

LGS-AO
Laser Guided Star -
Adaptive Optics

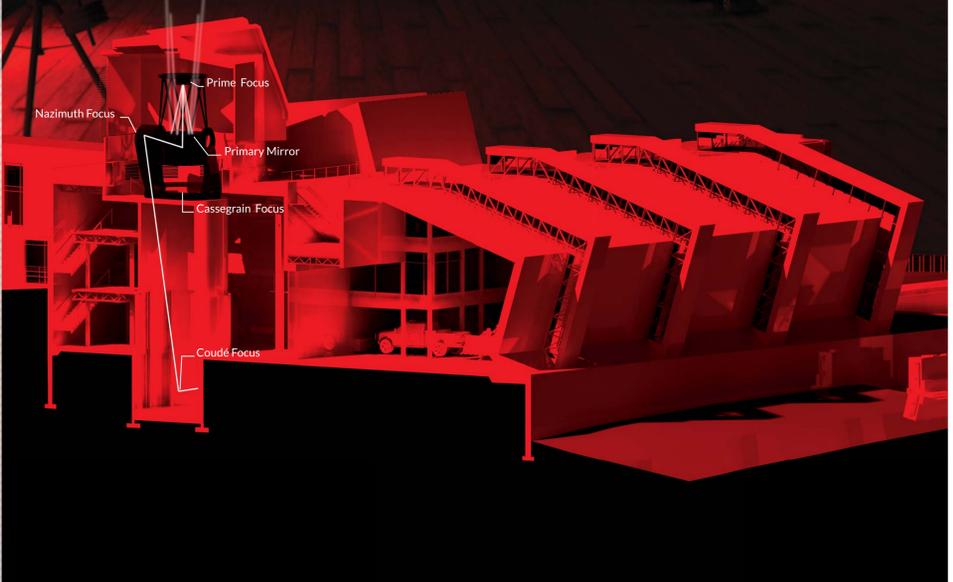
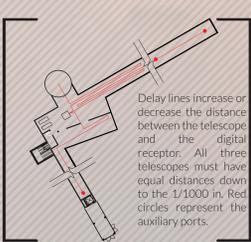


Earth's atmosphere provides many challenges for ground based observatories including atmospheric turbulence. An infrared diode laser creates an artificial star by exciting sodium atoms within the mesosphere - about 90 to 100km (50 to 60miles) above Earth's surface. The atmospheric information is calculated and applied to the main mirror by pushing and pulling certain nodes. By warping the mirror the telescope can eliminate the effects of turbulence overhead.

Interferometry
3m reflecting telescope
Two 1m auxiliary telescope



Interferometry is the combination of light using multiple receptors. Light travels through the telescope reflecting off a series of mirrors as illustrated. The light from all three telescopes must travel the same distance to the main receptor within the coude room. The image created from the combining light is of much higher quality making interferometry a powerful tool when using smaller, more adaptable telescope systems.



Technical Lens



Beartooth Pass, Wyoming
Absaroka Mountain Range
ELV. - 11,017ft