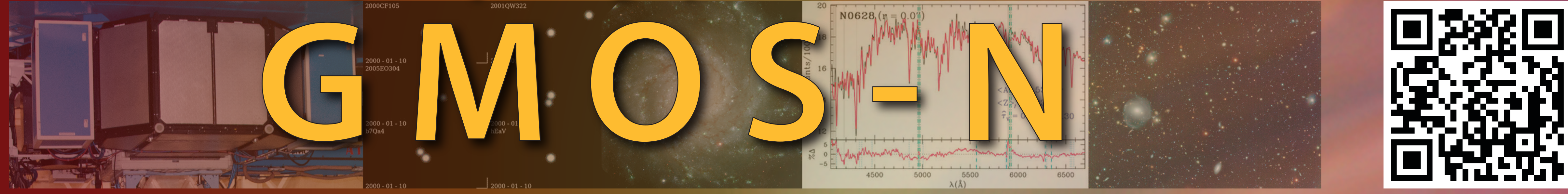


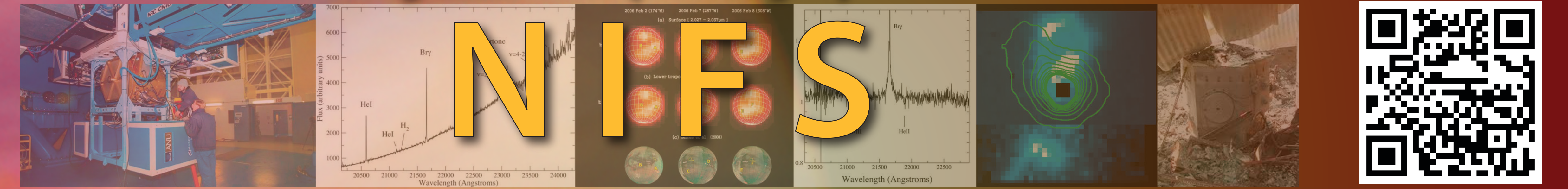
# Gemini North Capabilities

## Gemini Multi-Object Spectrograph



- Broad/Narrow band optical imaging (5.5'×5.5' FOV); long-slit, multi-object and integral field spectroscopy (350 nm–0.98 μm);
- Nod and Shuffle in long-slit and MOS spectroscopic modes;
- Spectral resolutions ~600–4400 in 1<sup>st</sup> order;
- Future detector upgrade to Hamamatsu fully depleted CCDs will extend wavelength coverage to 1.03 μm.

## Near-Infrared Integral Field Spectrograph



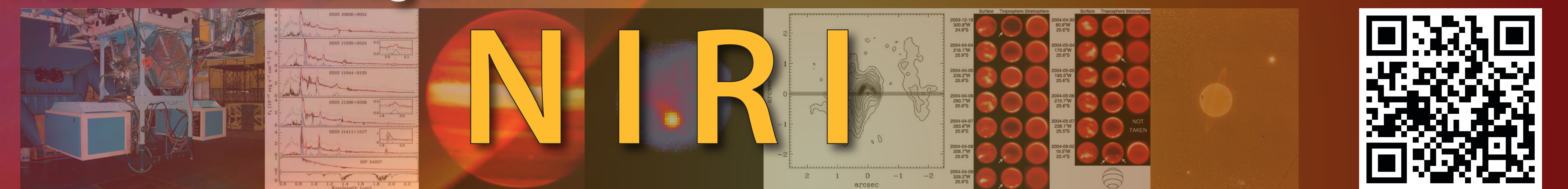
- Near-infrared (0.95–2.4 μm) integral field spectrograph and coronagraphic imager (3"×3" FOV);
- Spectral resolution ~5000;
- Spatially resolved spectroscopy on 0.1" scales with Altair adaptive optics system.

## Gemini Near-Infrared Spectrograph



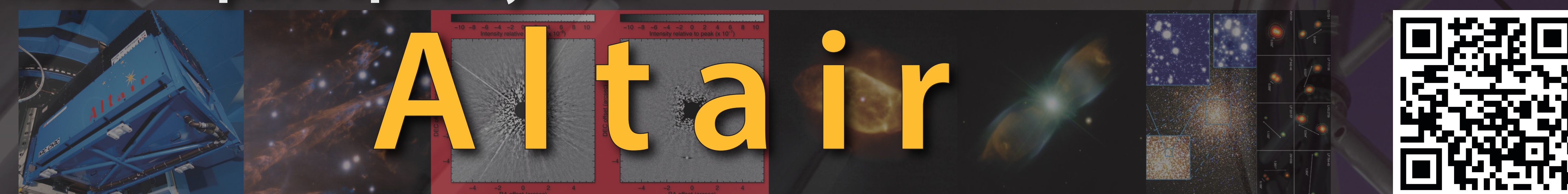
- Near-infrared (0.8–5.4 μm) long-slit and cross-dispersed spectroscopy;
- Spectral resolutions: ~1700, 5900 and 18000 in long-slit mode;
- Cross-dispersed spectroscopy delivering complete 0.8–2.5 μm coverage at R ~1700 and partial coverage at R ~5900.

## Near-Infrared Imager



- Near-infrared imager with three cameras;
- 22"×22", 51"×51", or 120"×120" FOV;
- Wavelength coverage from 1–5 μm.

## Altair Adaptive Optics System



- Natural guide star FWHM ~0.065" with Strehl ratios up to 40%;
- Laser guide star FWHM ~0.08" with Strehl ratios up to 20%;
- Used in conjunction with GNIRS, NIFS, or NIRI;
- Future integration with GMOS;
- Nearly full sky coverage using LGS+P1 "super seeing" mode for FWHM ~0.3".