

FY2026 - Astronomy Data Center Updates from Open-use services for Subaru Telescope

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for ADC/Subaru open-use support team

6/16/2026 Subaru Users Meeting FY2026

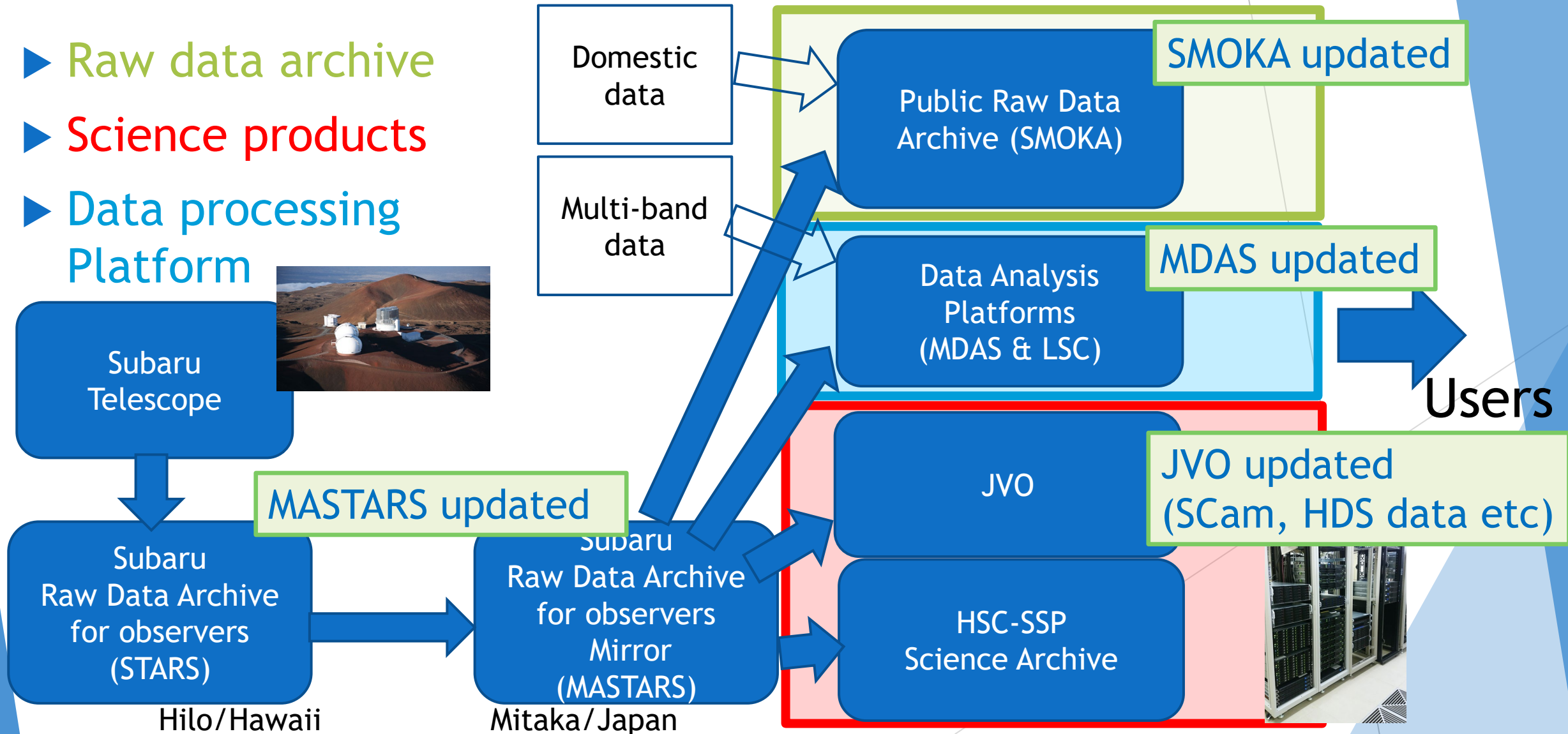
ADC : Data Flow and Services for Subaru Data Sciences

- New systems operating from 2024.7 → Stabilizing the services
- ADC Users Meeting will be held on November 18.

► Raw data archive

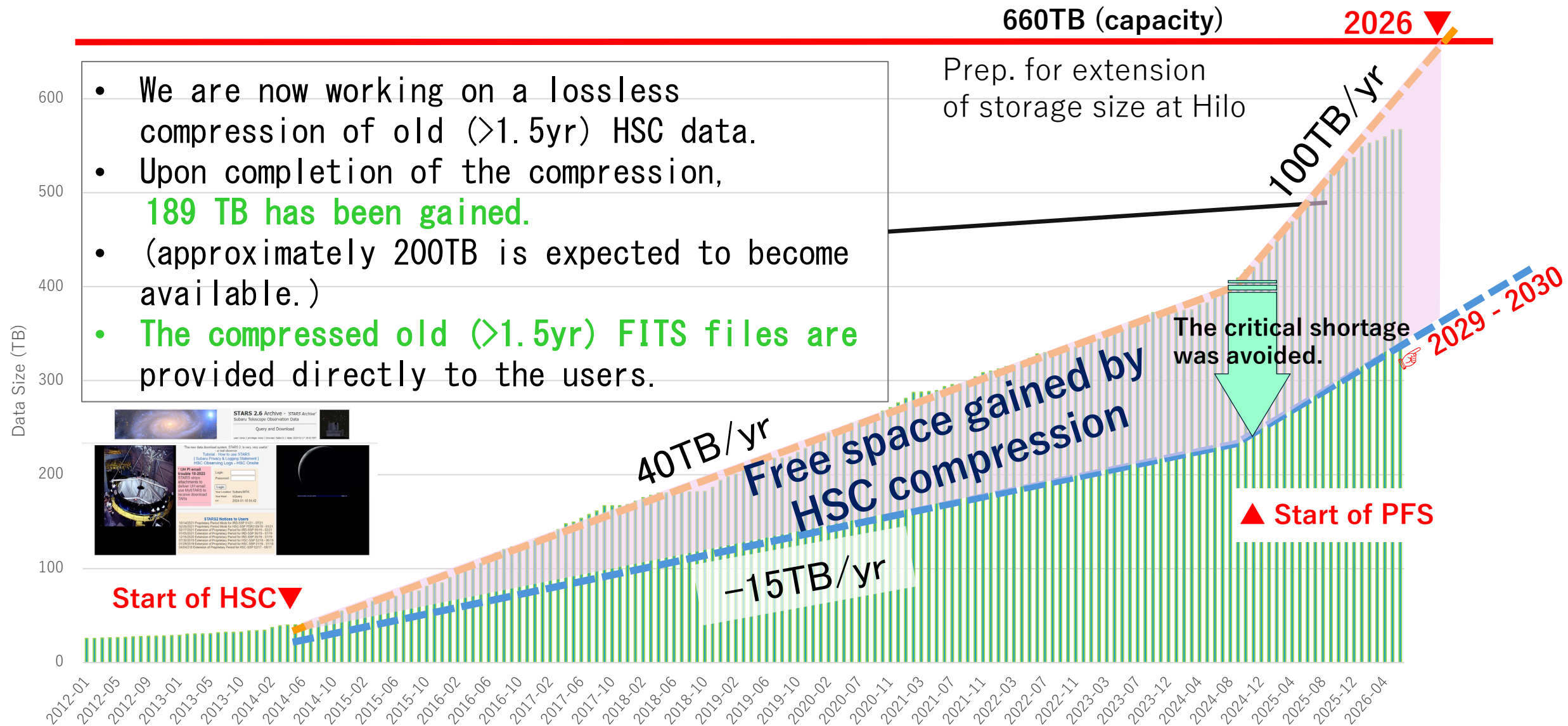
► Science products

► Data processing Platform



MASTARS/STARS: Data Compression Campaign Ongoing

Cumulative Data Volume in STARS Storage



(Subaru-Mitaka-Okayama-Kiso Archive System)

1. Releasing **public raw data from 37 instruments** including **20 instruments of Subaru Telescope**
2. A total of 311 papers using SMOKA data have been published in major refereed journals.
3. Update since the last Subaru UM (Nov 2025)
 - **New release : FastPDI of Subaru (May 2026~)**
 - The release had been on hold by the observatory because the FITS files are lossy compressed. Now the release guideline is established.
 - New release : **Reduced data of HONIR** of Kanata telescope (Jan. 2026~)
4. Future plans
 - **Preparing : PFS** of Subaru (Sep. 2026~)

The screenshot shows the 'SMOKA Archive Advanced Search' web form. It includes sections for 'Search Conditions' with fields for Object Name, Coordinate System (Equatorial, Equinox, J2000), Field of View (Circular, Rectangle), Observation Date, Exp. Time, Observer, and Output Format (TABLE or ASCII). Below this is the 'Instruments/Filters' section with dropdowns for Instruments, Observation Mode, Data Type, and Observation Category. The 'Output Options' section at the bottom allows selecting output columns (FRAMEID, DATE_OBS, FITS_SIZE, OBS_MODE, DATA_TYPE, OBJECT) and setting the maximum number of hits (100) and output equinox (J2000).

See Takarada's poster for details.

New Opt/IR data archive system: Purposes/Goals (recap from the last UM)

- ▶ Developing a next-generation optical & infrared data archive system to secure Subaru data archive (next STARS/MASTARS) in the next decades
- ▶ Also will coordinate with SMOKA (or its successor system) - for public for comprehensive operation, with a particular focus on designing a data operation model.
- ▶ The redundancy of data backup will be decreased due to increasing data production rate and costs.
- ▶ We want to start test operation well before the end of the current computer systems at Mitaka (2029/06), and start services with new systems parallel operation with current STARS/MASTARS for ~1 year for a smooth migration.

New Opt/IR data archive system: Current Status

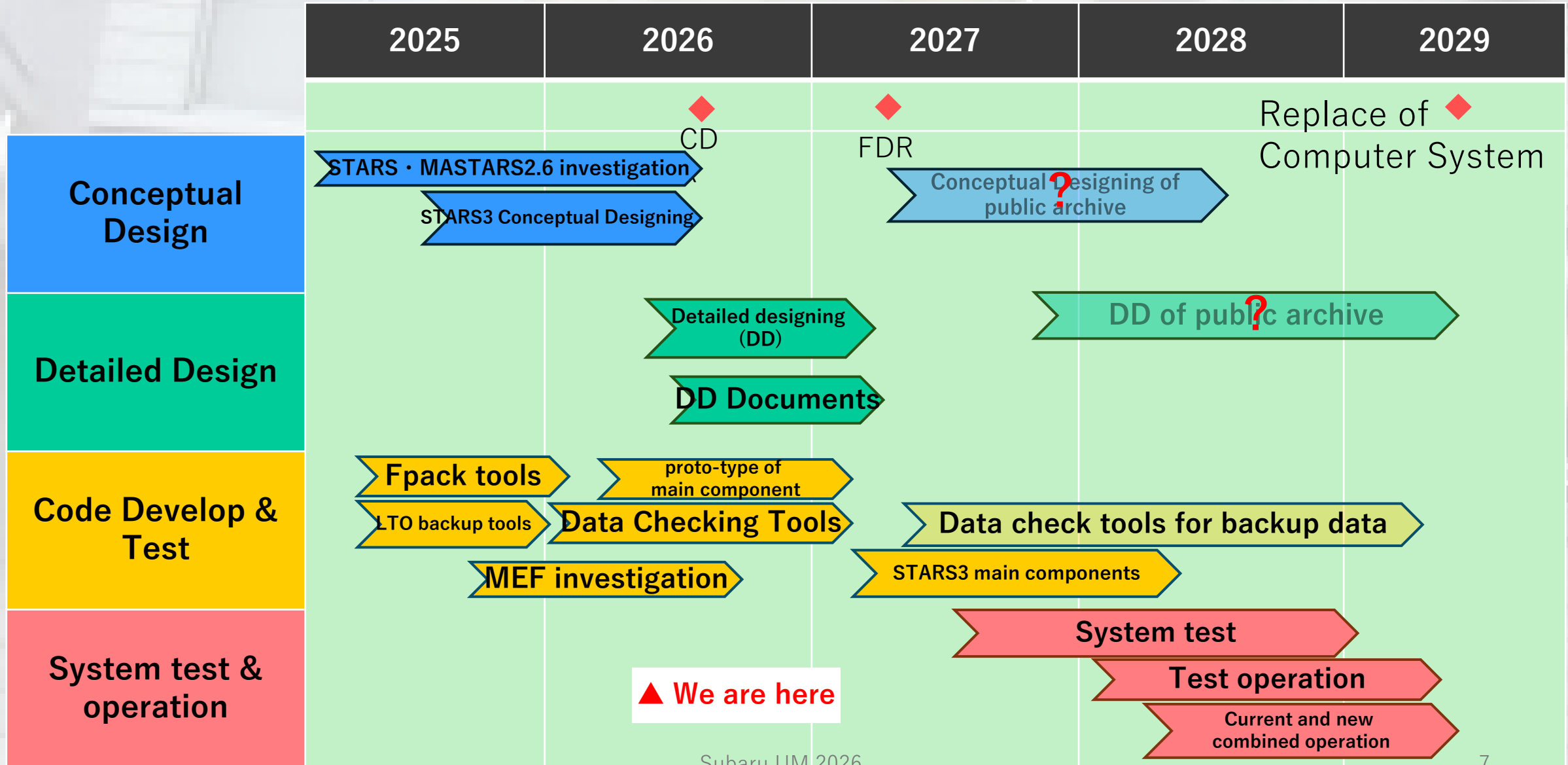
In the phase of **conceptual designing**:

- ▶ Mainly handled by **ADC members (currently)**
- ▶ **Computer system for the development/testing/initial operation** have been set-up and in operation from March 2025. (based on Open Access Promotion Budget by MEXT)
- ▶ Starting from **designing the next generation STARS/MASTARS**
- ▶ Confirming Basic functions of current STARS/MASTARS
- ▶ **Iterating over questions/issues for operation model between ADC and Subaru (not complete; further discussions continue)**
- ▶ Discussions about **FITS file correction policies** w/ Subaru staffs
- ▶ **Common development / Investigating some functions with current STARS/MASTARS (FITS file compression of HSC data, cold data back up to LTOs, MEF data handling etc.)**
- ▶ **Drafting development guidelines** - coding rules, implementation guidelines, and the memo for implementation and execution environment.
- ▶ **The review process is expected to take place soon (delayed)**

Will begin detailed designing after fixing issues and reviewing the conceptual design

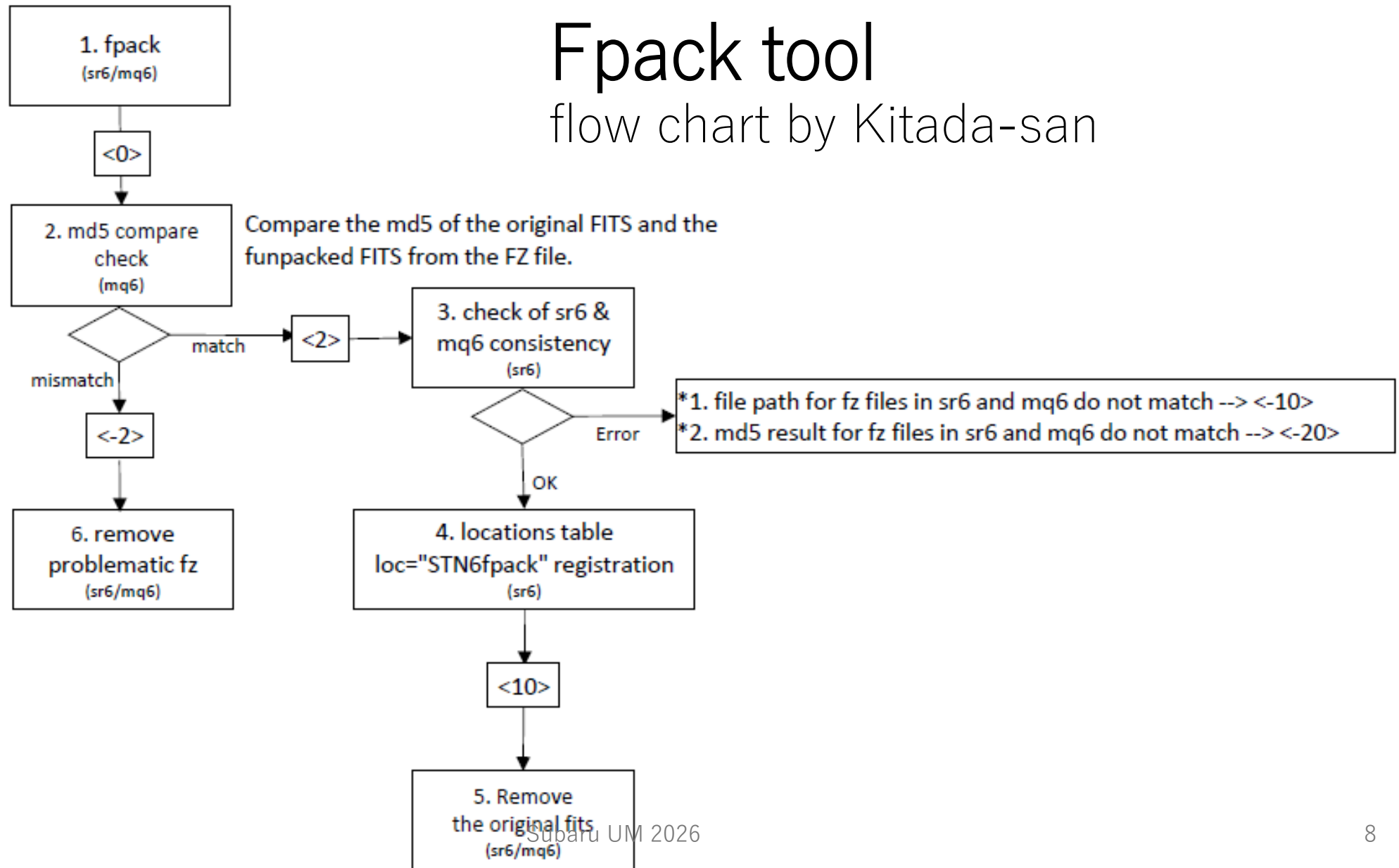
Tentative Development Schedule (current)

June 2026
Dev of Opt/IR archive



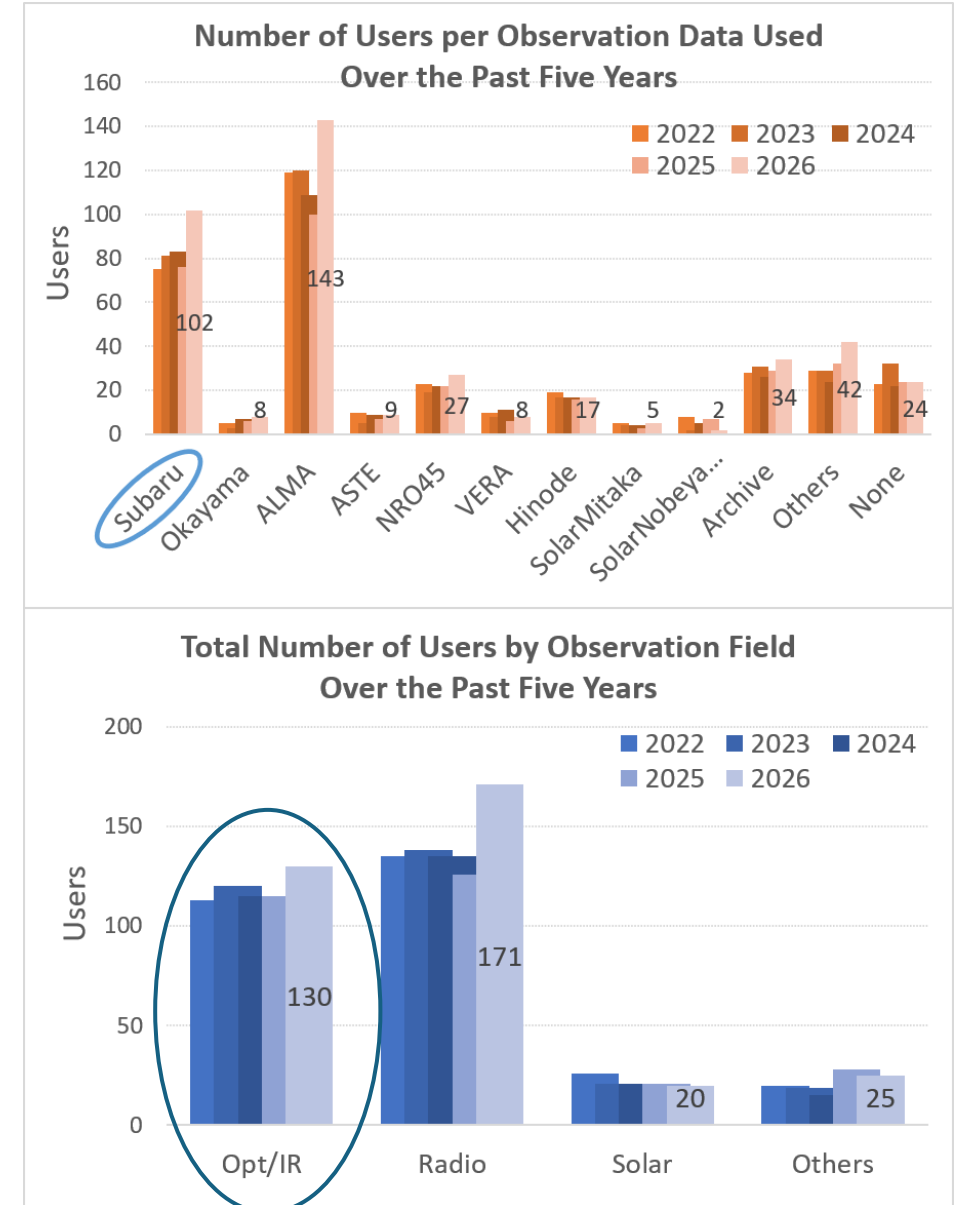
<n> : fpack status (table.column : shared.fpackwork.locations_regstat)

Fpack tool flow chart by Kitada-san



• Current Status and Usage

- Following the system replacement in 2024 and initial operation phase, **the system is now operating stably.**
- **Number of active users: 372**
(as of the start of FY 2026)
- **Subaru and ALMA users** make up the **majority** – **Subaru for ~1/3, Opt/IR for ~1/2**
- The **number of Subaru users increased** in fiscal year 2025, along with the number of ALMA users.



LSC

Since the last Users' Meeting:

➤ Annual registration / **Number of Users: Hovering between ~50-60.**

➤ GPFS Usage: Maintained at **low 90s%.**

➤ Job Restriction: Introduced concurrent job limits (Dec 2025–).

➤ **OS Update:** Postponed ; investigating hscPipe functionality
PFS-dedicated nodes completed

➤ **Storage Failure (GPFS/home) – Ongoing:**

→ **GPFS suspended since June 3 for data protection.**

Ongoing recovery efforts in coordination with the vendor.

Replacement parts will be shipped within this week. Reconstruction will be necessary to regain proper redundancy.

HSC/PFS/Science Platform

► HSC-SSP data releases

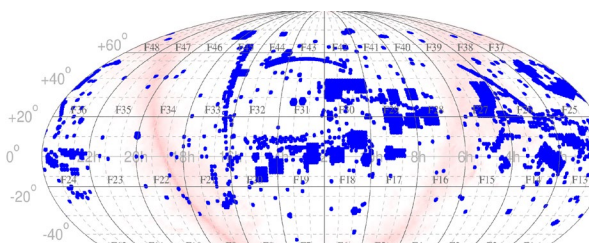
- The latest internal release S23B (Feb, 2025) being stabilized
- PDR4 is going to target this year
 - => long-term public archive will be operated primarily by ADC in coop. with Subaru
- Helpdesk now handled by ADC staff in cooperation with the observatory staff, as part of the operating transition for long-term archive mode

► HSC Legacy Archive

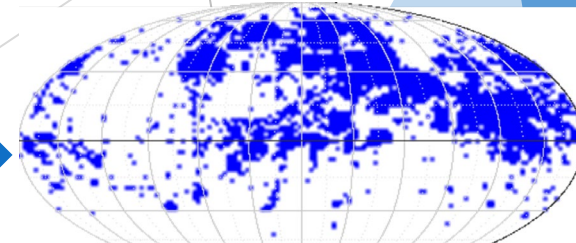
- The 3rd version of Data Release (2014-2020) published in 2026.5
 - (Harasawa+ in last UM; web-release at <https://subarutelescope.org/jp/news/topics/2026/05/11/3710.html>)
- Products 800TB over 7315 sq.deg (17.7% of the entire sky)
- Catalog Database will contain 1.5 billion sources in forced photometry

► Science Platform

- PFS open-use operation continues
- HSC-SSP-version preview in operational



LA2016: 3400 sq.deg

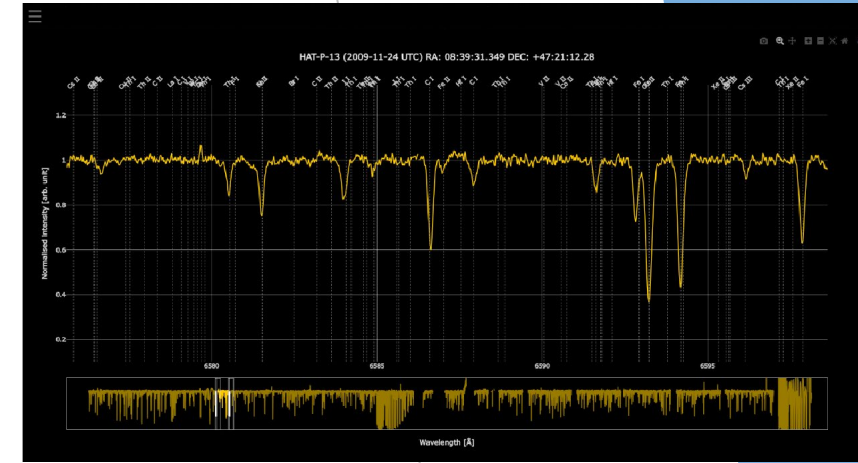


LA2020: 7315 sq.deg

Other Information

- ▶ JVO plans to increment HDS-processed data this fiscal year

- ▶ <http://jvo.nao.ac.jp/index-e.html>



- ▶ **ADC Users Meeting - Nov 19 (Thu) Full day (+ option: Nov 20(Fri) AM)**
- ▶ If you have any requests or ideas to improve the ADC services, please feel free to share them.
 - ▶ We will begin discussion for the next system design quite soon
 - ▶ ADC had international external review this spring as well as NAOJ SRM, will take the recommendations from the review into account for future planning, too.