

Short commissioning update

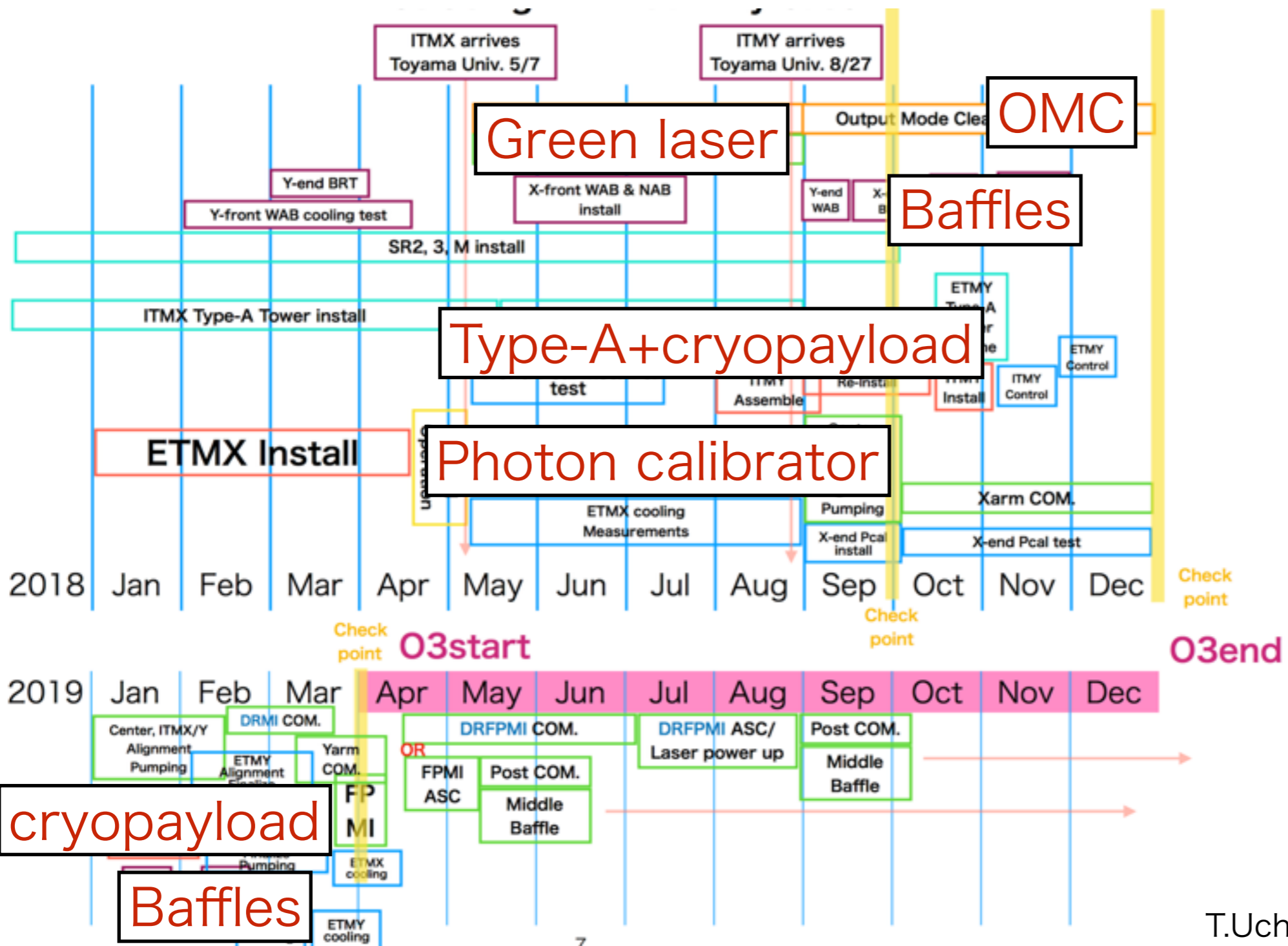
LVK Detchar Meeting
2019/06/11 T.Yokozawa

(Picture at the first
engineering run Jun. 8th
X-arm cavity test)



KAGRA commissioning status (~March)

- The all instruments were completed to install at end of this March and started the commissioning phase.



KAGRA Commissioning status (schedule)

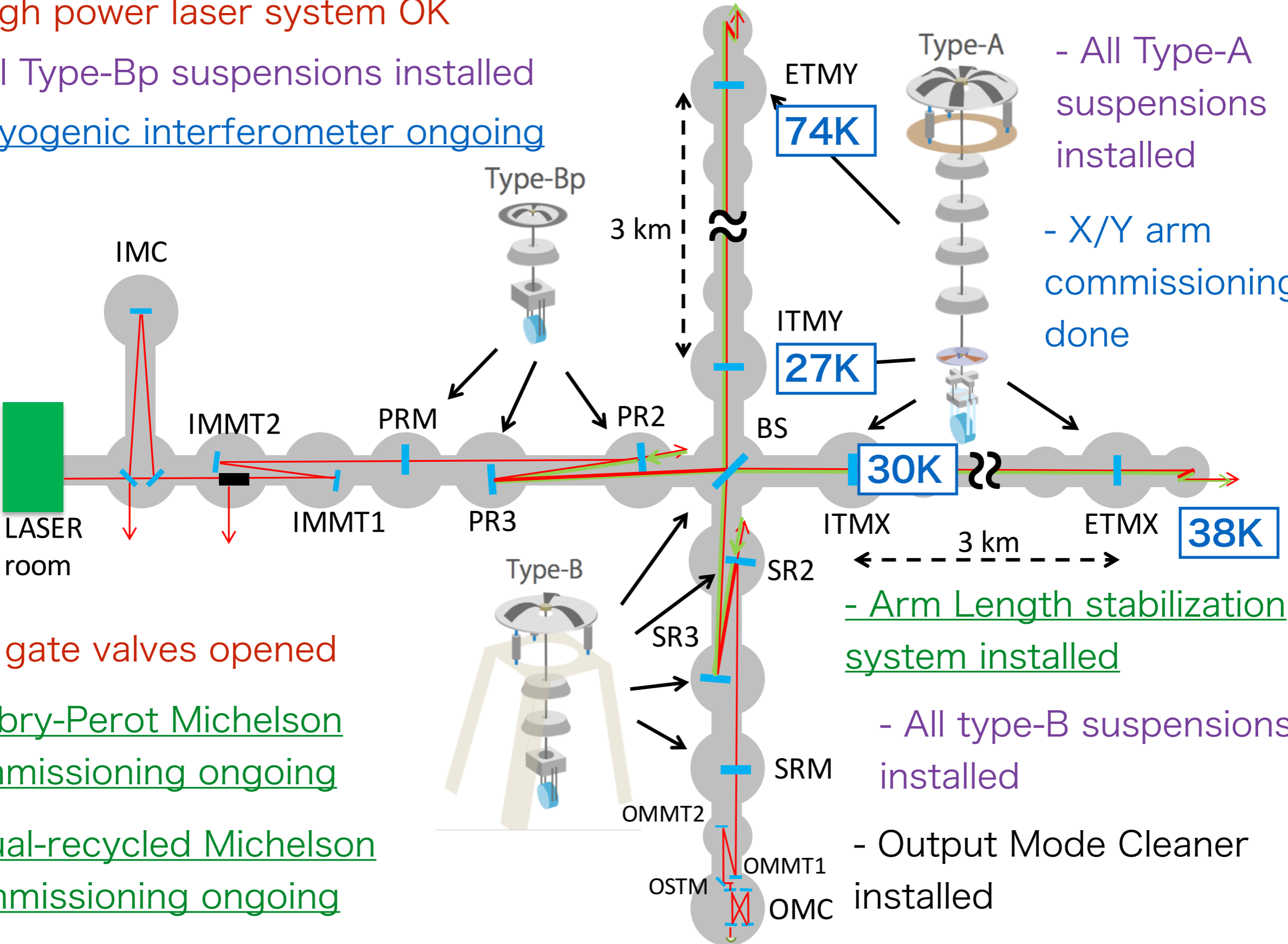
Commissioning schedule plan (19/05/09)

| | Task | Working time | Schedule |
|--------------------|-------------------------------|--------------|------------|
| Yarm COM. | Lock by IR | 1 week | 5/13-17 |
| | Measurements | 2 week | 5/20-31 |
| FPMI | Lock | 1 week | 5/20-24 |
| | Measurements | 1 week | 5/27-31 |
| DRMI | Lock | 1 week | 6/3-7 |
| | Measurements | 2 week | 6/10-21 |
| DRFPMI | Lock | 6 week | 6/24-8/2 |
| | Measurements | 2 week | 8/5-16 |
| DRFPMI ASC | Alignment Sensing Control | 8 week | 8/5-9/27 |
| Post Commissioning | Tuning PRC, SRC middle baffle | 6weeks | 9/30-11/8 |
| Noise hunting | Re-lock, noise hunting | 4weeks | 11/11-12/6 |

KAGRA Commissioning status (Now)

- High power laser system OK
- All Type-Bp suspensions installed
- Cryogenic interferometer ongoing

- All Type-A suspensions installed
- X/Y arm commissioning done



- All gate valves opened
- Fabry-Perot Michelson commissioning ongoing
- Dual-recycled Michelson commissioning ongoing

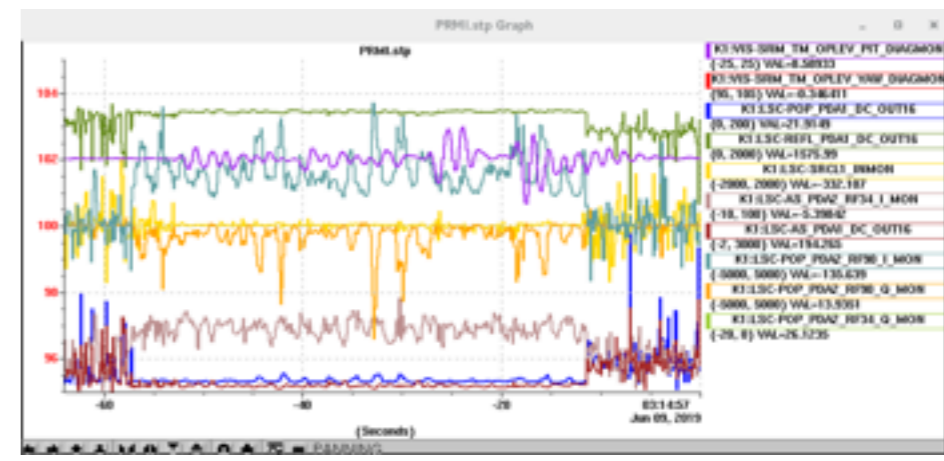
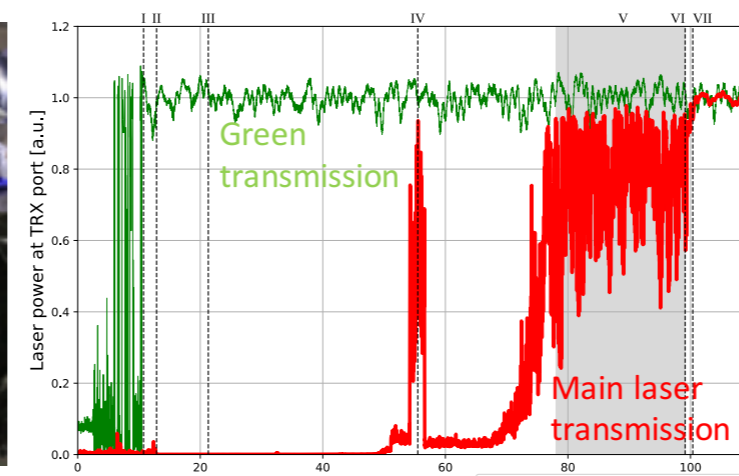
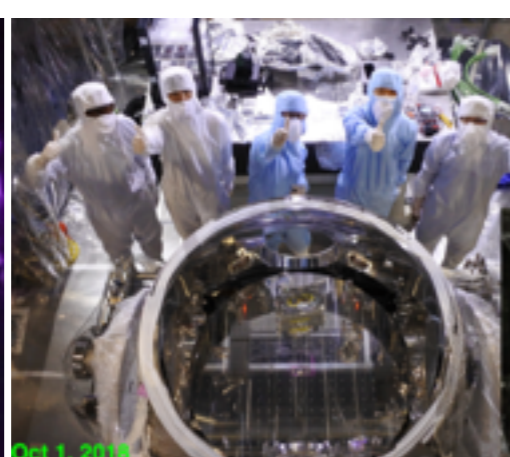
- Arm Length stabilization system installed

- All type-B suspensions installed

- Output Mode Cleaner installed

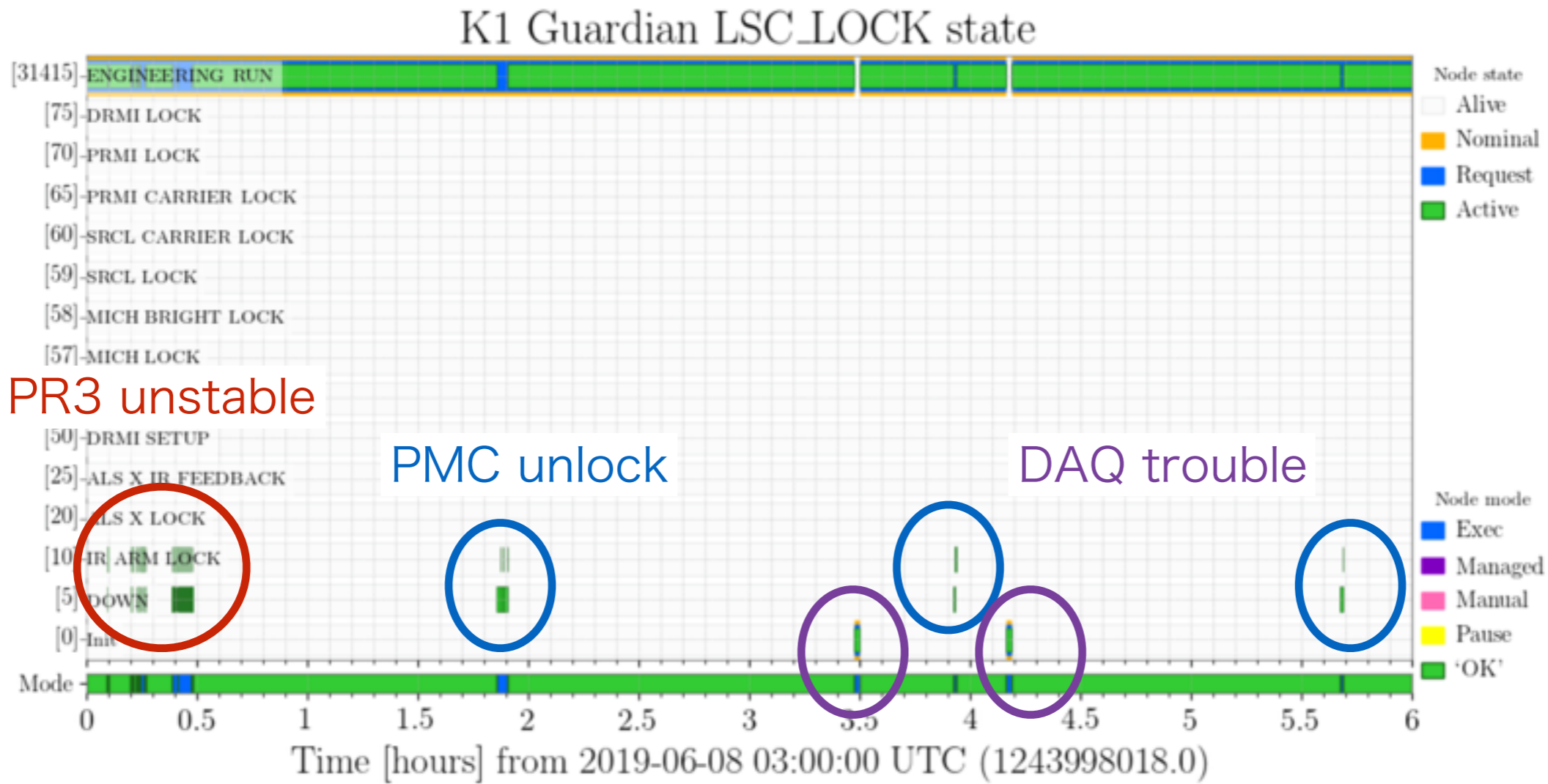
Ongoing commissioning tasks

- **Telephoto camera systems** for monitoring the mirror surface / main beam position / photon calibrator beam position were installed
- **Transmittance laser position systems** with vibration were installed
- Cryogenic interferometer is ongoing
 - Some maintenance for the cryo-cooler system and decreasing finesse, ...
- **Arm length Stabilization system** was confirmed by the X/Y arm commissioning
- **Fabry-Perot Michelson commissioning** is ongoing
 - First cryogenic arm length control by suspension mass will be appear soon
- **Dual Recycled Michelson commissioning** is ongoing
 - **~1 min DRMI lock achieved!** The commissioning work toward the stable lock is ongoing



Backups

Lock status



K1 Guardian LSC_LOCK state
 [1243998018-1244019618, state: all]

- ENGINEERING RUN [95.5%]
- DOWN [2.0%]
- IR ARM LOCK [1.7%]
- Init [0.9%]

95.5%!

