

Funding of Observatory Operations

Rich Matsuda, Maunakea Observatories Representative
MKSOA Board Meeting
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MKSOA Board Assignment:

Explain how observatory operations are funded.

- Intention: To provide background information so that MKSOA board members are able to make informed decisions regarding the transition and development of a management plan.
- Objective: Overview of where funding flows and for what purpose.
- Disclaimers:
 - This explanation is to the best of my knowledge.
 - No detailed funding amounts.
- This assignment highlights the need to create an Astronomy Advisory Group that can respond to MKSOA queries like this.

Mutual Stewardship Paradigm



- I acknowledge this presentation is sharing information about just one of many concerns and interests on Mauna Kea.



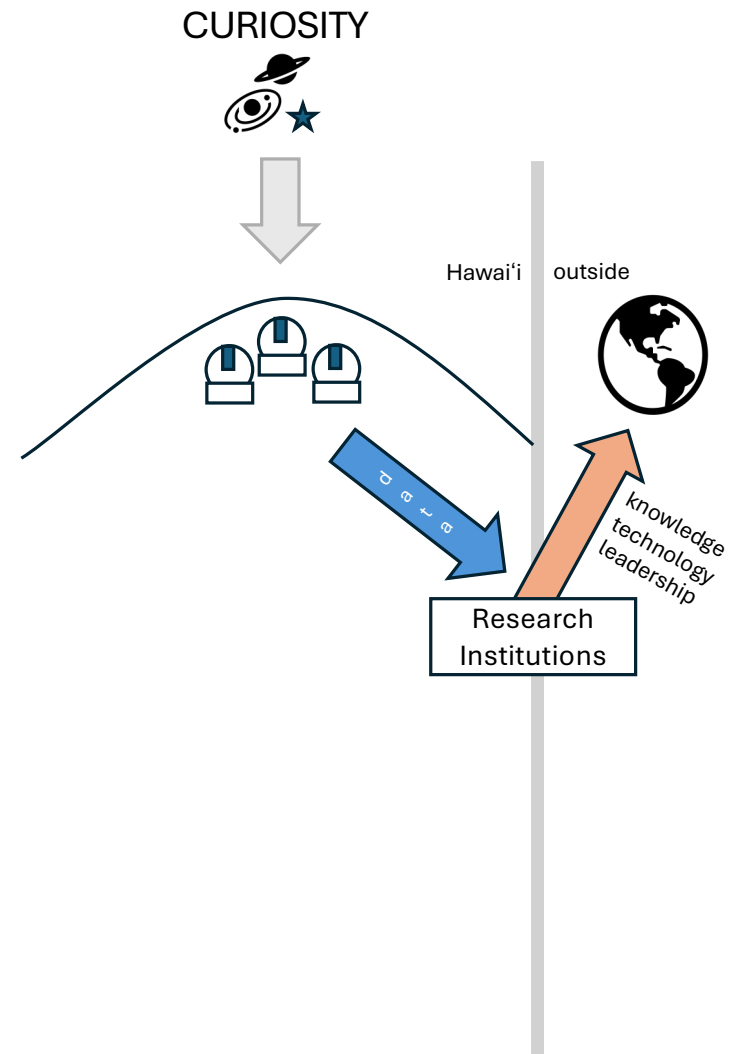
“Mauna Kea serves as an important cultural and genealogical site to the people of Hawaii, particularly to Native Hawaiians. The summit region of Mauna Kea is a spiritual and special place of significance that is home to cultural landscapes, fragile habitats, and historical and archaeological artifacts.”

- HRS 195H

The legislature formed the MKSOA “...to protect Mauna Kea for future generations and manage the lands contained therein for the purpose of fostering a mutual stewardship paradigm in which ecology, the environment, natural resources, cultural practices, education, and science are in balance and synergy.” – HRS 195H

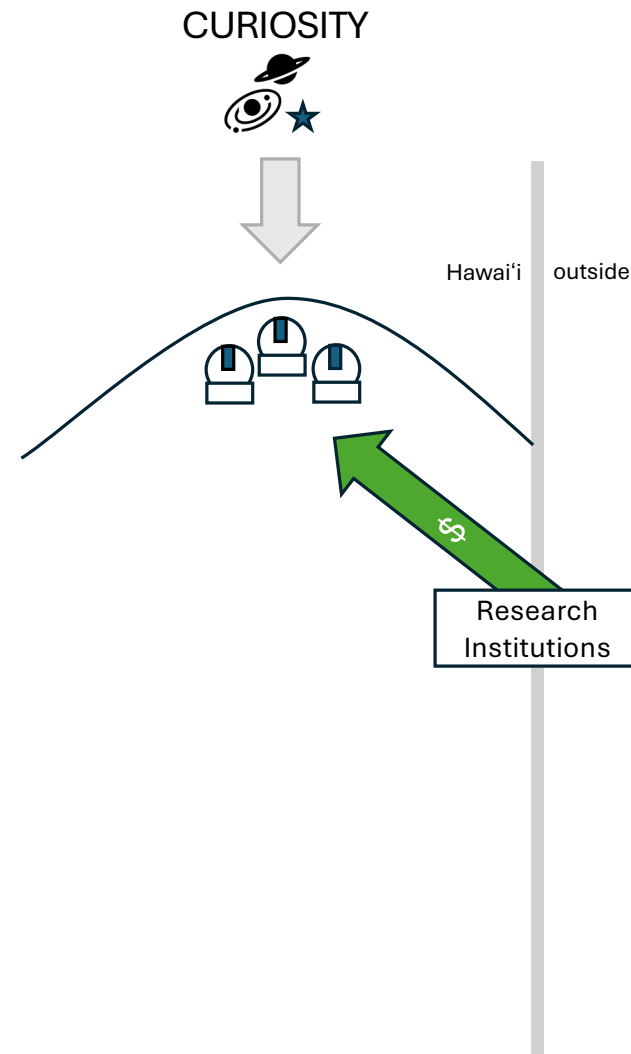
Observatories Objective

- The study of astronomy is driven by CURIOSITY
 - Where do we come from?
 - Are we alone?
 - What is our fate?
 - How does the universe work?
- Telescopes view the universe and turn star light into data.
- Astronomers at research institutions study and analyze the data, deriving new knowledge about the universe.
- This knowledge is shared freely with the world, along with the technology developed to measure the universe.
- Knowledge from Maunakea fosters scientific leadership.



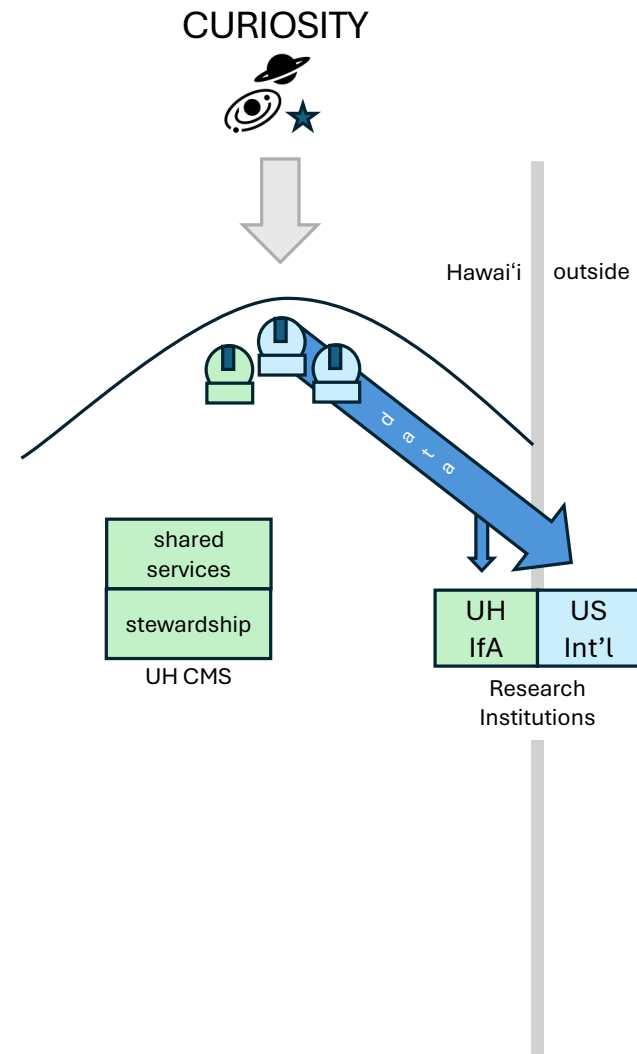
How Observatories are Funded

- Maunakea is a superb site for astronomical observations
- Over the years, research institutions have funded the construction and operations of their observatories.
- The observatories are non-profit. They spend the funds on operating the telescopes and do not create revenue for the research institutions.
- Institutions enter into scientific partnerships that help fund operations, new instrumentation, and infrastructure projects and are provided access to viewing time.



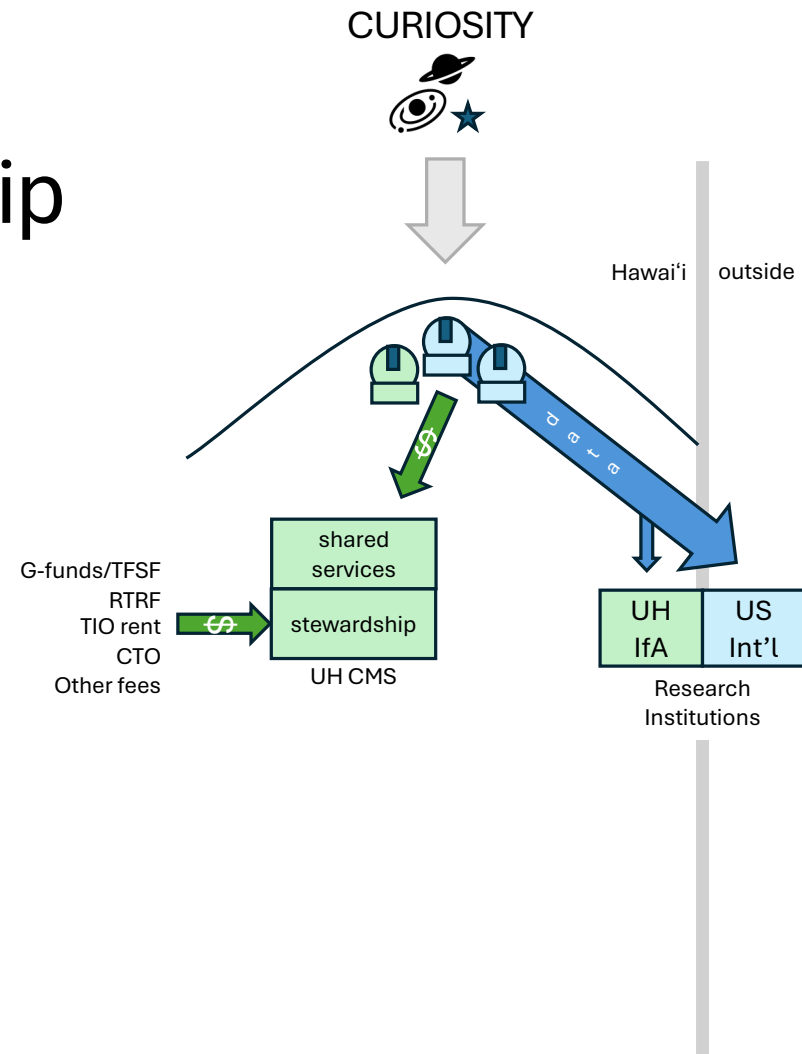
Observatory Access and Observing Time

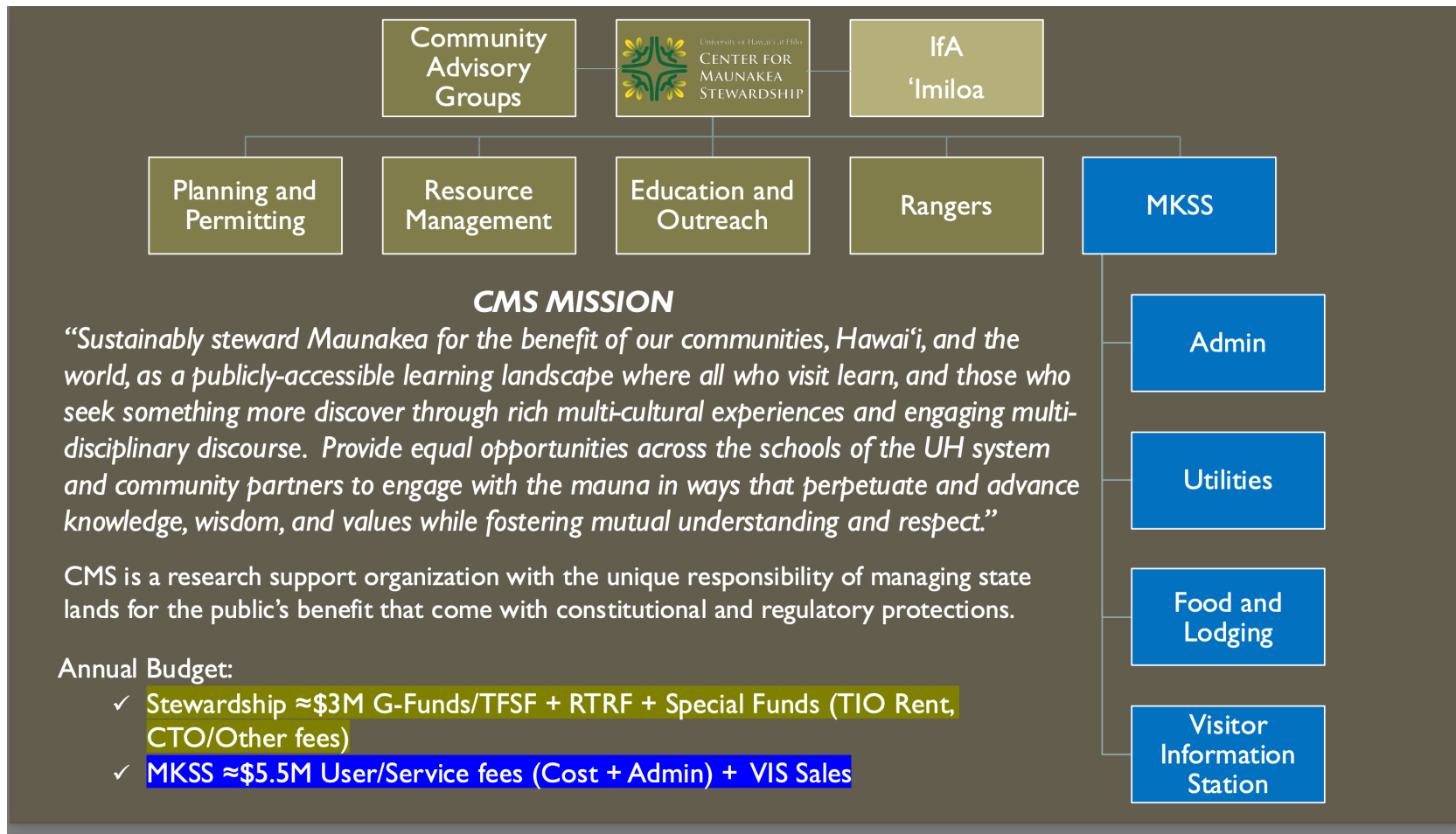
- Some telescopes are owned by UH (green)
- Some telescopes are owned by institutions from outside of Hawaii (light blue)
- UH has provided stewardship for the science reserve (up until the MKSOA was formed)
- UH holds the master lease which expires in 2033. The non-UH observatories have subleases with UH.
- UH has provided shared services (e.g. road maint, snow removal, Hale Pohaku) at cost to the observatories.
- The non-UH observatories provide a portion of their viewing time to UH Institute for Astronomy (10-15% of nights) for access to operate on Maunakea



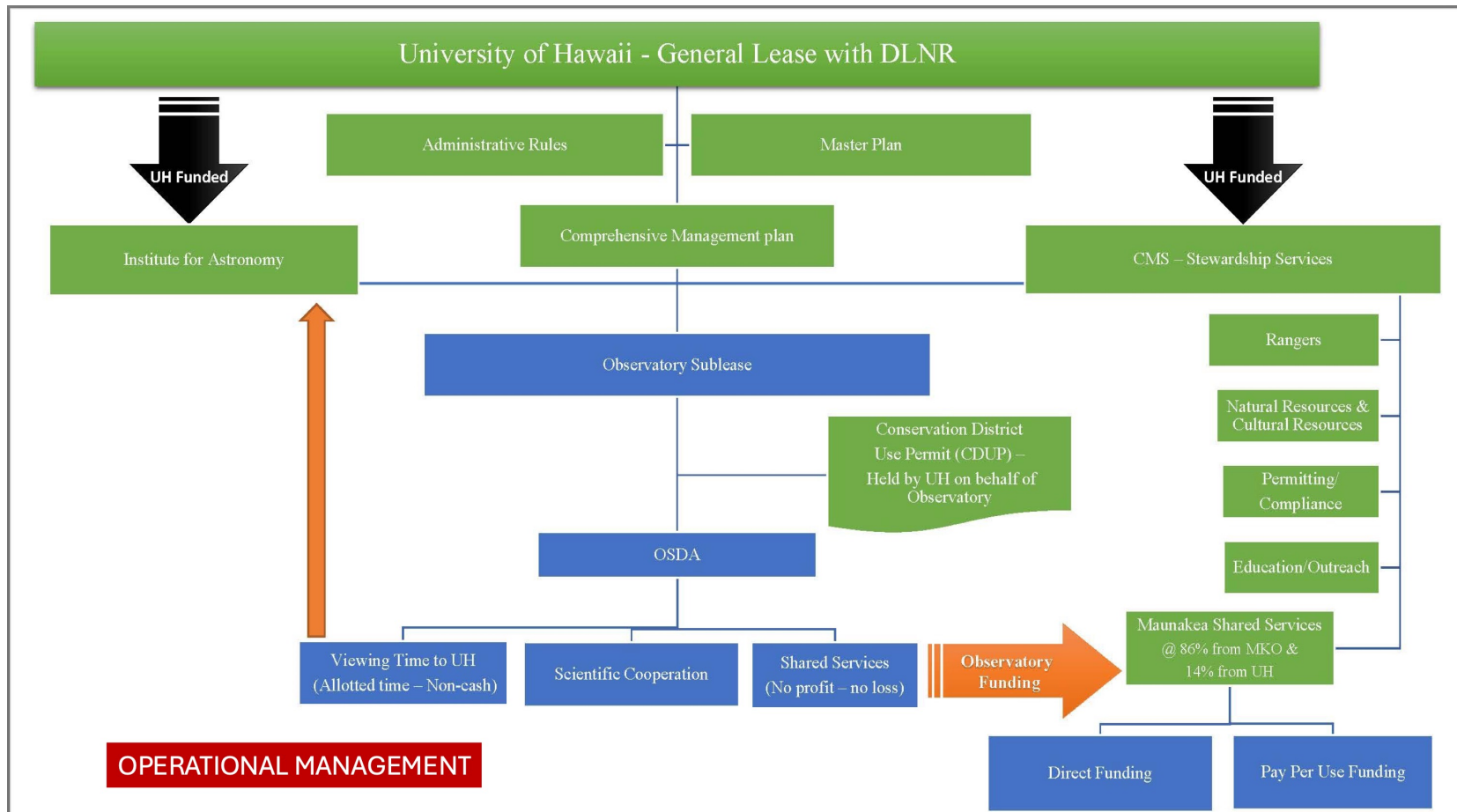
Center for Maunakea Stewardship

- UH funds stewardship through a combination of funding sources.
- The observatories are the primary funders of shared services provided at cost by CMS - road maintenance, snow clearing, Hale Pohaku food and lodging, Visitor Information Station, etc.





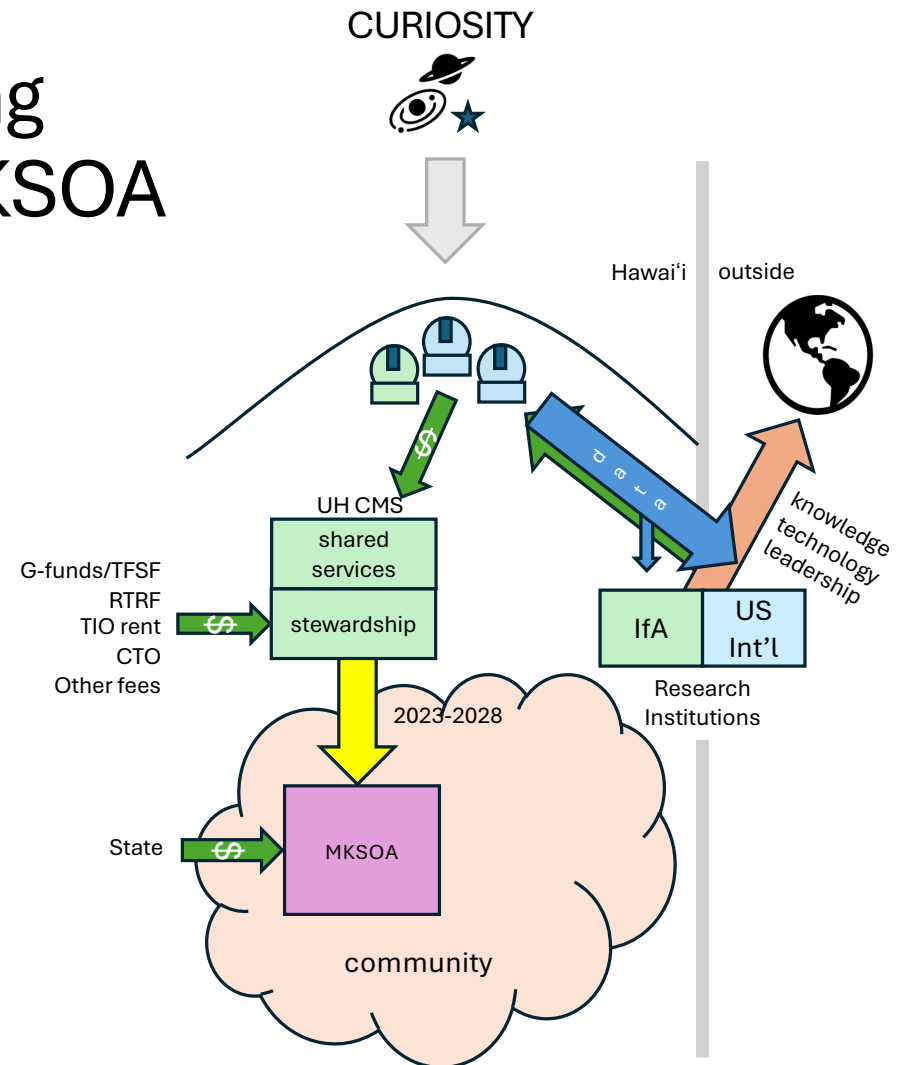
From MKSOA Board Meeting March 13, 2025, Agenda Item VIII.B.1.b. CMS Fiscal Overview TWG Presentation



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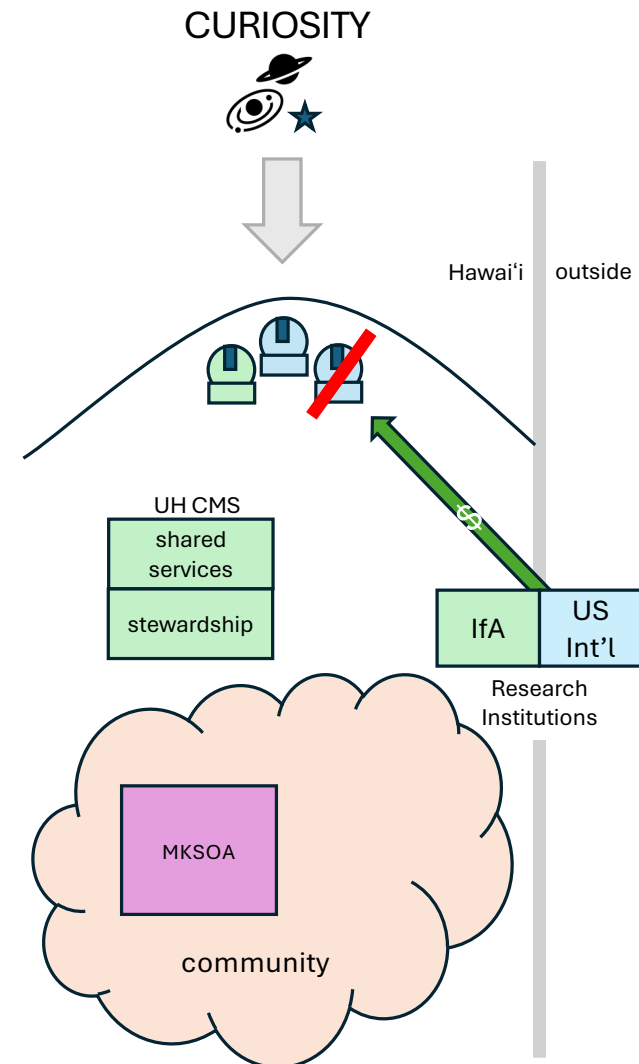
How Things are Changing with the transition to MKSOA

- The responsibility for stewardship of Maunakea is transitioning from UH CMS to the MKSOA
- Funding for MKSOA is currently coming from the state
- The intent of the MKSOA is mutual stewardship of Maunakea by the community



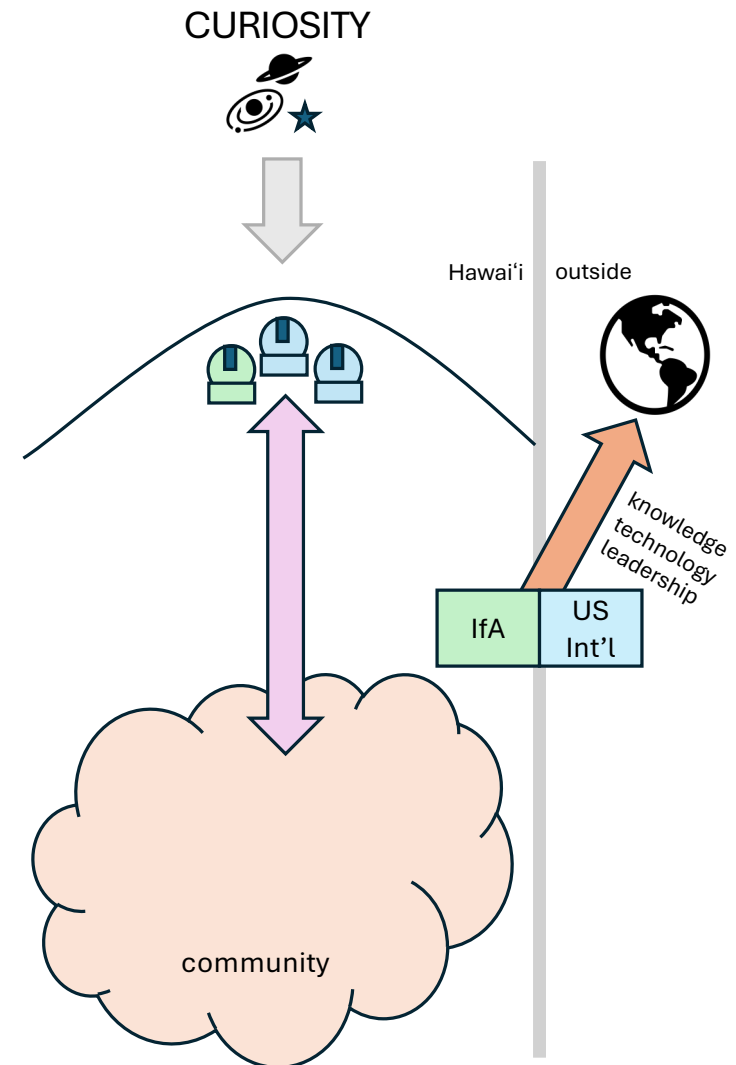
De-Commissioning

- When a telescope is de-commissioned, it is the research institution's responsibility to fund the removal and site restoration.
- Post-2028, the MKSOA will manage the decommissioning process.



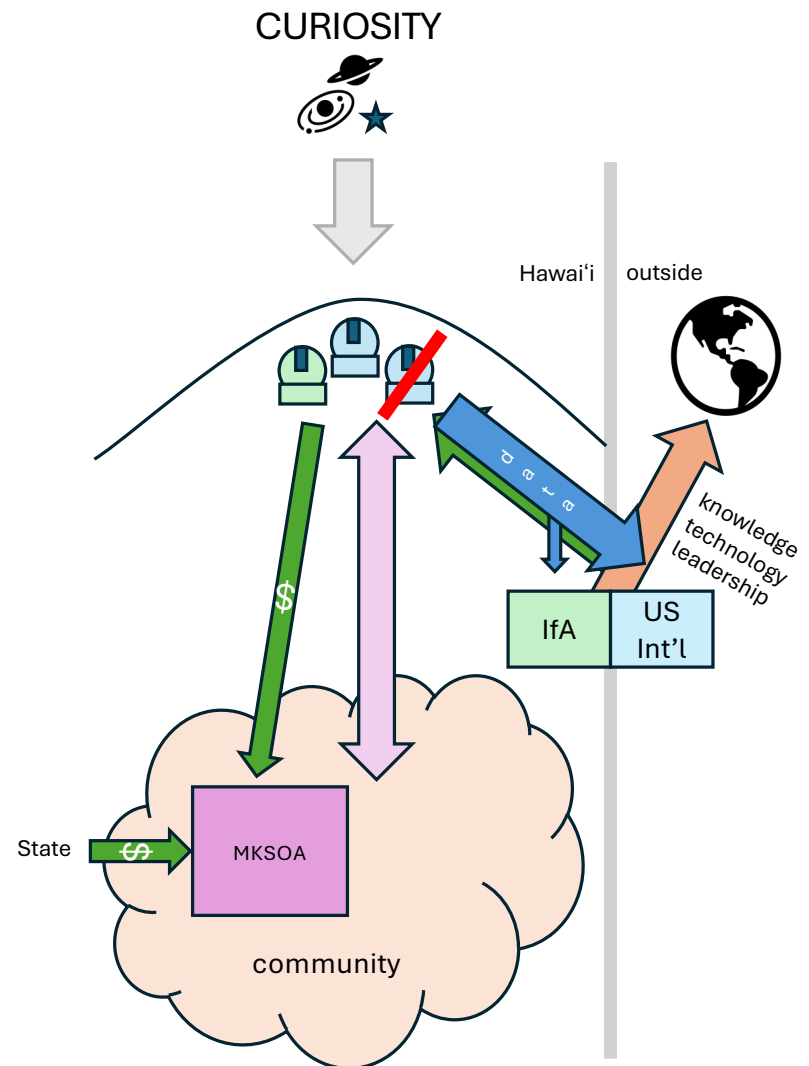
MKO's Relationship with Community

- Reciprocity
- Workforce Development
- Educational Opportunities
- Economic Impact



Future Vision?

- Up to us, working with community and stakeholders.



Summary

- Understanding observatory operations funding informs the MKSOA's planning and stewardship decisions.
- In order to fulfill our mutual stewardship mandate, we must build greater mutual understanding of “*ecology, the environment, natural resources, cultural practices, education, and (other) science*”.