THE GEMINI HIGH-RESOLUTION OPTICAL SPECTROGRAPH

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SPECIFICATIONS

- Wavelength Range: 363 – 950 nm
- Resolution: 50,000 (Standard Mode); 75,000 (High-Resolution Mode)
- Sensitivity: 17.5 mag at 450nm 30-sigma per resolution element
- Each target sampled spatially over 1.2 arcsecs
- Fixed format
- Radial Velocity precision: 600m/s in standard mode over entire bandpass
  - 10 m/s in RV high-resolution mode over 430 – 750 nm range
• High sensitivity detectors
• ‘Hot’ Grating
• Image slicing
• VPH cross dispersion
• Enhanced coatings
• High-throughput ’mini’-ADCs
COMPONENTS

- Cassegrain Unit
- Fiber bundle
- Bench Spectrograph
- Control Software
- Data Software
CASSEGRAIN UNIT
• **BLACK** – Science Fibers
• **RED** – Guide fibers
• **CYAN** – Sky Fibers
• **BLUE** – ThXe internal calibration
• Basic functionality works exceptionally well
• Plate scale appears to be well-behaved
• Instrument well-aligned to telescope
• Focus model fits predicted
• Acquisitions, guiding, etc all working well
• TBD 18B: ADCs, side-port testing, Gemini OCS software
SPECTROGRAPH

- ‘heritage’ white pupil design
- Red/Blue split at 530 nm
- RGL R2 MR234 Echelle Grating
- VPHG Cross dispersion
• Box in a box design
• Radiant heat panels (+/- 0.5 C)
SIMULATED DATA
• Expect GRACES community to embrace GHOST
• Metal-poor stars
• Star Clusters
• ‘The Cannon’ – GALAH/HERMES
• Follow up to existing surveys (PRISTINE)