Power up the instrument
Rotate telescope **UP**
Remove cover and stow
Check all breakers **in**
Check archiver computer power **on**
Laser red switch **ON**
Laser key **ON**
Wait for Q-SW power
Click Shutter **ON**
Click LDD **ON**
Click **Menu**
Click **Enter** twice, to unlock power setting
Rotate wheel clockwise to set power to: **28.5 A**
Click **Enter** once to lock power setting

Start all processes on hsrl

From terminal on hcr archiver, type

```
hsrl
```

or

```
ssh -XY hsrl@hsrl
```

Or from spider:

```
ssh -XY hsrl@192.168.2.201
```

Log in as:

```
user hsrl
passwd: %Lidar1543
```

Start system:

```
start_all
```

Check status:

```
hsrl_status
```

All processes should be running

Sometimes

```
hsrlcontrol
```

will not start

If problems, rerun:

```
start_all
```

until all processes are running.

Start GUI

On HCR archiver, bring up GUI in chrome:

```
hsrl:8083
```

or use HsrlControl bookmark

Or from spider, in browser open url:

```
http://192.168.2.201:8083
```

If you cannot connect via the browser, rerun

```
start_all
```

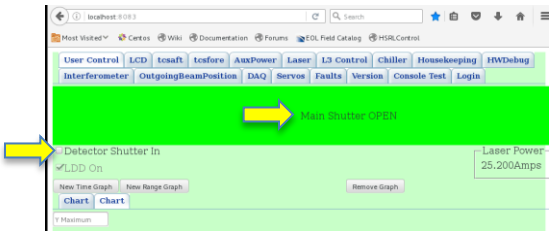
on hsrl

Click on

```
Detector Shutter In
```

twice to open shutter– no check mark

Click Main Shutter twice – OPEN - green



Check LIDAR is up using graph

Click on
New Range Graph

On graph, select Y1 for
Raw-CombHi
Raw-Mol
Raw-Xpol

Click on
Force Update

You should see echoes on the graph

Start all on hsrl-archiver

Log in to HSRL archiver:

From HCR archiver:

```
ahsrl
```

From spider:

```
ssh -XY 192.168.2.200
user: hsrl
passwd: %Lidar1543
```

From a terminal:

```
start_all
pcheck
```

`pcheck` **should report 0 processes down**

Start HawkEye:

```
start_HawkEye.ops
```

HawkEye window should pop up, and show reasonable data

Check data is flowing:

```
pdm
```

PrintDataMap should show data updating

Stow while waiting for takeoff

On GUI, close main shutter (**red**)

Point telescope **DOWN**

After take-off

On GUI, open main shutter (**green**)

Point telescope as required

Before landing

On GUI, close main shutter (**red**)

Point telescope **DOWN**

Shutdown after landing

On hsrl-archiver computer:

```
stop_all
sudo poweroff
```

On hsrl computer:

```
stop_all
sudo poweroff
```

On laser unit:

Click **Enter** to unlock power setting
Using wheel, reduce power to **0 A**
Click Enter to lock power at **0 A**
Laser key **OFF**
Laser red switch **OFF**

Pull all breakers:

- Thermal ctrl power
- Computer power
- Laser power
- etc

Point telescope UP, install cover

Point telescope DOWN

Using the spider for maintenance

Addresses are:

hsrl
```
192.168.2.201
```

GUI:
```
http://192.168.2.201:8083
```

archiver
```
192.168.2.200
```

spider
```
http://192.168.2.204
login: sysadmin
password: password
```

Set laptop IP address to:
```
192.168.2.220
```

Logging in to hsrl:
```
ssh -XY hsrl@192.168.2.201
```

Logging in to archiver:
```
ssh -XY hsrl@192.168.2.200
```

Copying data from archiver to USB

Insert USB stick or attach disk to USB3 port

Log in to hsrl-archiver, either from the hcr-archiver or spider (see above)

Mount stick or drive:

```
cd ~/projDir/system/scripts
sudo ./mount_usb
```

Passwd: %Lidar1543

Drive will mount as /data/usb

Rsync data to the drive:

```
cd ~/projDir/system/scripts
./rsync_to_usb
```

Data will appear on the drive in dir:

```
archive
```

at the top level

Unmount the drive:

```
cd ~/projDir/system/scripts
sudo ./unmount_usb
```

Passwd: %Lidar1543

Running HawkEye remotely

hcr-router is
```
192.168.84.175
```
SSH to the ports below on the router to get to the listed machines:
```
22 -> HCR archiver
23 -> HCR rds (pod)
122 -> HSRL instrument
123 -> HSRL archiver
```

HawkEye for HSRL

Log in to HSRL archiver:
```
ssh -XY -p 123 hsrl@hcr-router
user: hsrl, passwd: %Lidar1543
```

start HawkEye for HSRL:
```
start_HawkEye.ops
```

HawkEye for HCR

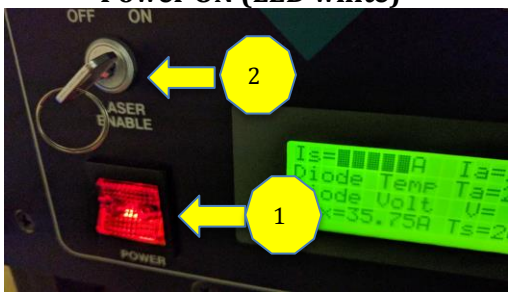
Log in to HCR archiver:
```
ssh -XY hcr@hcr-router
user: hcr, passwd: sun-dog
```

start HawkEye for HCR:
```
start_HawkEye.10hz
```

HSRL Breakers
All breakers in to startup
Arrow breakers off on shutdown

Archiver power

Power ON (LED white)

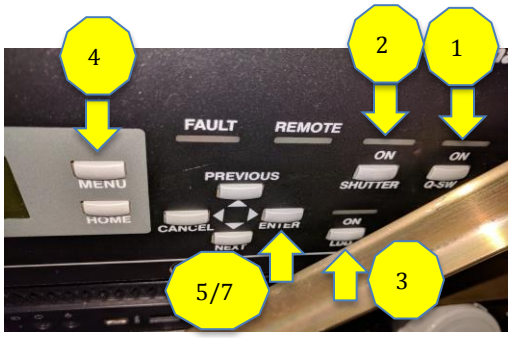


Laser power:

- **Red switch ON**
- **Key ON**

Power setting locked – flashing shaded

Power setting unlocked – no shading



1. Wait for Q-SW ON
2. Click shutter ON
3. Click LDD ON
4. Hit Menu
5. Hit Enter twice to unlock power setting.
Check shading is off
6. Set current to 28.5 A on wheel
7. Hit Enter again to lock

Setting the laser current:

Rotate wheel to set Is current to:

28.5 A (ON)
0.00 A (OFF)