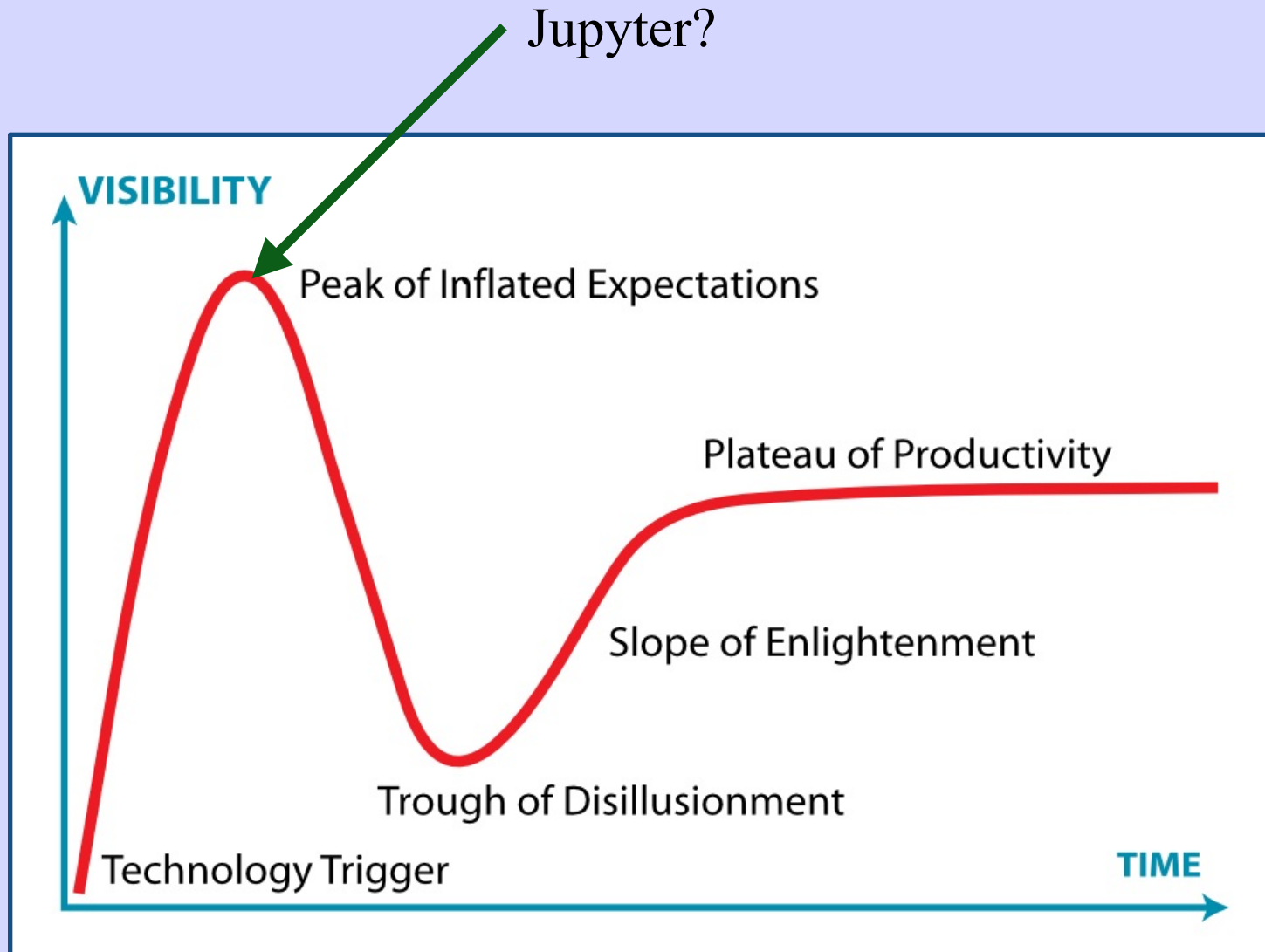


# Notebooks for the VO - hope or hype?

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# LSST "aspects"



INTERNET

## LSST SCIENCE PLATFORM



PORTAL

NOTEBOOKS



WEB APIS



DATA RELEASES



ALERT STREAMS



USER DATABASES



USER FILES



USER COMPUTING



SOFTWARE TOOLS

beginner?

advanced  
user?

power  
user?

## great things about notebooks

- self documenting!
- mix words and code!
- run cells independently!
- lots of Python stuff out there!
- share with my chums!

## bad things about notebooks

- self documenting!
- mix words and code!
- run cells independently!
- lots of Python stuff out there!
- share with my chums!

*pain in the \*\*\*\**

*I will just write a plain script*

- self documenting!
- mix words and code!
- run cells independently!
- lots of Python stuff out there!
- share with my chums!

*code blocks make it  
hard to read*

*wait.. which cell did  
I run just now?*

*wait.. what do I  
have to install?*

*my chum doesn't have  
the same stuff installed*

**solo power user**

**dont want notebooks?**

- need an IDE
- debugging
- variables inspector
- IPython console
- terminal
- etc

*rstudio,*  
*spyder*

*eg run*  
*STILTS*

## Extensions/Jupyter Lab

- bells and whistles improving all the time
- e.g. collapsible cells
- e.g. variables inspector
- Jupyter Lab getting more IDE-like

## Server side setup: Jupyter Hub

e.g.  
Firethorn.py  
NOAO DataLab

- standard installation
- multiple users/groups
- run code near the data
- MyDB/VOSpace facility
- enable distributed querying

*none of this is  
intrinsically  
about **notebooks***



## so what are notebooks good for?

- Tutorials
- Sharing
- Publication

*flexible groups*



*reproducible  
science*



*other people*

# science eco-system

**portal**

Web  
Apps  
client-side IDE

**community**

notebooks  
user logins

**power user**

middleware  
server-side IDE  
Distrib. querying

**consortia**

containerised API  
project apps

# VO eco-system

**DAL**

**Registry**

**VOSpace**

**groups**

**credential delegation**

**code to the data**

**container metadata**

**building block  
registry**