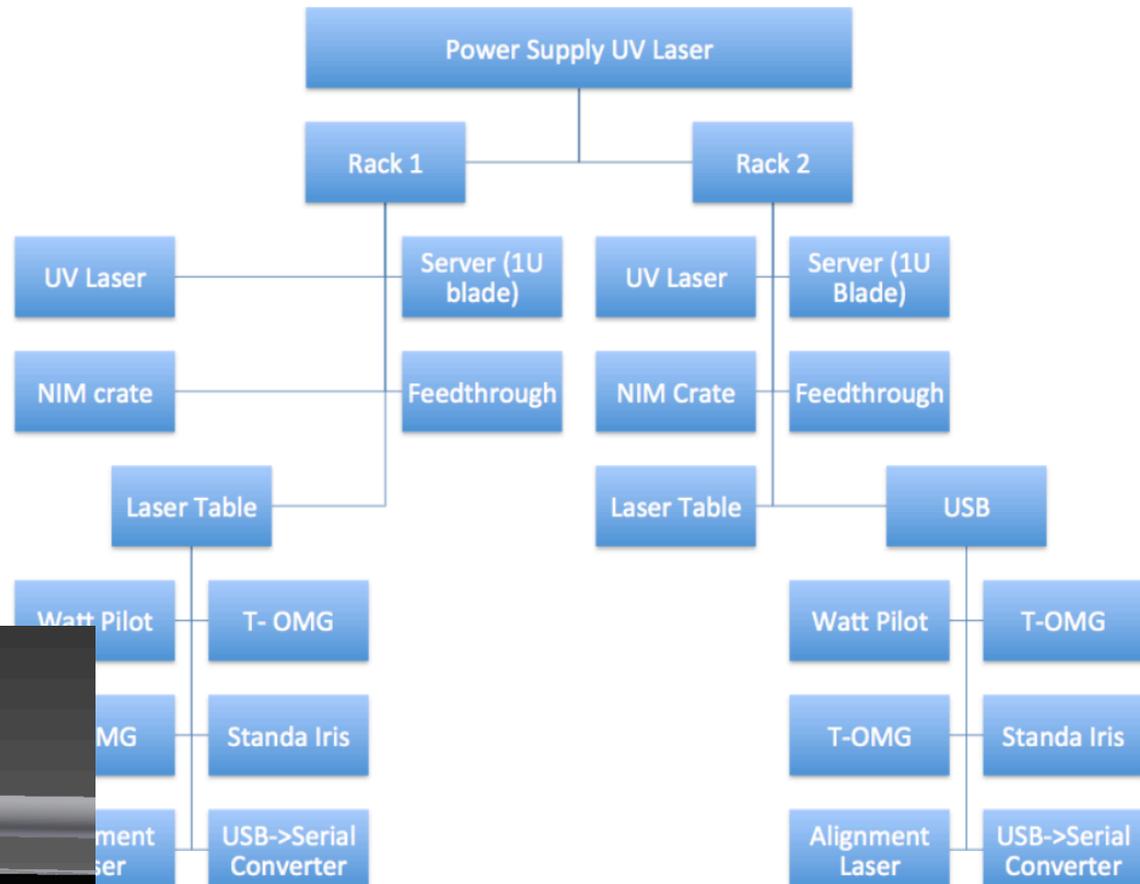
usbserial
Instruction Report Voltage of Motor [0, 52, 0, 0, 0, 0]
| reply [1, 52, 150, 0, 0, 0]
| number: 1
| number: 52
| voltage: 15.0 V
| reply [2, 52, 149, 0, 0, 0]
| number: 2
| number: 52
| voltage: 14.9 V
| Instruction Report Renumber [0, 2, 0, 0, 0, 0]
| reply [1, 2, 55, 1, 0, 0]
| reply [2, 2, 56, 1, 0, 0]
| Instruction Home all [0, 1, 0, 0, 0, 0]
| 0, 35, 254, 255]
| 2, 17, 255, 255]
dev/tty.usbserial
225-173-195:python scripts thomasstrauss$

```

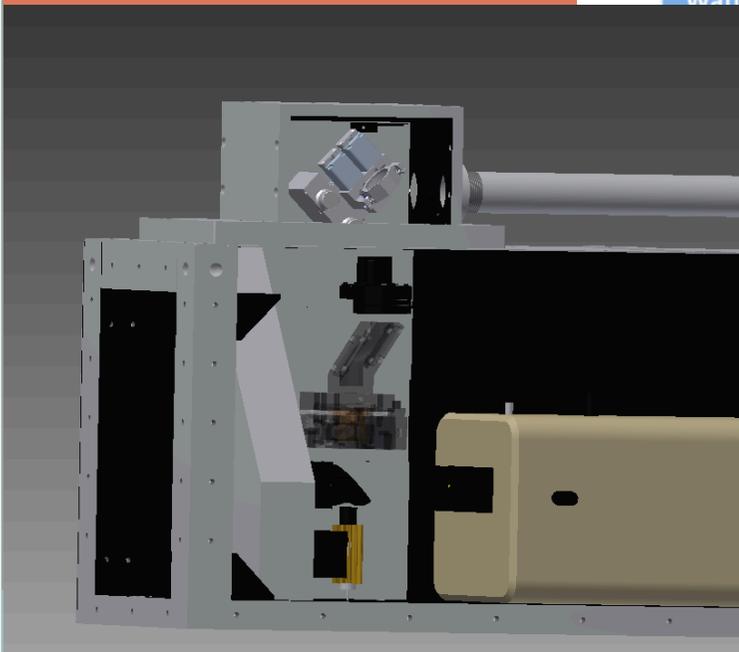
Slow Control via Epics, all motors speak RS-232

Preparation of ORC review thanks to help of **Linda**

Laser Safety Officer LSO is aware of our plans, and with his feedback we designed the laser table



Powering the laser system



Open points to be covered

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- Lifetime test of the prototype sealings
- Finalize the UV laser feedthrough (cover box for light tightness, temperature probes, motors, AOB)
- Trigger
 - laser diode gives trigger or we wait for trigger?
 - DAQ, how to get the laser info into the raw data
- Build it, test it and ship it (~April)