

Subaru's Future Instrument Plans

(Current Status and Community Discussion so far)



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From Subaru-1.0 to Subaru-2.0:

- Community discussion for the long-term strategy of Subaru is led by SAC.
See Subaru-3 session scheduled on Day-3.

= 光赤外専門委員会への提言 =

2020 年へのすばるの戦略 “天・地・人”

～スペースと地上観測の連携そして人材育成を軸に～

March 2009 by SAC

2009 年 3 月 9 日

すばる小委員会

= ハワイ観測所への提言 =

2020 年代に向けたすばるの戦略

～次世代地上・スペース望遠鏡を見据えた運用と人材育成～

June 2012 by SAC

2012 年 6 月 30 日

すばる小委員会

Instrument Planning Activity back in 2010s:

- There was an intensive discussion on the Subaru instrument planning around 2014-2017. At that time, there were two major milestones:
 - PFS commissioning – expected to start in 2017, expected First Light 2019 (!)
 - TMT operations – First Light was expected to be in late 2020s (!)
- Pressure from the government to reduce the operation cost of Subaru.
 - Linked to the discussion on the International Partnership
- Our direction and decision: more weight on wide-field survey.
 - Reduce the number of facility instruments while keeping the unique capabilities of Subaru.
 - Lead to the concept of Subaru-2.0.

Instrument Planning Activity back in 2010s:

- **Instrument Planning Task Force in ~2014**

- Detailed survey/scoring (publication, workload, competitiveness,...) on each instrument.
- Members:
 - H. Fujiwara
 - T. Hattori
 - M. Imanishi
 - I. Iwata
 - N. Kashikawa
 - Y. Minowa
 - N. Narita
 - N. Takato
 - Masaomi Tanaka

- **Subaru internal discussion WG in ~2016**

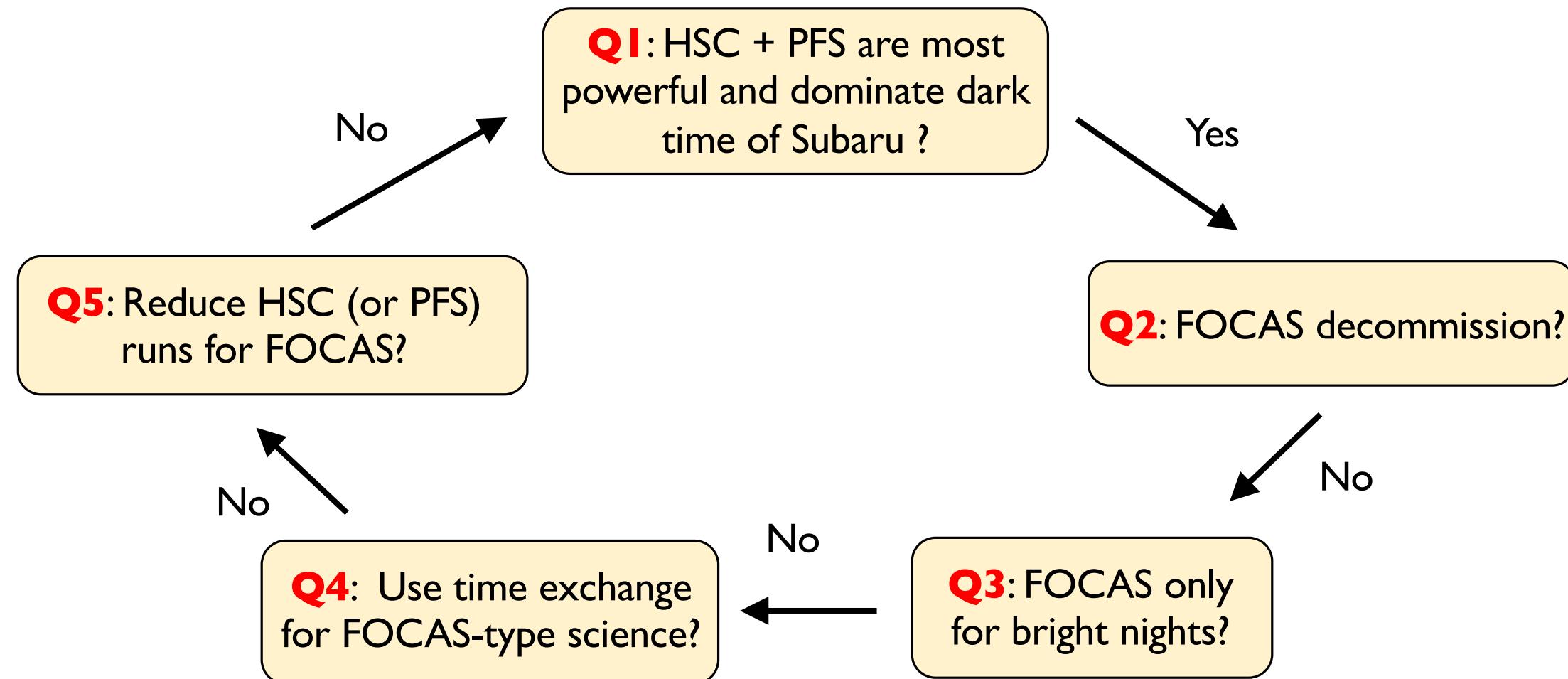
- Lead internal and community discussion on the instrument plans.
- Members:
 - I. Iwata
 - T. Hattori
 - Y. Minowa
 - Y. Koyama

Subaru UM FY2016 / SAC discussion in 2017:

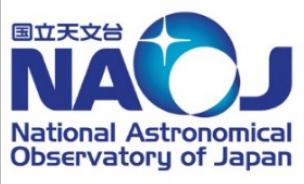
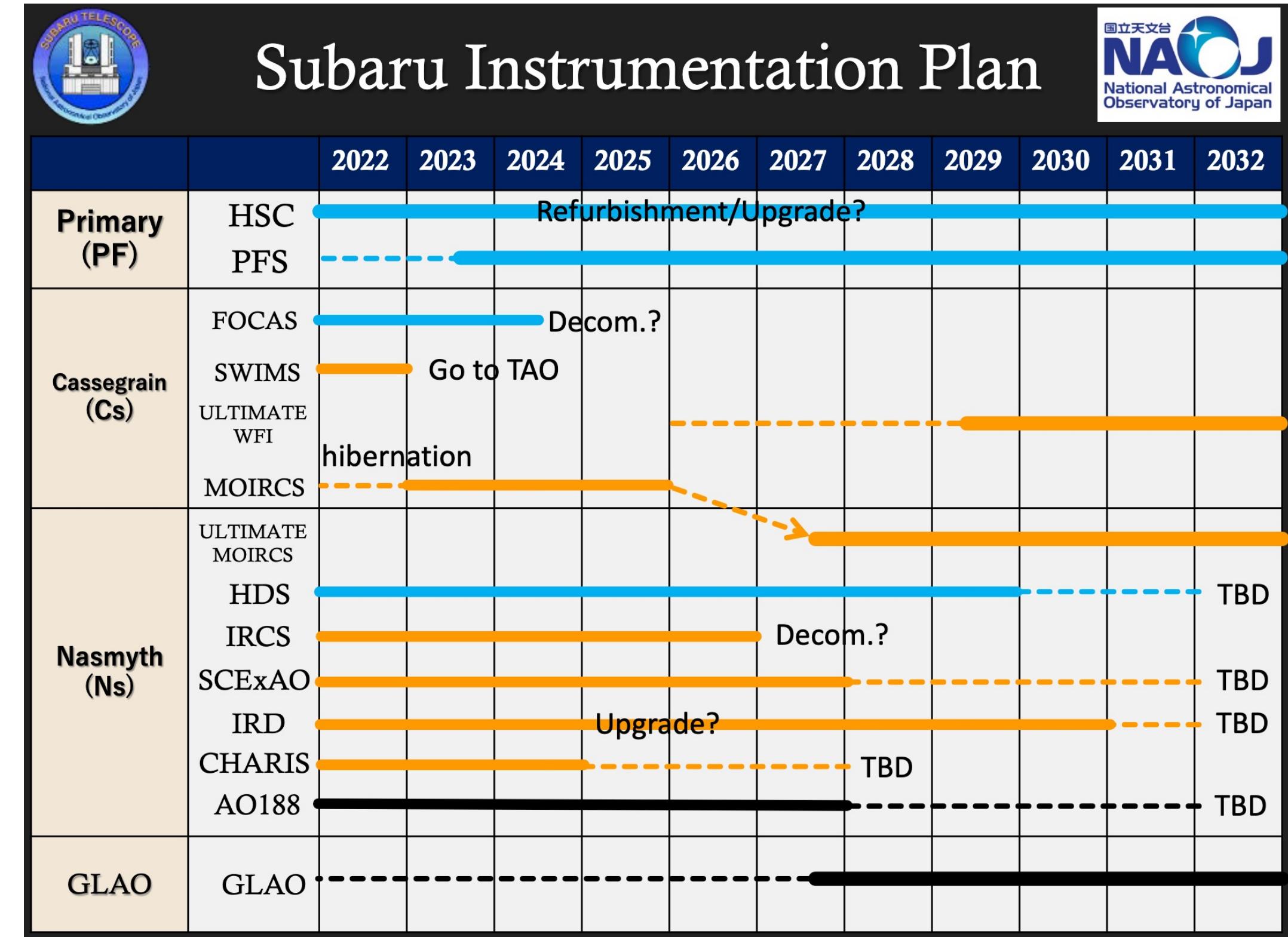
- After iteration with SAC, we proposed decommission of FOCAS (S18B in the earliest case) for PFS commissioning in Subaru UM FY2016.
- The community understands the observatory's situation, and there was no strong objection on the decommission of FOCAS after the completion of PFS full commissioning.
- Opinions to keep FOCAS:
 - Expected high demands for follow-up spectroscopy of e.g. HSC survey.
 - Keck/Gemini time exchange could help, but not perfect – e.g. the sensitivity of GMOS is lower than FOCAS, getting Keck time is very hard.
 - We should have “backup” spectroscopic instrument anyway – because we cannot rule out the risks of PFS (e.g. significant delay of commissioning, unexpectedly poor performance, ...etc) and decommission of similar instruments at Keck/Gemini.
 - Some types/modes of FOCAS observations cannot be done with PFS ([see Aoki-san's talk](#))

“FOCAS paradox”

This is what I designed in 2016, but the situation is still valid in our community?



“Most recent” officially presented version of the Subaru instrumentation plan - presented in Subaru UM in 2021 (by M. Yoshida)



Discussion items:

1. We agreed “Decommission of FOCAS after the completion of PFS full commissioning” - but how can we define the “completion of PFS full commissioning”?
2. How long does the community want to keep FOCAS ?
 - Still high science demands from the community – e.g. number of proposals.
 - Some observing modes of FOCAS cannot be done with PFS ([Aoki-san’s talk](#)).
3. What is the future of FOCAS, MOIRCS, IRCS, ... in line with the planned telescope modification at Cs focus for ULTIMATE ([see Aoki-san’s talk](#))?
 - A discussion session on NIR spectroscopy in FY2022 UM.
 - Who should drive/lead the Subaru Instrument Planning Activity
 - Need continuous discussion/evaluation as we did in mid 2010s?