



# GALA

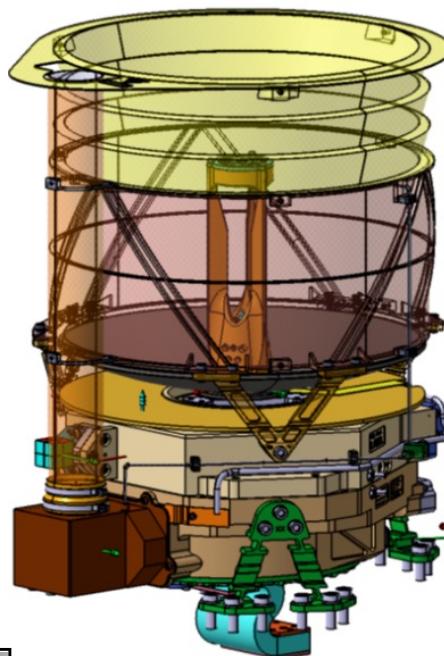
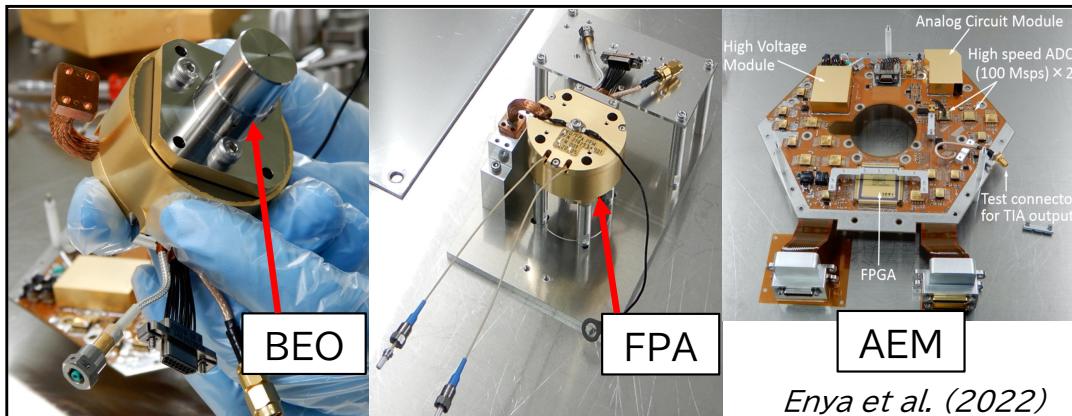
## Ganymede Laser Altimeter



**GALA** measures the three-dimensional shape of Ganymede and its variability through repeated distance measurements from orbit to the Ganymede surface.

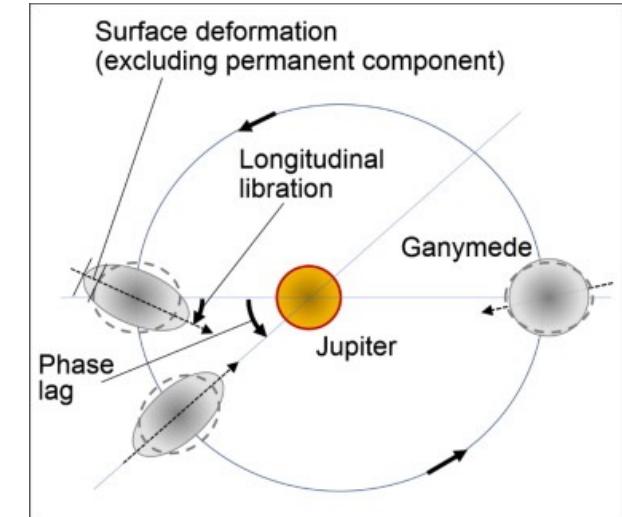
Item	Specification
Laser wavelength, energy	1064.5 nm, 17 mJ
Shot frequency	30 Hz or 50 Hz
Spot size	50 m
Telescope aperture	25 cm (diameter)
Size, total mass	39 cm × 35 cm × 42 cm, 24 kg
Altimetry accuracy	1 m (at points with good conditions)

GALA-Japan developed Backend Optics (BEO), Focal plane assembly including APD detector (FPA), and Analogue Electronics Module (AEM).

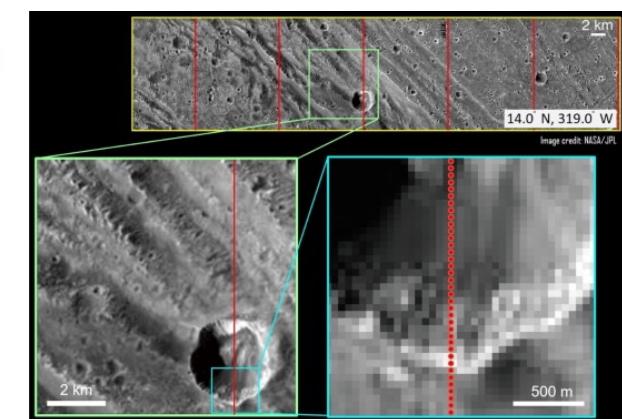


Outlook of GALA

Hussmann et al. (2019)  
Enya et al. (2022)



Ganymede's deformation etc.



laser spot on Ganymede  
(simulation)

- [1] H. Hussmann et al., "The Ganymede laser altimeter (GALA): key objectives, instrument design, and performance", *CEAS Space J.*, 11 (2019), pp. 381-390.
- [2] K. Enya et al., "The Ganymede Laser Altimeter (GALA) for the Jupiter Icy Moons Explorer (JUICE): Mission, science, and instrumentation of its receiver modules", *Ad. S. R.*, 69 (2022), pp. 2283-2304.