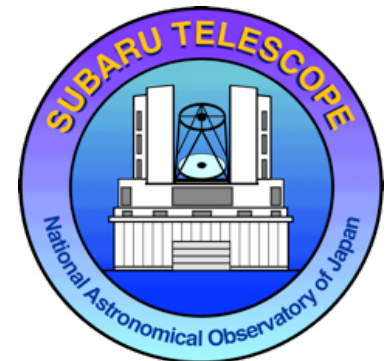


# Subaru Instrument Plans toward ~2020s

Subaru internal discussion & discussion items in Subaru UM FY2016

Y. Koyama, I. Iwata, Y. Minowa, T. Hattori



# Background

- Two major milestones :
  - PFS commissioning – starts in 2017, EFL 2019
  - TMT operations – FL will be in late 2020s.
- Reduction of operation budget from government.
  - International Operation
- Limited number of open-use nights.
- Our direction: focus on wide-field survey.
  - Reduce the number of facility instruments (decommission) while keeping the unique functions of Subaru.
- Trying our best to reduce the operation cost.
  - Pursue more “efficient” telescope/instrument operation – e.g. by reducing the frequency of instrument exchange.

# Instrument planning activity

- Instrument Planning Task Force in ~2014
  - Member: H. Fujiwara, T. Hattori, M. Imanishi, I. Iwata, N. Kashikawa, Y. Minowa, N. Narita, N. Takato, Masaomi Tanaka
  - Detailed survey/investigation/scoring (publication, workroad, competitiveness,...) on each instrument.
  - Task force web: <http://www.naoj.org/Projects/newdev/instplan2015/TF/>
- Subaru internal discussion WG in ~2016
  - I. Iwata, T. Hattori, Y. Minowa, Y. Koyama
  - All records of the discussion since 2014:  
<http://www.naoj.org/Projects/newdev/instplan2015/>

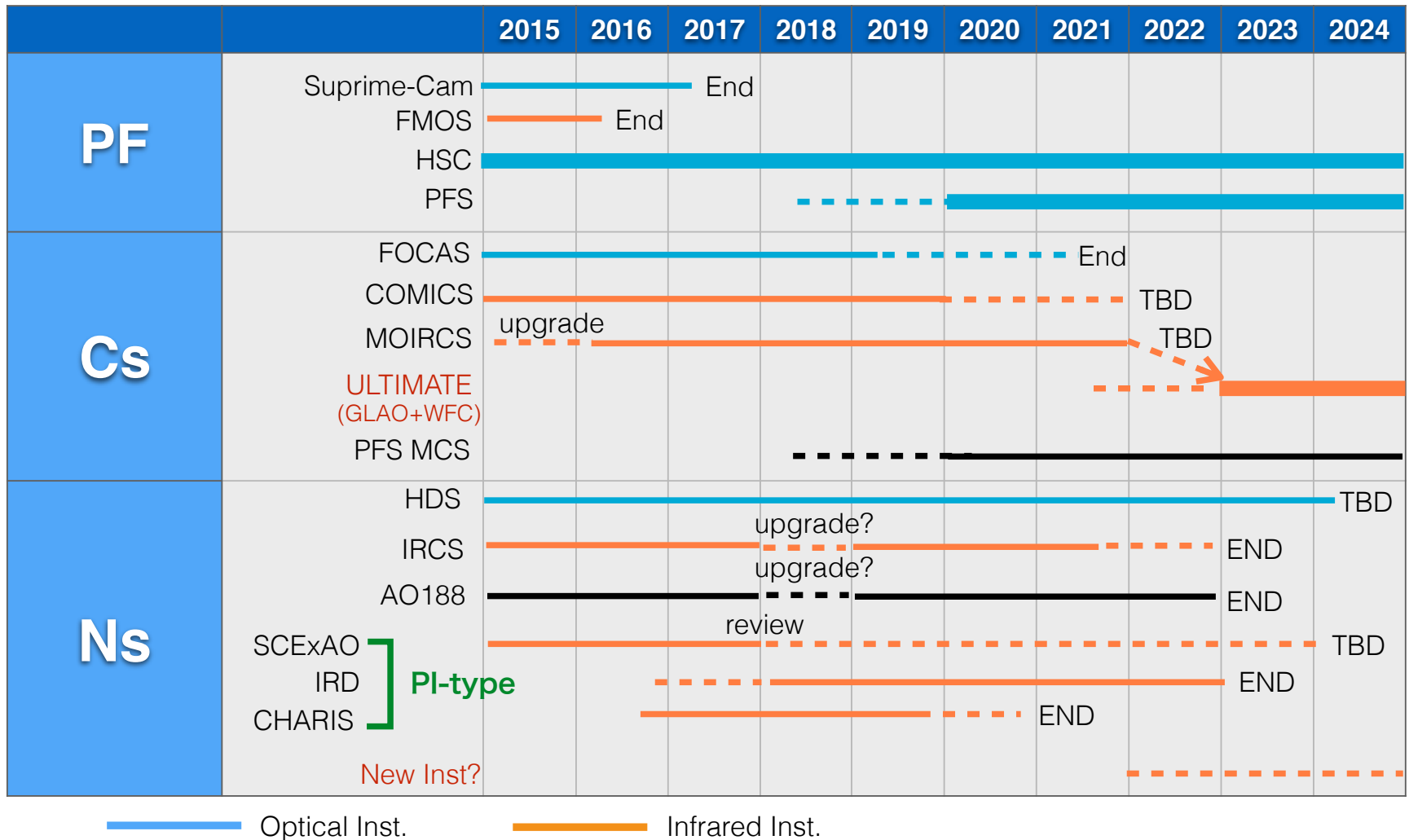
# Timeline

- 2016/09/21: Kick-off meeting (Koyama/Iwata/Minowa/Hattori)
- 2016/10/21: Follow-up meeting (Koyama/Iwata/Minowa/Hattori)
- 2016/11/14: Meeting w/ SciOp Division
- 2016/12/16 : Meeting within Subaru
- 2016/12/19 : Discussion in SAC
- 2016/01/09 : Discussion with community in Subaru UM

# Key Points ~ How do we survive PFS era? ~

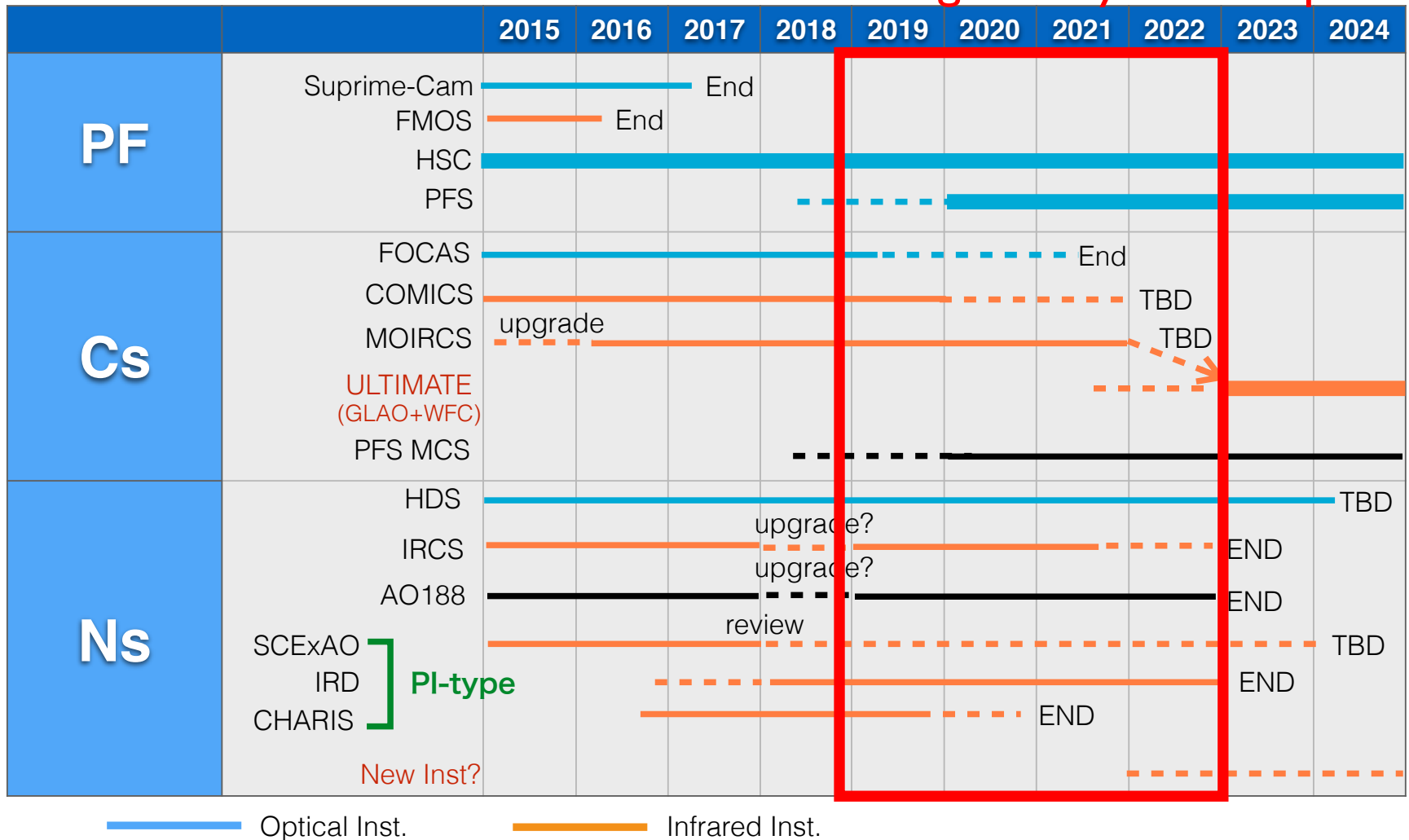
- HSC & PFS will dominate dark nights.
- Decommission FOCAS (SI8B?) for PFS commissioning.
- Keep MOIRCS as the 1<sup>st</sup>-light instrument of ULTIMATE.
- Keep HDS & COMICS as long as possible (until the day they die?)  
– their unique capability is competitive up to TMT era.
- Keep upgrading IRCS & AOI88 until we commission ULTIMATE.
- Encourage PI-type instruments (as long as Subaru resources allow) - to promote instrumentation activity in Japan (+ others).

# Subaru Telescope Instrument Timeline (version 2016/12/16)



# Subaru Telescope Instrument Timeline (version 2016/12/16)

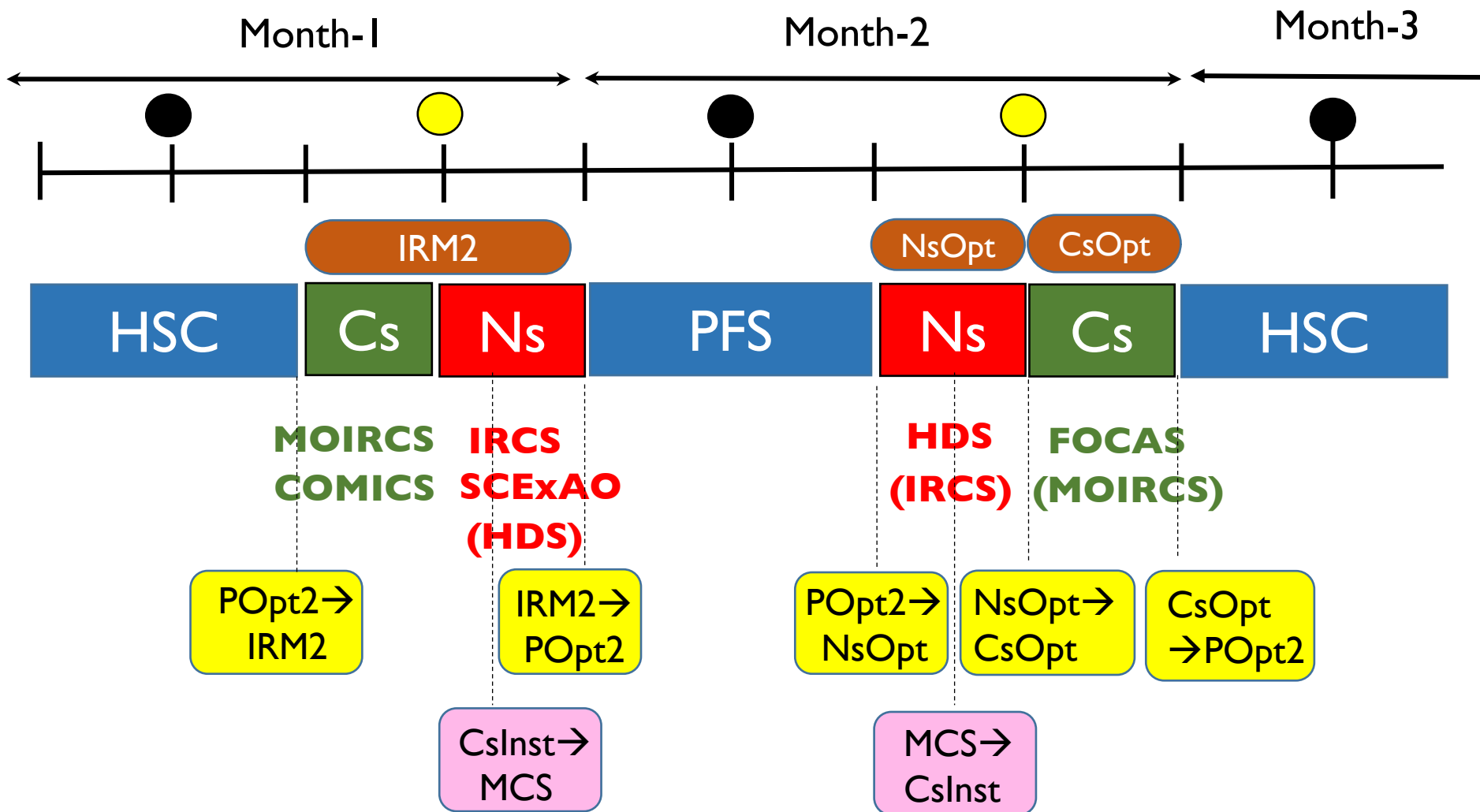
PFS commissioning + early science phase





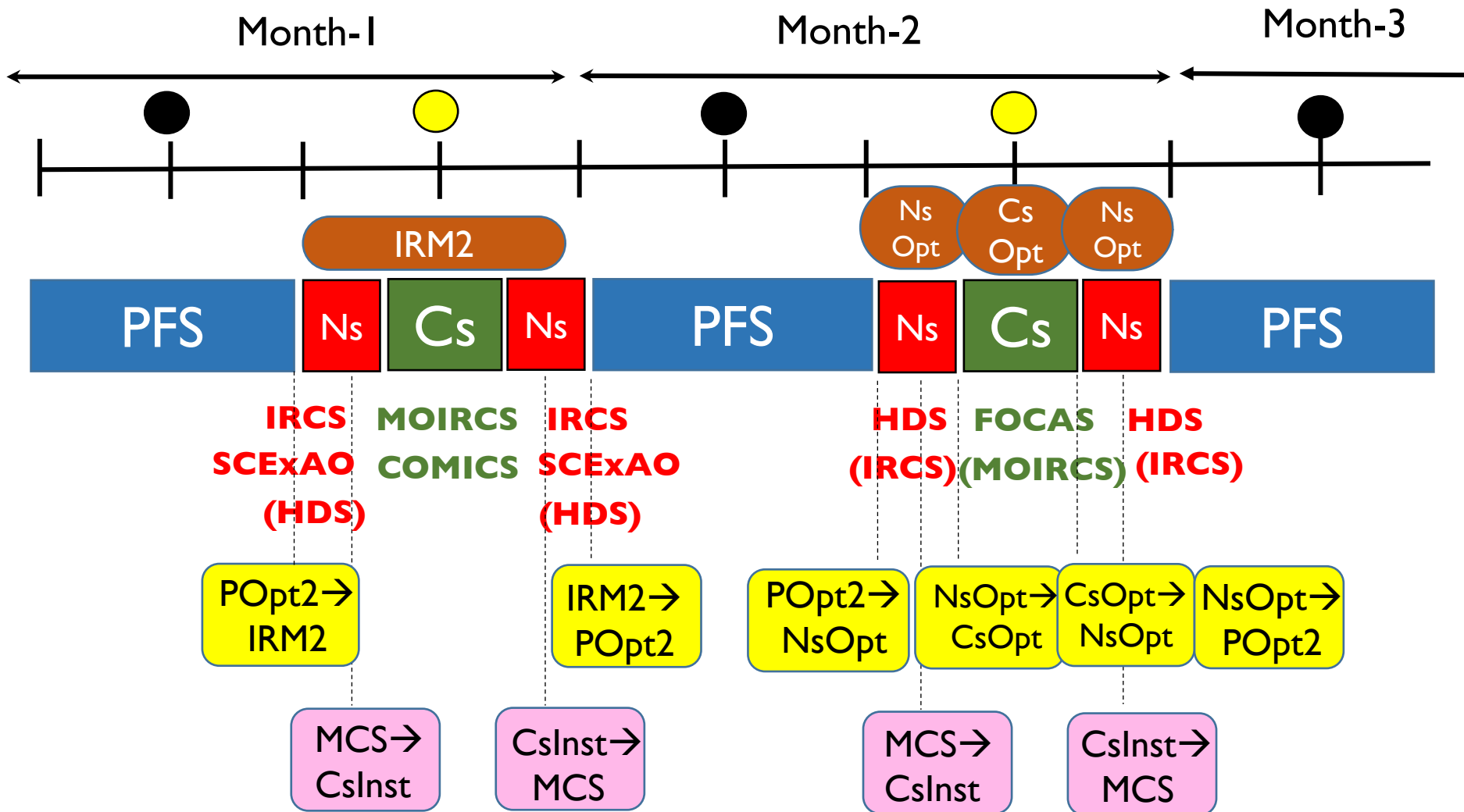


# Example of instrument exchange schedule in PFS era (I)





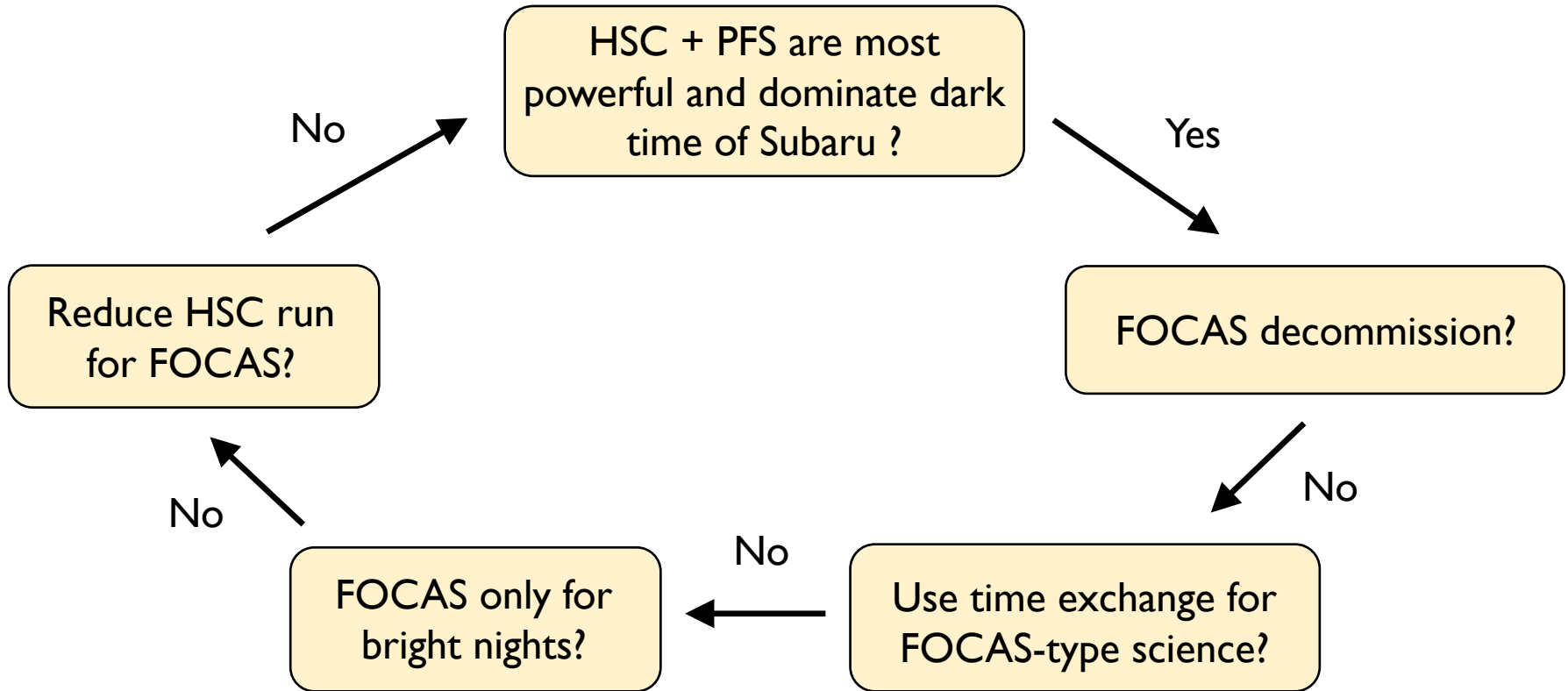
# Example of instrument exchange schedule in PFS era (2)



# Proposals (= discussion items)

- **Decommission of FOCAS (+CsOpt) in S18B**
  - depending on the PFS commissioning schedule
- **Reduce frequency of instrument exchange**
  - e.g. one instrument exchange per week
  - need to extend service/queue observation?

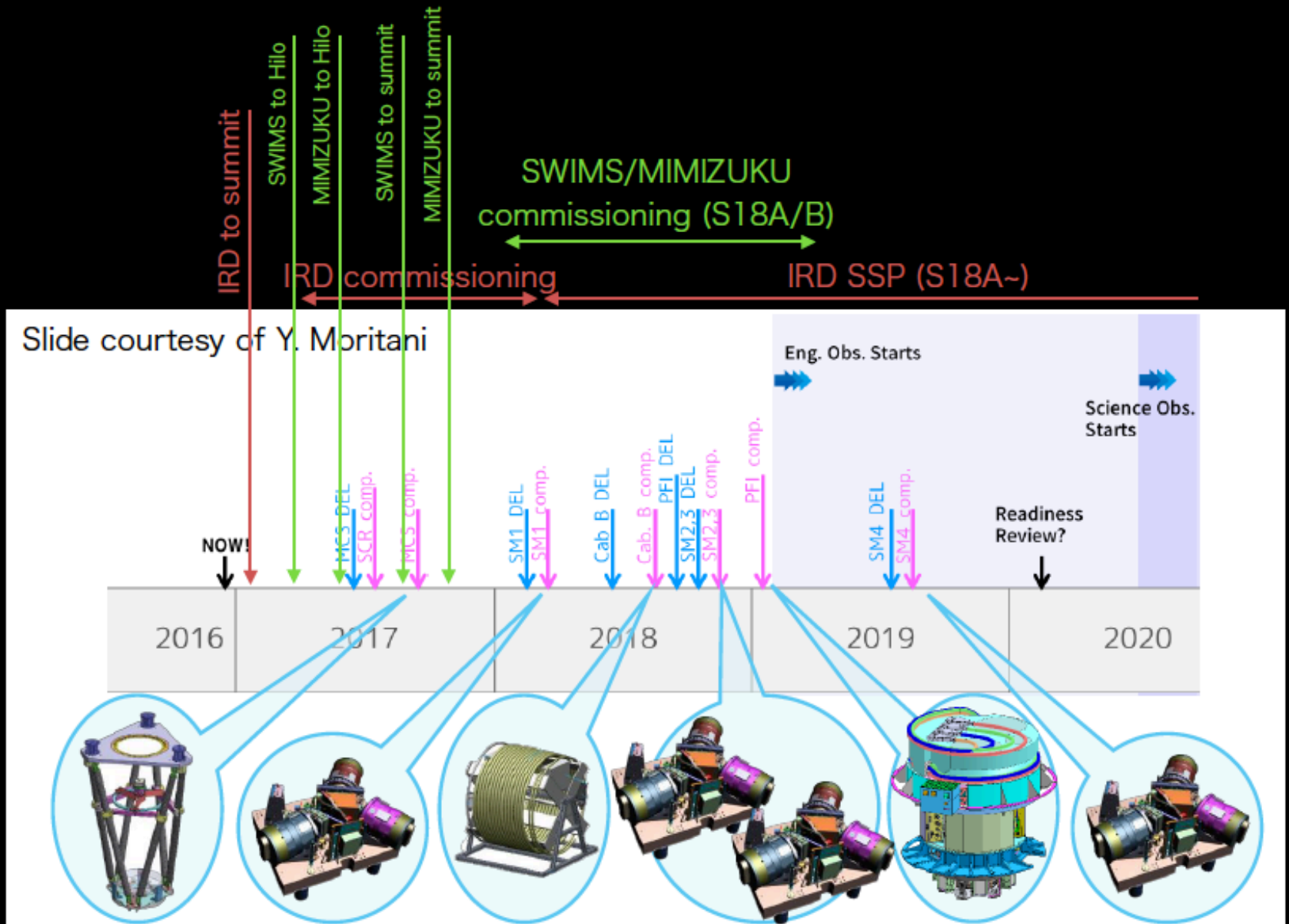
# “FOCAS paradox”



Please shout if you want to keep FOCAS during/after PFS commissioning. We will ask the community to submit a report for justification of their need of FOCAS in the PFS era, and how to solve the above paradox.

# Appendix A: PFS commissioning schedule

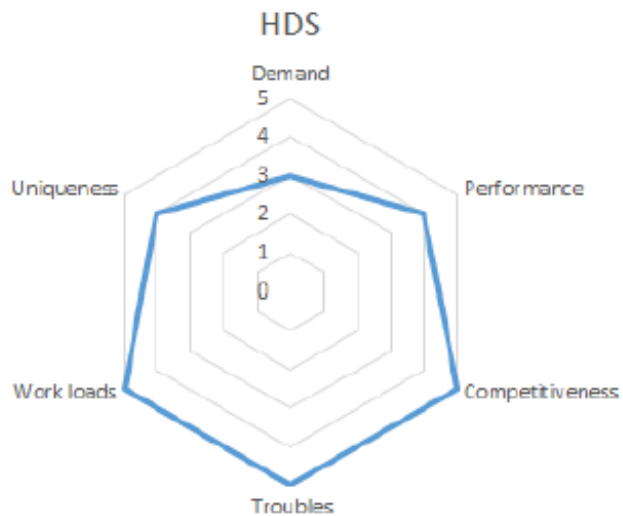
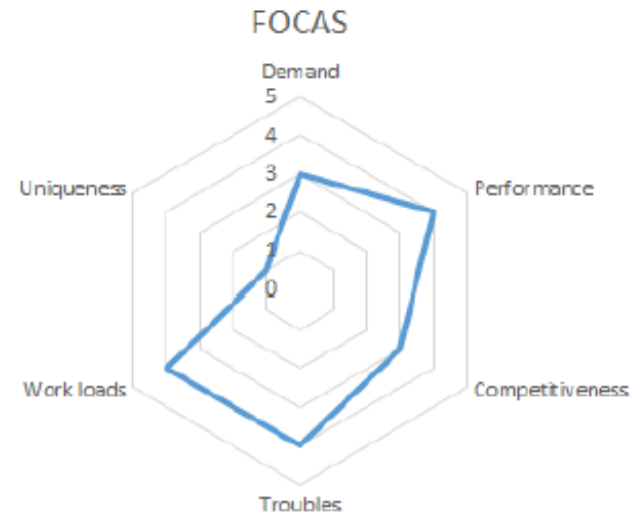
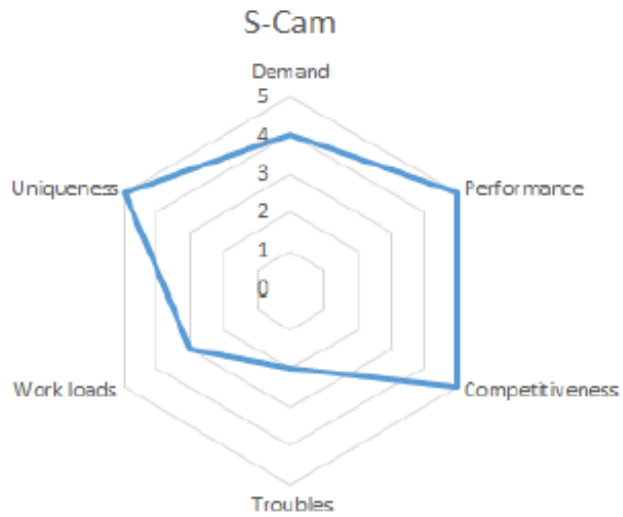
# PFS: Commissioning Schedule



**Appendix B:**  
**Scores for each instrument from**  
**Instrument Planning TF (2014)**



# Optical Instruments



Scores: higher is “better”.

# IR Instruments

