

# Gemini Observatory Update

**Subaru Users' Meeting, 2025jan28-30**

**Atsuko Nitta, Andy Adamson, Gemini staff**

**Gemini Observatory/NSF's NOIRLab**

1. Ops update & Statistics
2. Instrumentation news
3. Other activities

# Gemini Leadership Team Updates

- The Gemini Director Search is nearing completion! We expect the new Director will be stationed at Gemini North.
- Diego Correa, Gemini Head of Finance, departed NOIRLab on 31 October. Jennifer Liu, AURA, serving as interim Gemini Head of Finance.

# Operations Update



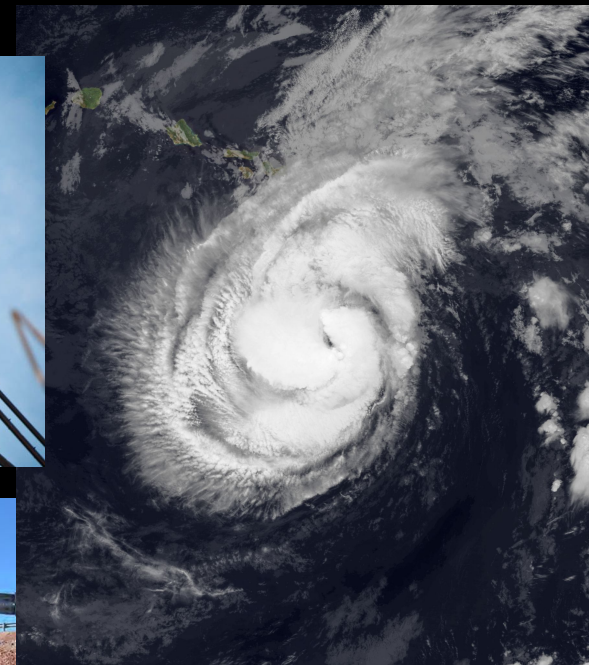
# Gemini North: Operations Update

## Recent Accomplishments:

- ❖ IGRINS-2 offered for shared risk science in 2025A.
- ❖ M2 procurement with Logistlab in progress.
- ❖ UPS replacement on the summit in August. (This was a two-year effort.)
- ❖ Completed the annual shutdown in November on schedule - the acquisition and guidance system, encoder maintenance, cooling line replacement.

## Challenges:

- ❖ GNIRS camera turret issue (repair work starting June 2025)
- ❖ Hurricane Hone impacted operations on Maunakea in late August. Over 10 inches of rain on the summit over 24 hours. Significant erosion on the summit and access road.





# Gemini South: Operations Update

## Recent Accomplishments:

- ❖ GHOST in regular science operations from 2024B.
- ❖ Completed the annual shutdown in August on schedule - the acquisition and guidance system and the replacement of the helium lines in the cass wrap.

## Challenges:

- ❖ Winter weather persisted on Cerro Pachon resulting in significant weather loss.
- ❖ Astigmatism issue following the shutdown that was resolved by extensive troubleshooting and actuator work.



# Statistics

# Proposal Routes

**Spring (A) & Fall (B) Semester:** Regular programs (NTAC, ITAC)

- BI-ANNUAL; queue, classical, ToO, priority visitor eavesdropping

**Large & Long Programs:** Large allocation and/or multi semester (LLP TAC)

- ANNUAL; queue, ToO, and priority visitor, eavesdropping

**Fast-Turnaround:** Immediate, short and/or follow up (Peer review)

- MONTHLY; queue, ToO

**Director's Discretionary:** Special opportunities (DD TAC team – Chief Scientist)

- Open call (worldwide); queue, ToO

**Poor Weather Programs:** Bright targets and guide stars (Head of SciOps)

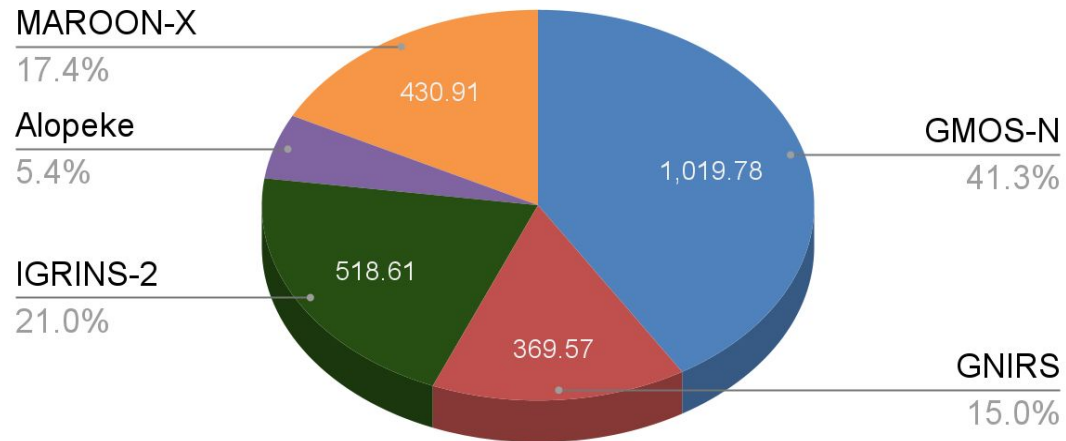
- Open call (Gemini community); queue

Note - we enable DARP, by Partner choice

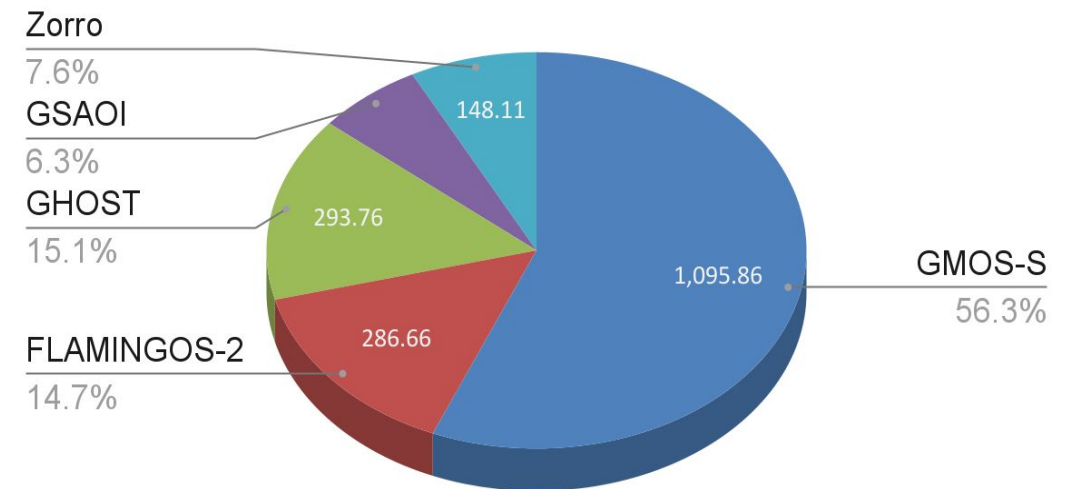


# Instrument Demand 2025A

Fraction of Time by Instrument: Gemini North 2025A



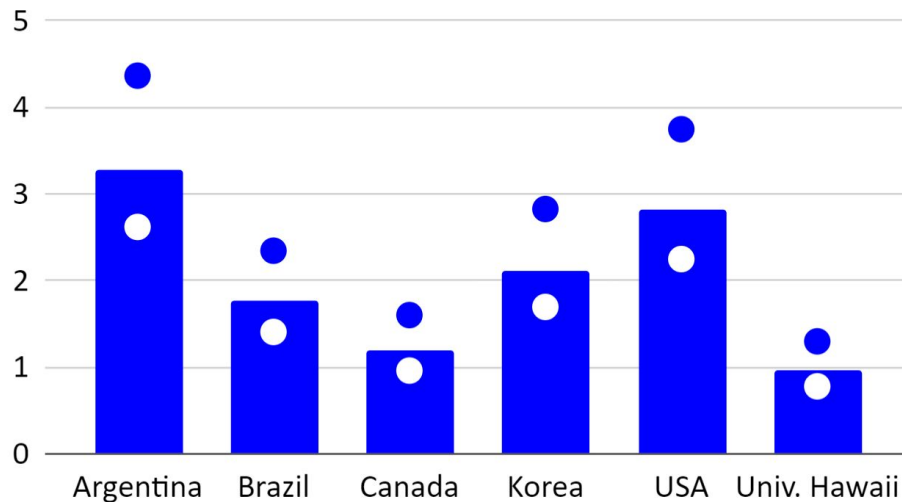
Fraction of Time by Instrument: Gemini South 2025A



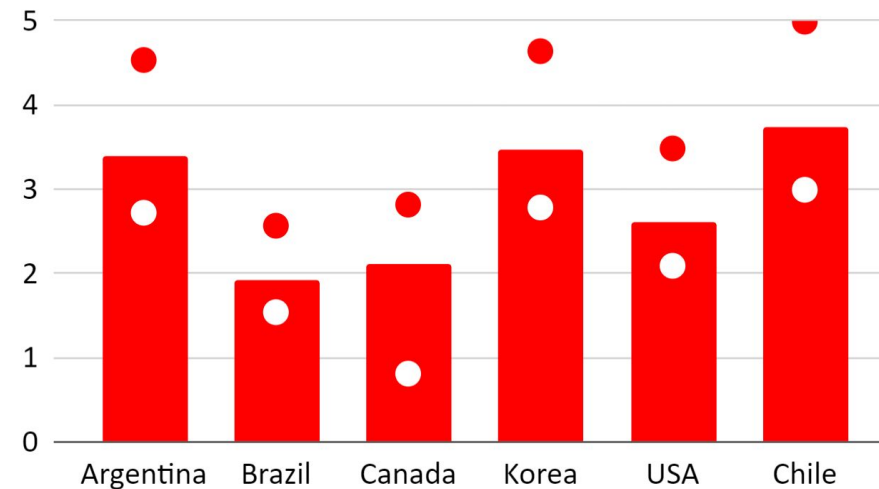
Instrument demand in 2025A highlighting the impact of new instruments, **GHOST** and **IGRINS-2**.

# Regular Queue Demand

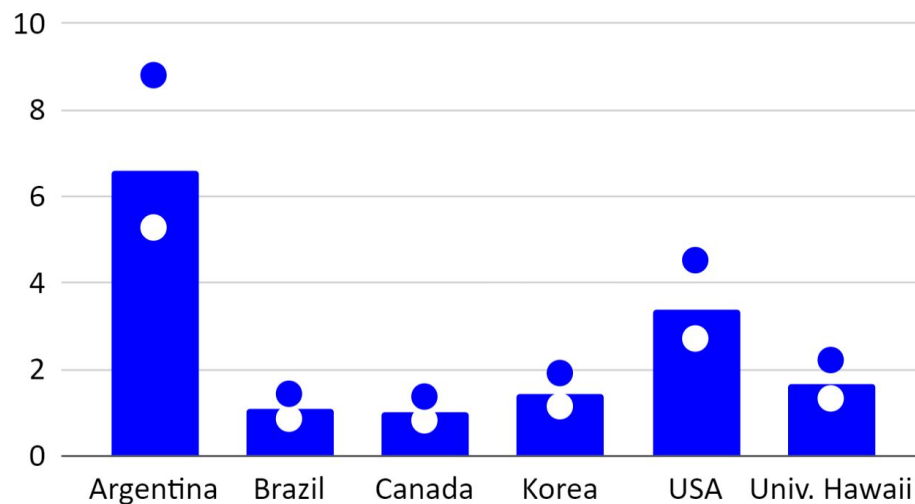
Gemini North 2024A Oversubscription



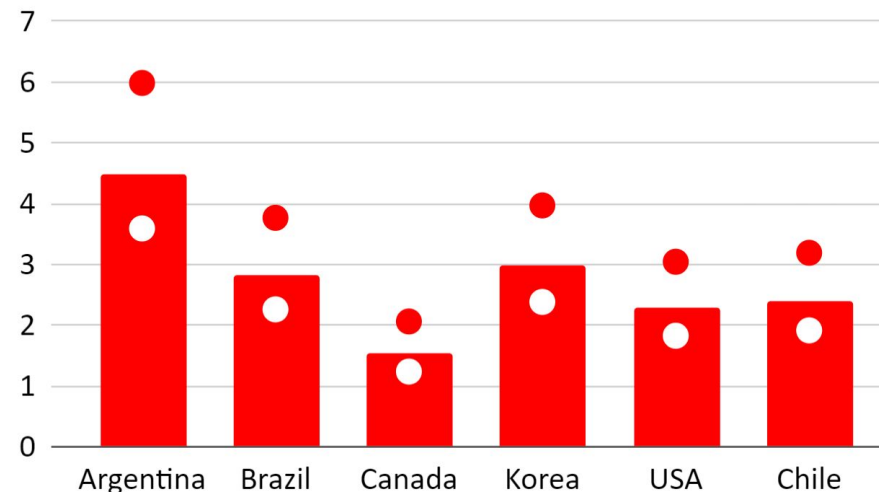
Gemini South 2024A Oversubscription



Gemini North 2024B Oversubscription



Gemini South 2024B Oversubscription



# Long & Large (LLP)

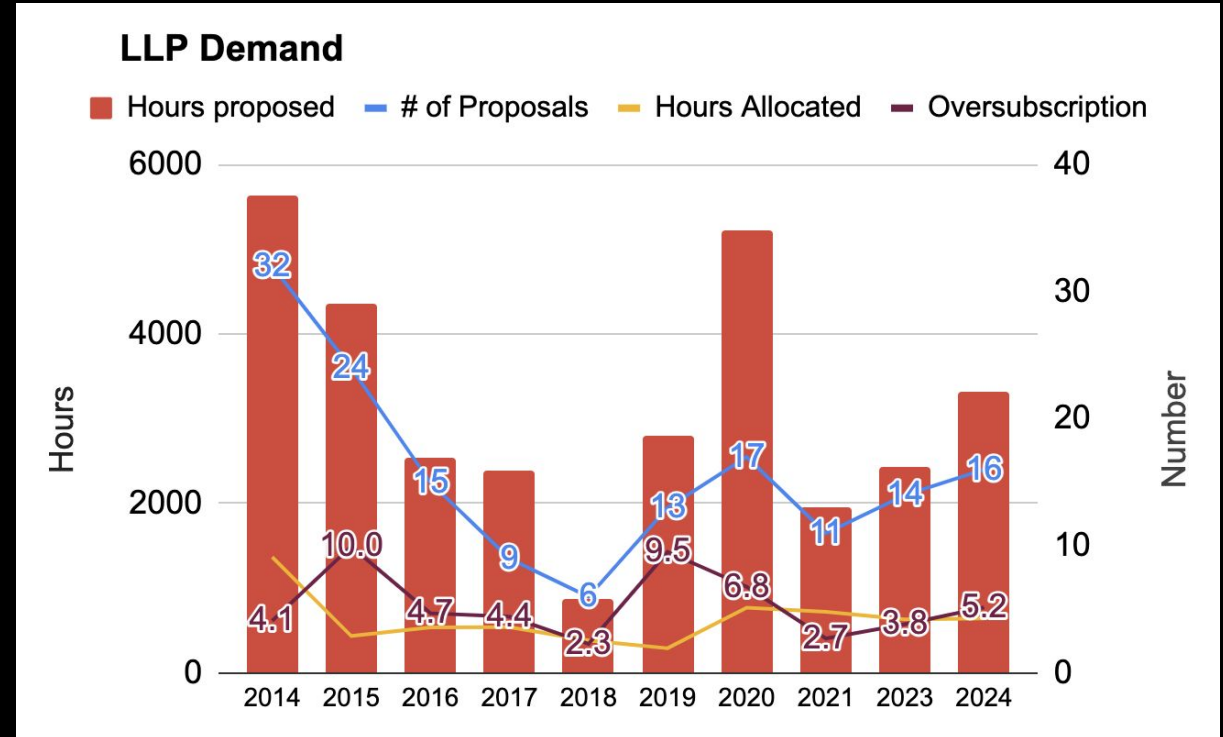
**Gemini - Subaru Exchange time allows**

**ONE LLP and  
ONE Subaru Intensive program**

**at the same time.**

**2025feb14 : Letter of intent**

**2025mar31: Proposal deadline**



## Notes

2021 - offered **Band 2** only

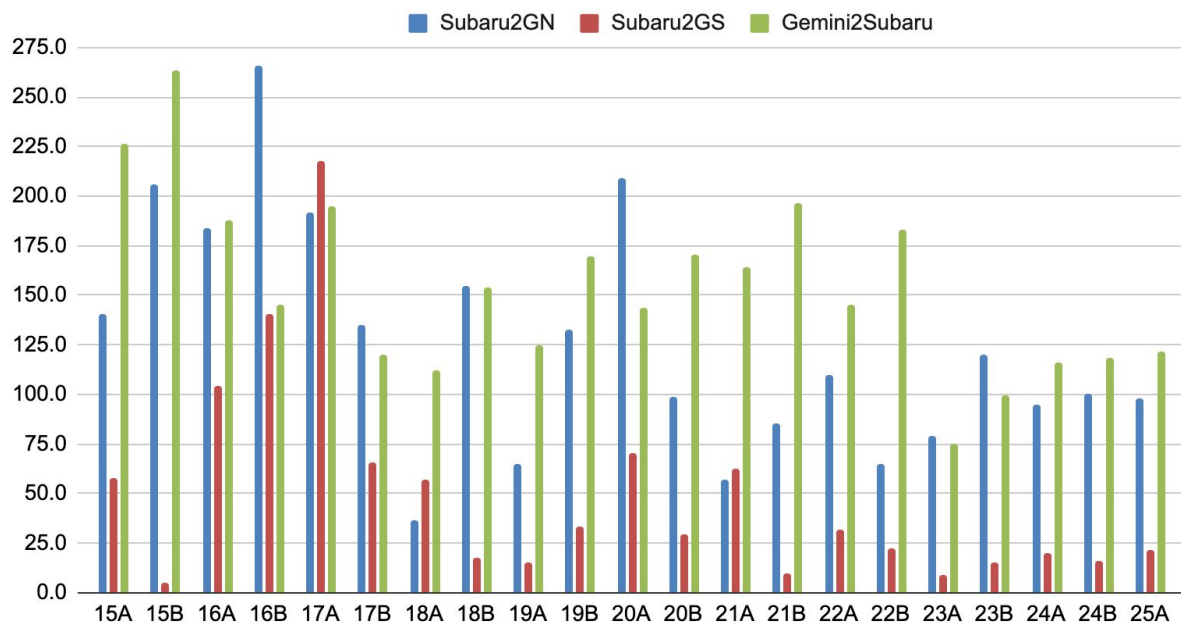
2022 - no call

LLP Coordinator : **Jennifer Andrews** ← **Sandy Leggett**

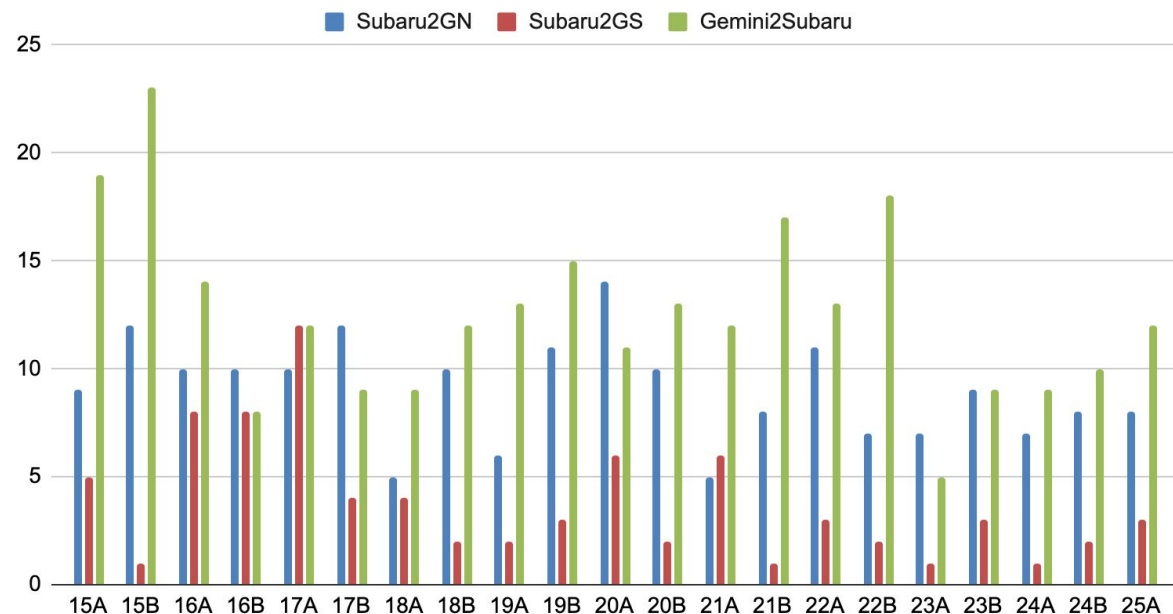


# Subaru/Gemini Exchange Time

Number of Hours of Time Requested via the Subaru/Gemini Time Exchange Program



Number of Proposals Submitted via the Subaru/Gemini Time Exchange Program



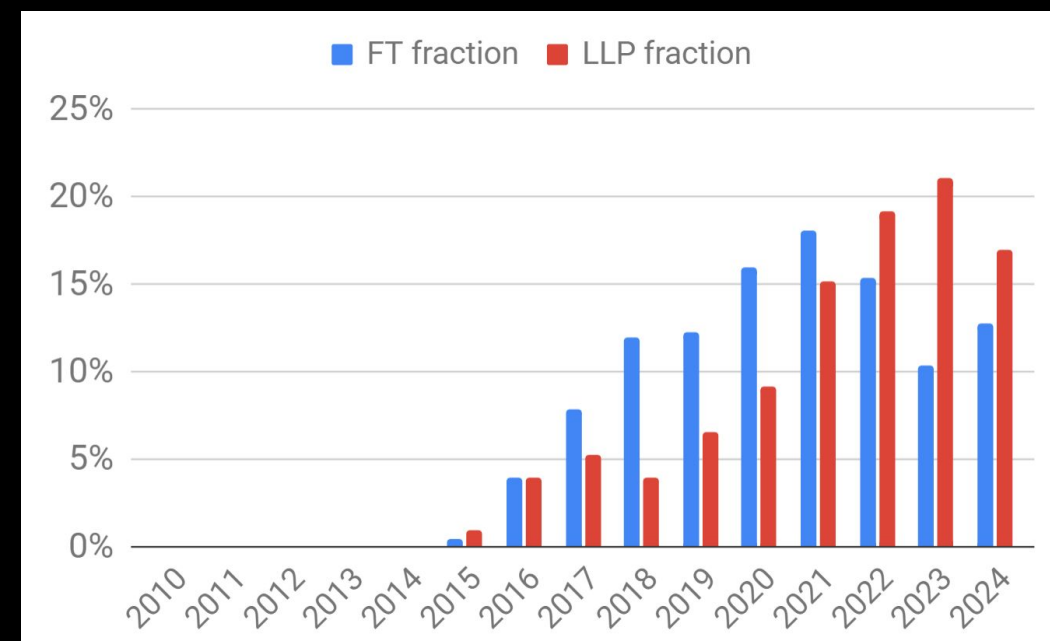
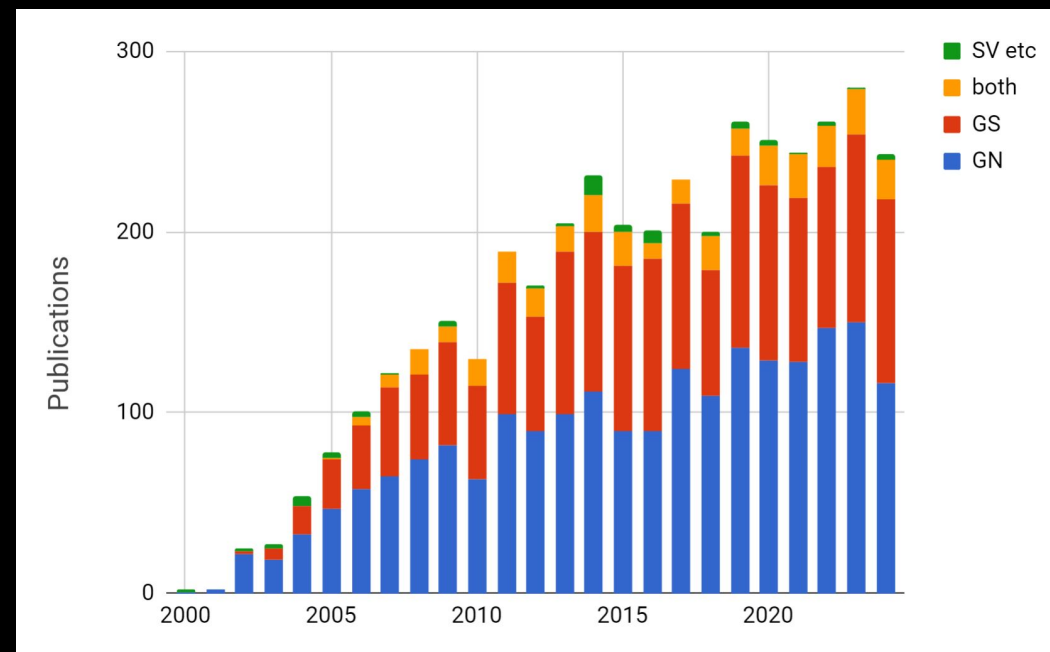
Requested hours seem steady but the number of proposals increasing in the past couple years.

# Publications

- **117 programs** in 2024 were thesis projects.
- GN publication decline might be due to combo of incidents one after another - 2020 COVID, 2022-2023 GN extended shutdown due to M1 damage, 2024 Cyber incident, 2022 JWST operations.
- Fast Turnaround (FT), Large & Long Program (LP) contributes significantly to the publications

## Publications from Exchange Time (incl FT, DD)

- 2023: Total 9 papers [ 3 from Gemini community and 6 from Subaru community.]
- 2024 : Total 8 papers [ 4 from Gemini community and 4 from Subaru community].
- 2025: Total 5 papers already! [2from Gemini community, 3 from Subaru community]



# Instrumentation



# Gemini 2.0

*A major revitalization of Gemini Observatory  
capabilities and instrumentation*



IGRINS-2

GN M2

GNIRS LR IFU

GNIRS HR IFU

GPI 2.0

MAROON-X

GNAO+  
GIRMOS

23A

23B

24A

24B

25A

25B

26A

26B

27A

27B

28A

28B

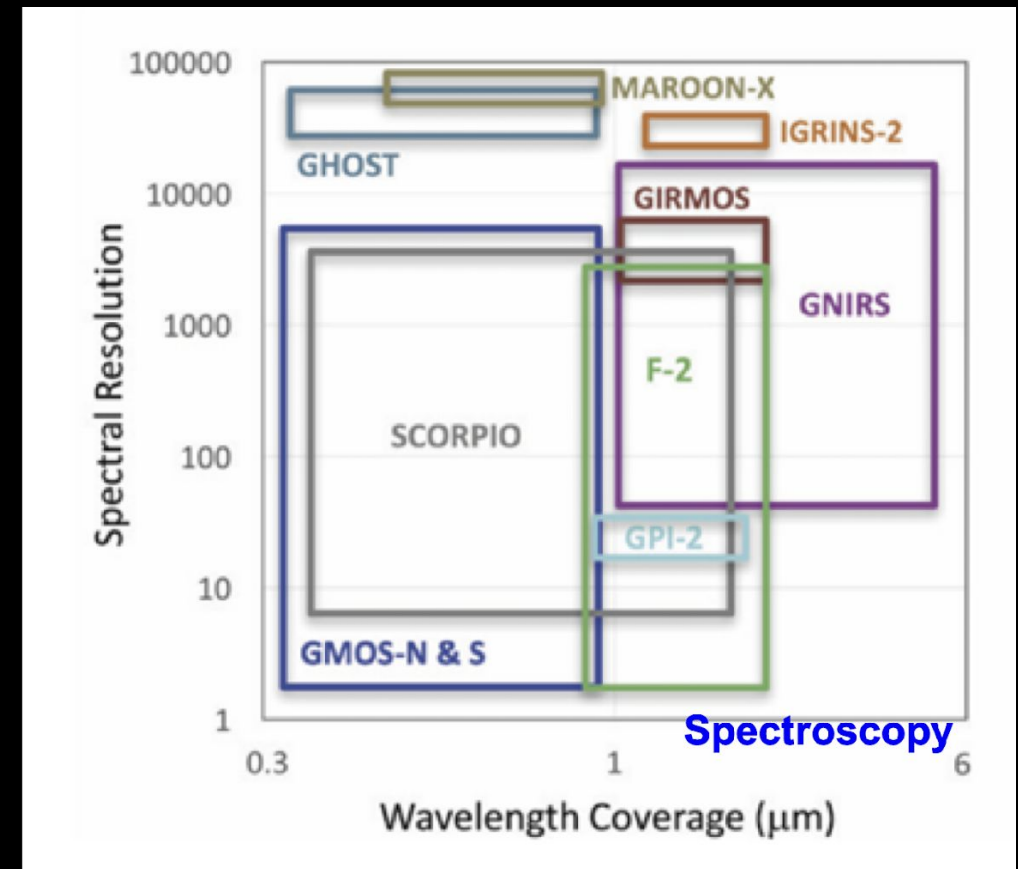
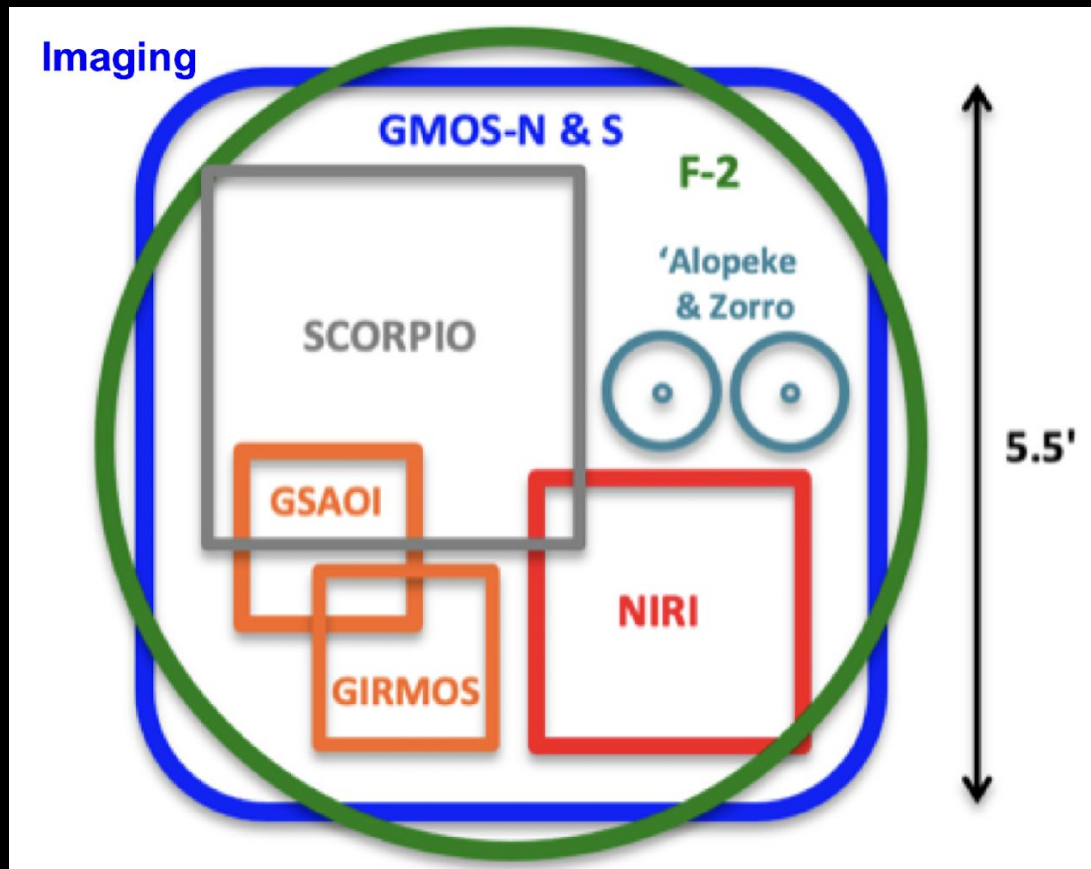
GHOST



SCORPIO

Rubin  
Sci Ops

# Current and Future Gemini Instruments



2023: **GHOST**, **GNIRS IFUs**

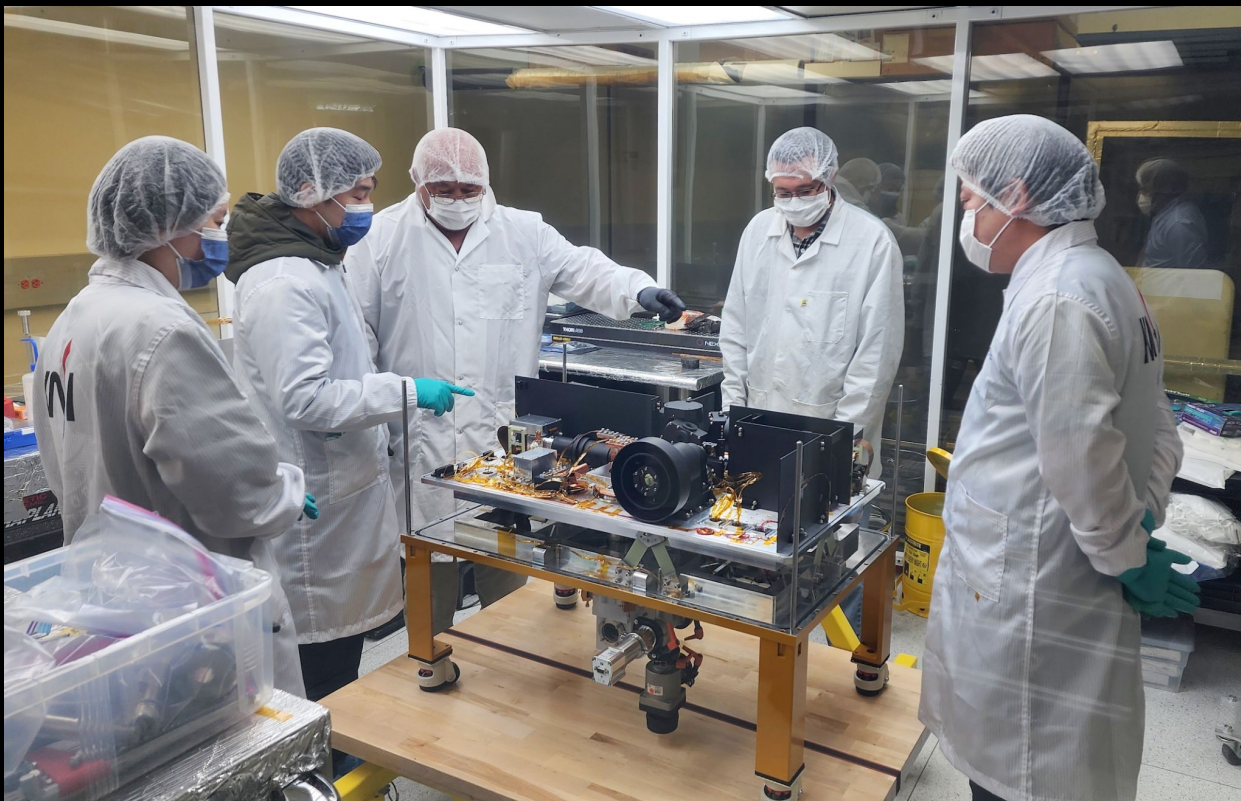
2024: **IGRINS-2**

2025: **GPI-2**(not for ops until later)

2026: New M2, **SCORPIO** (shared risk in 2027)

2028: **GNAO + GIRMOS**

# IGRINS-2 Offered in 2025A

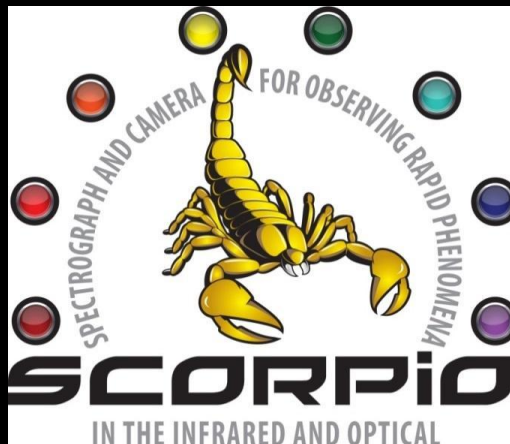


- The new, high-resolution ( $R \sim 40K$ ) Immersion GRating INfrared Spectrograph-2 (IGRINS-2) for Gemini-North.
- Designed and fabricated by the KASI team.
- System verification run completed in July 2024.
- Servicing mission conducted in October 2024.
  - Removed loose bolt
  - Replaced power supplies
- Offered to the community in shared-risk mode in 2025A.





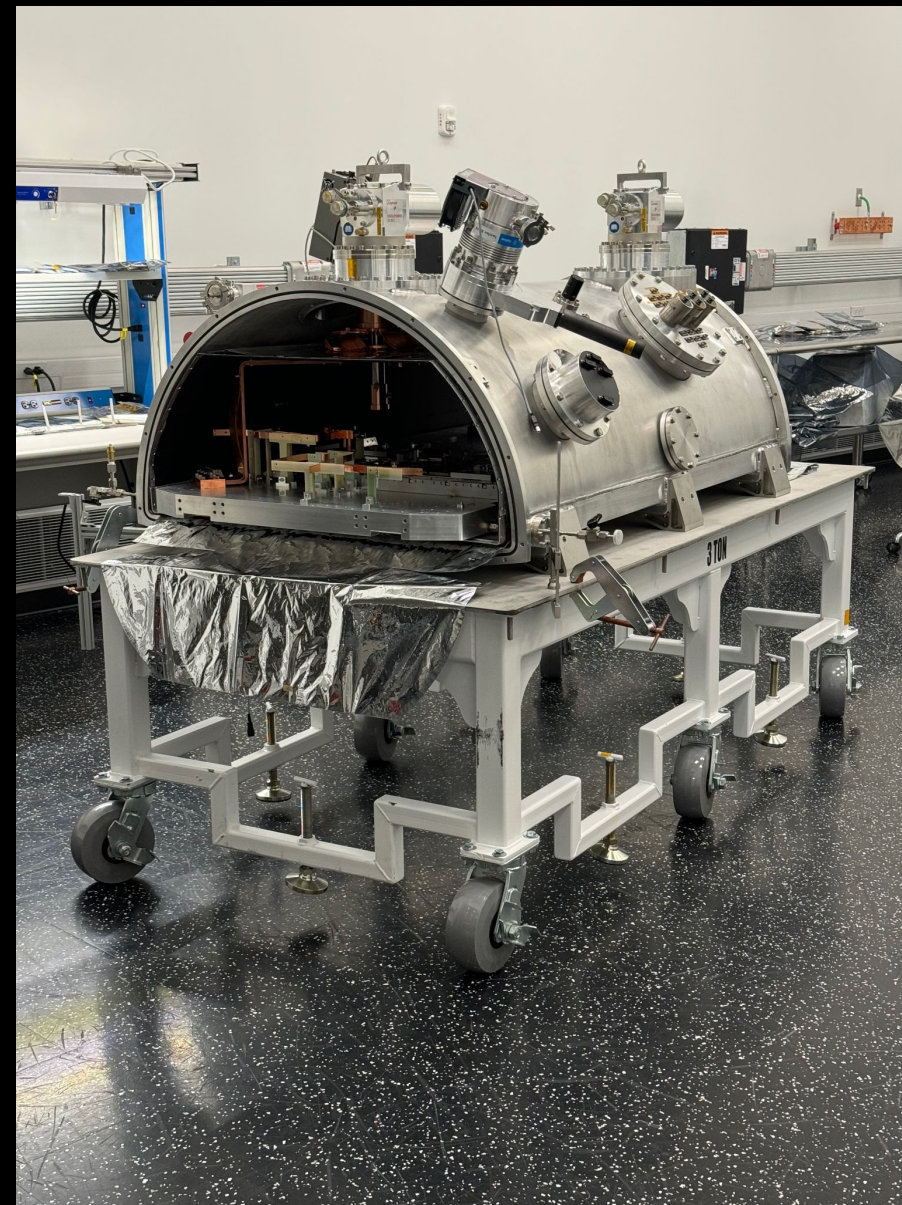
# SCORPIO



## Work-horse capability for time-domain science

Simultaneous 8-band optical/near-infrared imager and spectrograph built by SwRI , FRACTAL, JHU, STScI.

- Second cool down of the cryostat completed in November at SwRI,
- All major components arrived to Madrid on Jan27. FRACTAL will unpack starting Jan29. FRACTAL will perform the Assembly, Integration and Verification (AIV).
- NOIRLab-Gemini staff will augment on-site at FRACTAL during the AIV phase.
- Delivery to Gemini South ~August 2026.



# GNAO & GIRMOS Status



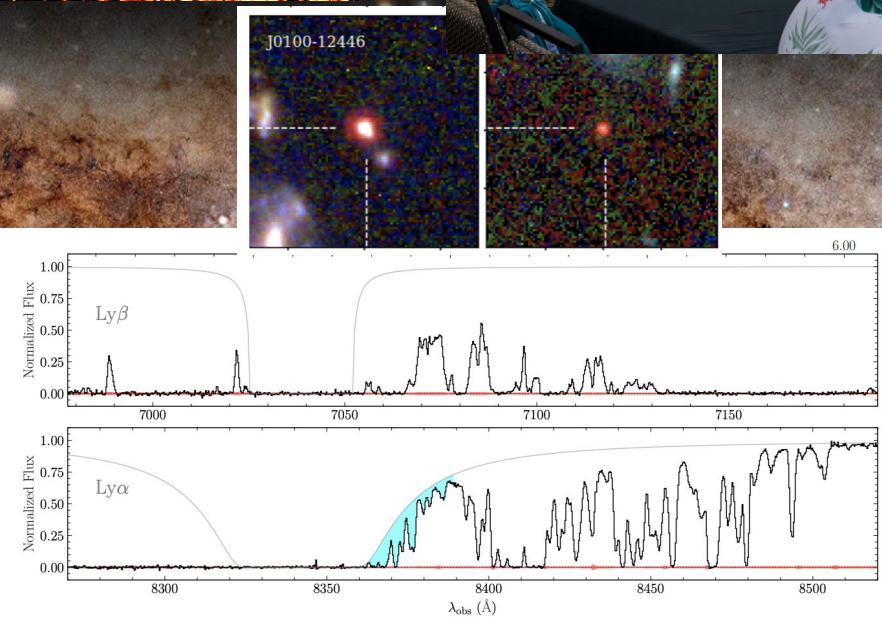
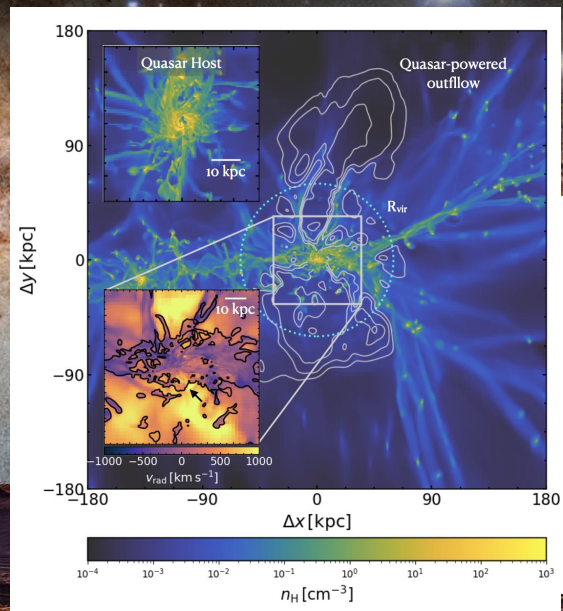
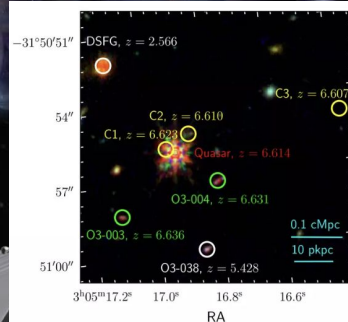
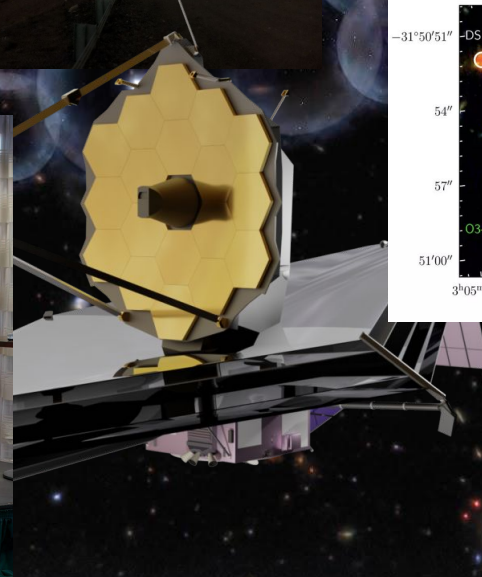
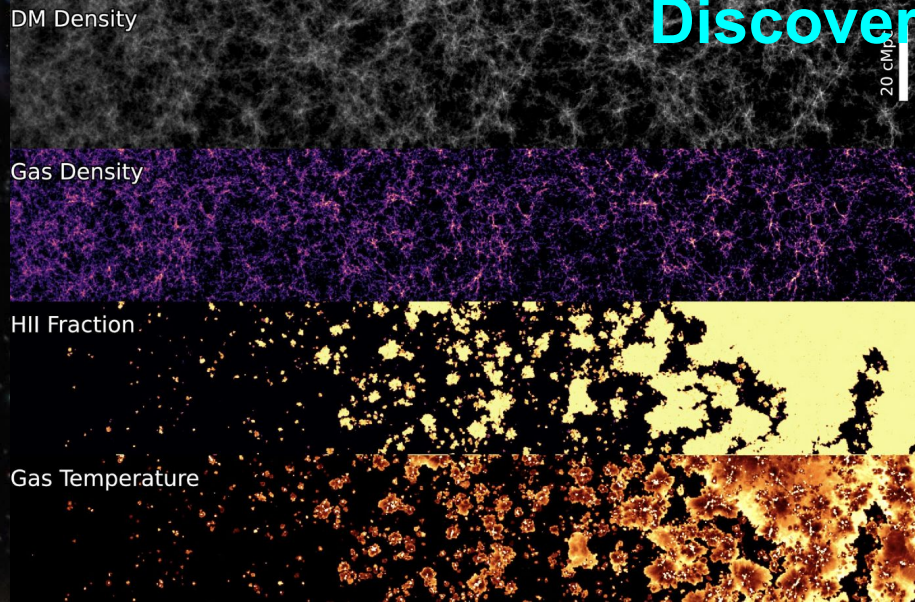


And ...



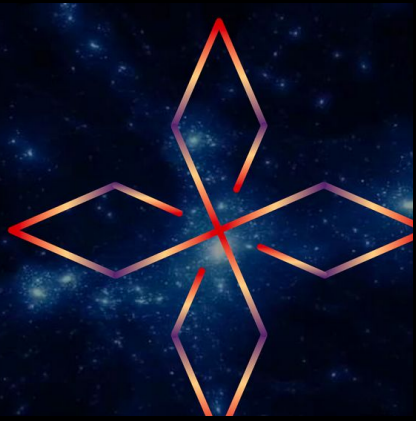
# The First Gigayear(s) Conference

Discover the Universe (and Hawai'i)





# Shadow the Scientists(StS) Initiative



- **2024nov15 Subaru StS in Japanese** with Jameeka (UC), Brian Lemaux (Gemini) + Kodama san (PI), Usuda Kumiko san (Facilitator), Tanaka Ichi san (Support Astronomer)!
- Canada (in French) session in Feb2024.
- Couple Indian session attended by hundreds of students!
- StS for first time users to assist in their phase2 prep.
- [shadow@ucsc.edu](mailto:shadow@ucsc.edu),  
[gn-shadow@noirlab.edu](mailto:gn-shadow@noirlab.edu)

Hawaiian Islands



Shadow the Scientists

Astronomy Night with Dr. Tadayuki Kodama and Team:  
Hunting Giants at the Edge of the Universe

Subaru Telescope 25th 1999 2024

UNIVERSITY OF CALIFORNIA SANTA CRUZ

The slide features a small inset photo of a woman in the top right corner and a photo of the Subaru Telescope on Mauna Kea in the center.

Shadow the Scientists (15-16/Nov/2024)

すばる望遠鏡が捉える  
120億年前の宇宙の古代都市

Subaru is Looking into the Ancient  
Cities of the Universe (12B yrs ago)

兒玉 忠恭 (東北大学天文学教室)  
Tadayuki (Taddy) Kodama (Prof.)  
Astronomical Institute, Tohoku Univ.

Perseus cluster (Euclid/ESA)

The slide features a background image of the Perseus galaxy cluster and a small inset photo of a man in the top right corner.

# Maunakea Engagement

Some of the activities listed below. Many are carried out together with other observatories and/or with other community organizations.

- Hawai`i Cultural Residency
- Kama`aina Observatory Experience – **Restart!**
- Journey through the Universe
- Hawai`i Advisory Committee
- Aloha`Aina Events
- 'Ohana Stargazing
- Project Hōkūlani
- Astronomy on Tap
- Summit day time tour, HBF early evening tour
- etc.

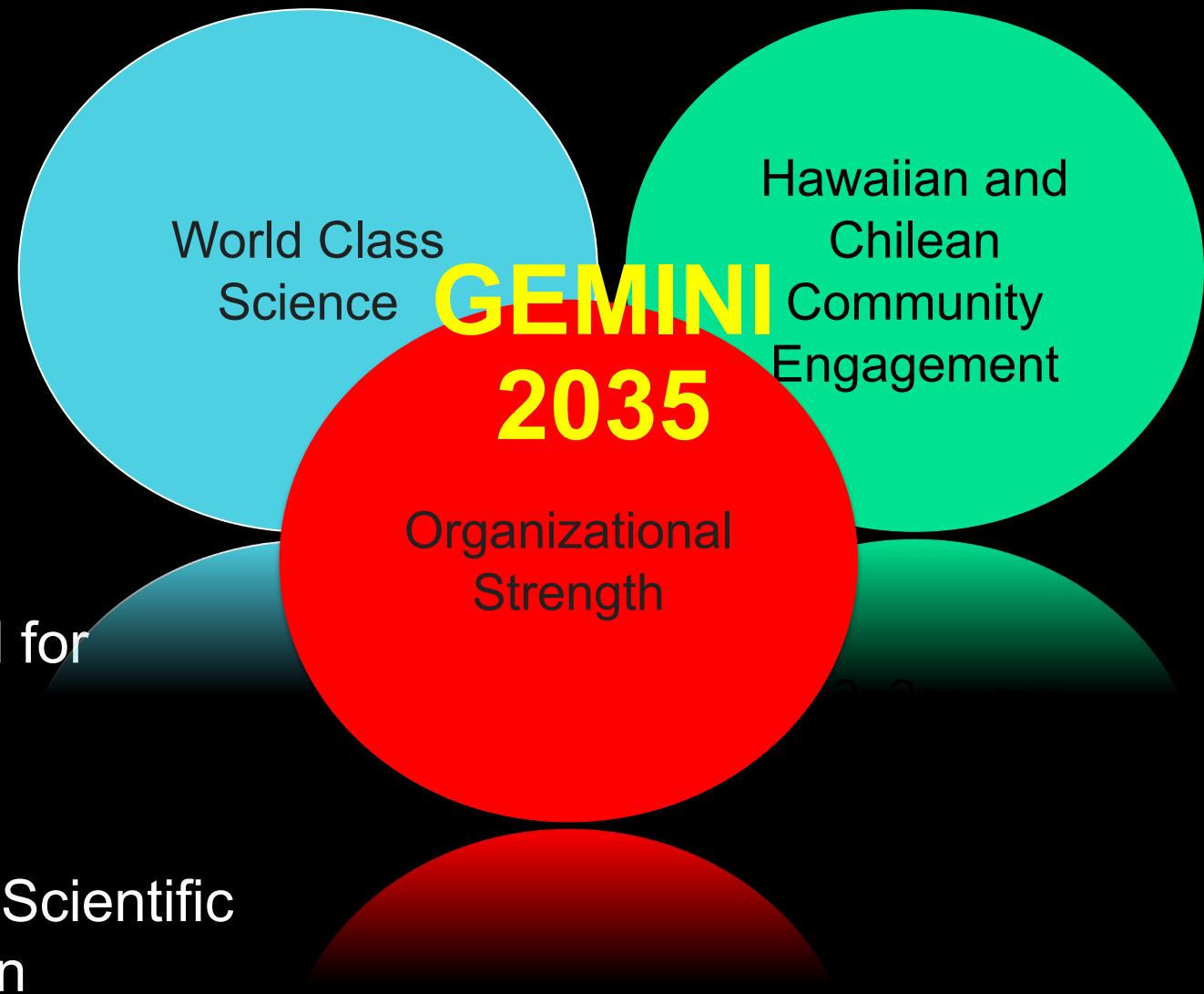
# SPIE in Yokohama

25 Geminites attended to learn and exchange information, ideas, learn from each other and meet the instrument team distributed across the globe in person!



# Gemini Strategic Vision

- Virtual town halls
- Call for community papers
- Strategic working group formed
- Second community survey scheduled for January 2025
- Intent is to present the new Strategic Scientific Plan at the Gemini Science Meeting in November 2025.





# Thank you!

