

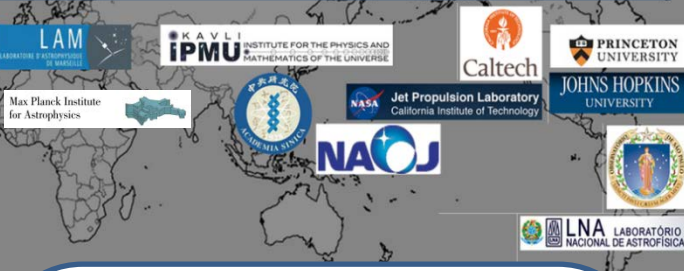
SUBARU PRIME FOCUS SPECTROGRAPH

Naoyuki Tamura (Kavli IPMU, The Univ of Tokyo) & PFS collaboration

PFS (Prime Focus Spectrograph), a next generation facility instrument on **Subaru Telescope**, is a **very wide-field, massively multiplexed, and optical & near-infrared spectrograph**. The instrument has been developed by the international team at the initiative of **Kavli IPMU**. The project is coming into the construction phase aiming at system integration & commissioning in 2017-2018 and science operation in 2019, with three key science areas: **Cosmology, galaxy/AGN evolution, & Galactic archaeology**.

PFS collaboration

Across 6 countries: JPN, TPE, USA, BRA, FRA, GER.



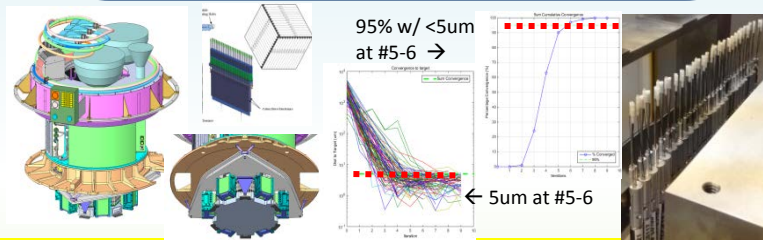
HSC & PFS for "SuMIRE"

Kavli IPMU is leading the project **"SuMIRE" (Subaru Measurement of Images and Redshifts)**, of which two wheels are **PFS & Hyper Suprime Cam (HSC, a very wide-field CCD imager)** on **Subaru**.



PFS - Fast facts

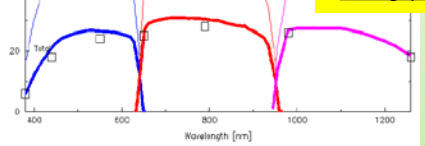
- Wide field: **~1.3 deg diameter** (Hexagonal)
- Highly multiplexed: **2400 fibers**,
- Quick fiber reconfiguration: **~60 sec** (TBC)
- Fiber diameter: **~1.1 arcsec**
- Positioner pitch: **8mm** (~88 arcsec), with patrol areas overlapped between adjacent ones.
- Optical-NIR coverage: **380-1260nm at once**.



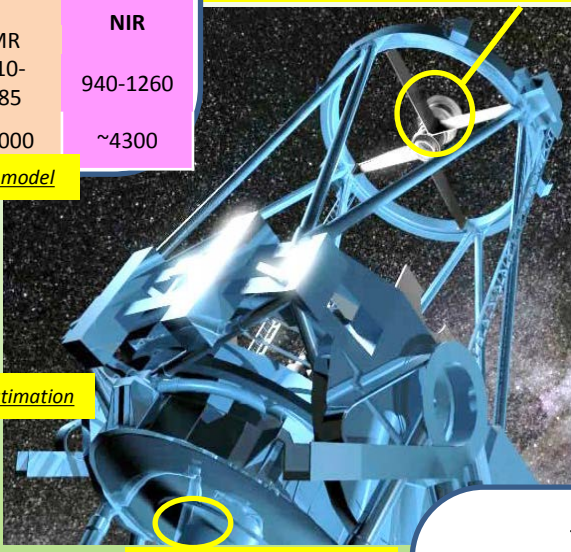
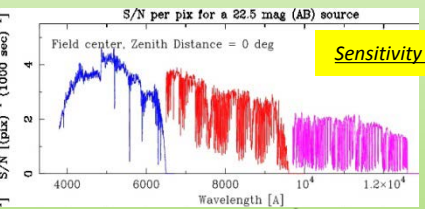
Prime Focus Instrument "PFI" (JPL/CIT, ASIAA, LNA)

	Blue	Red		NIR
		LR	MR	
Coverage (nm)	380-650	630-970	710-885	940-1260
Resolving power	~2300	~3000	~5000	~4300

Throughput model

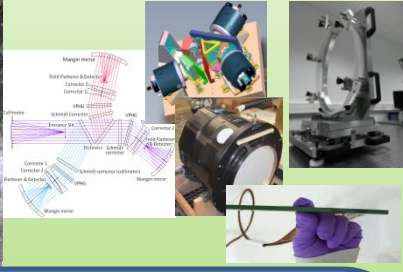


Sensitivity estimation



Spectrograph System "SpS" (LAM, PU, JHU, LNA)

- 4 identical units → 2400 spectra total.
- Located in an env-ctrl'd clean room on the TUE-IR floor in the dome.



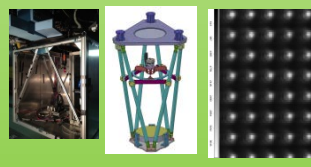
Fiber System (LNA)

- Three parts: PFI ("Cable C"), Telescope ("B"), SpS ("A").
- Two connectors: "C-B" & "B-A".



Metrology Camera (ASIAA)

- Take images of back-lit fibers on the prime focus **all at once**.
- Installed as an instrument at Cs.



Expected timeline

