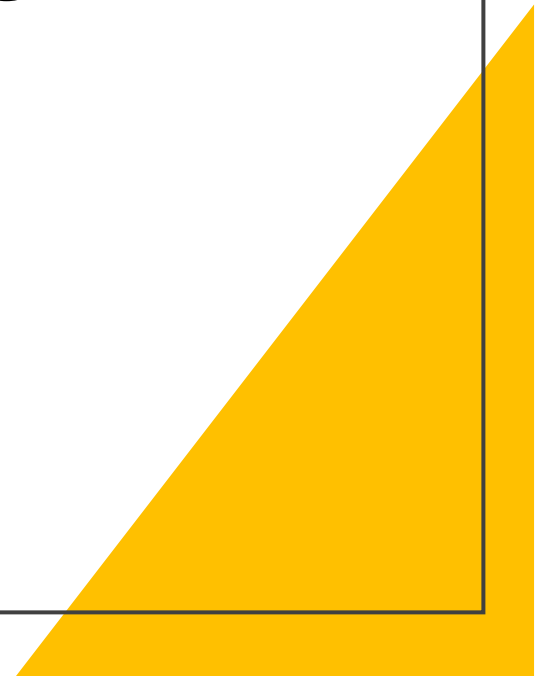


Science Operation Report for FY2021 Subaru UM

Tae-Soo Pyo



Agenda

Available Instruments in S22 Open Use

Allocation Issue with FOCAS in S22A

Subaru-Gemini time exchange imbalance

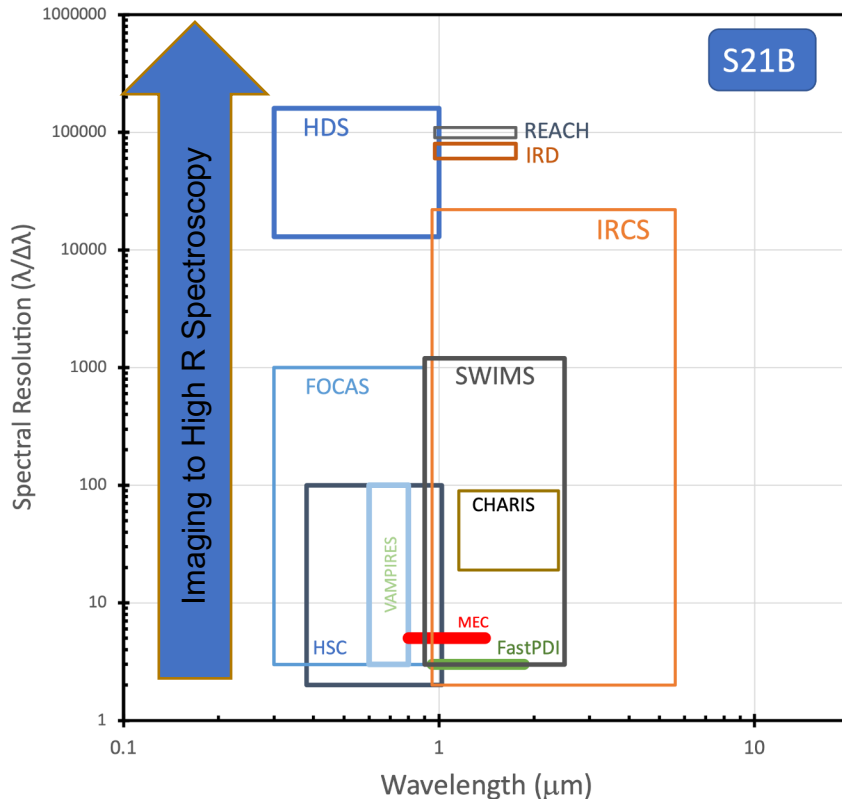
HSC Queue mode completion rate for
S21A & B

Reorganization of Night Support System
with Full Remote Operation/Observation

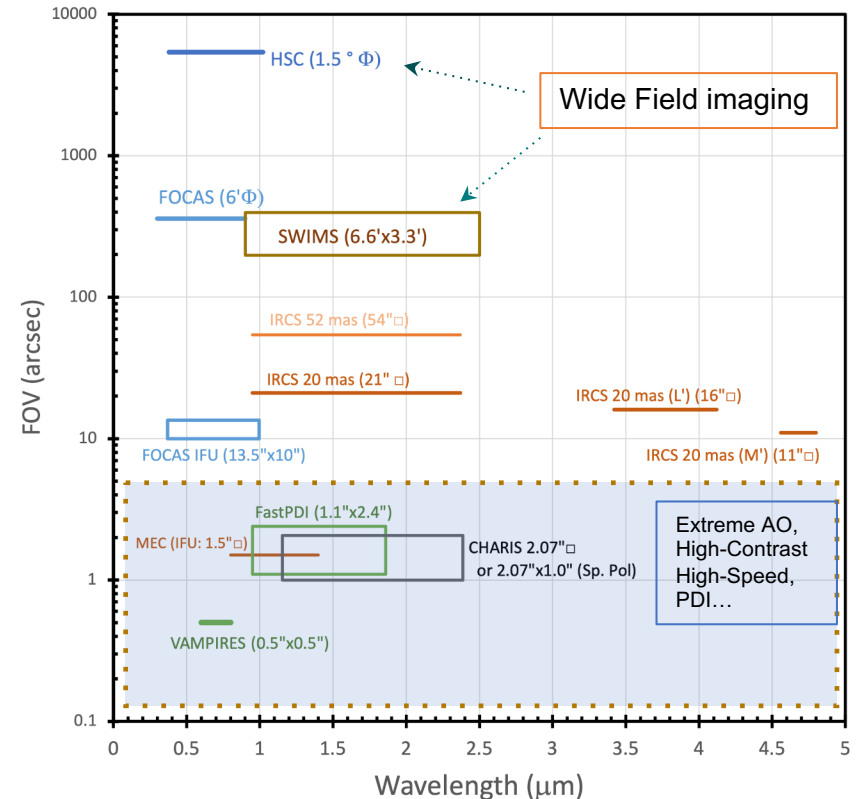
Available Instruments in Open Use @ S22A & B

- MOIRCS hibernate and Opening SWIMS until S22B.
- Opening FPGDI/SCEExAO since S21B and MEC/SCEExAO from S22A
- PFS in Engineering observations (opening from S23B)

Spectral Resolution of Instruments



FOV of Imaging Modes



Allocation issue with FOCAS in S22A

FOCAS observations are allocatable only 10 nights in April (5) and July (5) in S22A.

1) No FOCAS until April 19th

- FOCAS can use with CsOpt-M2 only (not with IR-M2).
- IR-M2 only until April 19th due to TUE repair work

2) No FOCAS from April 25th to July 5th

- FOCAS can be allocated only gray nights around HSC observation run.
- The instrument exchange between HSC and PFI (PFS) with common POpt2 will take contiguous five days works:
 1. HSC + POpt2 removal from Telescope (Top Unit)
 2. Warm up HSC in POpt2 (> 24 hrs)
 3. HSC separate from POpt2 @ Unit Selector
 4. PFI combine into POpt2 @ Unit Selector
 5. PFI + POpt2 install on Telescope (Top Unit)
- PFS needs MCS on Cs focus instead of FOCAS.
- FOCAS cannot be installed due to the configuration and insufficient manpower for instrument exchange.

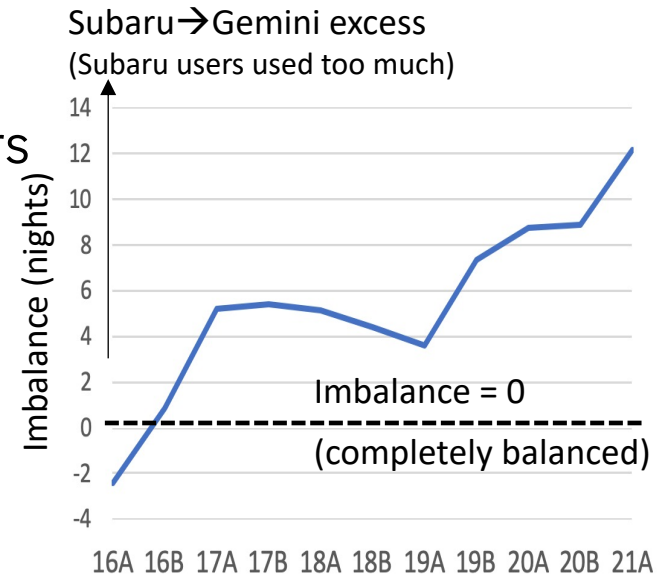
3) Telescope downtime for the primary mirror coating since July 11th.

Subaru-Gemini time exchange imbalance

- **Problem:** Subaru users used more Gemini time than Subaru time used by Gemini users in the last ~5 years.

- Subaru→Gemini (2016A-2021B) : **63.5 nights**
- Gemini→Subaru (2016A-2021B) : **52.3 nights**

Subaru-Gemini MoU states that we do not need to strictly balance the exchange nights in each semester, as long as we can balance in long term.



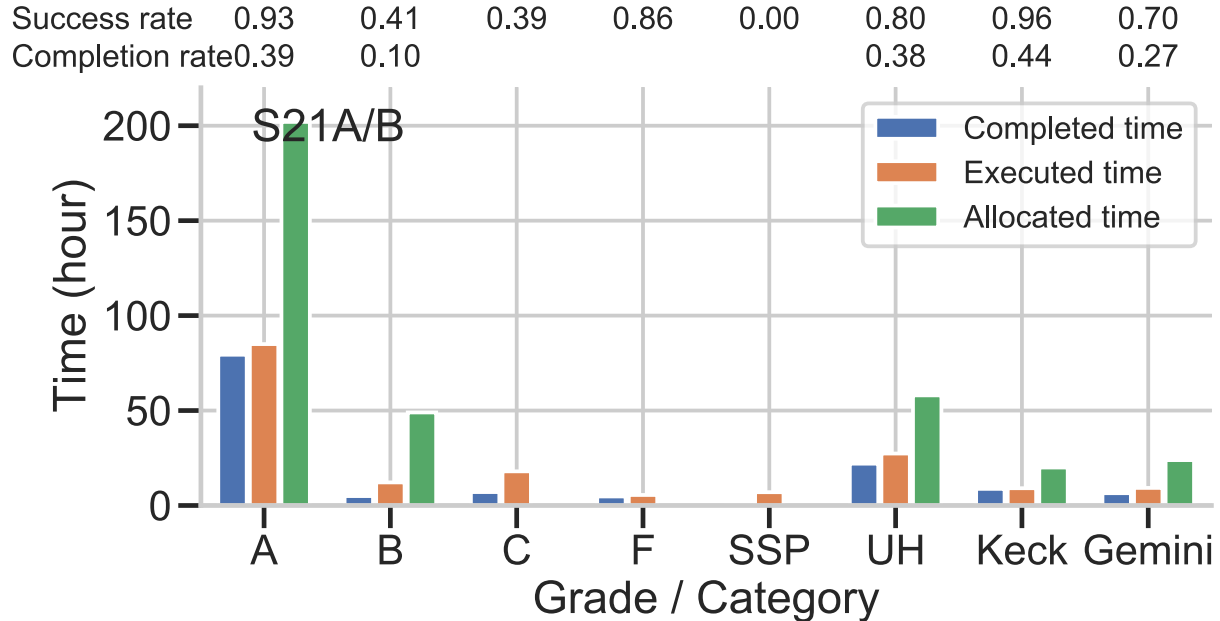
- **Reasons:**

- Subaru users are awarded many Gemini Fast Turnaround (FT) time (5 nights at max/semester since 2016A), but we did not have good mechanism to adjust the imbalance generated by FT.
- Gemini→Subaru requests are biased to HSC. HSC time is very limited even for Subaru users, and we often need to reject some of the requests from Gemini.

Subaru-Gemini time exchange imbalance

- **Actions:** SAC and observatory agreed we should “pay back” the imbalance (~12 nights) before PFS operation starts (S23B) - so we will take the following procedures until further notice:
 1. In each semester, we will secure **at least 4 nights for Gemini users** (>2-nights from openuse and >2-nights from DDT).
 2. In each semester, Subaru TAC will approve **3.0 nights at maximum for Subaru→Gemini** time exchange programs.
 - **For Users: Please remember - proposals requesting >3.0 nights of Gemini time will not be accepted. Also please carefully (and flexibly) consider “2nd choice instruments” when you submit Subaru→Gemini proposals.**
 3. Subaru users can access **12 hours (=1.2n) at max of Gemini FT** time per semester – this is already effective since Sep 2021.
 - More specifically, Subaru users can submit Gemini FT proposals only for calls issued in odd numbered month (Jan/Mar/May/Jul/Sep/Nov) - and Gemini will approve 4-hours at maximum in each opportunity.
 4. We will accept Subaru **service programs from Gemini** community from S22B semester (~1 night at maximum per semester).

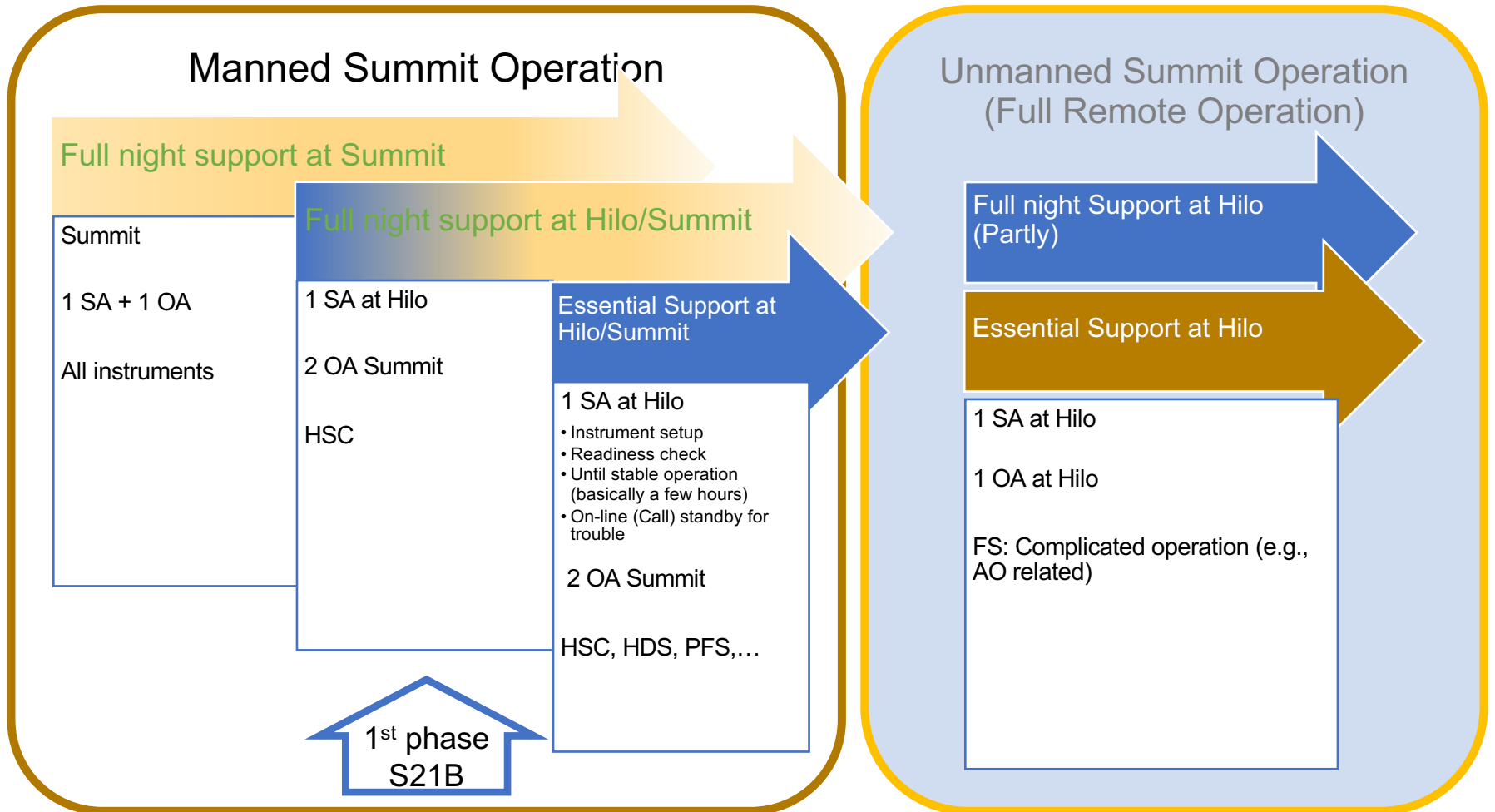
HSC Queue Completion Rate: S21A & B



* Completion rate = (Completion/Allocation), Success rate = (Completion/Execution)

- Success Low Completion rate ~ 0.4 for Grade A, 0.1 for Grade B
 - S21A — March run canceled due to telescope TUE problem
 - S22B — Completely lost data in December & January run due to bad weather
- Please see the TAC reports for the overall completion rates in the all semesters.

Reorganization of Night Support System with Full Remote Operation/Observation



Reorganization of Night Support System with Full Remote Operation/Observation

- Simplify HSC Queue mode Operation (lead by Terai)
- Full Remote Observation System
 - Upgrade Zoom kits (Summit/Hilo/Mitaka)
 - Open VPN system
 - real time data download, HSC/PFS observation log control, upload OPE file from office,..
 - Upgrade GERS server
 - Prepare backup terminal servers for Gen2
 - Replace Mtkda server in Mitaka
 - Keck remote observation room at Mitaka
- Full Remote Operation at Hilo
 - Core members : Aoki, Fujiyoshi, Tanaka, Takagi
 - Trouble summary (by Letawsky and Takagi)