Science Platforms

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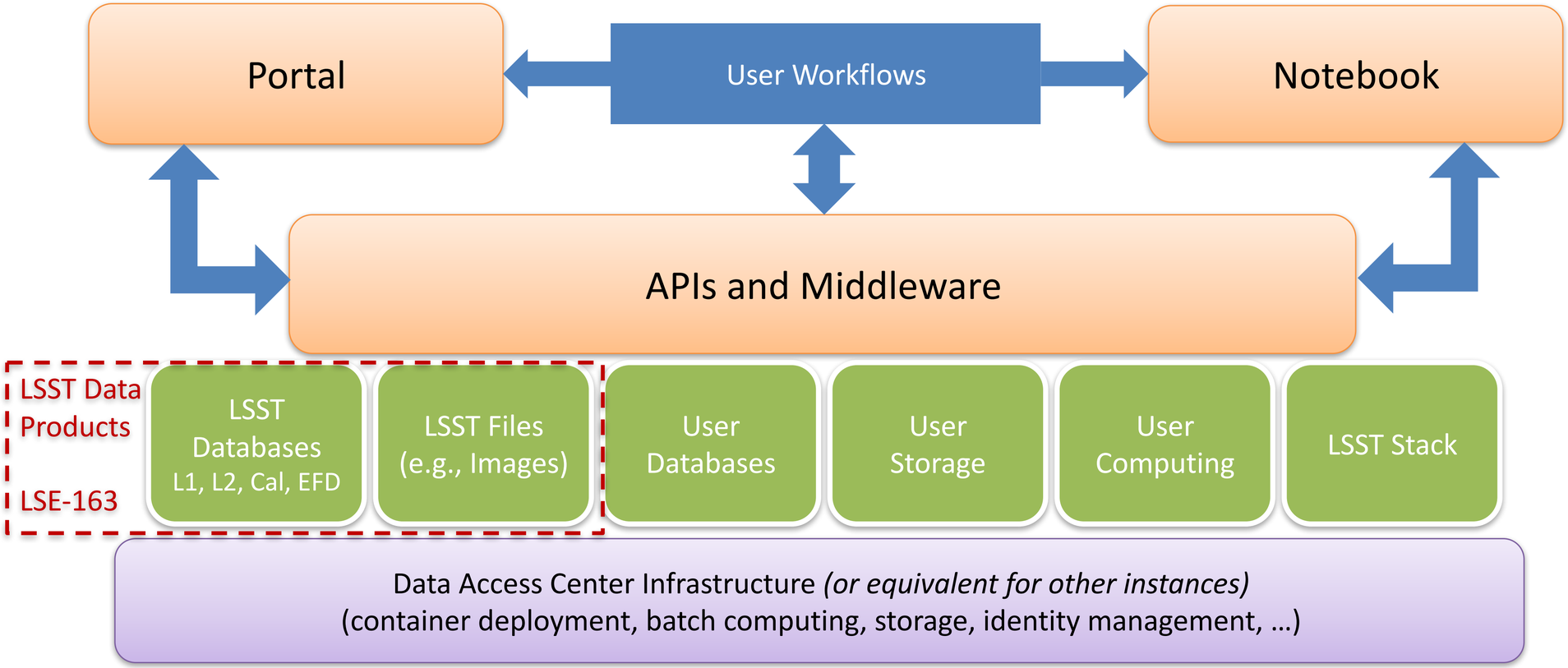
ASTRON (Netherlands Institute for Radio Astronomy)

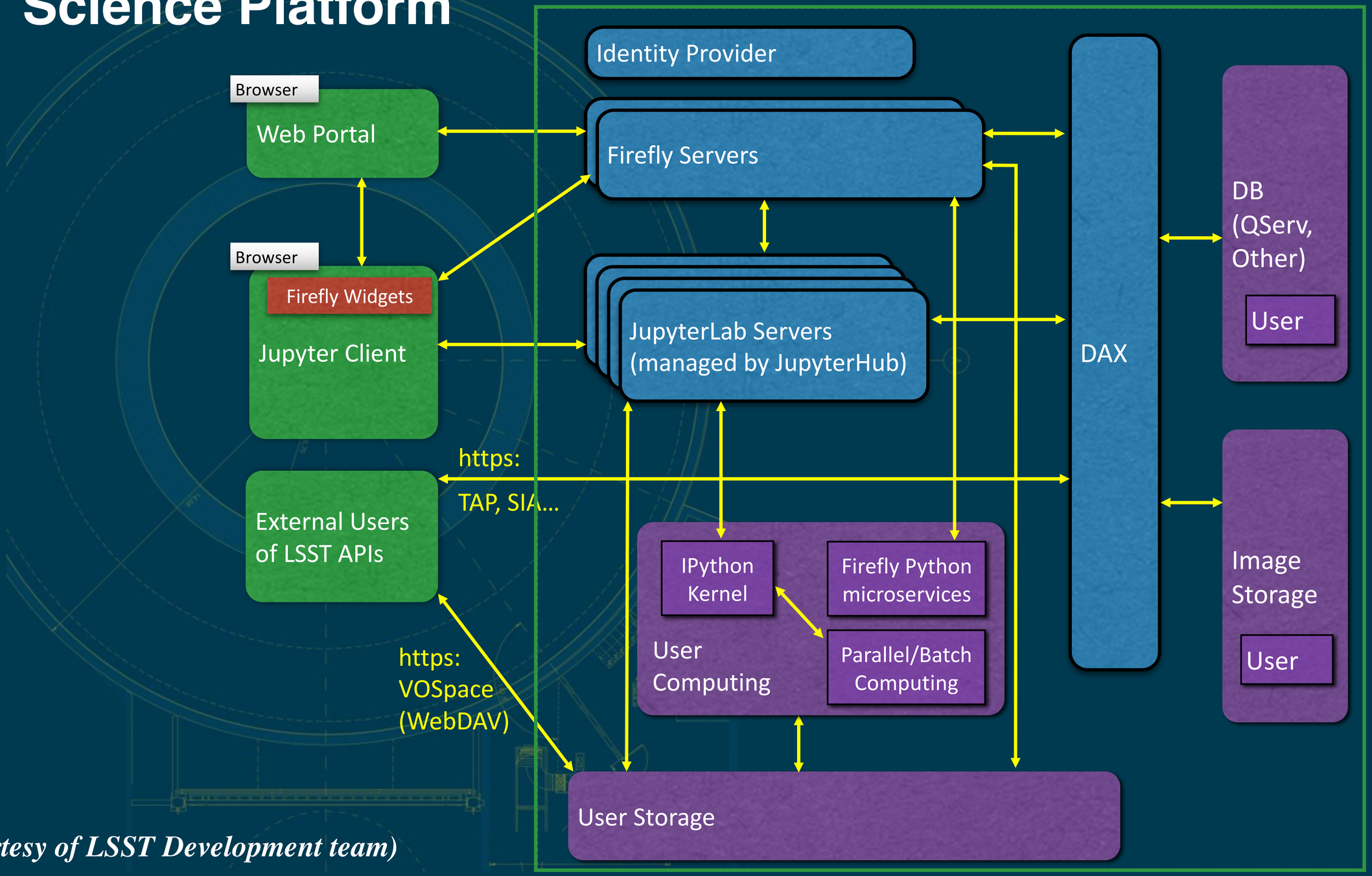
AENEAS Plenary Meeting, Granada, October 19, 2017

User Science Platform



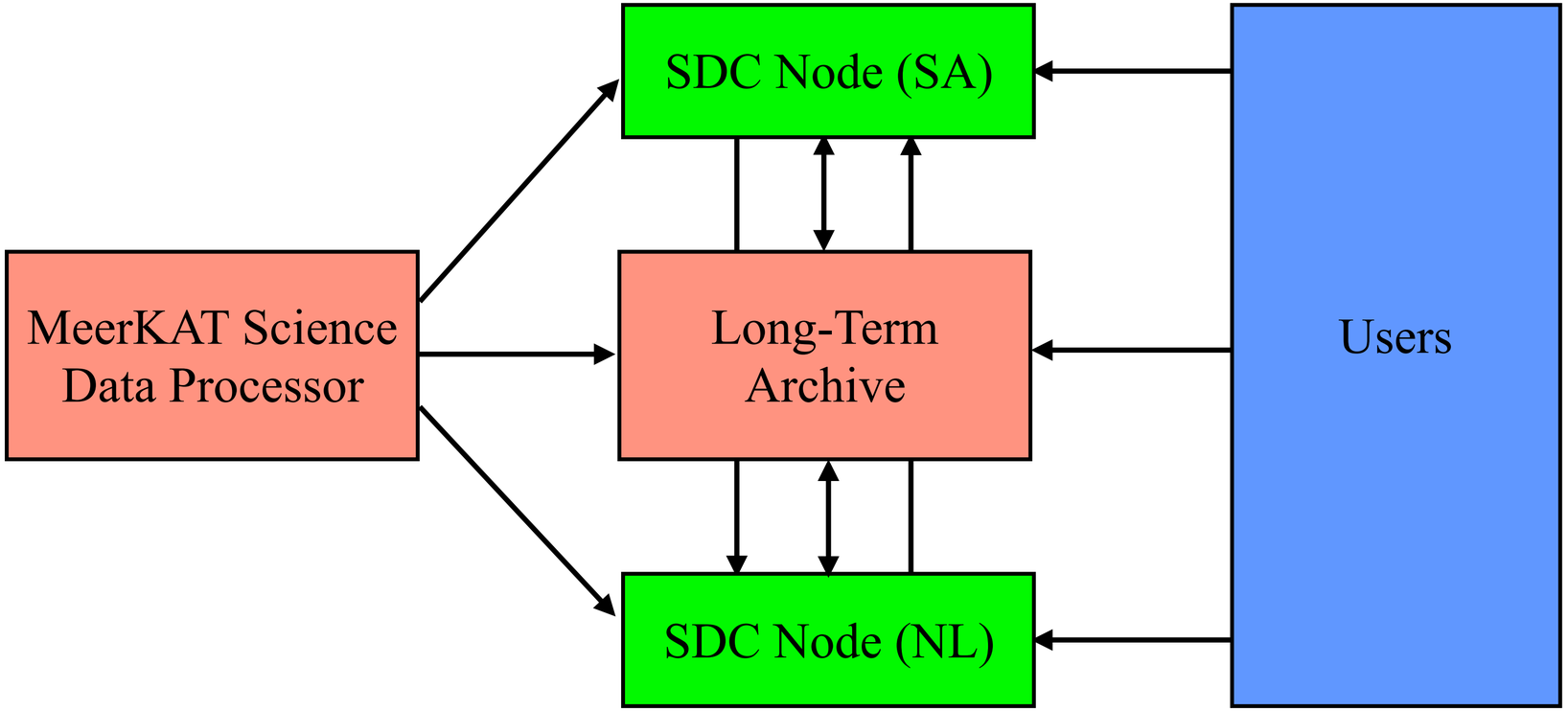
(image courtesy of LSST Development team)

LSST Science Platform



(image courtesy of LSST Development team)

MeerKAT SDC Prototype



Ongoing collaboration between ASTRON, IBM, and SKA-SA

Funding from NWO, ASTRON, IBM-DOME, IDIA, and SKA-SA

- ***Cloud-based processing***
- ***User analysis platform***
- ***Platform for prototyping***
- ***Online in Q4 2017***

QuickTime Player File Edit View Window Help

Wed 15 Mar 13:51

https://arcade-jupyter-hub.arc.ac.za/user/frank/notebooks/ACF1G1.ipynb

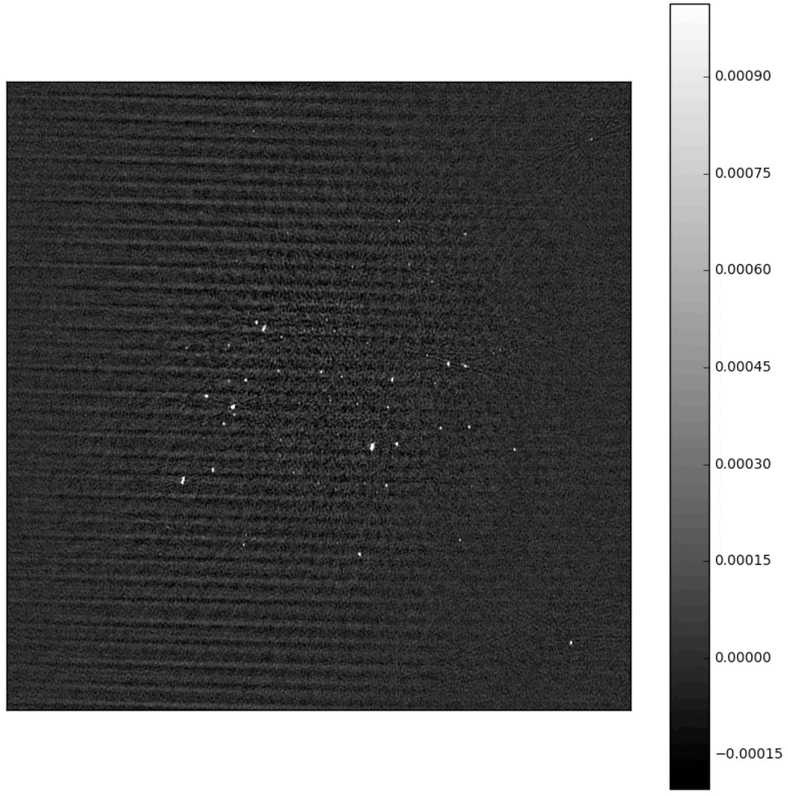
jupyter ACF1G1 Last Checkpoint: 02/24/2017 (autosaved)

Control Panel Logout

File Edit View Insert Cell Kernel Help Python 2

Code CellToolbar

```
masher - INFO : fits in_=acf1g1p1.image out=acf1g1p1.image.fits op=xyout
miriad fits - INFO : Completed.
QIMPLOT - INFO : RMS = 0.0001
QIMPLOT - INFO : Plotting from -2*RMS to 10*RMS
QIMPLOT - INFO : Quick Image Plot
masher - INFO : fits in_=acf1g1p1.residual out=acf1g1p1.residual.fits op=xyout
miriad fits - INFO : Completed.
QIMPLOT - INFO : RMS = 6.4e-05
QIMPLOT - INFO : Plotting from -2*RMS to 10*RMS
QIMPLOT - INFO : Quick Image Plot
masher - INFO : fits in_=acf1g1p1.mod out=acf1g1p1.mod.fits op=xyout
miriad fits - INFO : Completed.
QIMPLOT - INFO : RMS = 2.6e-05
QIMPLOT - INFO : Plotting from -2*RMS to 10*RMS
```



jupyter plotting with apercal Last Checkpoint: 01/27/2017 (autosaved)

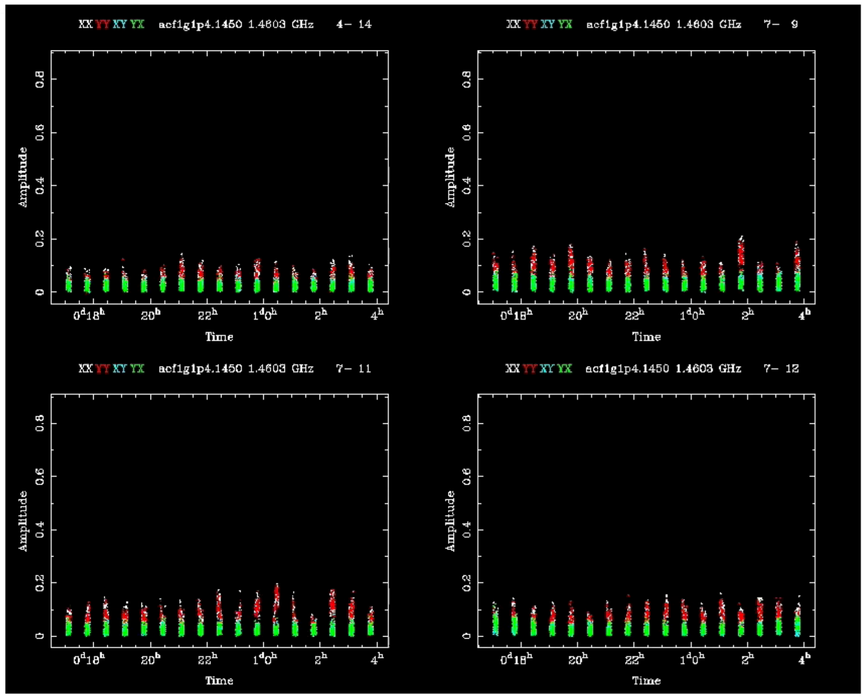
Control Panel Logout

File Edit View Insert Cell Kernel Help Python 2

Code CellToolbar

```
tempdir="/home/frank/tempdir", r=5, nxy='2,2', select='-auto')
```

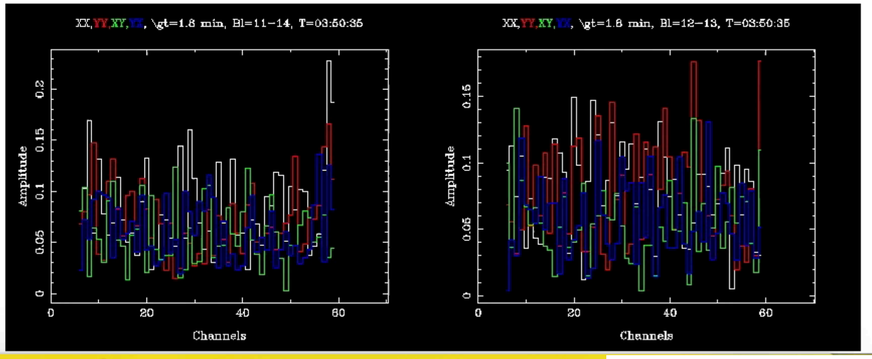
Out[27]:



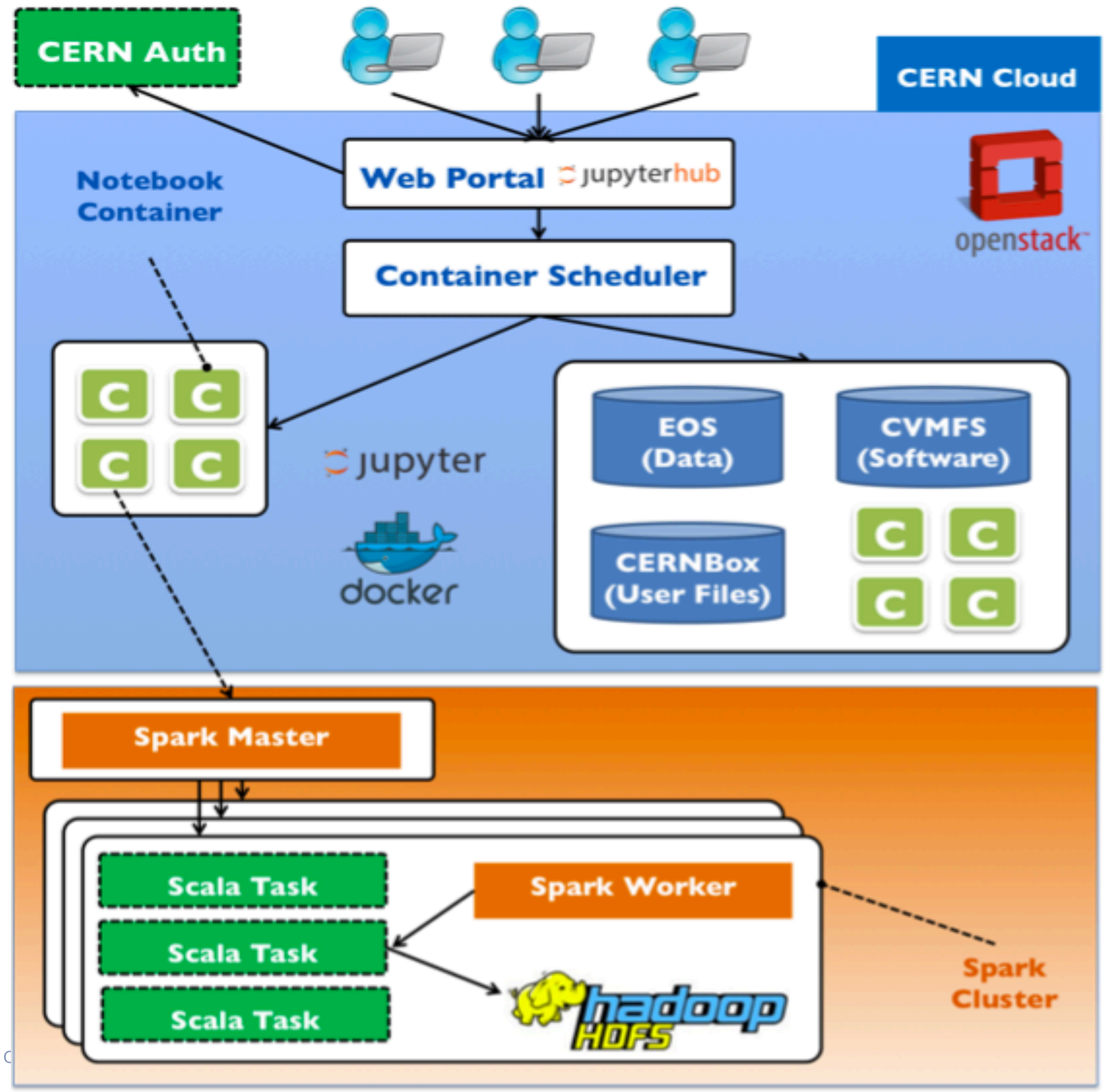
In [30]:

```
mplot.uvspec(vis='/home/frank/acf/acf1g1/working/acf1g1p4.1450',
             tempdir="/home/frank/tempdir", r=5, nxy='2,2', interval=2)#, options='nopass')
```

Out[30]:



(courtesy B. Frank, UCT)

SWAN

- Provides a web-based analysis facility – via notebooks
- Transparent access to scalable back-end analysis infrastructure
  - Clouds, Spark, Hadoop, ML, etc.
- Performance is defined by the infrastructure
- Provides the analysis portal in a “data cloud” or “data lake” model