

# Status of Input Optics

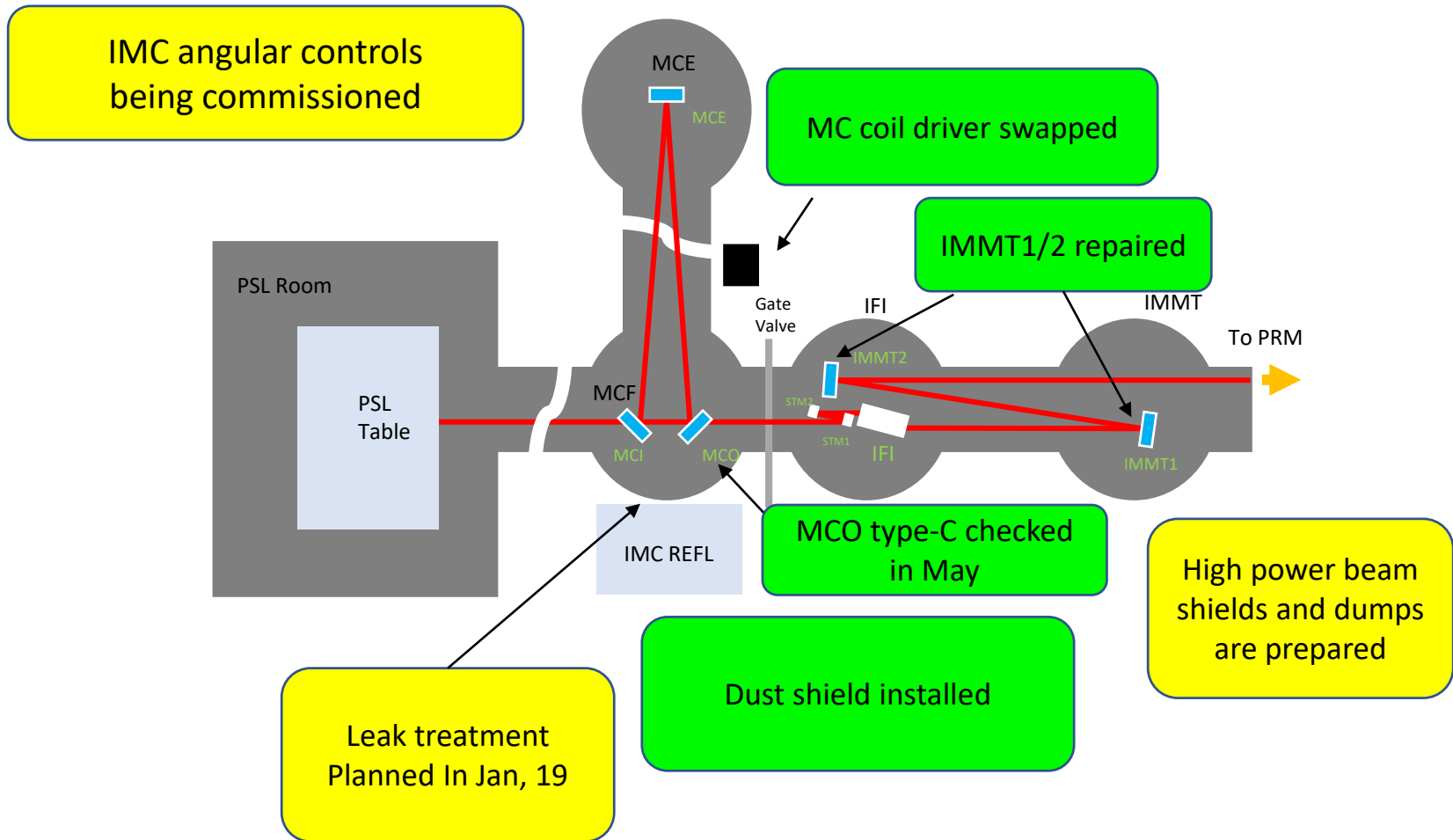
Guiguo Ge, Masayuki Nakano, and Keiko Kokeyama

On behalf of the IOO subgroup

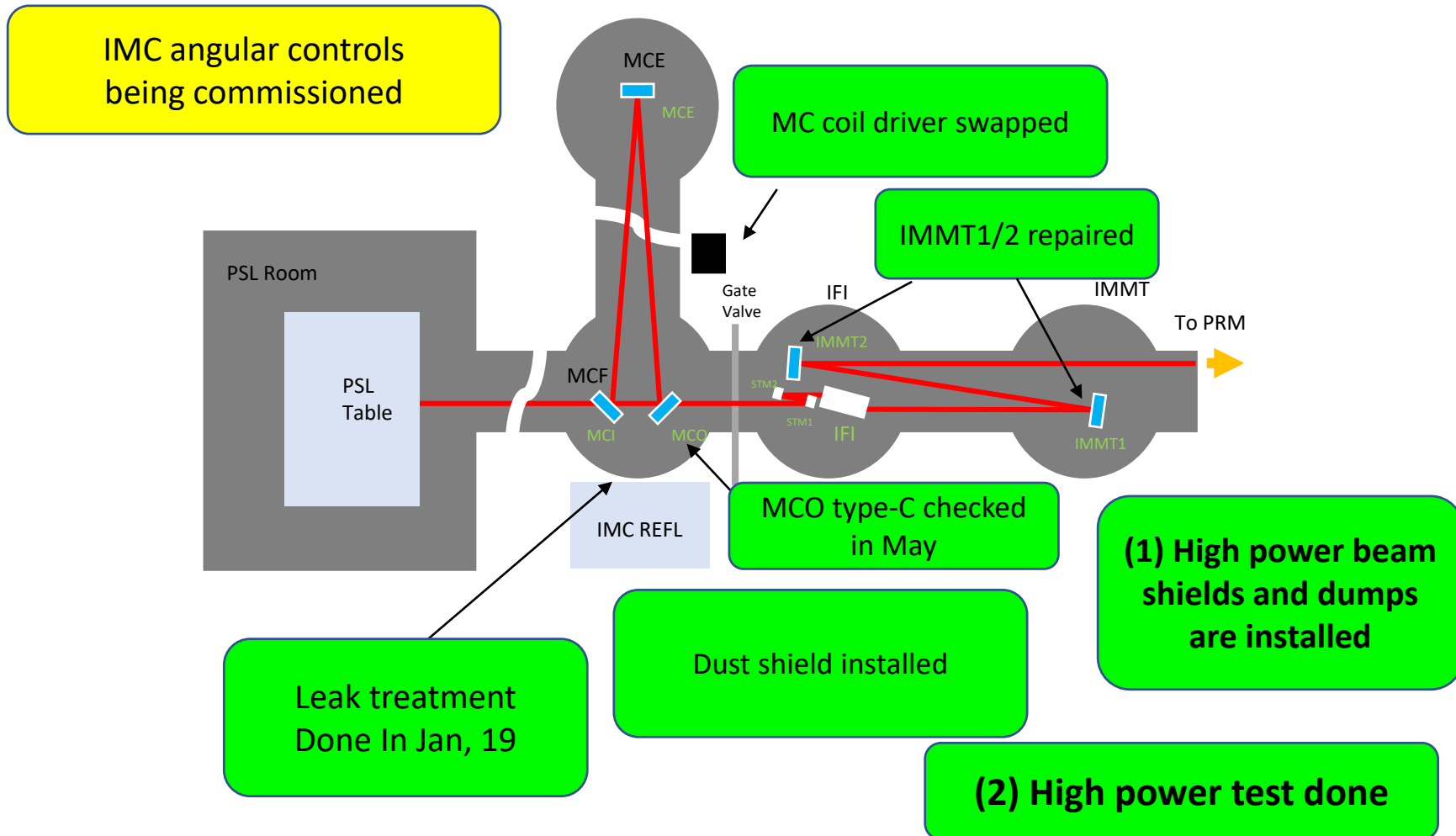
The 22<sup>st</sup> F2F meeting @ Kashiwa

April 19<sup>th</sup>, 2019

# Last F2F in December 2018

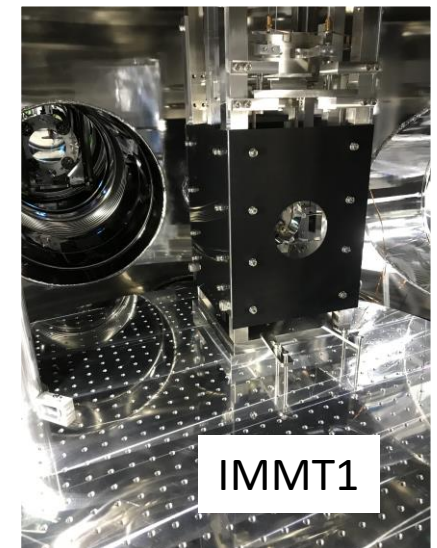
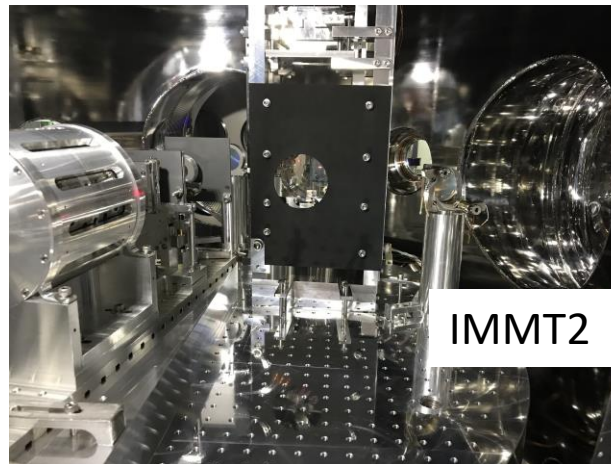
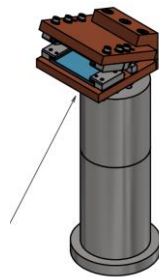
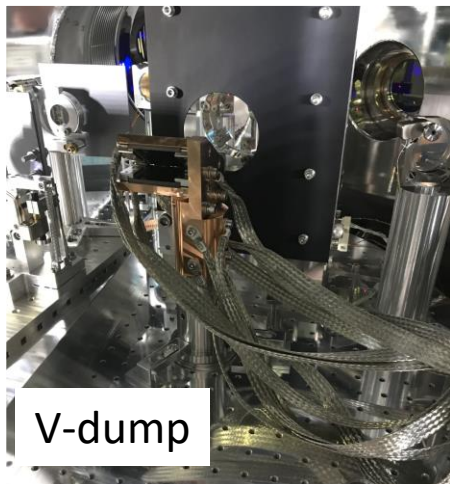
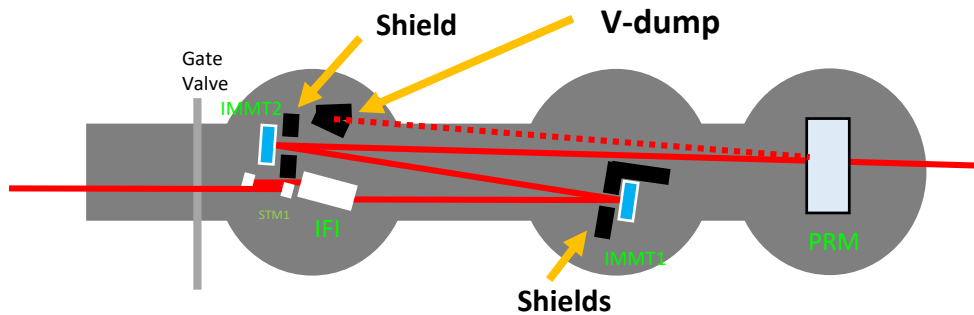


# Current (Apr 2019)



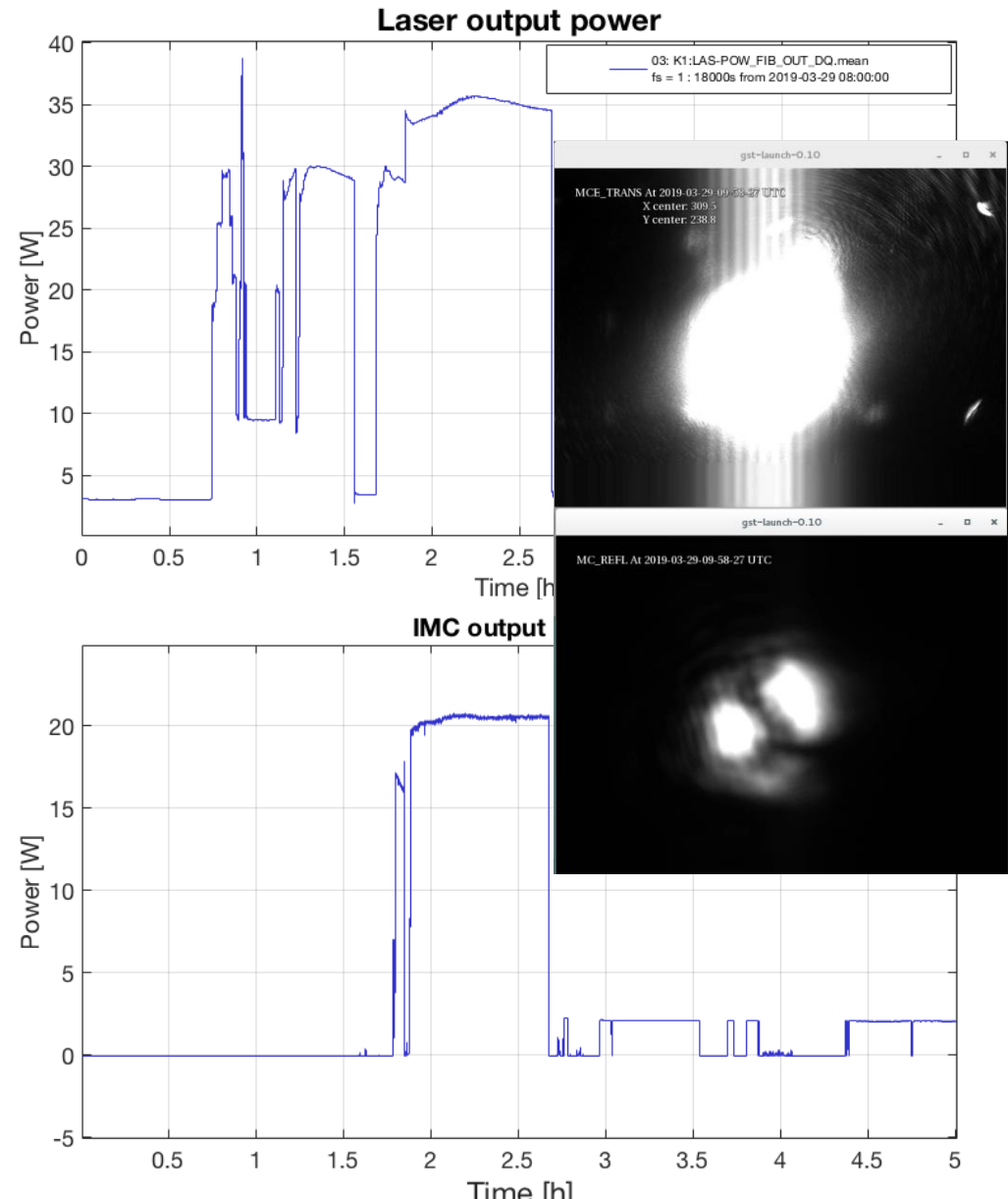
# (1) High Power Beam Dump

- For the safety for the suspension fibers and signal cables, black shields and a beam dump (SiC) were installed by Sato (NAOJ), Ge and Kokeyama
- They are to protect from the direct reflected beam by the PRM during the commissioning
- Installations done in Jan (klog 7595) and Feb (klog 7912)



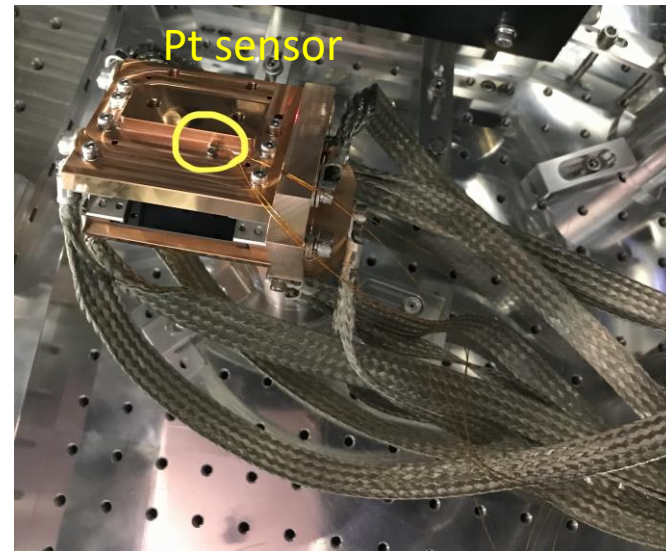
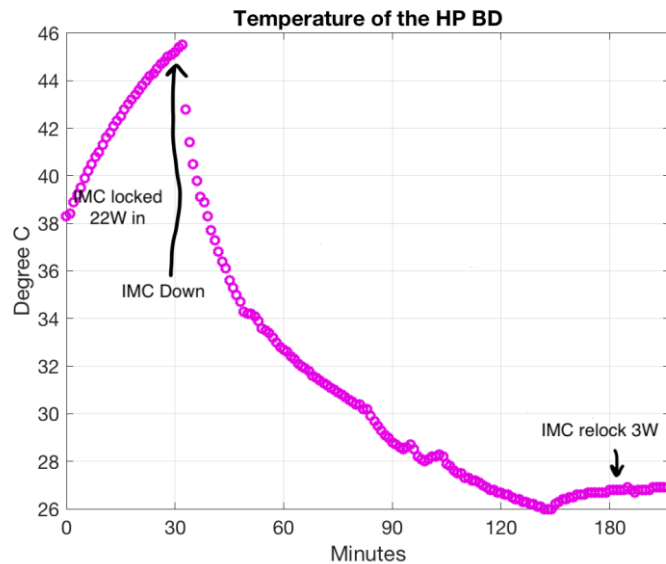
# (2) High Power Beam Test

- The IOO system was tested with the laser power **34.5W** in PSL and the IMC input 22W (transmission **20W**) for about 1 hour – see klog 8529
- **Satisfied the requirement for the O3**
- Control loops for the PSL (PMC, FSS) are automated for the power change by Guardian
- No major problem found
- GPS time and important channel info was informed to the detchar team to be characterized



## (2) High Power Beam Test

- The high power reflection from the misaligned PRM is send to the high power beam dump
- The platinum temperature sensor on the beam dump sensed the temperature change properly – see klog 8538



# Summary

Project	Sub-project	Lead by	Status
PSL	Reference cavity	Nakano	Leak problem on the chamber (Telada)
	Pre-mode cleaner	Ballmer	Done
IMC	LSC	Nakano	Operating
	ASC	Kokeyama	Being commissioned
HP laser	40W	Mio Lab, Nakano	Installed and tested Safety treatment
AM/PM mon		Uehara, Yamakoh	Almost done
MZM		Yamakoh	Decided to remove MZM for O3. R&D will be done in parallel in 2019.
Safe	Beam Dumps	Kokeyama	Done