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# The Australian National University **Laser Guide Star Facility:** design, integration and commissioning

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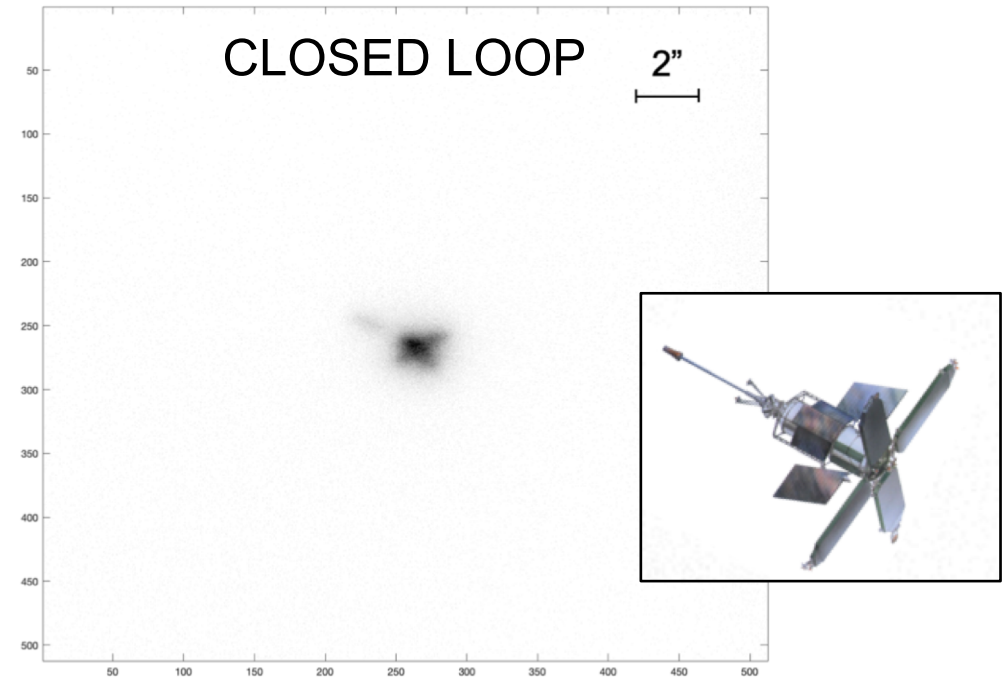
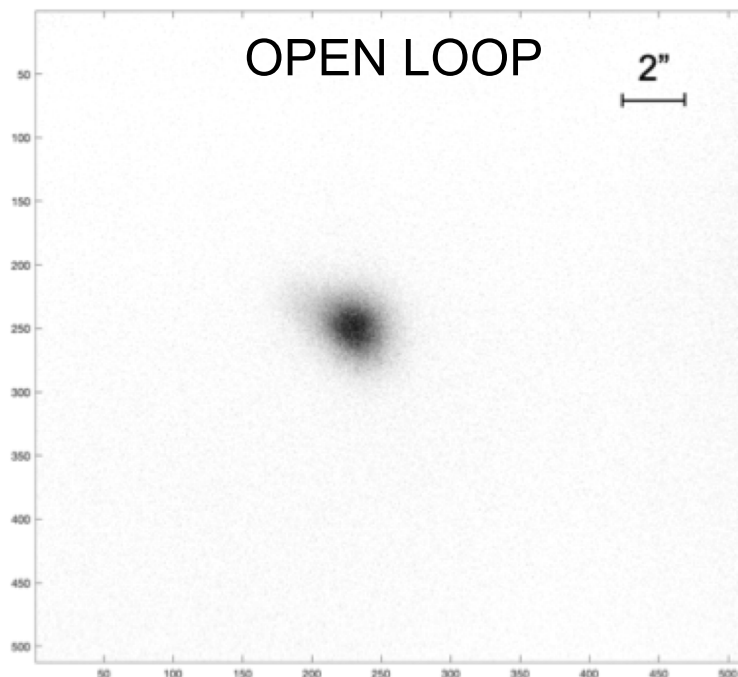
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## Adaptive Optics for Satellite/Debris Imaging

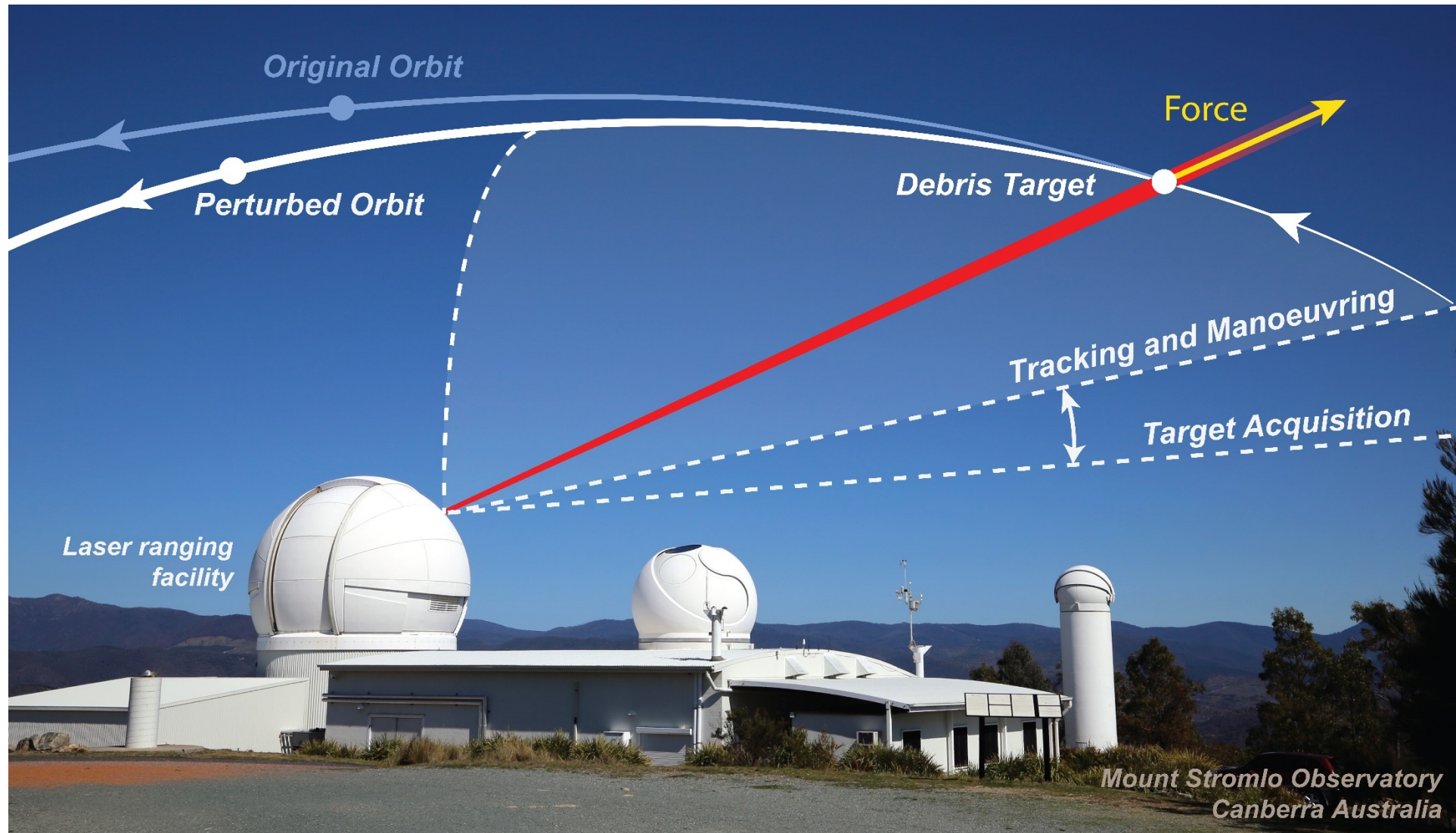
- EOS 1.8m telescope
- Imaging FOV = 25 arcsec
- Lucky imaging 30-60Hz
- Strehl ratio 30%
- SH WFS 16x16

Resolution of 50 cm for objects at 800 km range and 800 nm imaging wavelength



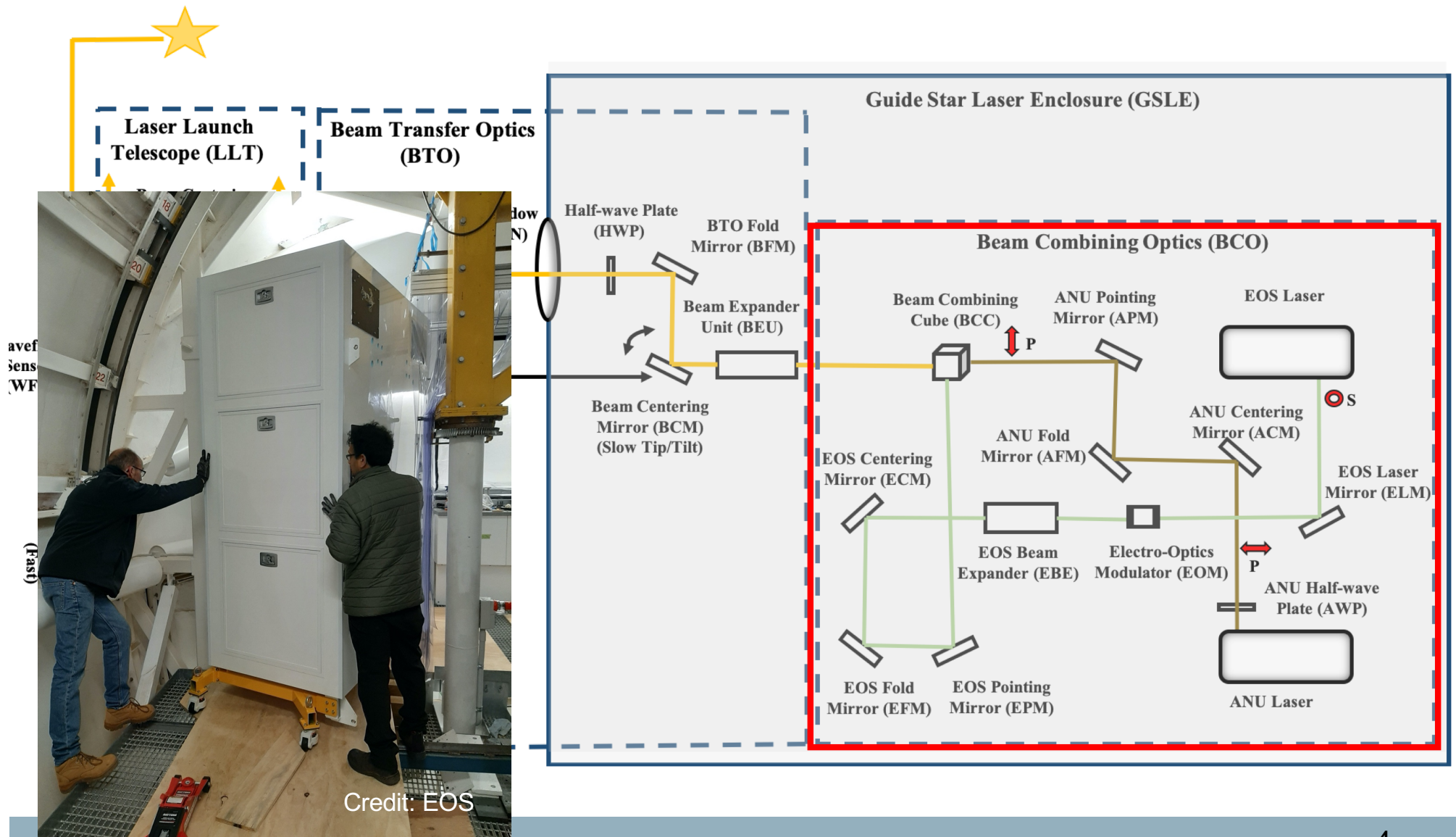


# Adaptive Optics for Tracking and Pushing of Space Debris

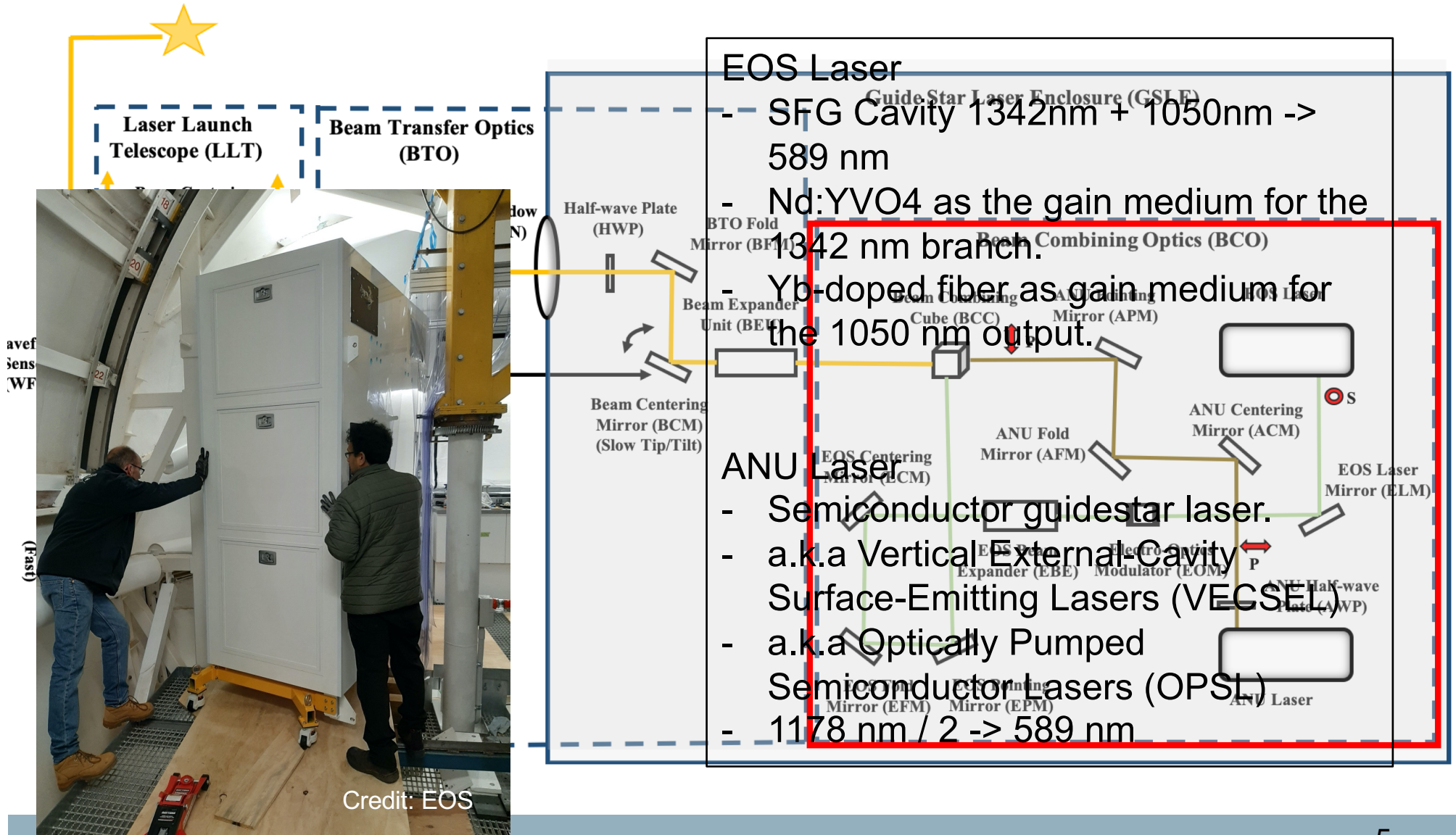




# AOTP Laser Guide Star Facility



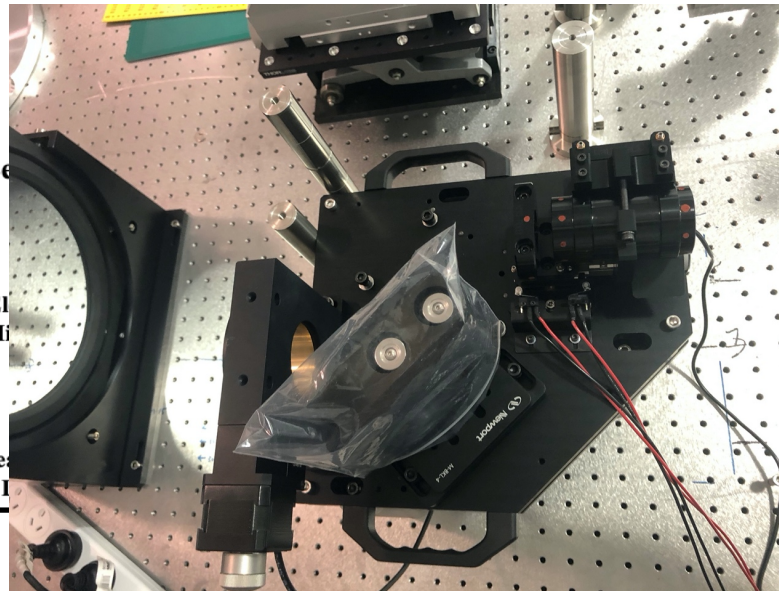
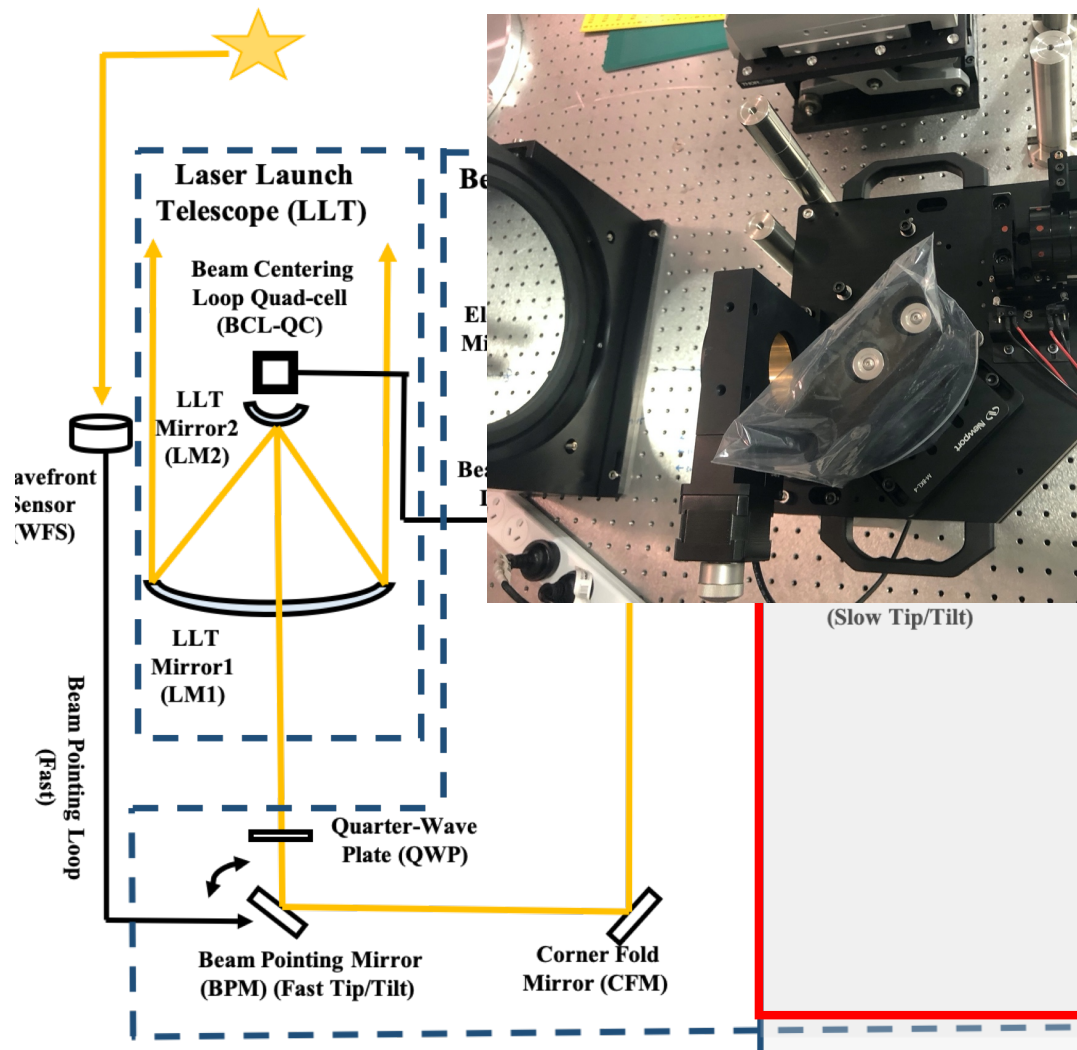
# Guidestar Lasers and Beam Combining Optics



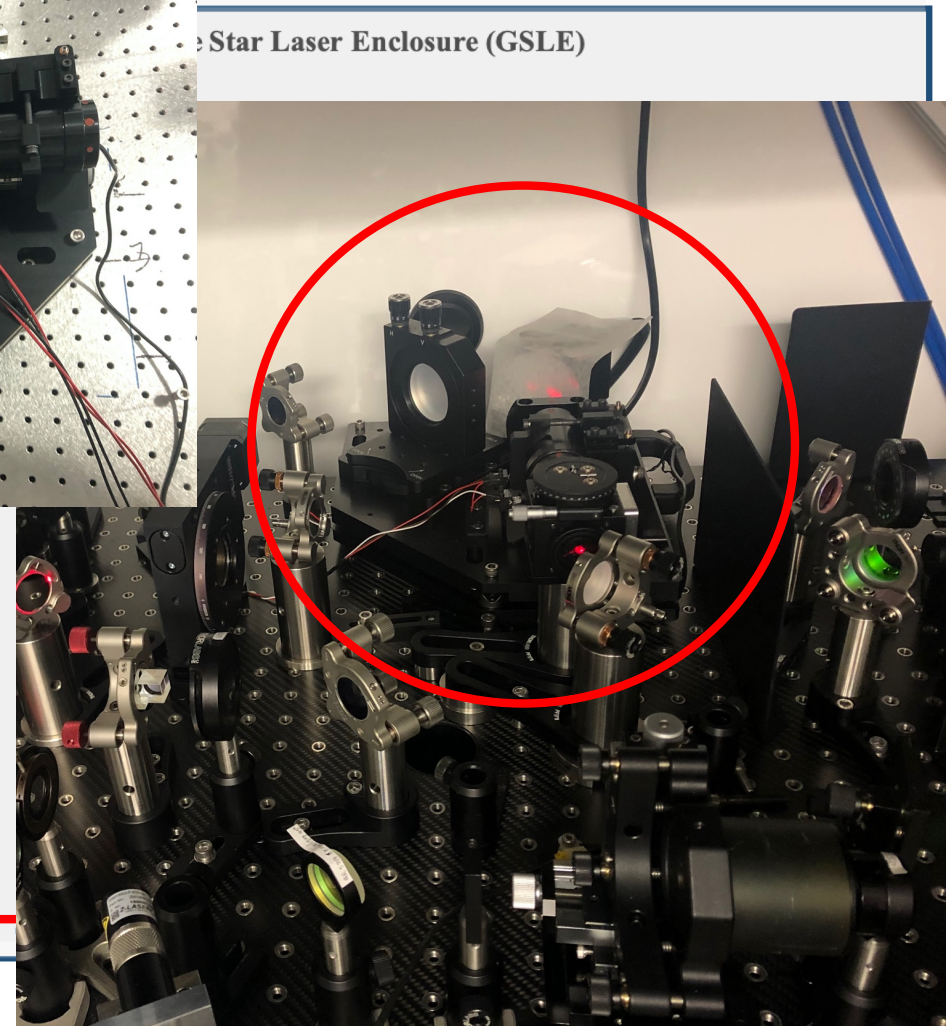
Credit: EOS



## Beam Transfer Optics

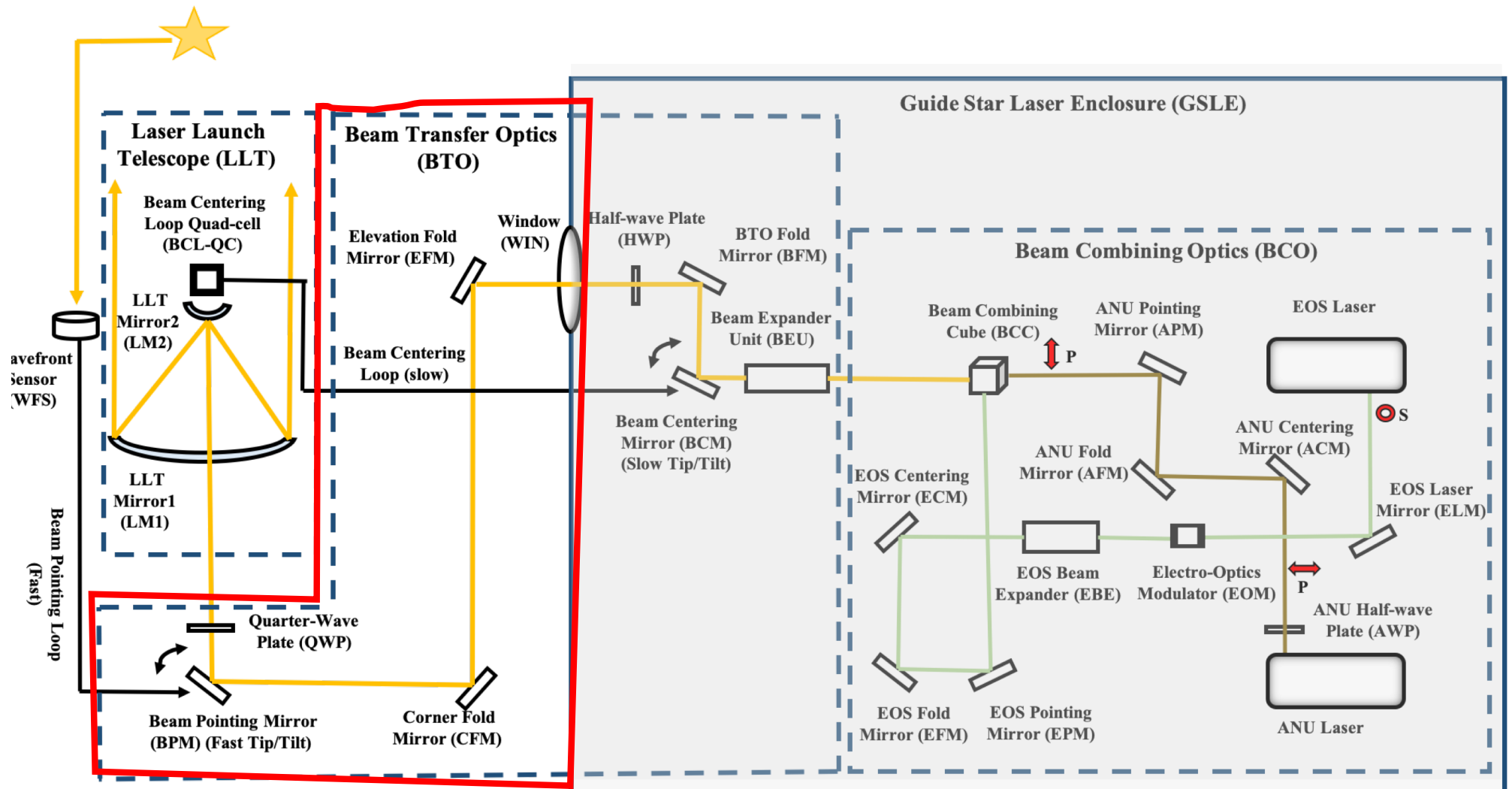


(Slow Tip/Tilt)



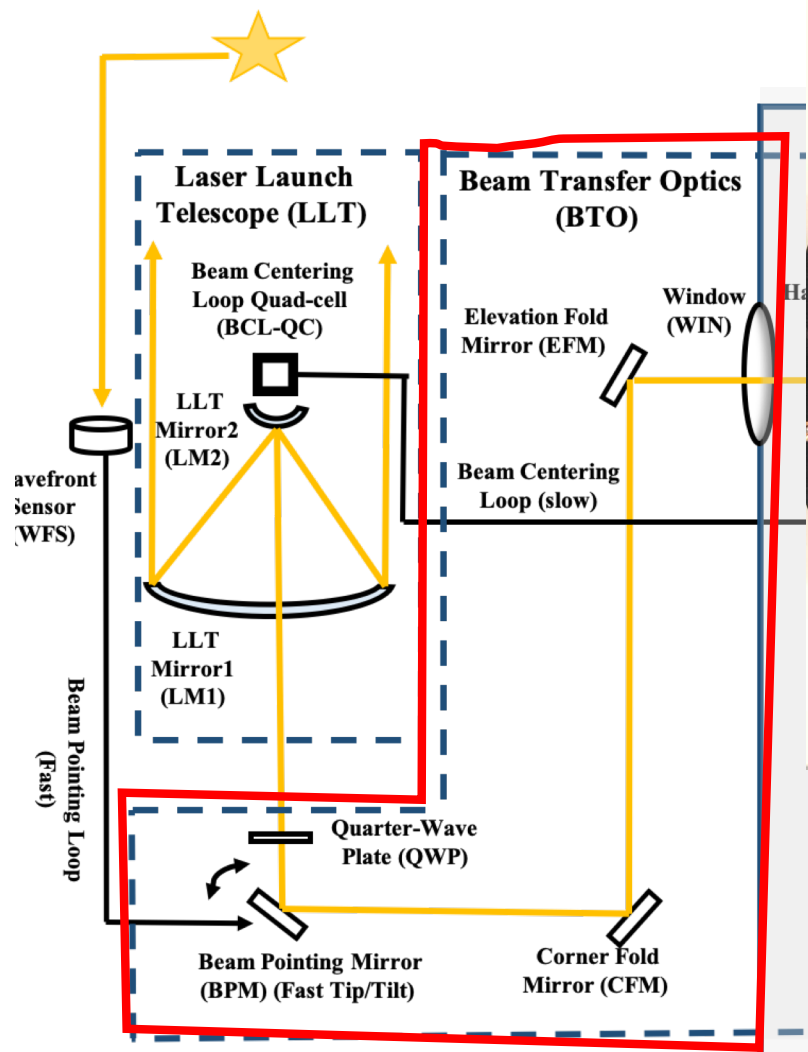


## Beam Transfer Optics





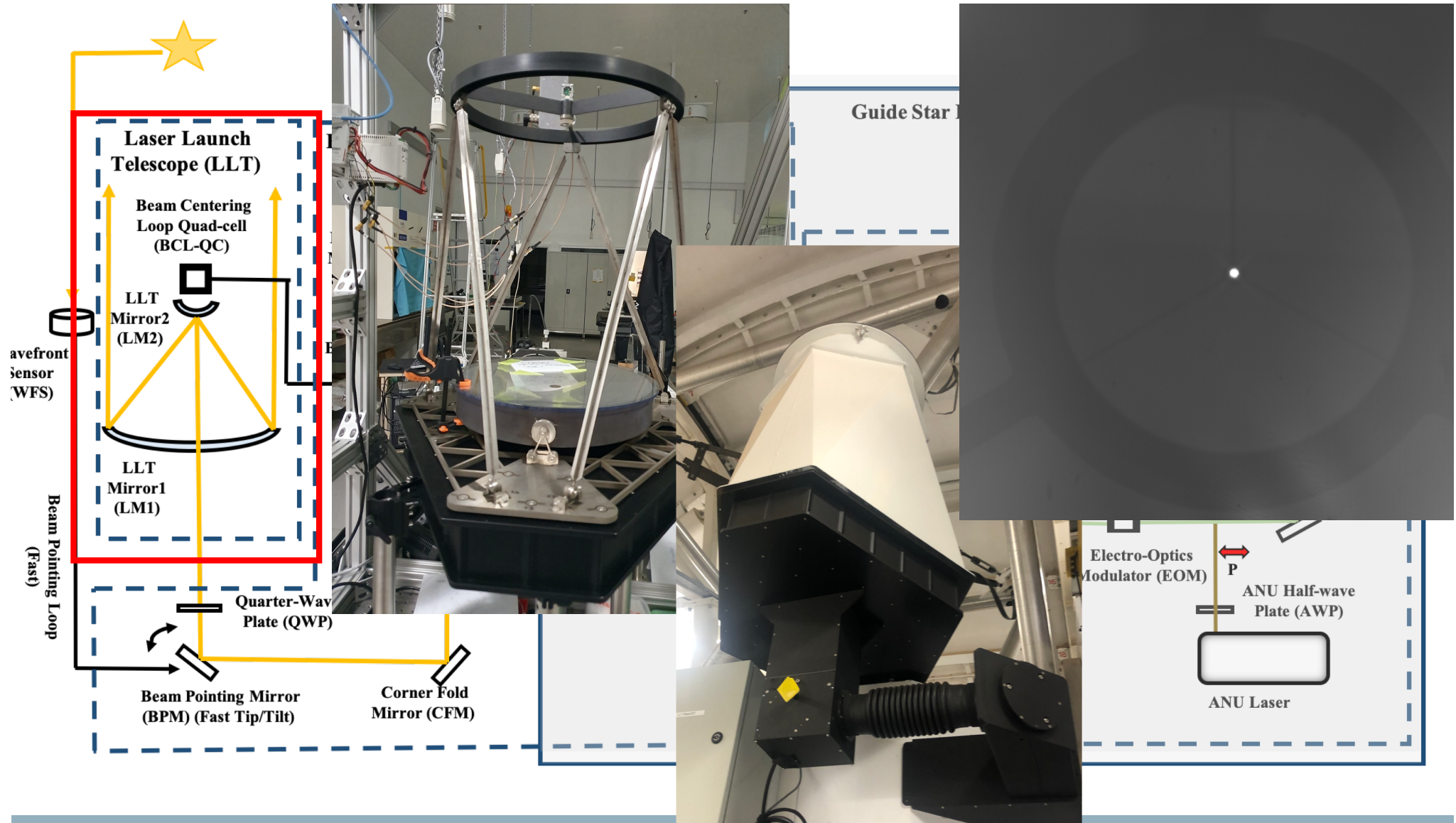
## Beam Transfer Optics





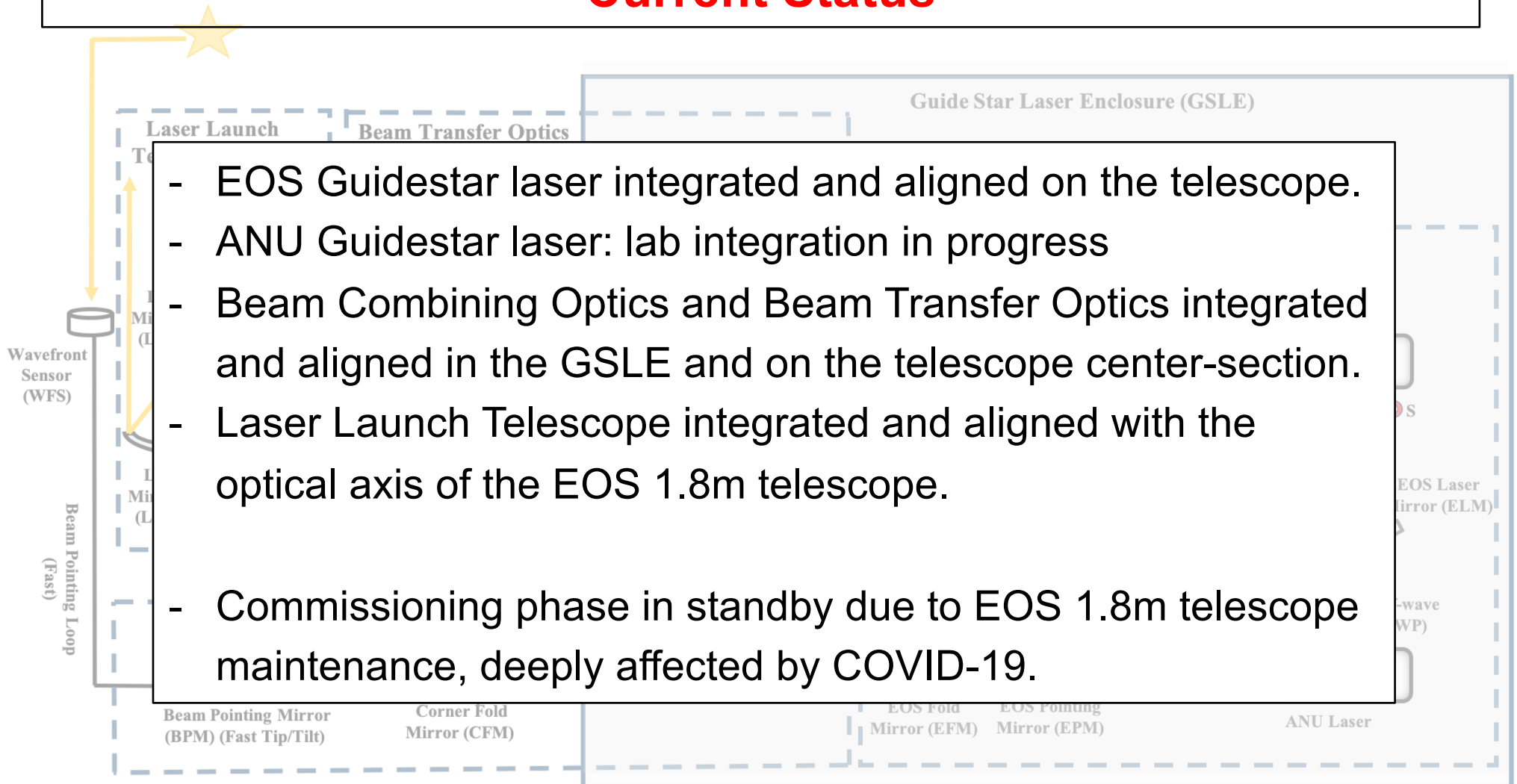


## Laser Launch Telescope





# AOTP Laser Guide Star Facility Current Status



- EOS Guidestar laser integrated and aligned on the telescope.
- ANU Guidestar laser: lab integration in progress
- Beam Combining Optics and Beam Transfer Optics integrated and aligned in the GSLE and on the telescope center-section.
- Laser Launch Telescope integrated and aligned with the optical axis of the EOS 1.8m telescope.
- Commissioning phase in standby due to EOS 1.8m telescope maintenance, deeply affected by COVID-19.



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**THANK YOU**

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