P01

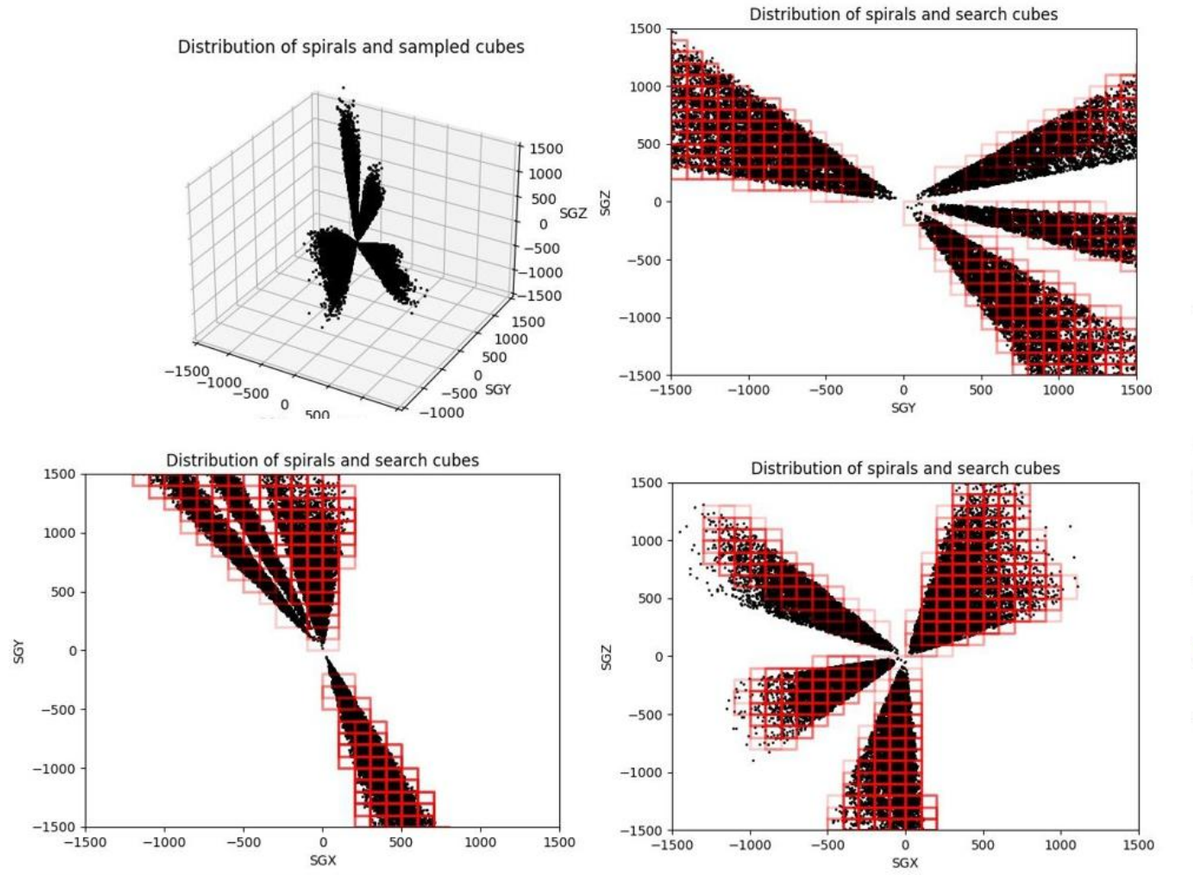
A Search for Dynamical Memory in the Spin Distribution of Galaxies in HSC WIDE Survey Regions

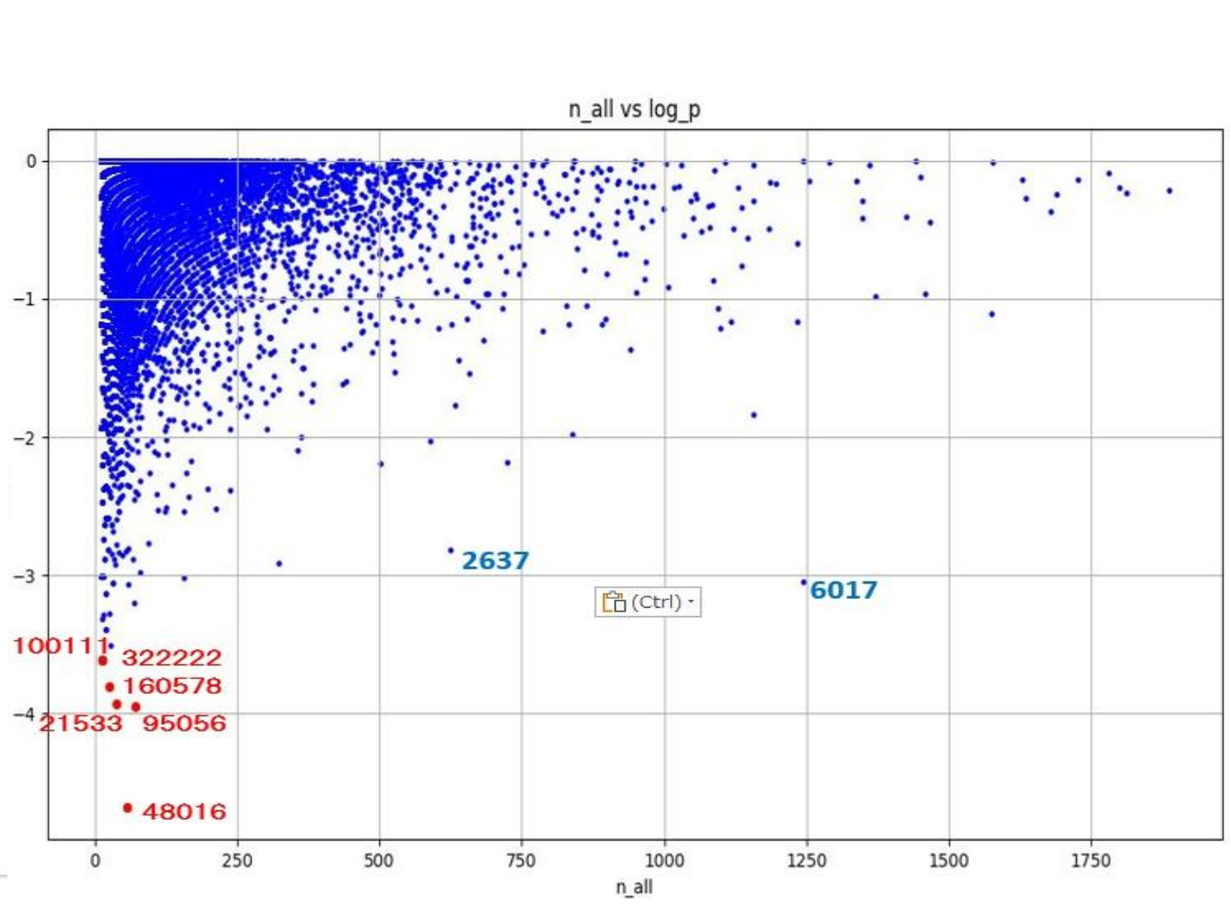
M. Iye[1,2] and M. Yagi[1] ([1]NAOJ, [2]Japan Academy) : 2026, AJ 172, 19

Objective: CMB at *z*~1000 and galaxy distribution at *z*~1 (scalar fields) provide a basis for the Λ-CDM scenario. We study the distribution of galaxies' spin vectors.

Galaxy Data: Use 49,494 spiral galaxies in four HSC WIDE fields, for which the spectroscopic redshift and the spiral winding parity (S-wise or Z-wise; Tadaki+2020) are known (Fig.1).

Search Domains: Deploy 46,247 search cubes (20-200Mpc) and count S- and Z-wise spirals to compare with the binomial distribution (Fig1).





Results:

1) We identified six search cubes that showed bizarre number asymmetry of S- and Z-wise spirals (Fig. 2)

2) The level of departure from the random binomial distribution as a whole is 2.4%, marginal but not significant enough.

3) Therefore, we found no clear evidence for non-random initial perturbation in the vortex distribution.

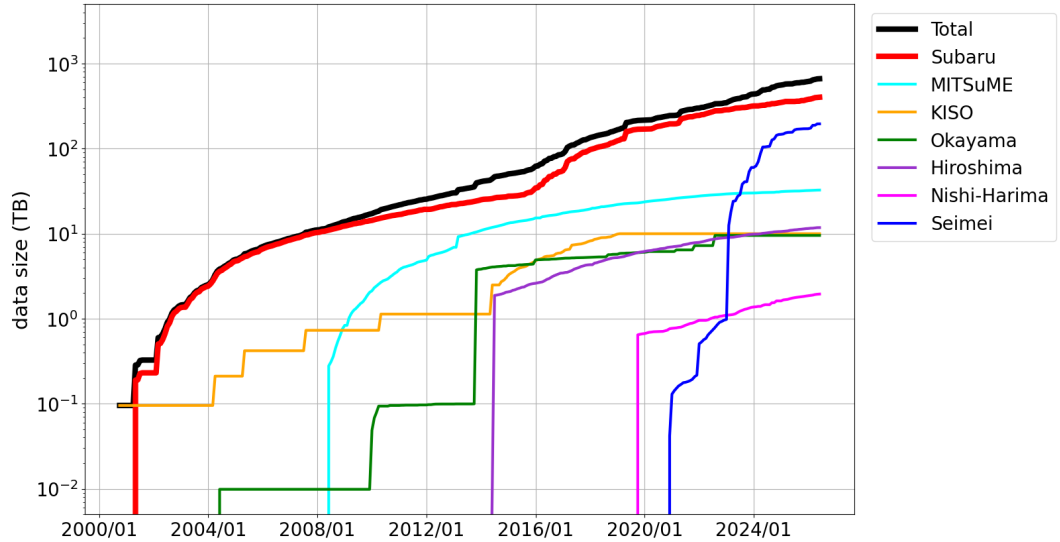
P03 Current Status and Future Plans of SMOKA

Takuya Takarada, Yasushi Nakajima, Shuhei Koyama, Junko Furusawa, Ryo Kato, Hisanori Furusawa (NAOJ ADC)

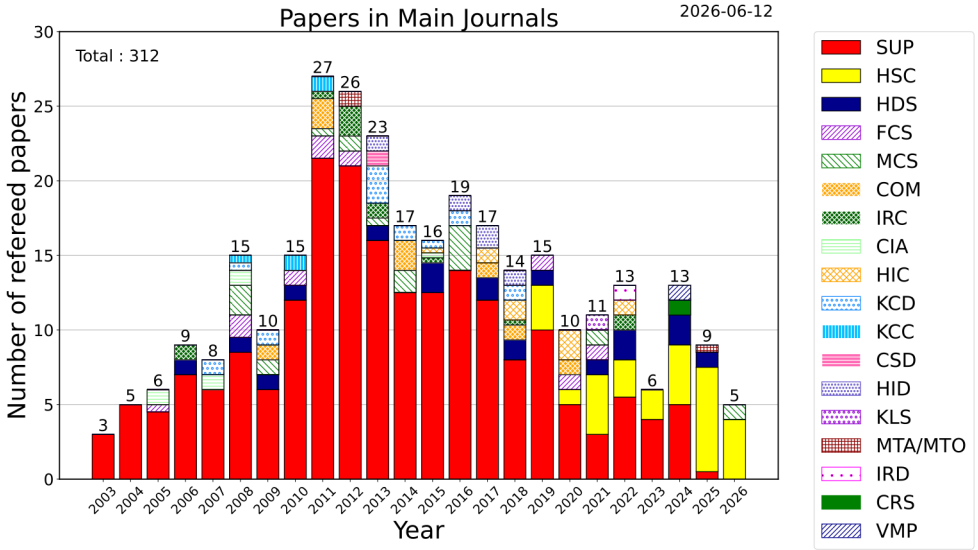
- SMOKA is the science archive system developed and operated by the Astronomy Data Center of NAOJ.
- Updates Since Subaru UM 2025

1. FastPDI data is released (May 2026~)
   (The release had been on hold by the observatory because the FITS files are lossy compressed.)
2. Reduced data of HONIR of Kanata telescope is released (Jan. 2026~)

- Total data: 44 million frames, 684 TB
- Subaru data: 23 million frames, 419 TB



- 312 papers are published using SMOKA
- Most recent publications are based on Subaru data



Future Plans

1.Data Release

- Subaru: PFS (2026/9) TAO: NICE, SWIMS, MIMIZUKU Seimei: MIDSSAR Photographic Plate: Dodaira

2.New Service: Weather classification for Okayama All Sky images

P07: Updates from the IR-side Nasmyth (NsIR) management committee

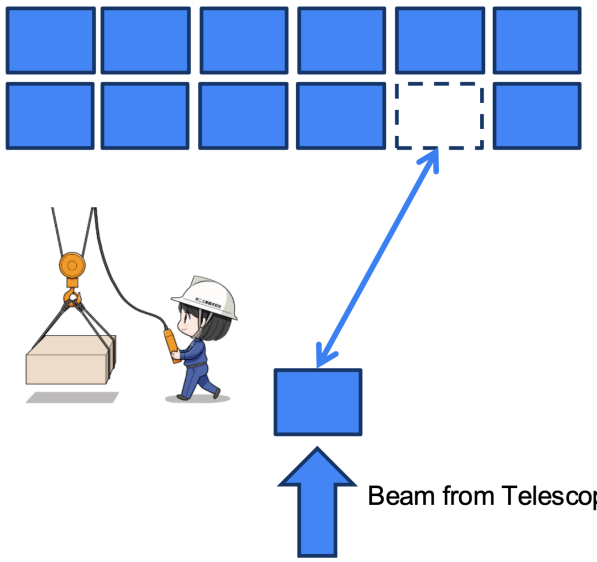
N. Tamura, T. Hattori (Subaru Telescope, NAOJ) & all the NsIR committee members

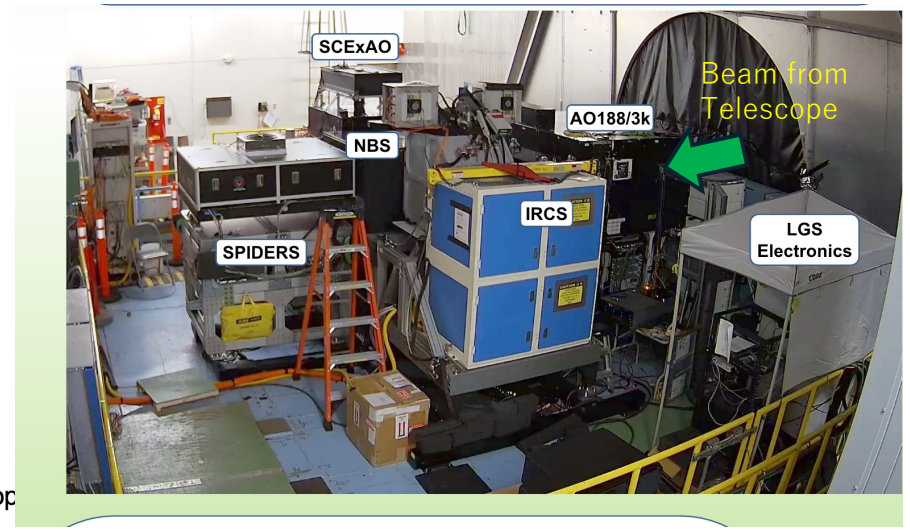
- With the upgrade by Nasmyth Beam Switcher (NBS), the instrument operation on the NsIR platform has been transitioned dramatically to be static rather than dynamic.
- Meanwhile, the activity level of new developments exploiting the AO system continue to be high through PI-type/visiting project framework (NIR-WFS & nlCWFS for AO, SCExAO, SPIDERS, ULTIMATE-Start (LTAO), and NINJA).
- What is a good balance between static, stable operation and active developments keeping sustainability? What should be a good strategy of improving this platform for its high productivity?

Significant effort saving at instrument exchange
Operational stability
Risk mitigation

- ~15% higher thermal background in the K-band and beyond
- Polarimetric calibration change (characterization is ongoing)

Dynamic (craning) → Static (Beam Switcing)





In the poster, status updates of NBS are presented, and key questions for future perspectives are discussed.

Please send your feedback/thoughts/interests to naoyuki@naoj.org.

P08

OHANA NUI: Direct measurement of the size of a White Dwarf using intensity interferometry

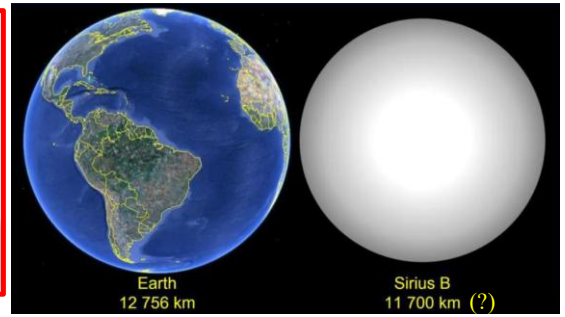
O. Lai[1], R. Kaiser[2], W. Guerin[2], S. Tolila[2], F. Izraelevitch[2], J.-P. Rivet[1], G. Labeyrie[2], M. Hugbart[2], Andreas Zmija[2], Ilian Ellafi[2], J.-G. Cuby[3], M. Baril[3], J. O'Meara[4], A. Bouchez[4], P. Wizinowich[4] A. Adamson[5], J. White[5], E. Tapia[5], N. Tamura[6], O. Guyon[6], J. Lozi[6], M. Chun[7], C. Dodds[8], B. Allen[7], D. Simons[8]

[1]Laboratoire Lagrange, UCA, OCA, CNRS, France, [2]Institut de Physique de Nice, UCA, CNRS, France, [3]Canada-France-Hawaii Telescope, Waimea, Hawaii, USA, [4]W.M. Keck Observatory, Waimea, Hawaii, USA, [5]Gemini Observatory, Hilo, Hawaii, USA, [6]Subaru Telescope, NAOJ, Hilo, Hawaii, USA, [7]Institute for Astronomy, University of Hawaii, Hilo, Hawaii, USA, [8]Institute for Astronomy, University of Hawaii, Manoa, Hawaii, USA

Path-opening on **Sirius B** (white dwarf) : quantum degenerate Fermi gas of electrons

SNR ≈ 6
in 1 hour
observation time !!!!

Beyond reach of present instruments

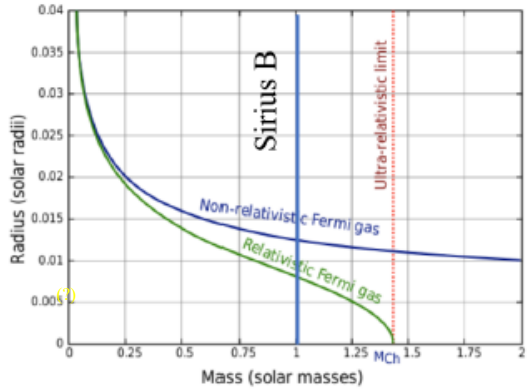


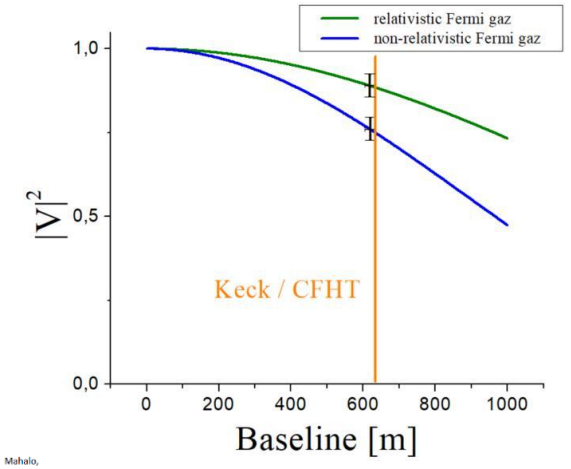
Magnitude=8.4

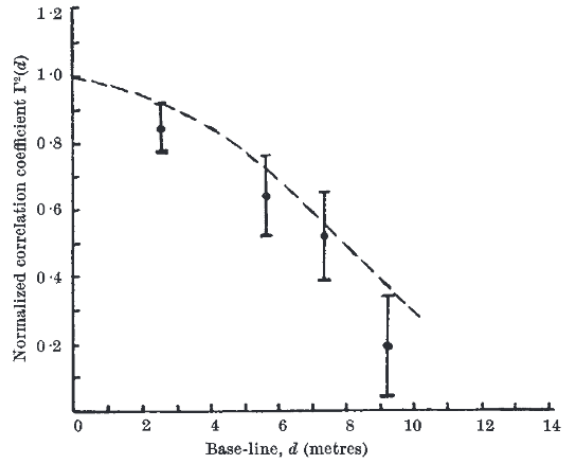
Mauna Kea @ Hawaii

Photon Bunching

- @ λ = 420nm
- D=630m







HBT 1956: First demonstration of $g^{(2)}(r)$ with 2 telescopes (measurement on Sirius)

	Grating Instr.	Filters Instr.
Fibered ?	Yes	No
Spectral bandwith per channel	0.90 nm	0.81-1.06 nm
Transmission	9%	15%
Temporal resolution (RMS)	43.6 ps	38.9 ps
Shape factor 𝕊	89%	86%
Multiplexing factor 𝕄	1.9	3.07
SNR (Sirius)	3.0	4.3

Sincerely,
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Chief of Technical Development
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Sincerely,
Jean-Gabriel Cuby
Executive Director
Canada-France-Hawaii Telescope

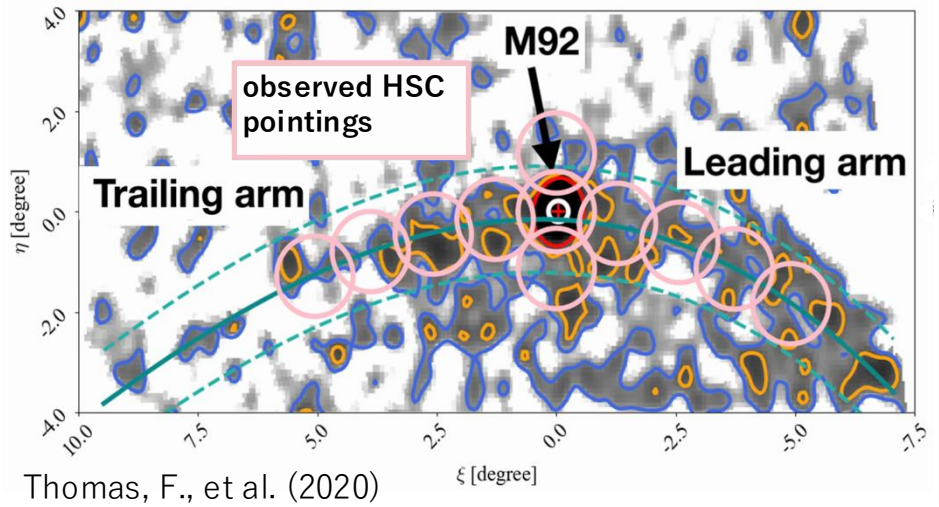
Mahalo,
Doug Simons
Director
University of Hawai'i, Institute for Astronomy

P09

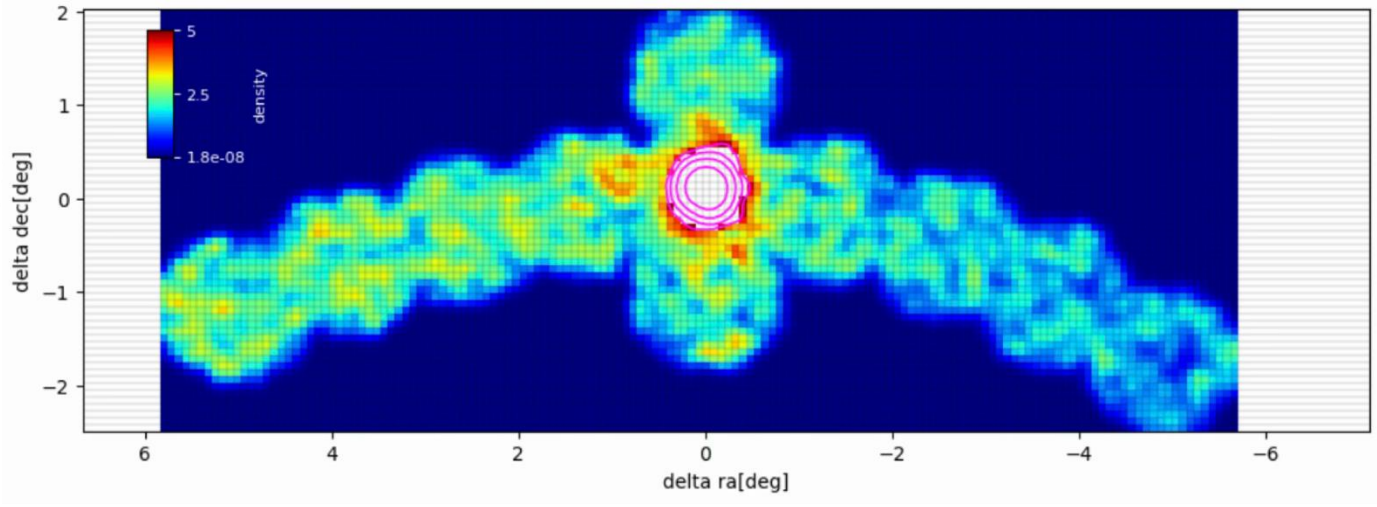
Investigation of Tidal Stream Structures around the Globular Cluster M92 with Subaru Hyper Suprime-Cam

Torajumaru Sugawara, Yutaka Komiyama（Hosei University）, Masafumi Yagi, Itsuki Ogami（NAOJ）

Does the M92 tidal stream really exist?
～Re-examining previous studies～



Thomas, F., et al. (2020)



Analysis of about 700,000 point sources using 11 HSC fields

→Extraction of M92 candidate member stars from the CMD using BaSTI isochrones

→ Investigation of possible contamination

P10

Subaru Telescope in the Local Community on the Island of Hawai‘i

Kumiko Usuda-Sato, Christian Wong, Naoyuki Tamura, Karen Maruta, and Subaru Telescope Hilo Office (Subaru Telescope, NAOJ)

Since 2022, we have been expanding **astronomy/STEM activities** to the Island of Hawai‘i community, **including remote areas beyond Hilo**.

1. Subaru Stars

Field trip

To bring astronomy/STEM activities, we visit schools and invite students to our facilities through **the Subaru Telescope original program**.

2. MKO Events

Facility tour at Tanabata Party

We lead the Maunakea Observatories (MKO) annual events; **Tanabata Block Party** (joint open house) and **Maunakea Coin Contest** (art contest for K-12 students).

3. Other Events

Career Day

VEX competition

We participate in events by local organizations like **Science Day/Night**, and judge at **VEX robotics competitions**.

From Observation to Public Release:
Bringing Subaru Telescope Discoveries to the Public

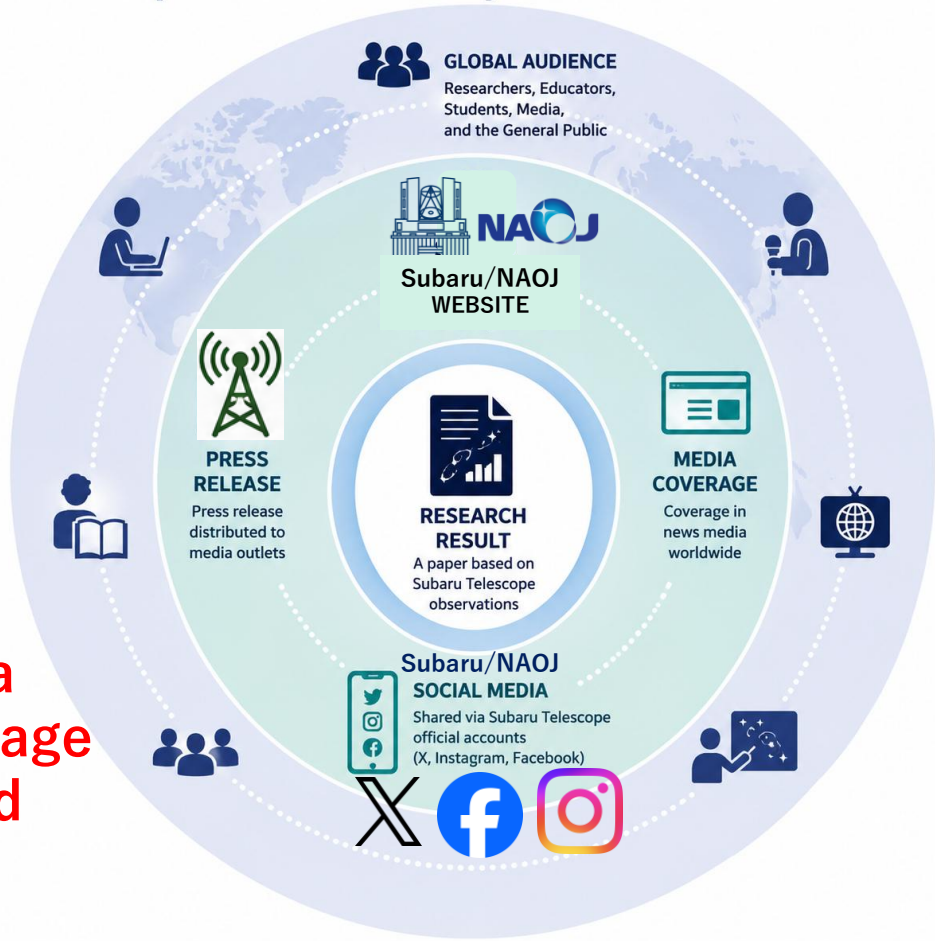
Ishii, Miki
Subaru Telescope, NAOJ

The Public Information and Outreach (PIO) team at the Subaru Telescope communicates scientific results through our website, social media, and press releases.

This presentation gives an overview of how Subaru Telescope research results are shared with the public.

The poster also highlight some of the most-viewed research news articles from the past year.

If you are planning to publish (or have recently published) a paper based on Subaru Telescope observations, we encourage you to share your results through the Subaru Telescope and NAOJ communication channels.

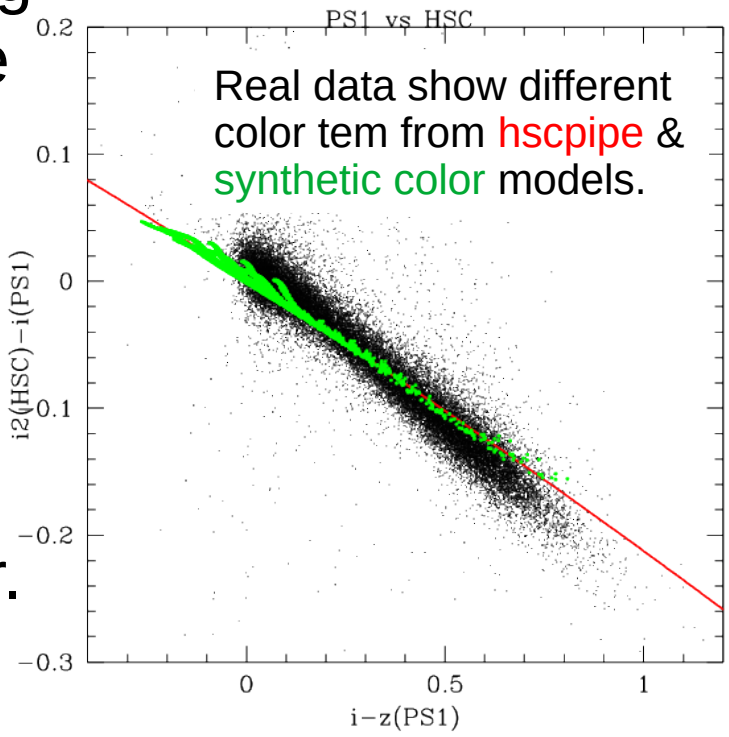


P13

Color term of PanSTARRS i-band

YAGI, Masafumi(NAOJ) et al.

- PanSTARRS1(PS1) i-band catalog mag and PS1 official response curve would be inconsistent, up to 0.05 mag.
- It would introduce ~0.03 mag offset in HSC i2-band ZP calibration by hscPipe.
- An empirical color conversion i'=i-0.046(i-z)-0.012 makes the difference between the models and the data smaller.



Check Poster P13 for details.

Air-shower Lensing Observation at High Altitude (ALOHA) project: Current status and future prospects

ALOHA project

(**A**ir-shower **L**ensing **O**bservation at **H**igh **A**ltitude)

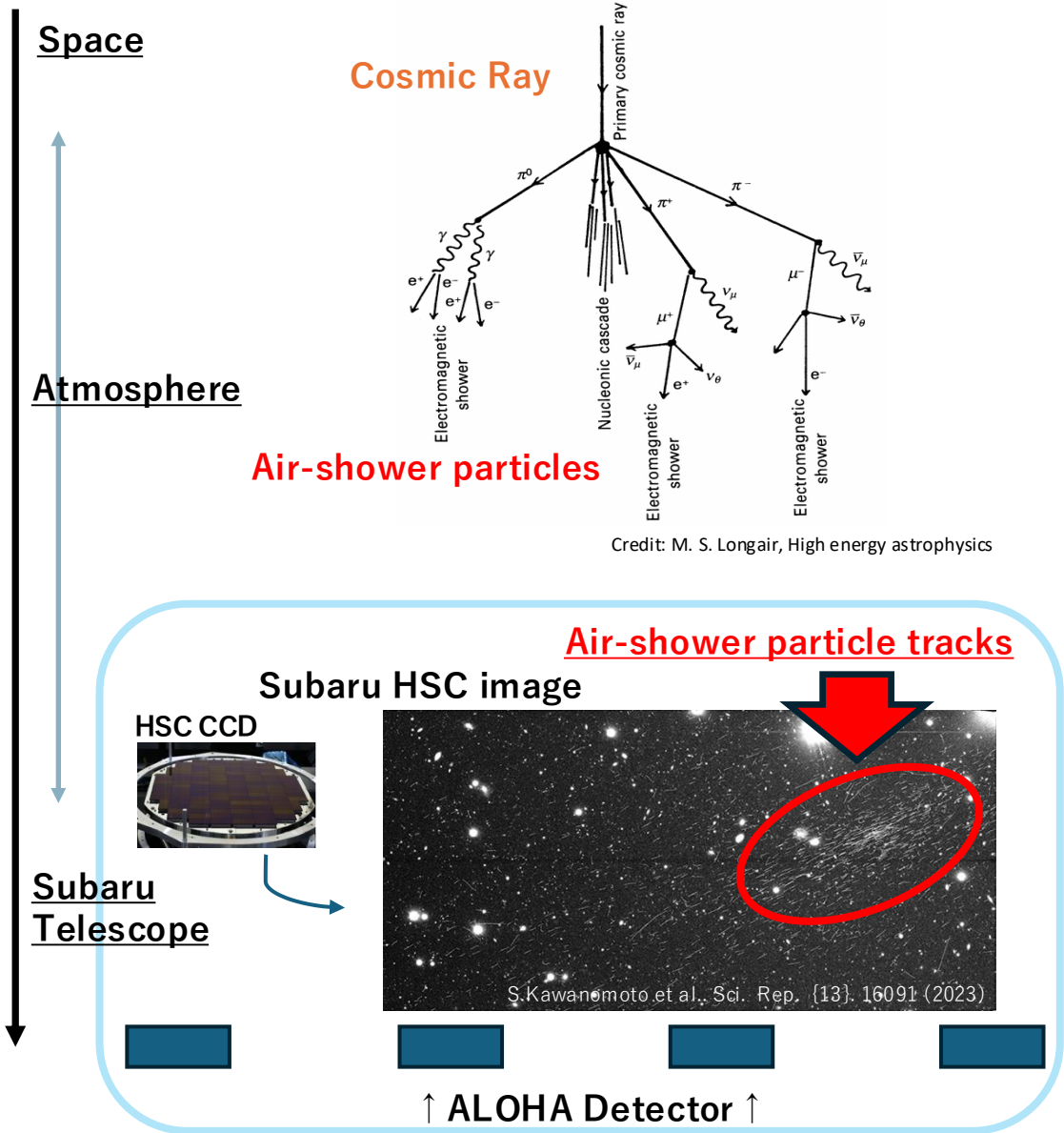
Observation of air-shower

Air-shower imaged in Subaru HSC

Air-shower : A particle cascade in the atmosphere triggered by a high-energy cosmic ray

Cosmic Ray : High–energy particles traveling through space

→ **Air shower reconstruction based on HSC images and ALOHA waveforms !**

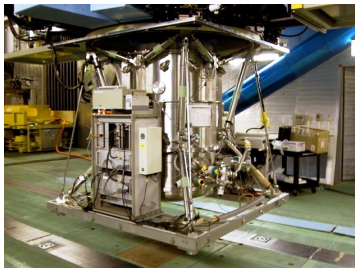


Resurrection of Subaru+COMICS for the study of solar system objects with ground-based MIR observations IV

Takafumi Ootsubo, Hideyo Kawakita, Yoshiharu Shinnaka, Jun-ichi Watanabe, Takuya Fujiyoshi

P16

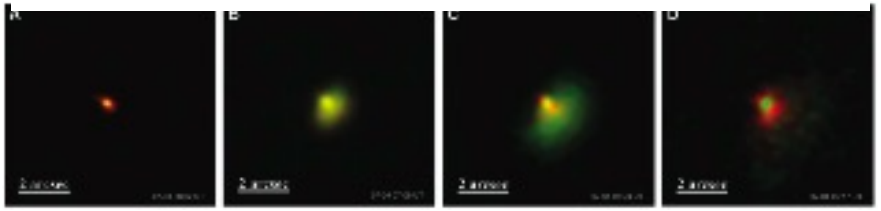
Cooled Mid-Infrared Camera and Spectrometer



- **7.5 – 25 μm (N and Q-bands)**
- **Imaging**
- **Spectroscopy**

- **This is the final year of the project, extended from the original 3-year plan.**
- **COMICS** operated for nearly **20 years** at Subaru Telescope **until S20B**.
- Many results for **Solar System objects** were acquired with COMICS, but was **decommissioned in 2020.**
- Restarting **COMICS is still the most reliable and efficient** way to study Solar System objects in mid-IR!
- We will conduct **an engineering observation** with COMICS in **late July**.

Deep Impact on 9P/Tempel (2005)



- **No hardware issues** with COMICS have been encountered so far.
- After a successful engineering observation, we look forward to **expanding collaborations across wider astronomical fields**!

Current Status of Red-NINJA

Chihiro Tokoku (NAOJ)
on behalf of NINJA team

Science Goal: Probing the Origin of Heavy Elements with Kilonova Spectroscopy

Red-NINJA:

- Integration and testing: Completed (Mitaka and Hilo)
- Installation at Subaru (IR Nasmyth): July 2026
- Engineering first light: S26B.

Please see our poster for details!

Blue-NINJA: Concept design phase started: 2026

Team: Development driven by students and early-career researchers.
We are looking for collaborators!



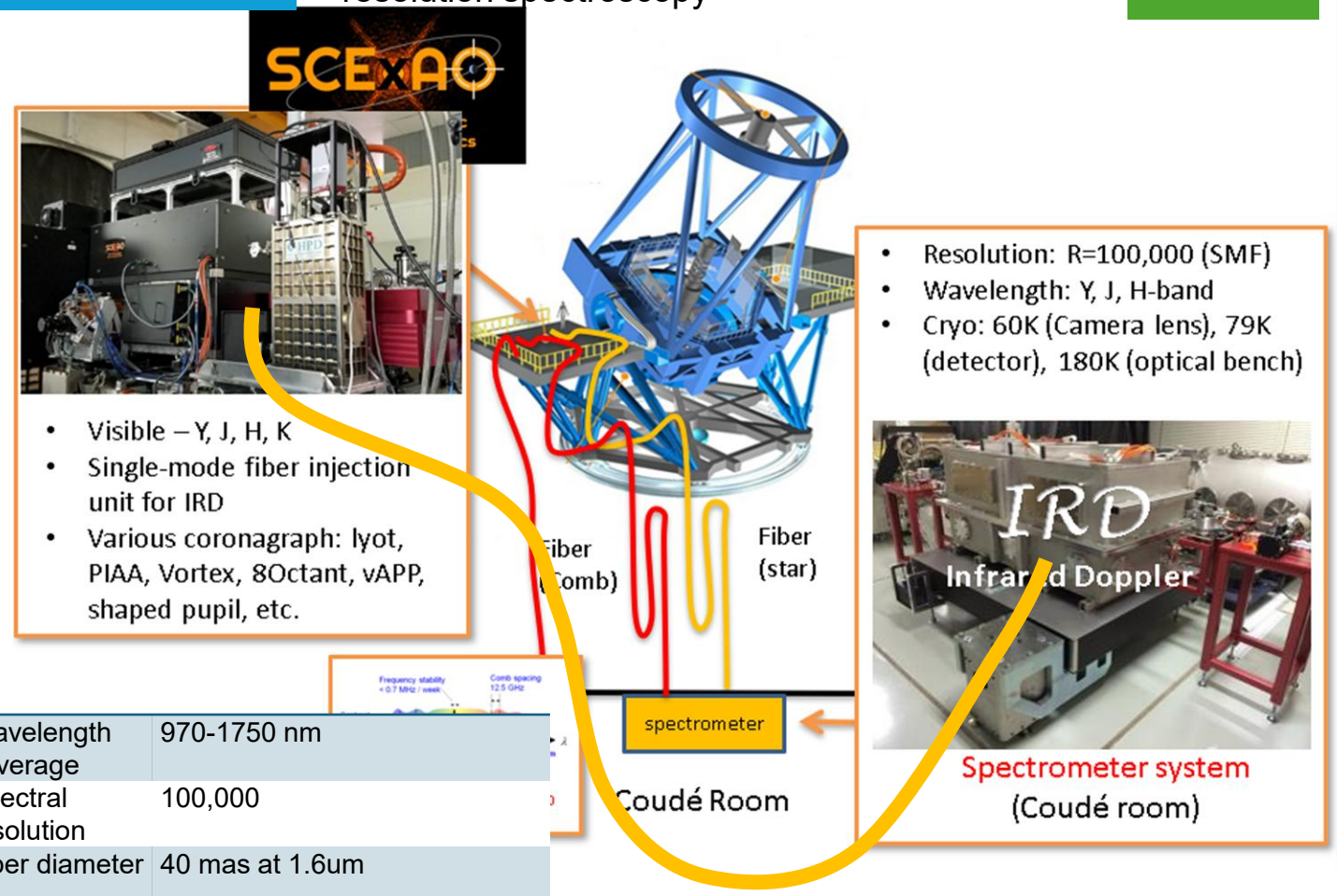



P19

IRD, REACH, and K-REACH: Current Status and Upgrade Plans for Near-Infrared High-Dispersion Spectrometer

REACH

Combination of
IRD and SCExAO for high-contrast and high-resolution spectroscopy

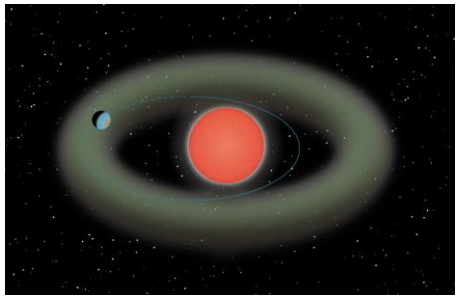


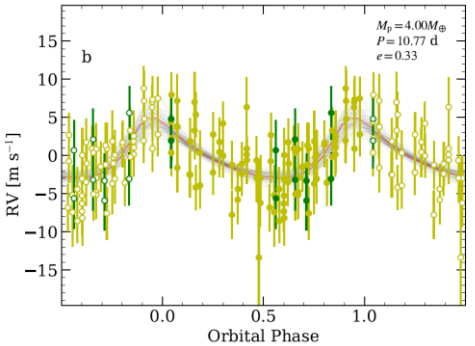
Wavelength coverage	970-1750 nm
Spectral resolution	100,000
Fiber diameter	40 mas at 1.6um
Throughput	2% at ~1520 nm at 0.6arcsec seeing condition
Operation	From 2020

IRD

YJH-band, R=70,000 high-resolution spectrometer for highly stable radial velocity measurement

Wavelength coverage	970-1750 nm
Spectral resolution	70,000 max (Multi-mode fiber), 100,000 (Single-mode fiber)
Fiber diameter	60 mm, 0.48 arcsec (MMF: OFS F8950), 7.5 mm MFD@1550nm (SMF: OFS BF05635-02)
Wavelength reference	Laser frequency comb, ThAr lamp
Throughput	2.3% at ~1000nm, 3.9% at ~1520 nm
Radia velocity measurement stability	2 m/s
Operation	From 2018



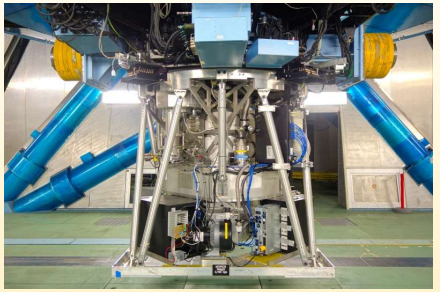


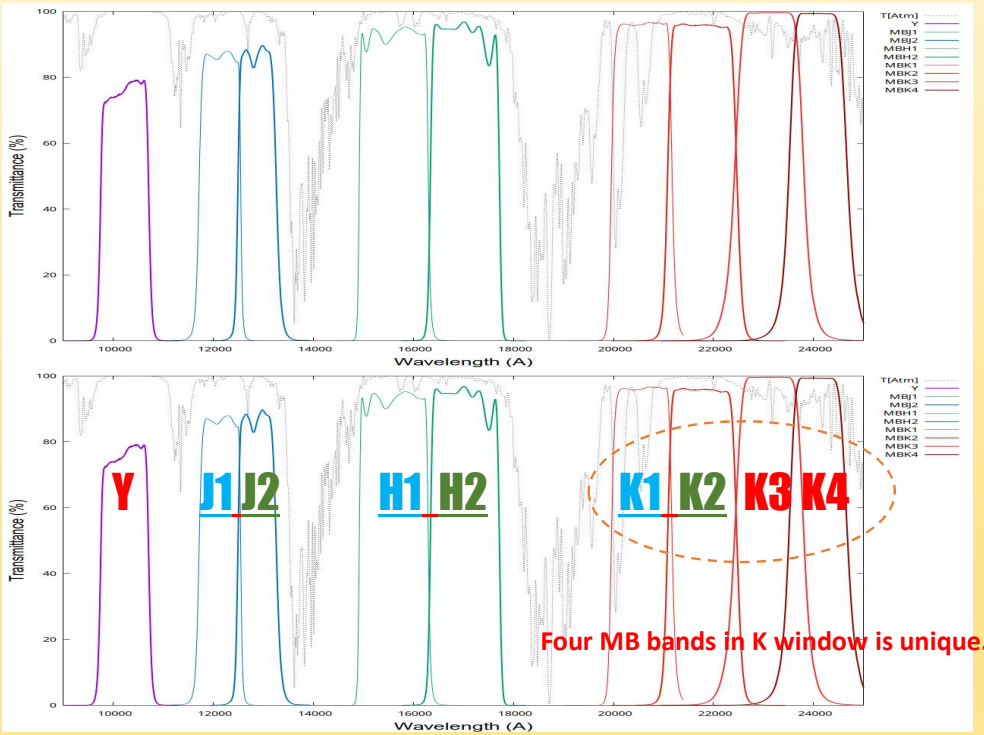
4 M_{Earth} planet near the habitable zone (Harakawa et al. 2022,PASJ, 74,904)

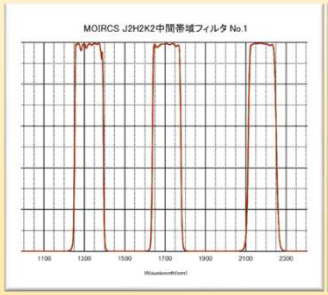
P20: Introducing the Suite of Near-Infrared Medium-Band Filters for MOIRCS

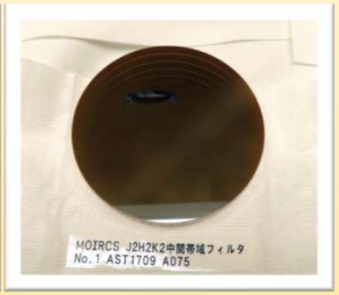
Ichi Tanaka*[1], Yusei Koyama, Kentaro Motohara, & Tadayuki Kodama

***1: Subaru Telescope, NAOJ (ichi@naoj.org)**



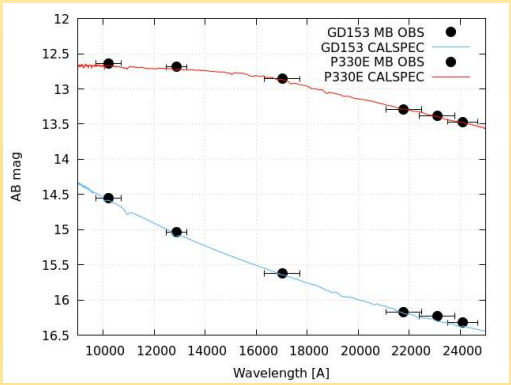






A Noble J2H2K2 "**Triple Medium-band Filter**"

Full 8 MB Suite will be available from S27A! **Stay Tuned!!**



Filter	Limiting Mag (AB)	System Efficiency
Y	24.5	0.31
MBJ2	23.8	0.33
MBH2	23.6	0.36
MBK2	23.4	0.35
MBK3	23.5	0.35
MBK4	22.8	0.32

Acknowledgments: Support for the fabrication of the MB band filters was provided by **the ULTIMATE-Subaru Project**, **KAKENHI (International Leading Research 22K21349: PI Satoshi Miyazaki; Kiban-A 26H02070: PI Yusei Koyama)**, and **the Subaru Telescope**. The triple-band filter was realized thanks to the technical support of Mr. Toshihiko Kimura at Asahi Spectra. We express our deepest gratitude to all involved.