STScI | SPACE TELESCOPE SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

TIKE: Doing TESS Science in the Cloud

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Presentation Topics

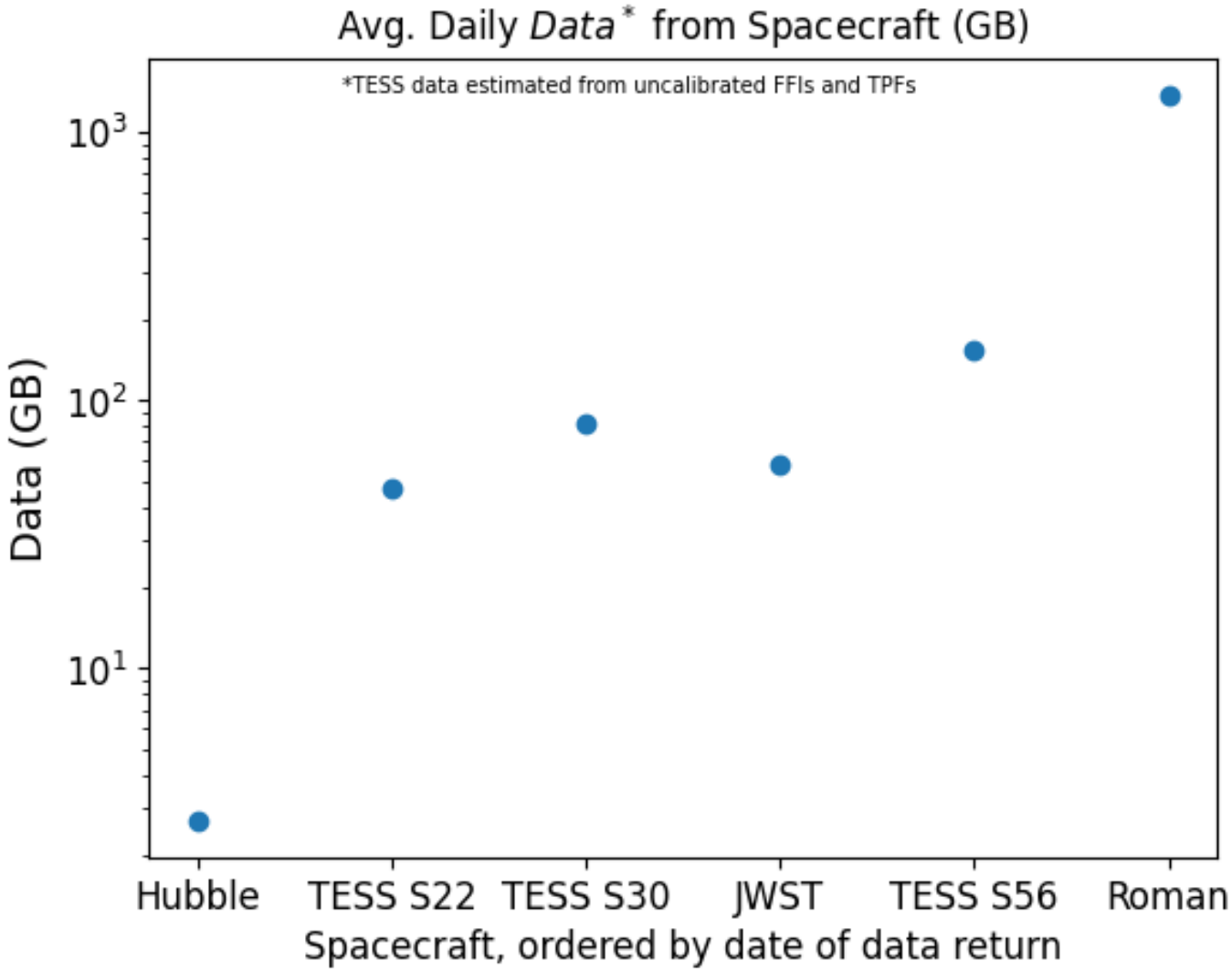
I. Why the cloud? How does TIKE work?

II. Why should I use TIKE?

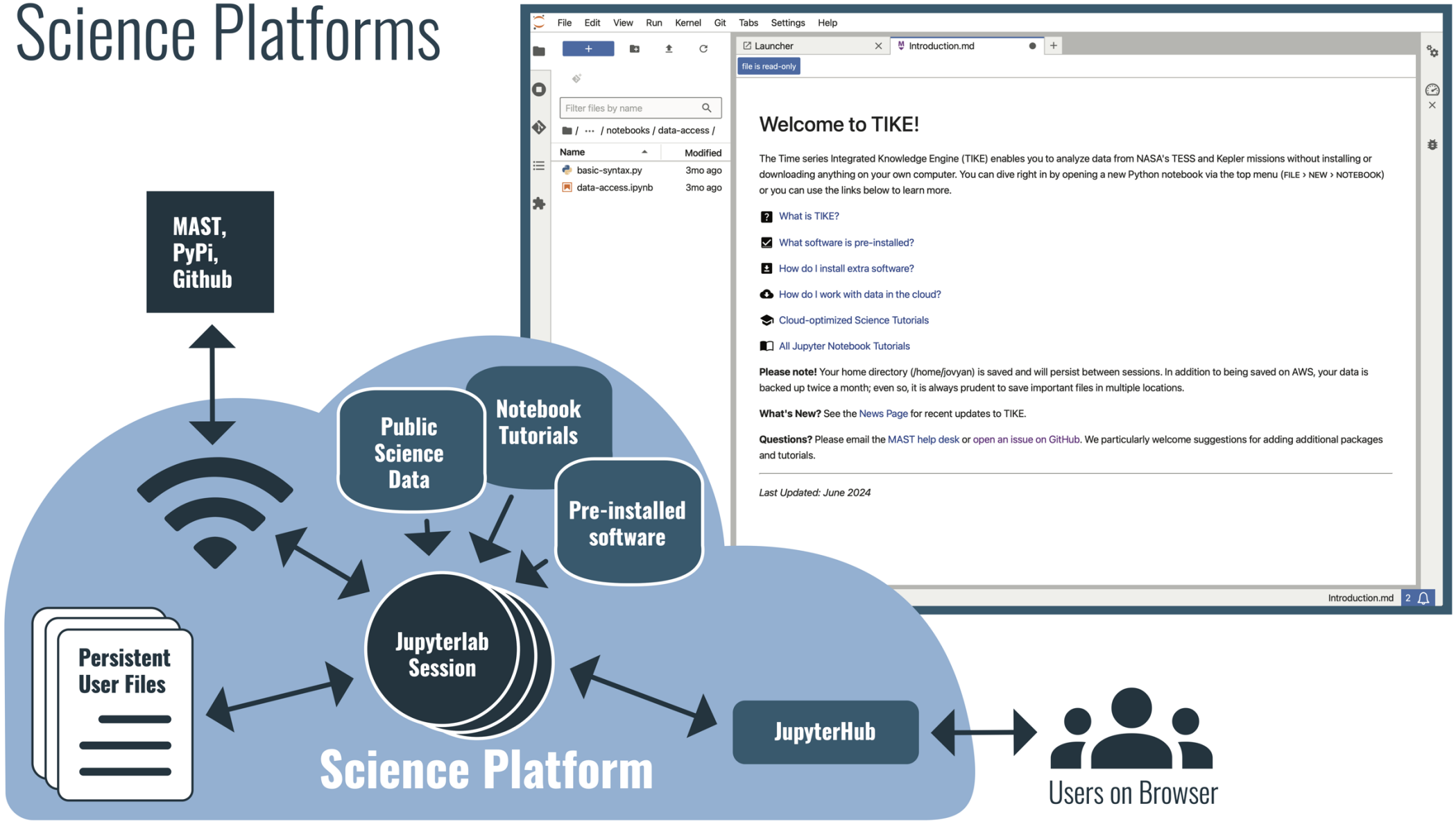
What is TIKE?

Why is TIKE?

- Non-distributable / non-downloadable data
- Even harder to archive than the graph suggests
- Anybody's ISP offer 1Tbps?



Science Platforms



Why should I use TIKE?

timeseries.science.stsci.edu

Notebook Demo

An Honest Review of TIKE from a Completely Unbiased Presenter

Why TIKE is awesome:

- Speed
- Software
- Cost
- Teams*

* coming soon!

"Negatives", minor though they may be:

- Requires a MyST account
- Finite storage
- 0.000000001% data loss

Welcome to the Timeseries Integrated Knowledge Engine (TIKE)

TIKE is a JupyterHub service provided by the Space Telescope Science Institute (STScI), and its main goal is to increase the accessibility of scientific data and software related to the Mikulski Archive for Space Telescopes (MAST).

Why should I use TIKE?

If you access and analyze data from MAST, the Mikulski Archive for Space Telescopes, using TIKE can be incredibly convenient. The primary advantages are:

1. The cloud environment offers quick access to all the data in MAST's AWS Public Datasets; no need to wait for a download to complete.
2. As data volume from missions continues to grow, it will not be practical to store files of interest on your local machine. As an example, TESS now produces about 7 TB of calibrated images every 27 days. Future missions, like the Roman Space Telescope will produce equally large files.
3. Works "out-of-the-box": installation is not required. TIKE includes many common packages relevant to the hosted missions; this includes generic packages like pandas and numpy, in addition to astronomy-specific ones like astroquery and lightkurve.

What data are available on TIKE?

Any data hosted in MAST's AWS Public Datasets are available on TIKE. Our initial focus is on time series data, such as those available from the TESS, Kepler, and K2 missions. Data from Hubble and GALEX are also available. We're working hard to make more missions available on the cloud, so stay tuned.

Getting Started with TIKE

To get started, click "Start server" below.

Select Environment:

(●) **MAST Classes Summer 2024 Part 2. tike-0.13.1 (June 24, 2024)**

Full package overhaul. Phasing out September 30, 2024. Your files will persist.

Please see the list of installed packages for details on the available software.

( ) **General Update tike-0.12.3 (June 18, 2024)**

Python-3.11 update. Added astrocut. Phasing out Nov 1, 2024. Your files will persist.

Please see the list of installed packages for details on the originally available software, minus astrocut.

Start server