

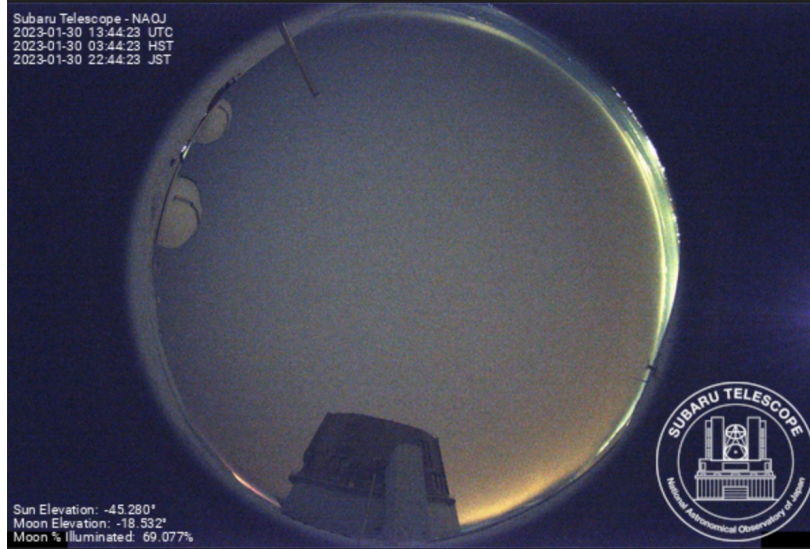
Science Operation FY2022

Tae-Soo Pyo

2023.01.31

All Sky Camera

- All Sky Camera is available for observers and the public from S22A.
https://www.naoj.org/allsky/current_web.png
- Developed by Andrew Neugarten and Ichi Tanaka.



Dome Open/Closing Conditions considering volcanic activities

- Since eruption of Mauna Loa, the volcanic activity is considered one of the dome open/close conditions.
- SO₂ emission
 - > 2000 tons/day → RH > 50%
 - < 2000 tons/day → RH > 80%
 - Forecast & simulation data by vmap
- Any ash or volcanic particles, e.g. Pele's hair, are visible in a flashlight test.
- PM_{3dL} > 500 with Keck's Particulate counts
(<https://www2.keck.hawaii.edu/software/weather/pms/index.php>)
- High concentration of SO₂ (Reddish; > 1 ppm) or SO₄ (Reddish; 139 microgram/m²) around Mauna Kea summit
(<http://weather.hawaii.edu/vmap/new/>)
 - Strong Smell
 - We purchased SO₂ detector.

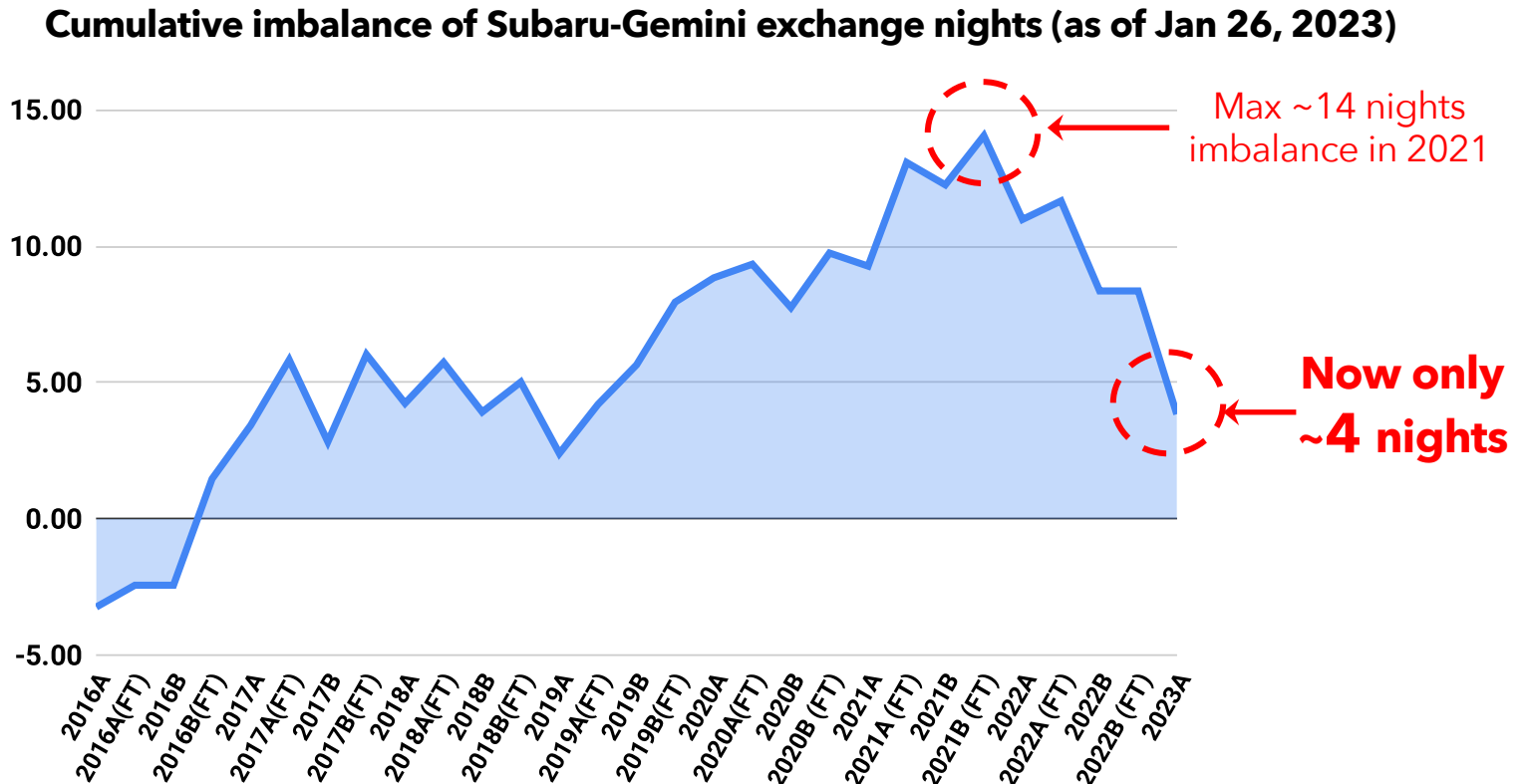
Telescope Time Exchange

Subaru-Gemini exchange imbalance is significantly reduced

"Positive" means
Subaru users use
more Gemini time

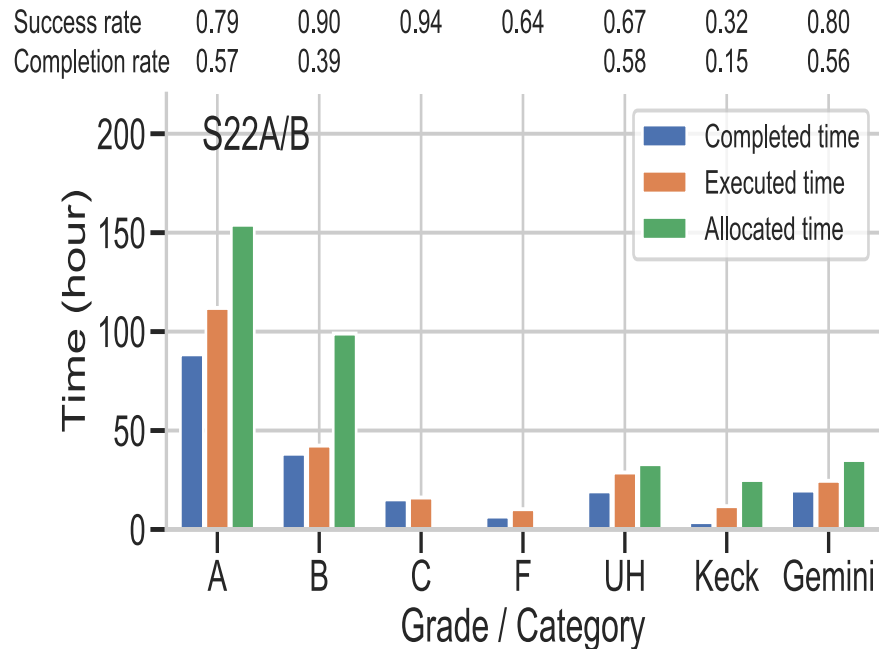
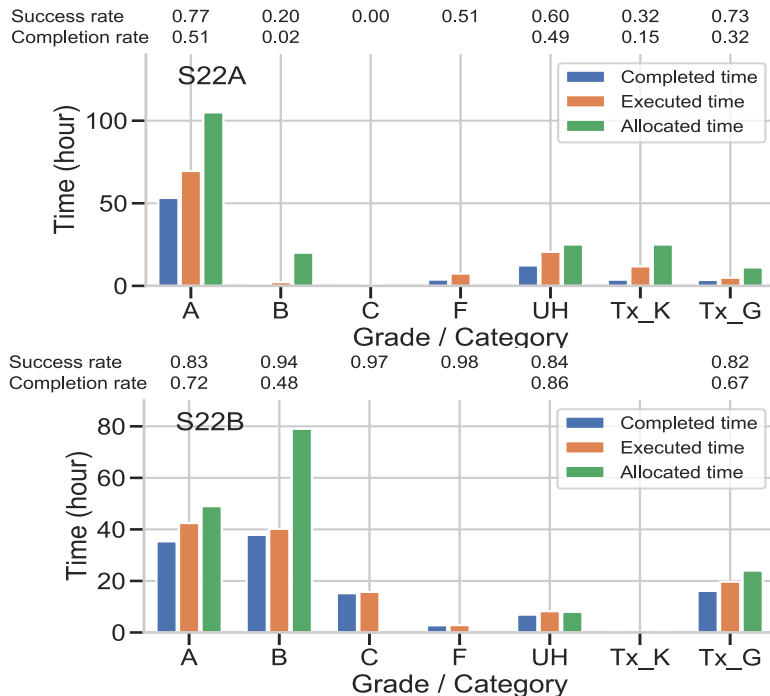


"Negative" means
Gemini users use
more Subaru time



We deeply thank the users (and Gemini observatory) for understanding, but we still continue strong actions (max 3.0 nights of Subaru → Gemini per semester + every 2 months for Gemini FT) until further notice.

HSC Queue Mode S22A&B



S22A: 3 runs, 39% lost (28.2% bad weather, 10.8% troubles)

April run: 56.6% bad weather, May run: 7.7% weather, 27.8% troubles(Power, FEU, Airduct)

Jun short run: 14.2% weather, 1.8% trouble

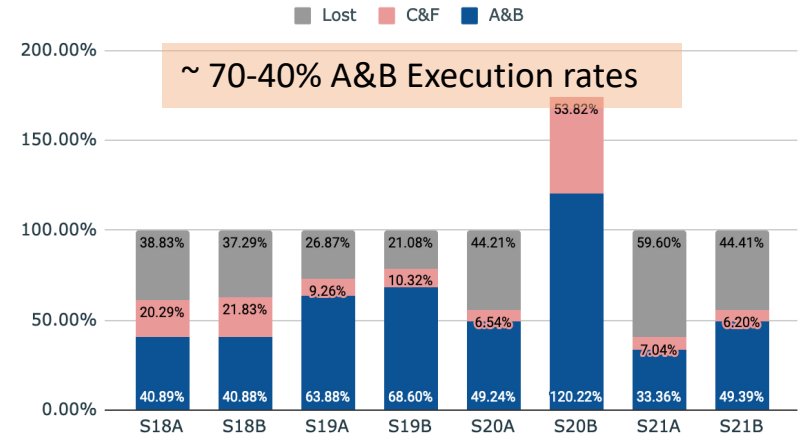
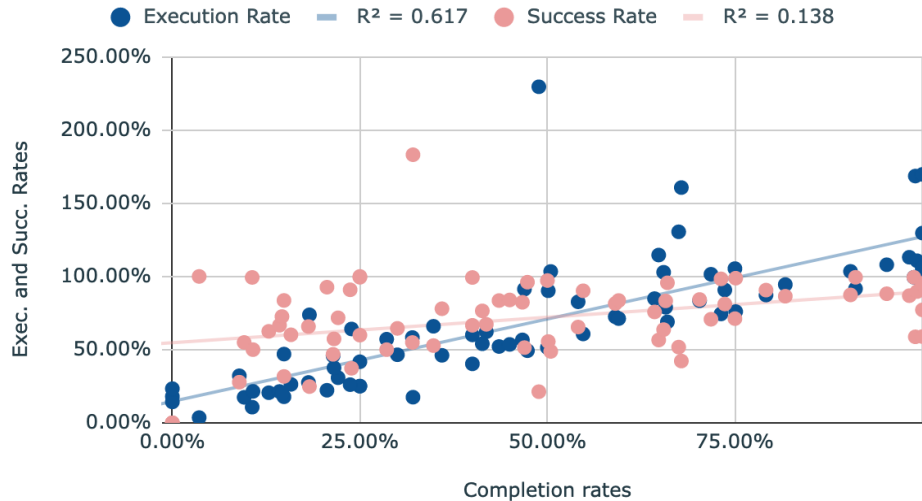
(Keck program in April and May with NB filters, which is limited the execution period due to the number of filters (6) restriction)

S22B: 2 runs, 13.4% lost by weather, 4% by troubles, 5% by others (Volcanic, Earthquake(10/31))

1.5 nights (12.6%) additional nights due to postpone of the TUE work (11/1-11/2)

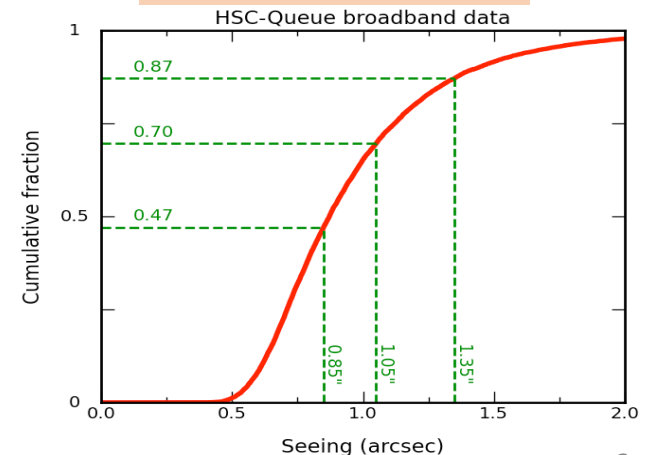
Examination of Low Completion rates of HSC Queue mode (S18B-S21B)

P11



- ➔
1. Including 30% weather factor for Queue mode time
 2. Relaxation of the seeing constraints

< 70% for seeing < 1.0"



Science Instruments for S23A & B

- SWIMS observation has been completed for S21A-S22B.
- MOIRCS returns from S23A.
- VAMPIRES will open new multi-bands modes with new CMOS detector on S23B (See SCExAO webpage).
- AO LGS mode opening on S23B is discussing due to the postpone of TBAD flight test.

Hilo Remote Operations of HSC and more (S23A & B). [Plan]

- Strengthening the operator's role in the night operation
- Enhance SA's role in QC, planning, FQA

SA (1)
[Hilo]

- Readiness check and set up, standby for night operation
- HSC Queue Coordination, FQA
- User support on the observation preparation and planning

Operators(2)
[Summit]

- Telescope operation
- Gen2 Operation for HSC observations
- Communication with the observers during the night operation

Observers
(Classical mode)
[Remote: Zoom & GERS]

- Planning of observation
- Leading the observation with communication with the operators.
- Modification of OPE file

Preparation for PFS Science Operation

- Takagi-san and Arai-san has been joining to the PFS engineering nights to understand PFS instrument operation and to check/establish the observation procedure together.
- Science Operation staffers (Takagi, Arai, Pyo) are cooperating to PFS obsproc discussion team in order to successful open-use observations of PFS.
 - Fiber hours and necessary allocation hours
 - Too policy
 - Filler policy
 - Operation flow
 - ...
- We have discussion session this afternoon (15:20-16:20) in Japanese (slides in English).
 - Update the main observation frame (flow) work (M. Tanaka)
 - ToO Policy (Takagi)
 - Filler Policy (Onodera)