

Subaru and Gemini future instrument collaboration

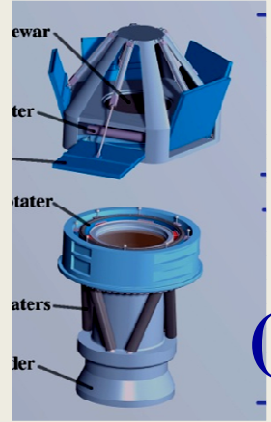
Hideki Takami
Subaru Telescope

Overview of Subaru and Gemini instrument in 2011

It is important to overview instrument
lineup of both telescopes

Subaru Instruments in 2011

• *Prime*



HSC
(2011-)
(WFEMOS)



FMOS

• *Nas*



HDS



HiCIAO



LGSAO



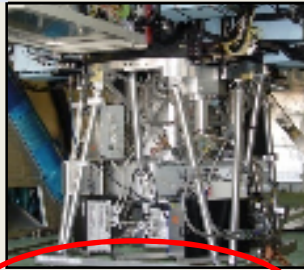
IRCS

• *Cass*

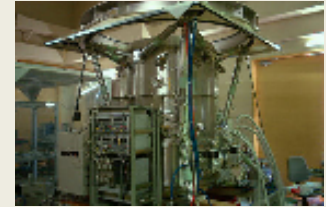


FOCAS

Overlap



MOIRCS



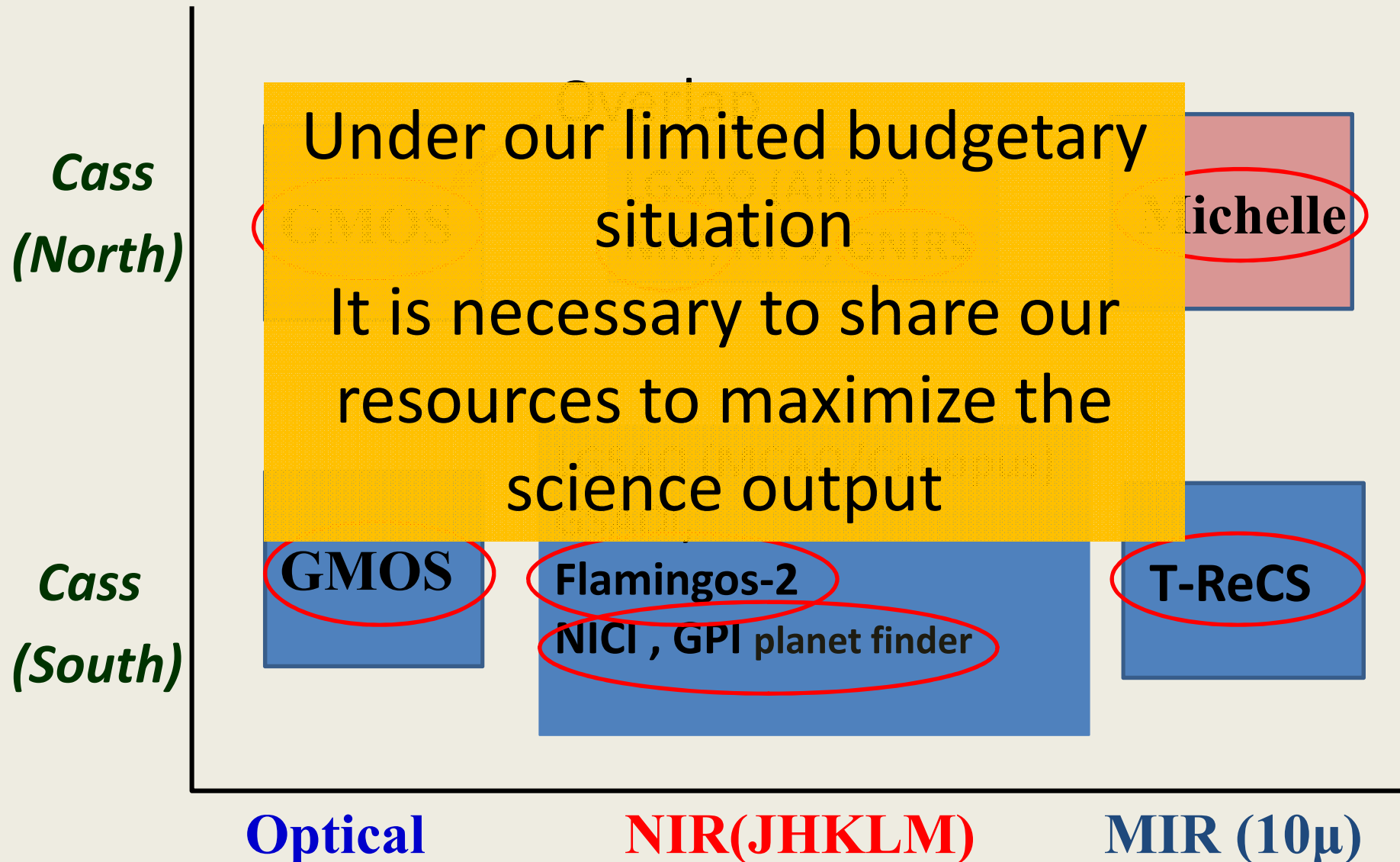
COMICS

Optical

NIR(JHKLM)

MIR (10μ)

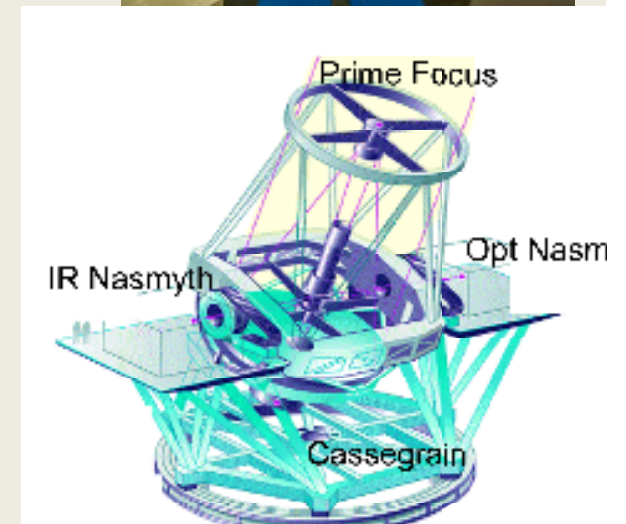
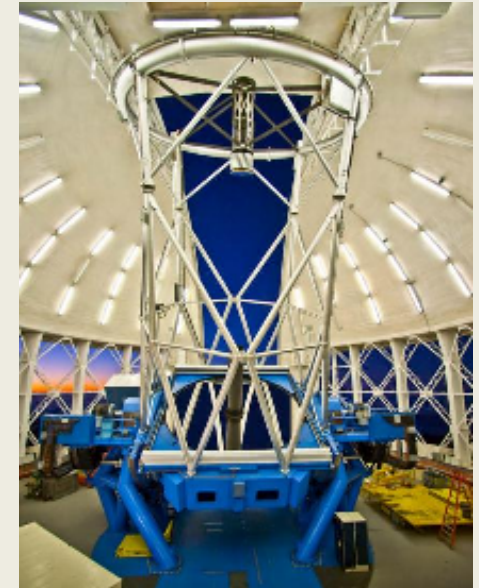
Gemini instruments in 2011



Points to be considered for our
future (2015~) instrument plan

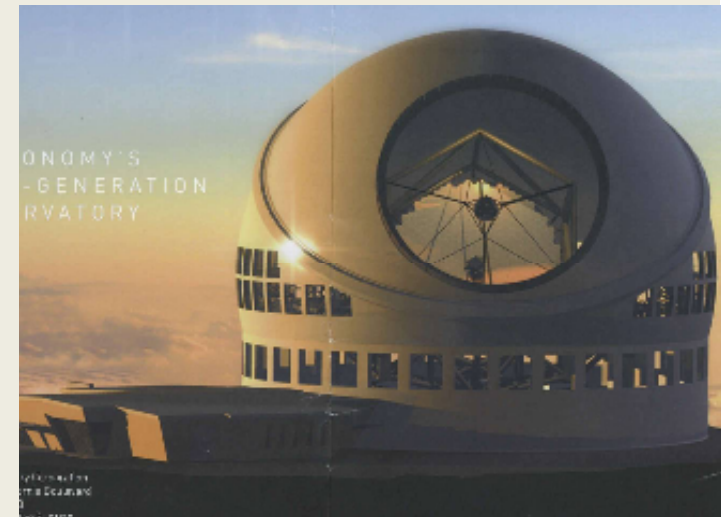
1) Subaru and Gemini's strength

- Gemini is good at
Northern & southern coverage. good image quality, IR optimized, flexible queue operation
- Subaru is good at
Prime Focus, stiff telescope structure, Nasmyth platform, large size instrument, easy development, good image quality



2) Live with TMT (2018~) if it comes to Mauna Kea

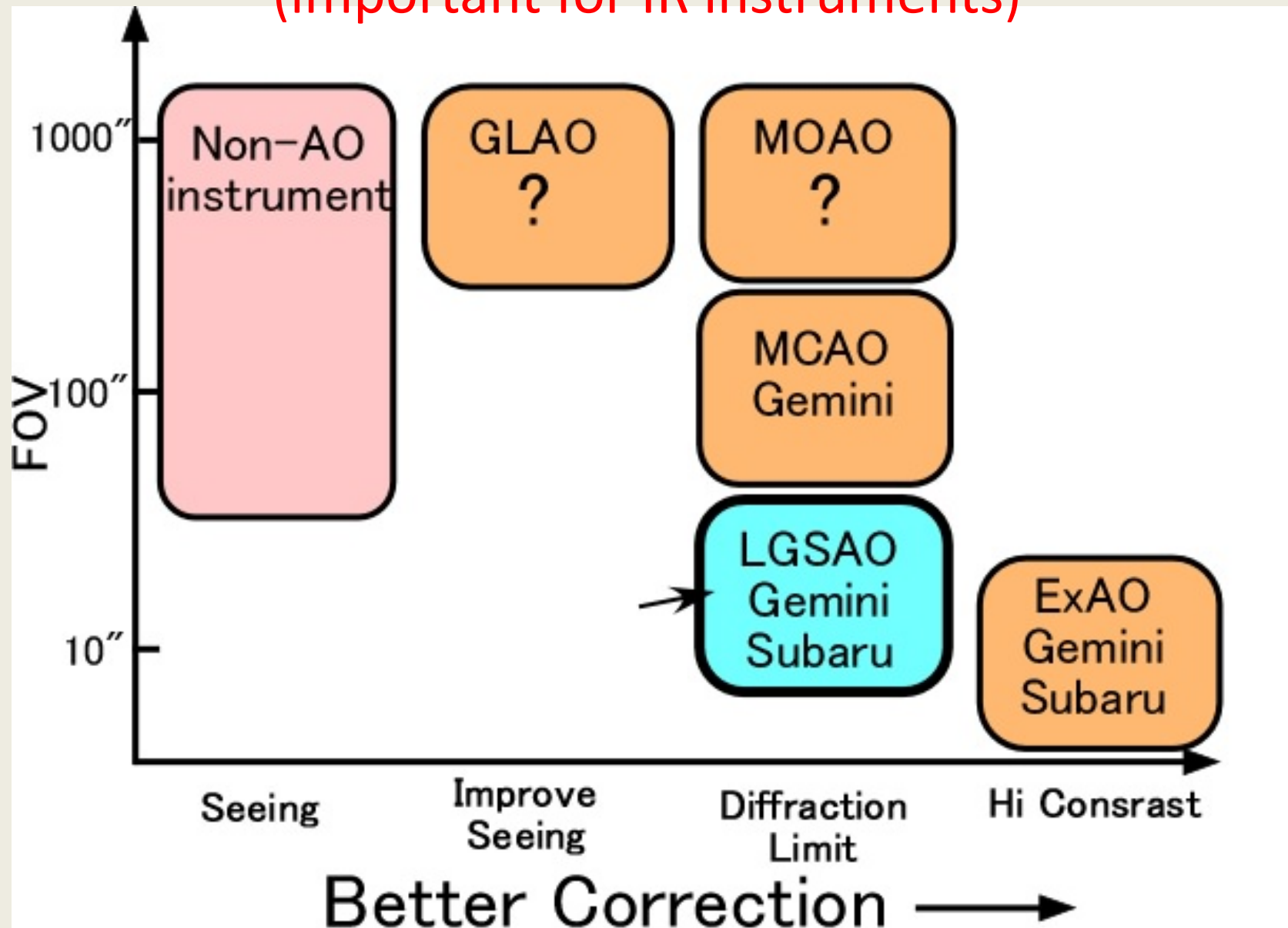
- Capabilities which TMT will not cover
 - Wide Field Imager, Spectrograph ?
 - Visible diffraction limit => Keck NGAO ?
- Prototype of TMT instrument ?
the 2nd phase instruments come after 2020
- New technology instrument
(ex. OH suppress fibers)



3) Other issues

- Competitive to VLT instruments
- Subaru might have to reduce the number of instruments to provide budget for TMT operation
- Still seek WFMOS (like instrument) ?

If we see from the point of AO
(important for IR instruments)



Candidates of Subaru/Gemini instruments after ~2015 (which should be studied from now)

- Wide Field Camera and Spectrograph with GLAO
- Multi Object IFU spectrograph with MOAO
- Planet finder after GPI, HiCIAO
- WFMOS (like)
- etc.....

Challenges

- Difference in development style between Japan and Gemini. (Learn from FMOS development with UK/AAO)
- Schedule may be different each other
- Must be affordable instrument
- Time exchange will become more critical
- Currently, Japan's instrument budget is funded independently from Subaru's planning.

Nevertheless it is important to persuade the possibility

Summary

- Subaru needs instruments plan after HSC (2015~)
- Subaru and Gemini has overlapping in functions of their instruments, think to optimize the inherent capabilities of the telescopes
- Should build competitive instruments to VLT
 - Maybe best achieved through instrument construction collaboration with Subaru, Gemini and other partners.
- Need to consider the synergy with TMT (Hawaii)
- Subaru will have a meeting on new instruments (so far Infrared) during this year. Exchange information and