

Status of Existing Facility Instruments

Subaru Users' Meeting 2016

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(Instrument Division)

Summary 2016

Prime Focus

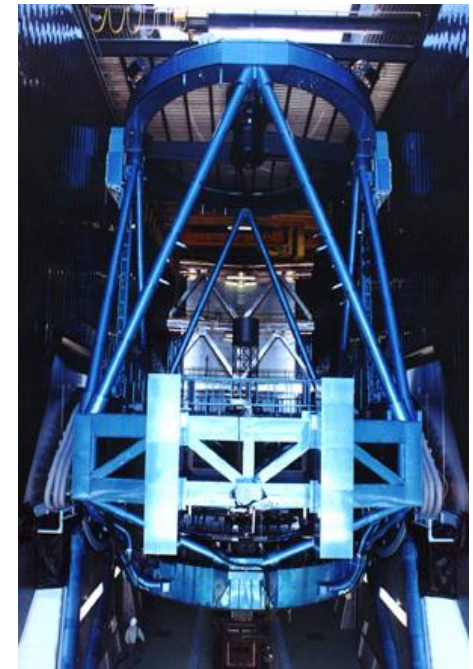
HSC	minor upgrades, handover
SpCam	decommission after May, 2017

Nasmyth

AO188	LGS brightness, TBAD progress, RTS upgrade
IRCS	new filters, polarimetry in thermal infrared
HDS	new OBCP, fiber-MOS status

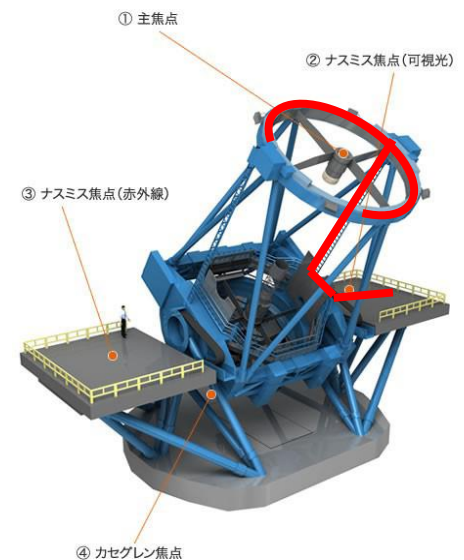
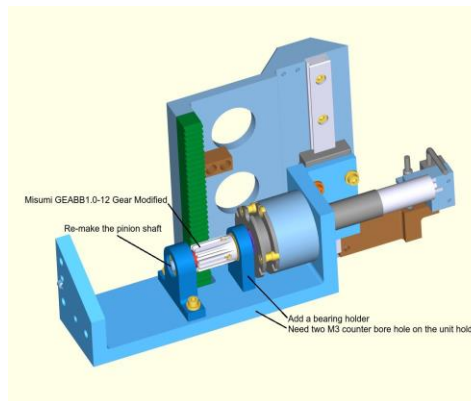
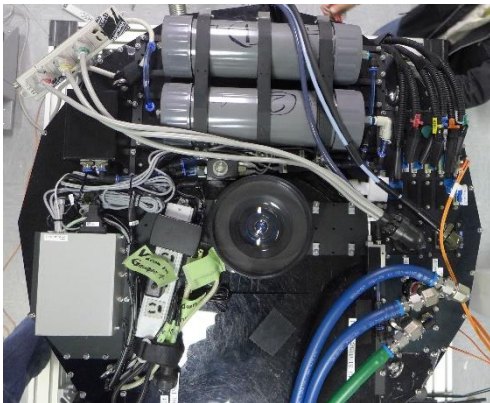
Cassegrain

COMICS	no major status update
FOCAS	discussion on decommission, IFU status
MOIRCS	performance after detector upgrade, plan for new grism



HSC

- minor upgrades
 - on-axis domeflat
 - small mechanical modifications to FEU
 - monochromatic domeflat (planning)
 - OBCP upgrade and new rack system
 - filter transmission measurement system



HSC

- continuing efforts to handover the instrument operation and maintenance works
 - software (Philip Tait)
 - hardware of FEU/Shutter (Yoshiyuki Doi)
 - organizing instrument works (Nakata, Hattori)



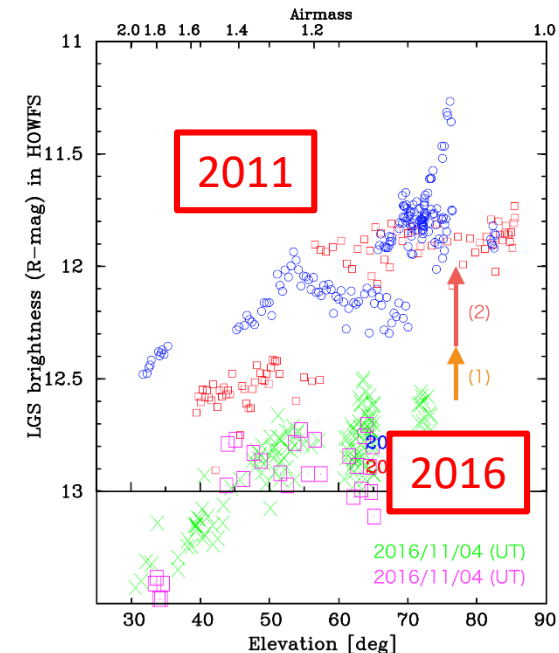
- and many other people

Suprime-Cam

- last observing run in May, 2017
 - will be decommissioned after that
 - difficulties in keeping the prime-focus unit (POpt) operational, especially AG/SH functions
 - stable operation of HSC
 - original plan : after two years of stable HSC operation
- need to discuss what to do after decommission
 - keep it as a backup instrument for HSC?
 - if yes, how long?

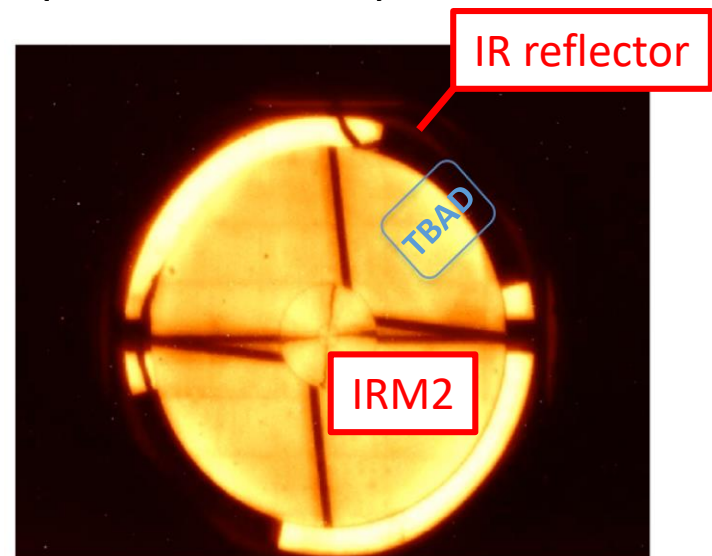
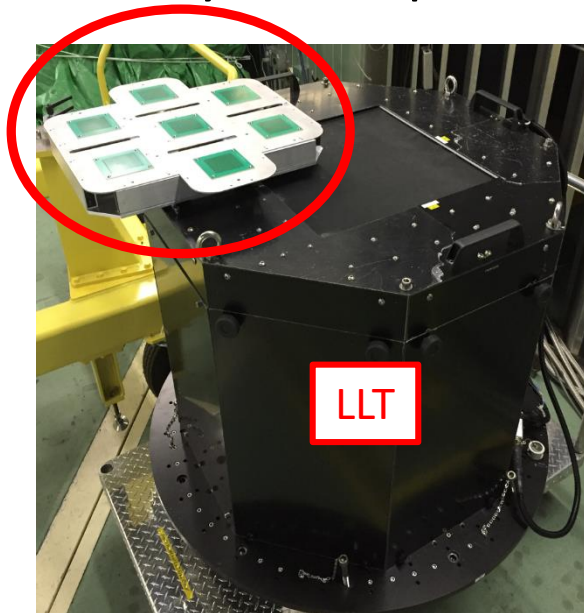
LGS/AO188

- recovery of LGS brightness
 - damage to fiber and lens
 - replaced the injection lens
 - 0.4-0.5mag. brighter after replacement
 - still ~ 0.5 mag. fainter than in 2011
 - laser power (4.5W vs 5.4W)
 - primary mirror reflectivity?
- RTS upgrade (2017)
 - Real Time System for AO control (2005-)
 - new system from S17B?
 - fast real-time telemetry
 - automatic tuning of AO control



LGS/AO188

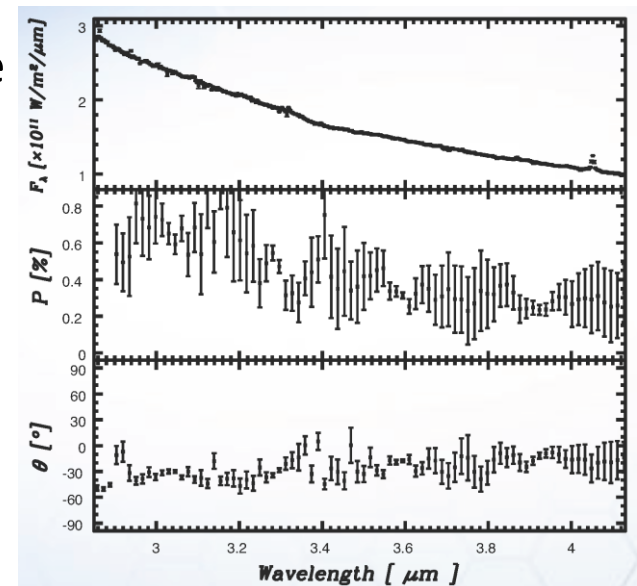
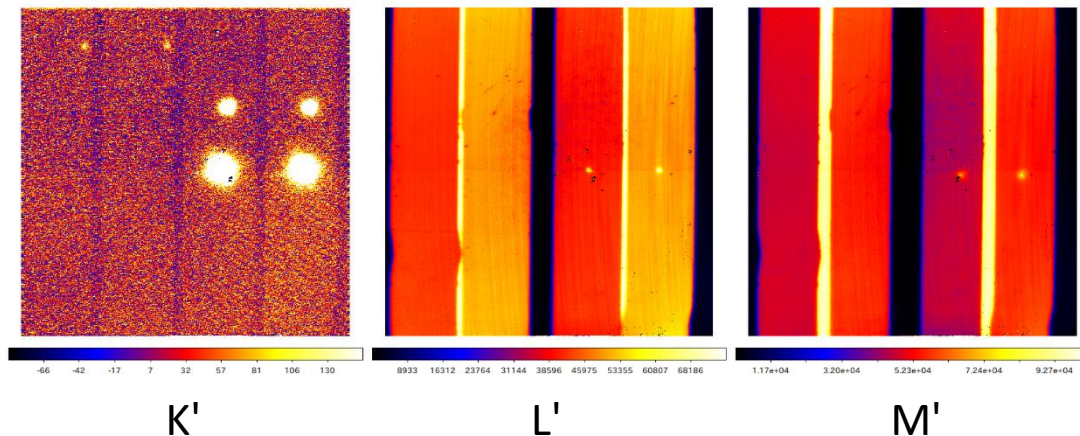
- TBAD (Transponder-Base Aircraft Detection)
 - science path vignetting test in 2016
 - 2016/6, 2016/11
 - with AO188, IRCS, and MOIRCS
 - permanent install and over-flight test in S17A
 - may start operation in S17B (earliest case)



IRM2 with domeflat seen by AO188

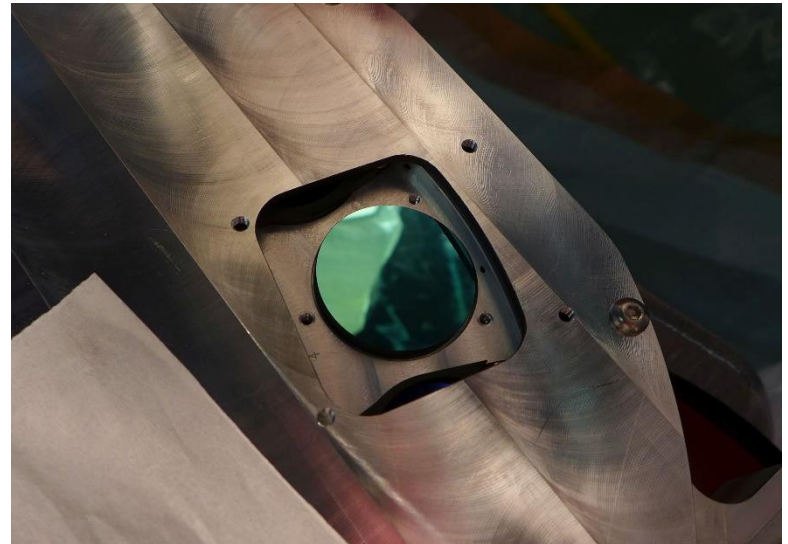
IRCS

- new observing mode (polarimetry in thermal infrared)
 - half-waveplate and wire-grid for 2-5 μm
 - installation and test in 2016
 - engineering observation on 2016/6/19 (0.5 night)
 - K', L', M' imaging- and K, L spectro-polarimetry
 - evaluation still ongoing
 - polarization degree and PA measured in L'-band imaging are mostly consistent with literature values
 - S18A is the target for starting open-use



IRCS

- new filter installation
 - IRCS camera-side
 - NB2070
 - upgraded H2O Ice filter for imaging-polarimetry
 - Iz order-sorting filter was removed

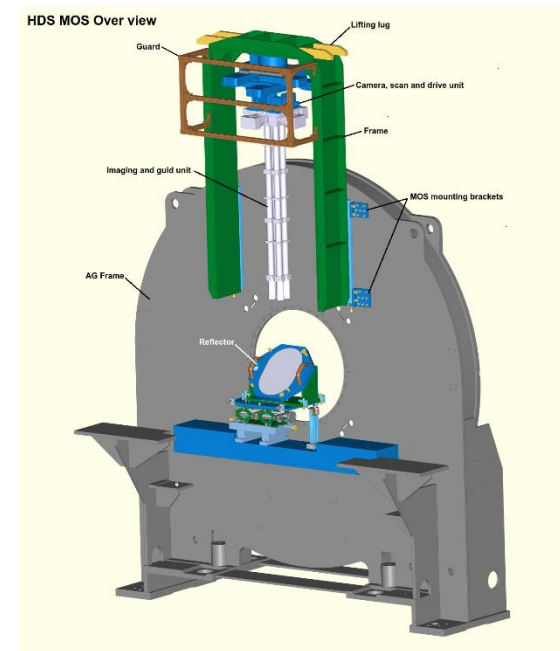
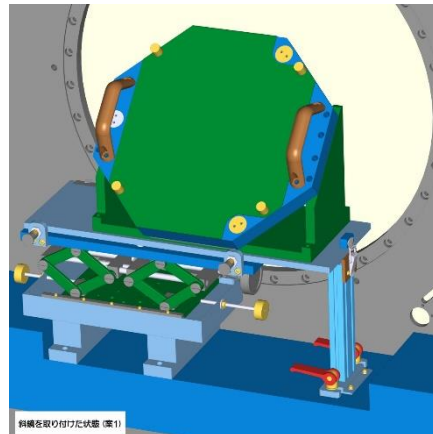


HDS

- OBCP upgrade
 - SUN Ultra2 to Linux computer
 - started operation in Nov. 2016
 - reduced overhead
 - 15-20% less than
 - mainly in fits file creation process
- minor troubles
 - hard-disk, computer-fan, NVRAM, etc.
 - will need upgrades to keep using in 2020s
 - CCD and readout electronics
 - image rotator (recoating, new ImR?)
 - replace old devices in the hardware control system

HDS

- fiber-MOS unit (PI: Wako Aoki)
 - FY2016
 - detailed mechanical design and fabrication (on-going)
 - discussion on NsOpt AGSH structure which supports HDS MOS unit
 - camera unit (BU-50) control test
 - installation and test in 2017?

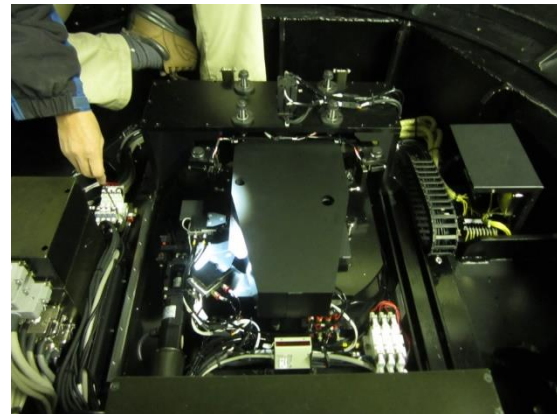


FOCAS

- discussion on decommission
 - increasing number of HSC follow-up observations
 - high- z quasars, LAEs, SNe, etc.
 - supporting software for MOS-mask design directly from HSC data
 - difficulty in allocating observing nights in dark/grey time
 - usually brighter than half-moon
 - see Koyama-san's presentation

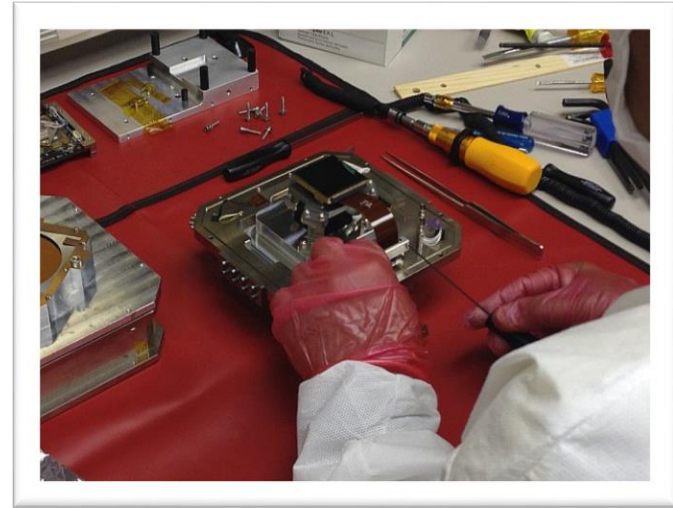
FOCAS

- IFU (PI: Ozaki)
 - opt-mechanical components have been manufactured and delivered in June 2016
 - installation test to FOCAS (without optics)
 - July 2017 : one interference was discovered
 - October 2017 : after modification, successfully finished the test
 - plan for this year
 - early FY2017 : optical performance test during daytime using telescope calibration lamps
 - mid to late FY2017 : engineering observation (hopefully)



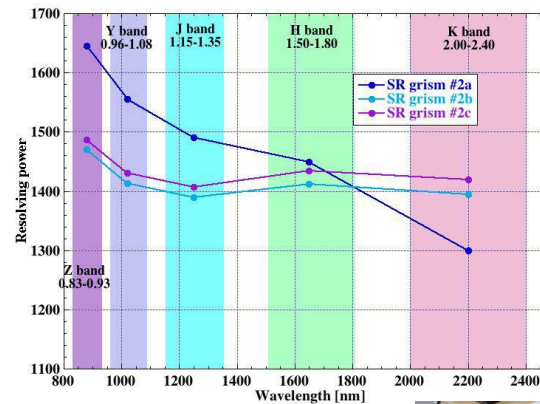
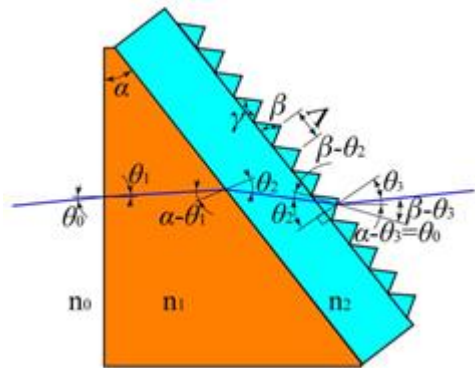
MOIRCS

- detector upgrade
 - 2015 (last UM)
 - replacement to H2RG
 - full renewal of the control software system
 - 2016
 - open from S16A
 - engineering : 4 nights (S16A), 1.5 nights (S16B)
 - open-use : 5.5 nights (S16A), 12.5 nights (S16B)
 - characterization and stabilization
 - improvements in efficiency, readout noise, overhead, etc.
 - downtime due to instrument troubles (open-use) : < 2h in total
- please see Tanaka-san's poster for the performance and remaining issues



MOIRCS

- grism upgrade (Ebizuka@Riken)
 - planning for new high-throughput medium-resolution grism ($R \sim 1500$)
 - more details in Ebizuka-san's poster presentation



- MLA-IFU project (Ishigaki@Iwate Univ.)
 - tests in Hilo base are ongoing
 - redesign of the focal plane



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