



Status report of AO188+LGS (+future AO)

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Topics in 2010.

- Recovery of damaged deformable mirror.
- LGS mode commissioning.
- Risk-shared open use at S11A and S11B.

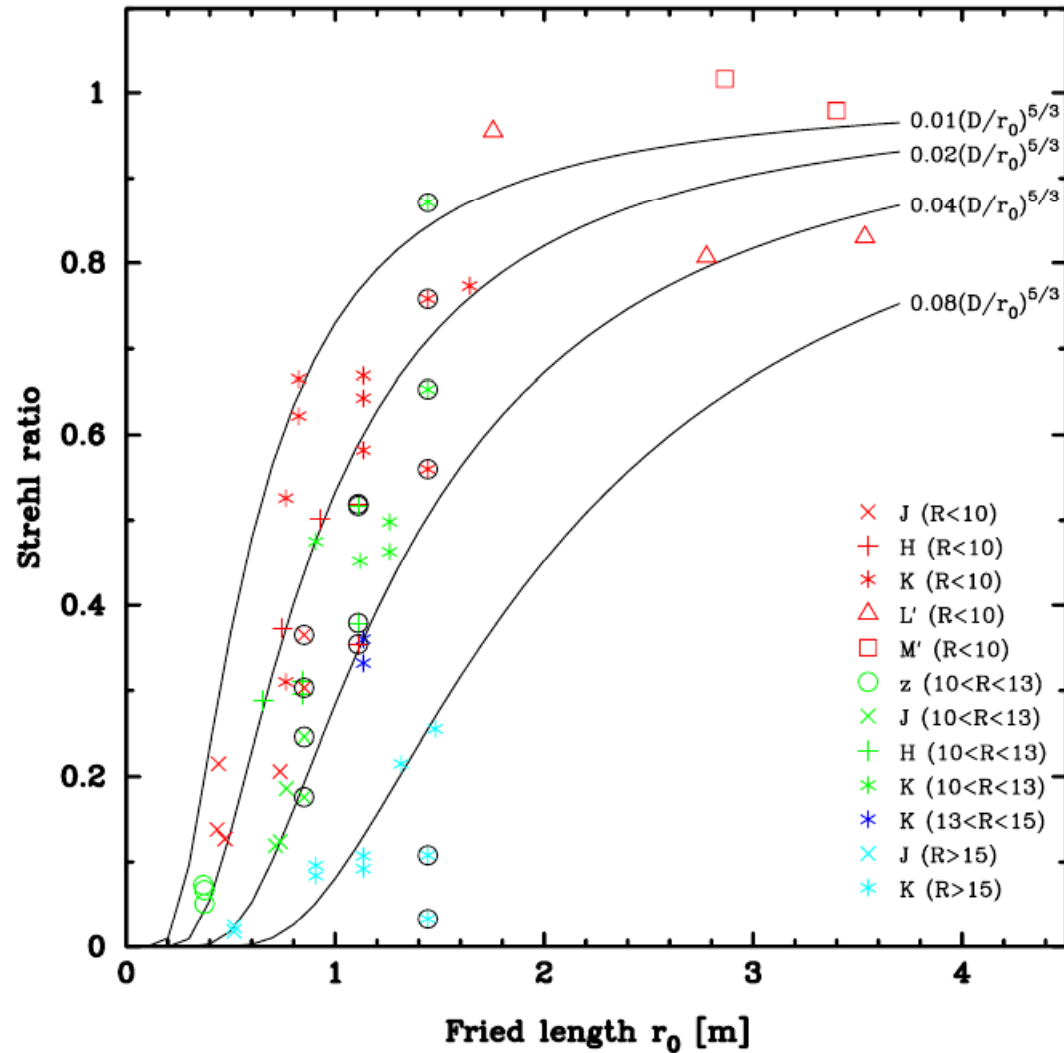


New deformable mirror (DM)

- DM was damaged in Jan, 2010.
 - High AC current was applied to the two ground pins.
- New DM has delivered in August, 2010
- Implemented electrical circuit breaker.
- Implemented software limit switch.
- On-sky performance test in October, 2010.
- Back to open use operation in November, 2010.
- Web release on Dec. 27, 2010.



Performance of NGS mode.





Commissioning of LGS mode.

- First closed loop on sky in December, 2010.
- Strehl ratio $\sim 0.1 - 0.2$ @ K-band
- FWHM ~ 0.1 arcsec @ K-band

- Performance v.s. guide star magnitude.
 - 17.8 mag equiv @ 1 kcps / APD (Low-order WFS.)
- Performance v.s. separation of TT guide star.
 - Anisoplanatism of TT/focus mode might be larger than $60''$.



Risk shared open use

- Risk in performance.
 - SR $\sim 0.1 - 0.2$, FWHM $\sim 0.1''$ at K-band.
 - Guide star magnitude: brighter than 17.5 in R-band.
 - Separation of guide star: $< 80''$.
 - Elevation limit = 25 deg.
- Other features.
 - ADC
 - Science path, high-order WFS, low-order WFS.
 - F-conversion optics. (12 mas mode.)



Future AO for Subaru Telescope.

- 3rd generation AO for next instrument at IR.
 - Wider field coverage. (~ 10 arcmin.)
 - High throughput. (Adaptive secondary mirror.)
 - Active/Adaptive optics.
 - Multiple guide stars and multiple WFSs.
 - MOAO, GLAO, LTAO etc.