

GNAO

The next-generation adaptive optics for Gemini North

High-redshift galaxies

Time domain/multi-messenger

Star clusters

AGN feedback/galaxy evolution

Giant planets and moons

Star formation

GNAO

Object Selector

Deformable Mirror

IFS

Open-loop AO

4x multiplexing advantage over similar instruments.

gemini.edu/about/gemini-era-multi-messenger-astronomy

- Part of NSF-funded Gemini in the Era of Multi-Messenger Astronomy (GEMMA) program
- Telescope: 8-meter Gemini North telescope (Maunakea)
- Adaptive Optics:
 - 4 laser guide stars, 1-3 natural guide stars, 1 deformable mirror
 - Narrow field mode (20" x 20") with LTAO
 - Wide field mode (2' diameter) with GLAO

- First-light instrument: Gemini Infrared Multi-Object Spectrograph (GIRMOS)
 - Up to 4 deployable IFUs with LTAO or GLAO+MOAO
 - Wavelength range 0.95-2.4 microns
 - NIR imager (85" x 85" field of view) with GLAO or LTAO
- First light: Early 2028



