



# The IRTF Spectral Library: Cool Stars (FGKM-SC-LT)

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[http://irtfweb.ifa.hawaii.edu/~spex/IRTF\\_Spectral\\_Library/](http://irtfweb.ifa.hawaii.edu/~spex/IRTF_Spectral_Library/)

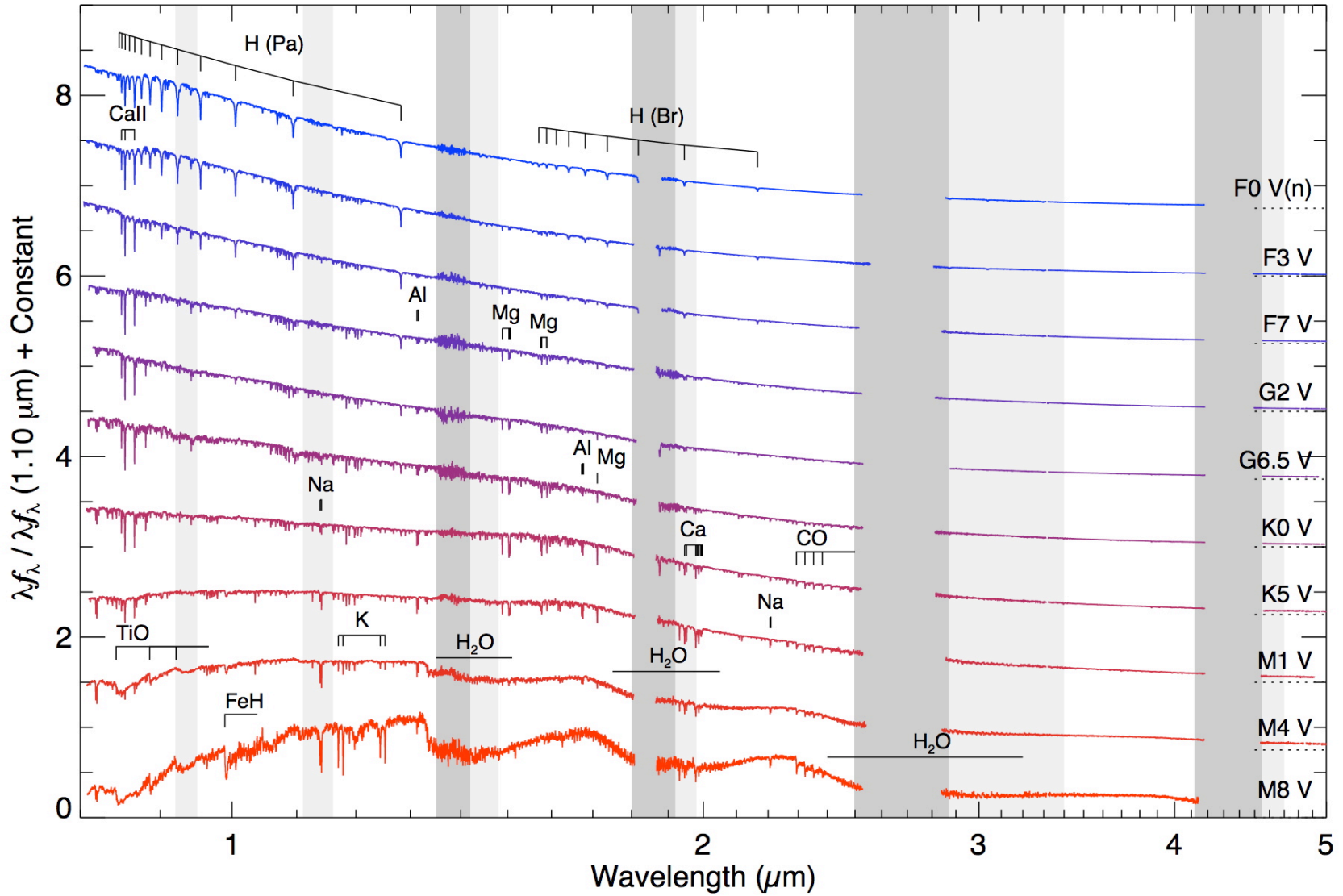
# IRTF Spectral Library: FGKM-SC stars

- 212 stars with optical MK classification
- Mostly near-solar metallicities
- 0.8-2.4  $\mu\text{m}$  all stars, most 0.8-5.0  $\mu\text{m}$
- $R \sim 2000$
- $S/N \geq 100$  typical (except in poor telluric regions)
- Continuum shape is preserved
- Spectra are absolute flux calibrated (2MASS)

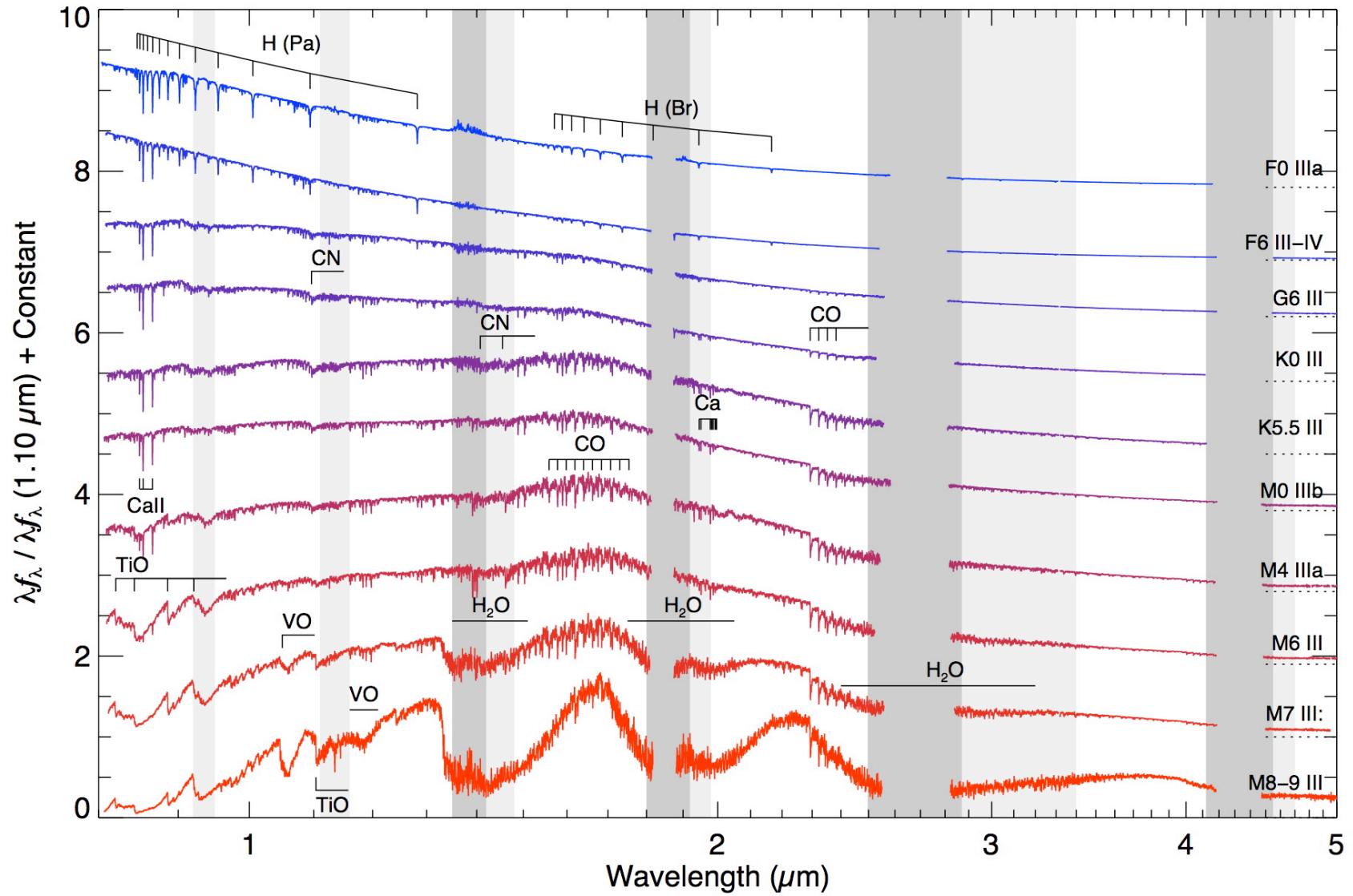
# Applications

- Physics of cool stellar and substellar atmospheres
- IR classification of optically embedded and cool stars
- IR evolutionary population synthesis studies
- Synthetic photometry

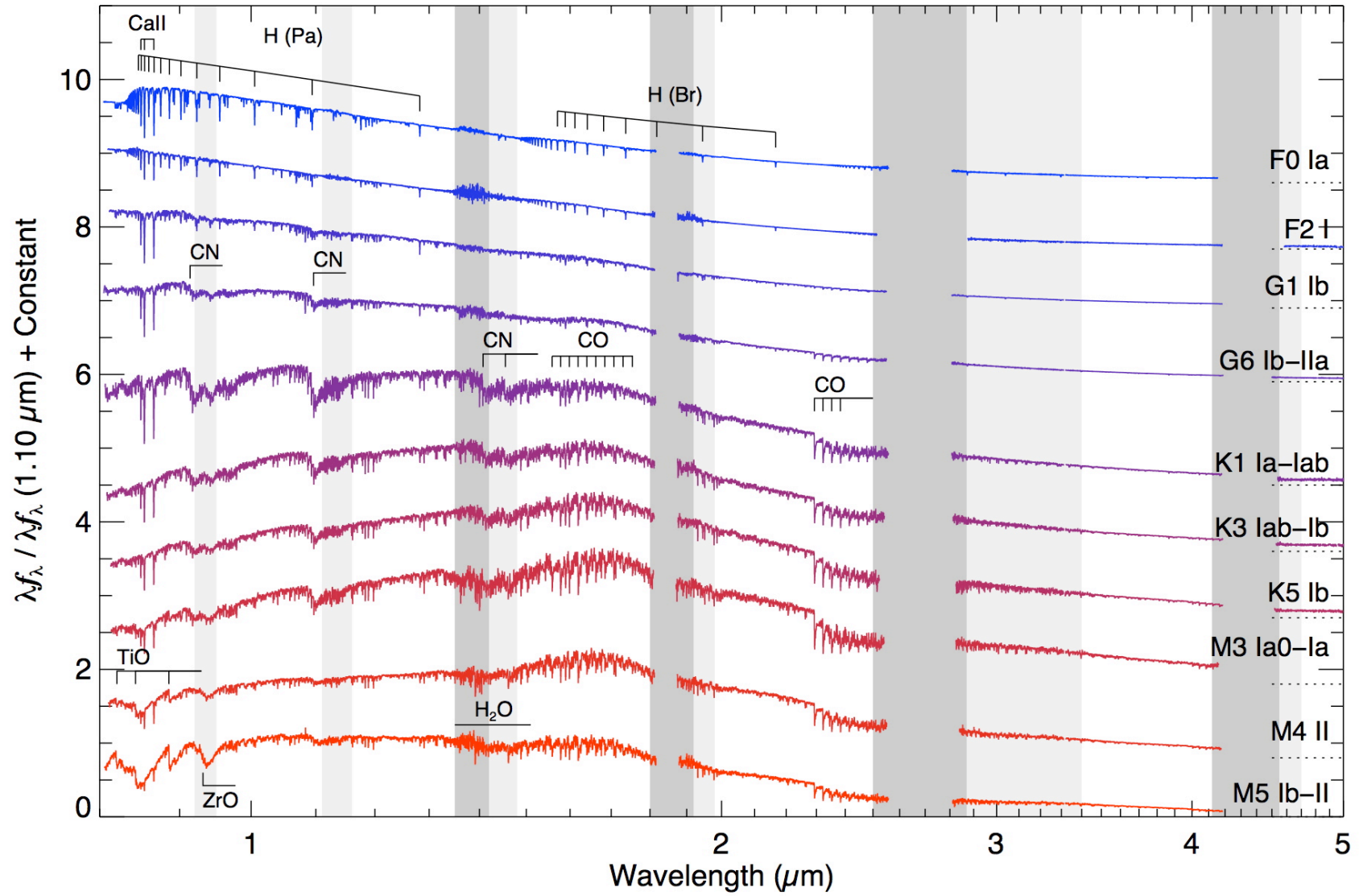
# Dwarfs

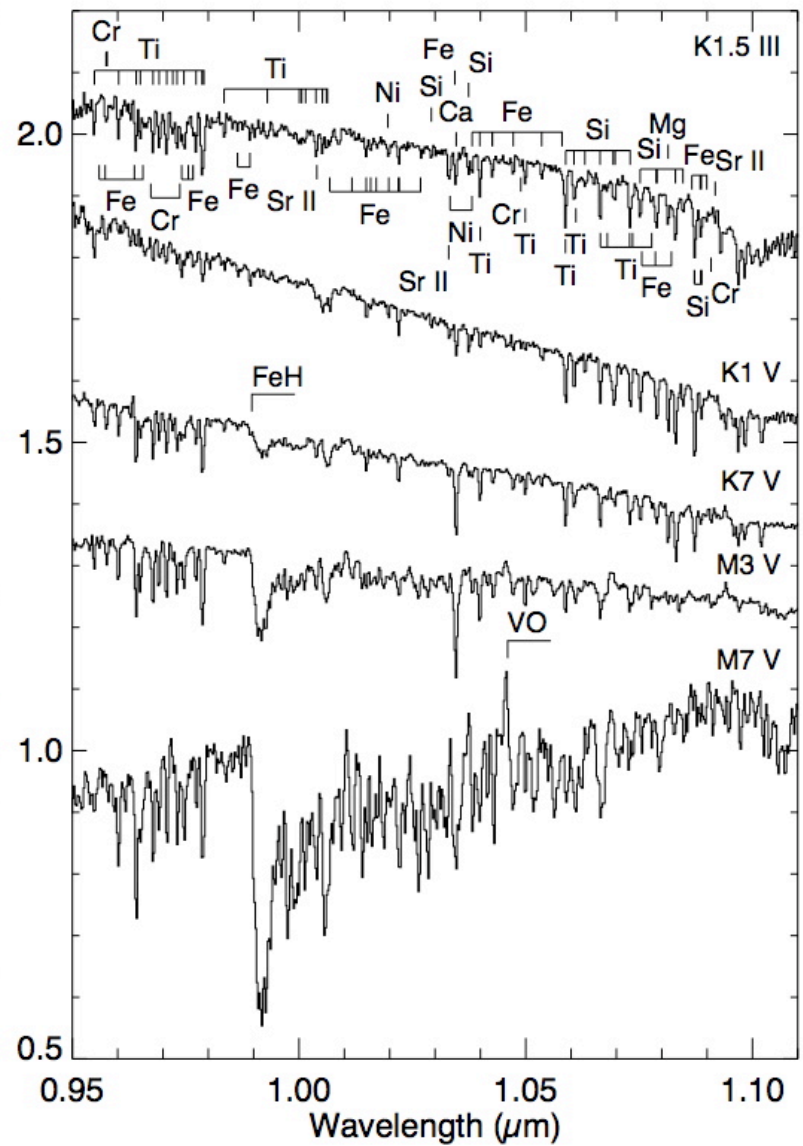
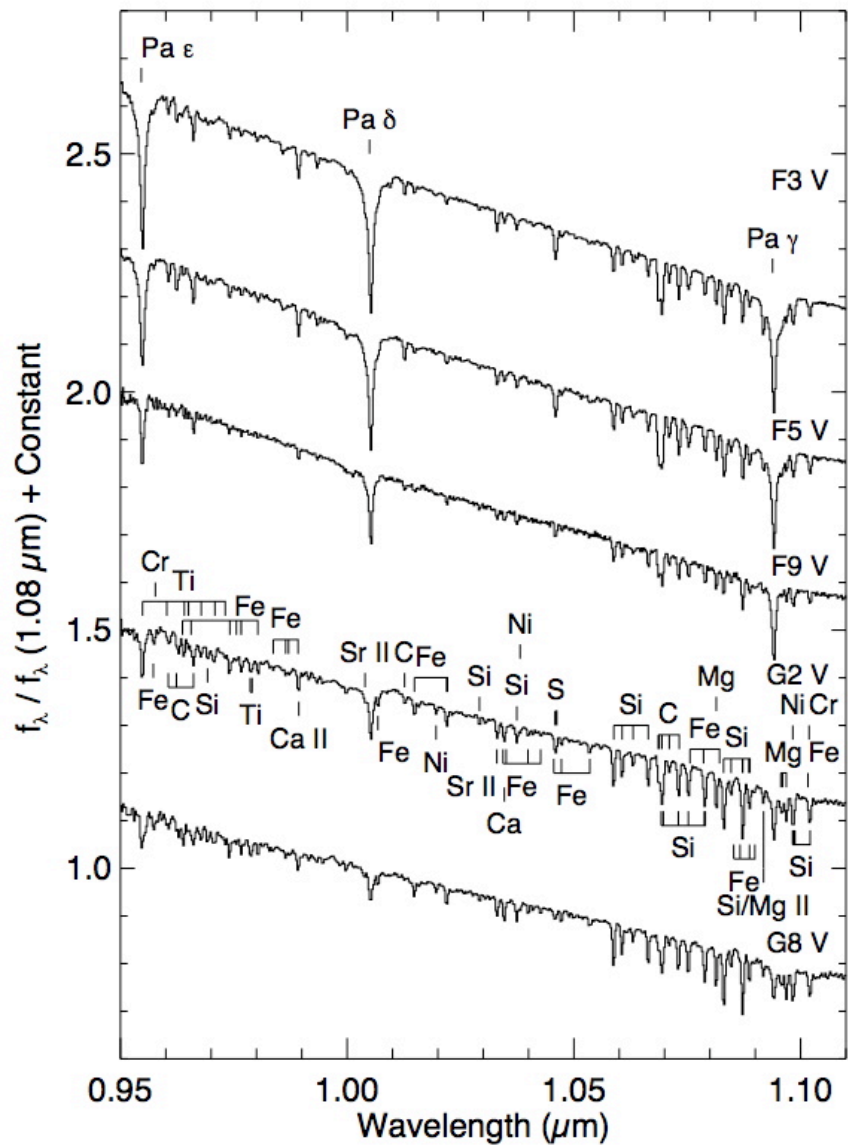


# Giants

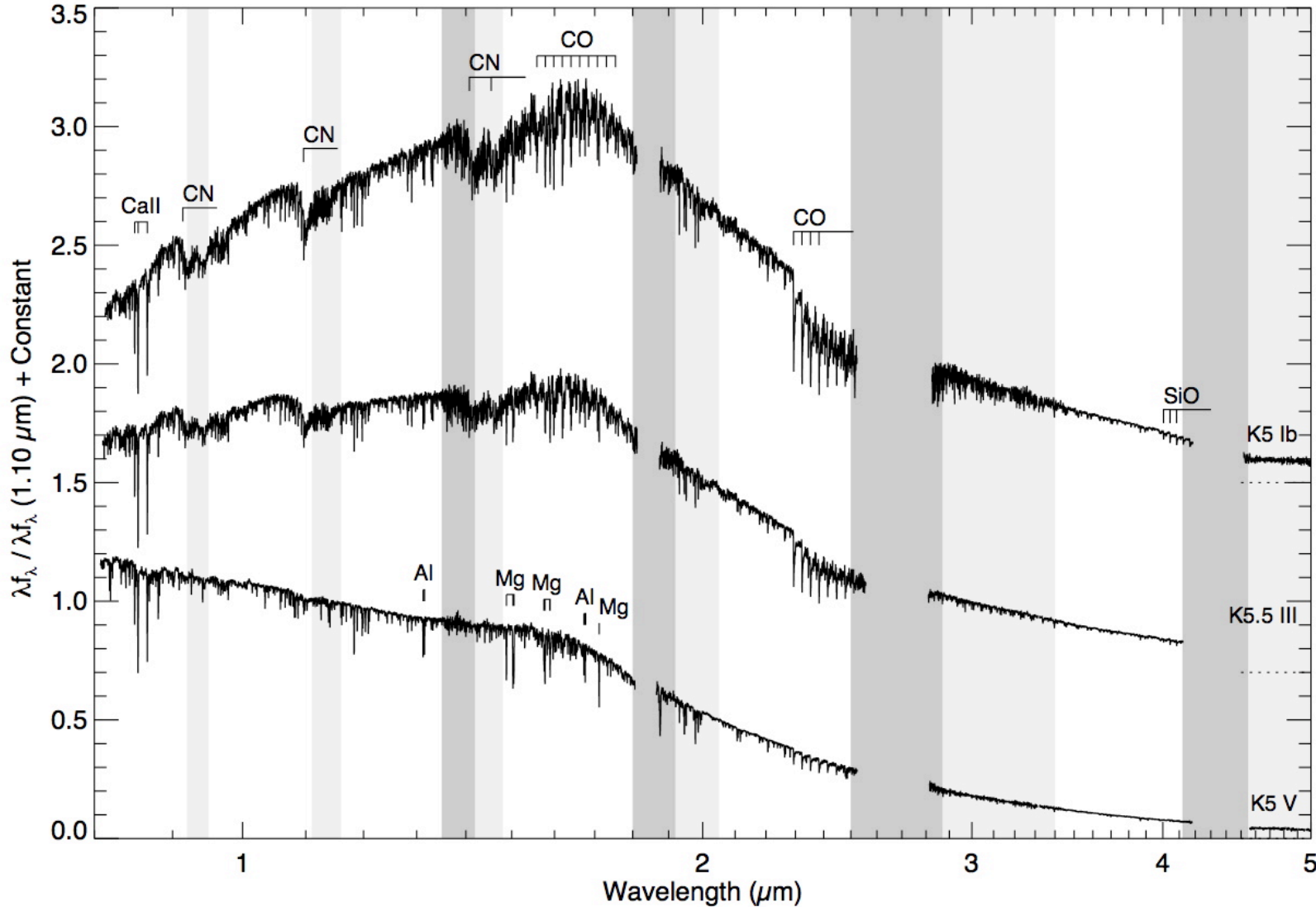


# Supergiants



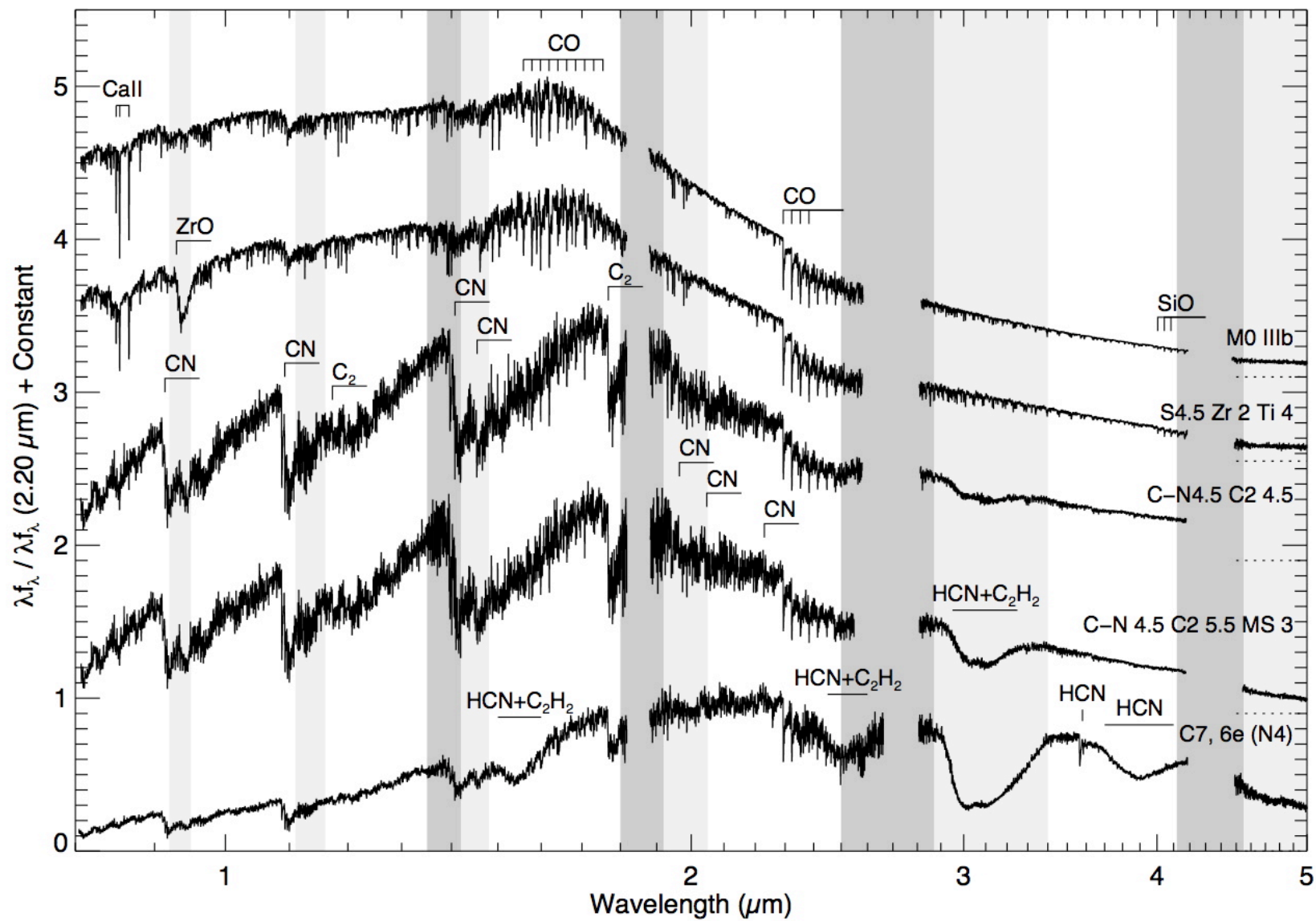


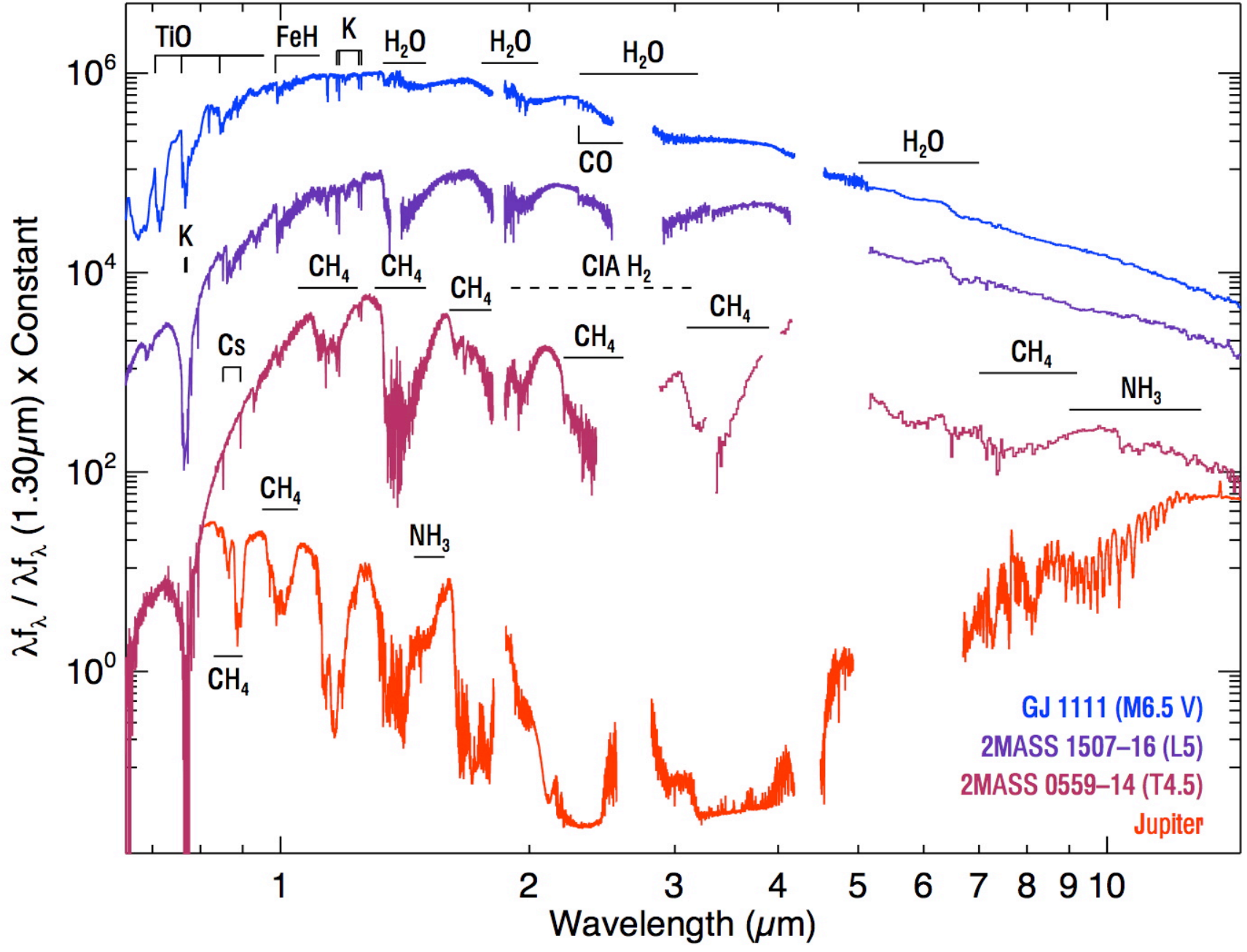
# Luminosity effects at spectral type K





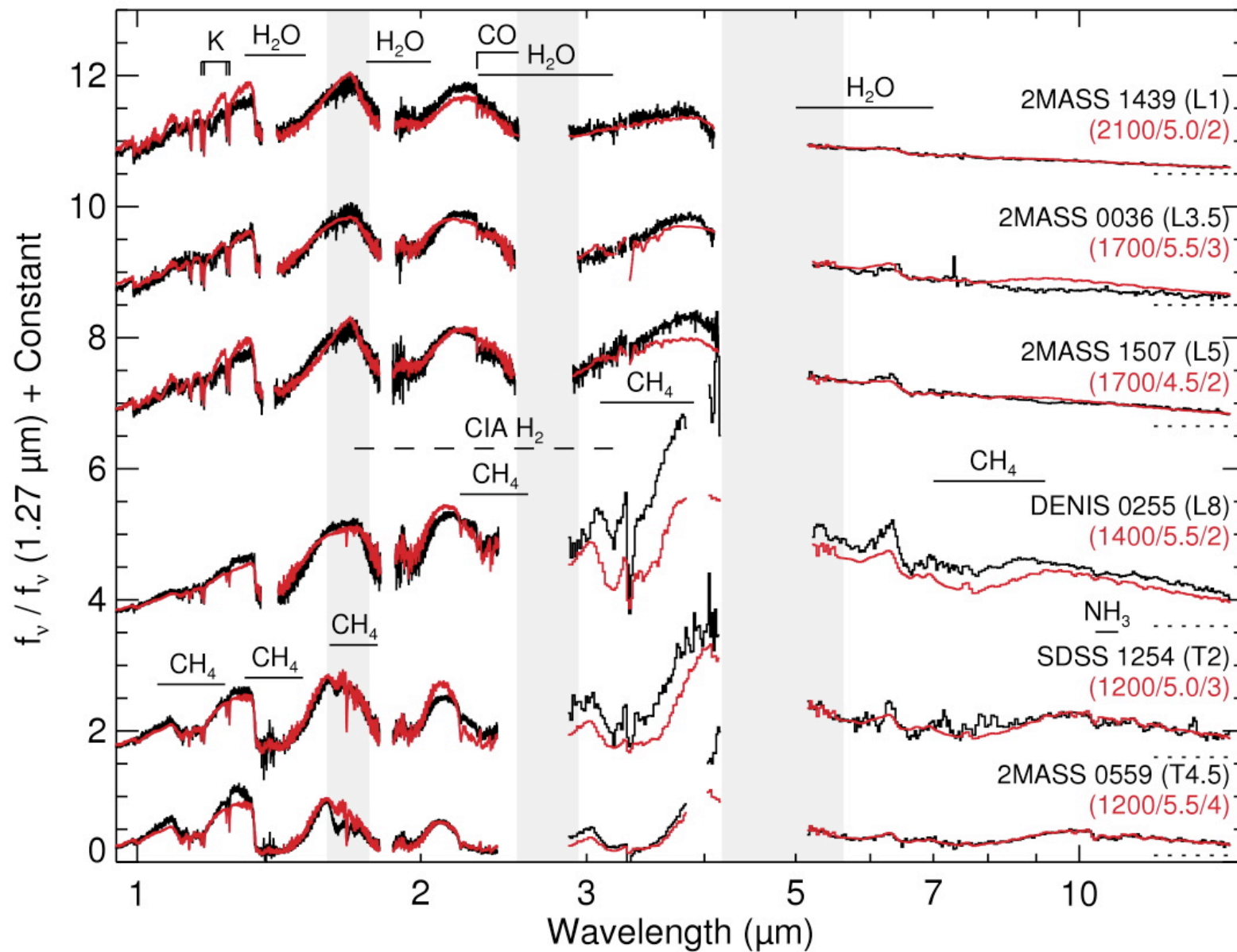
# C and S stars





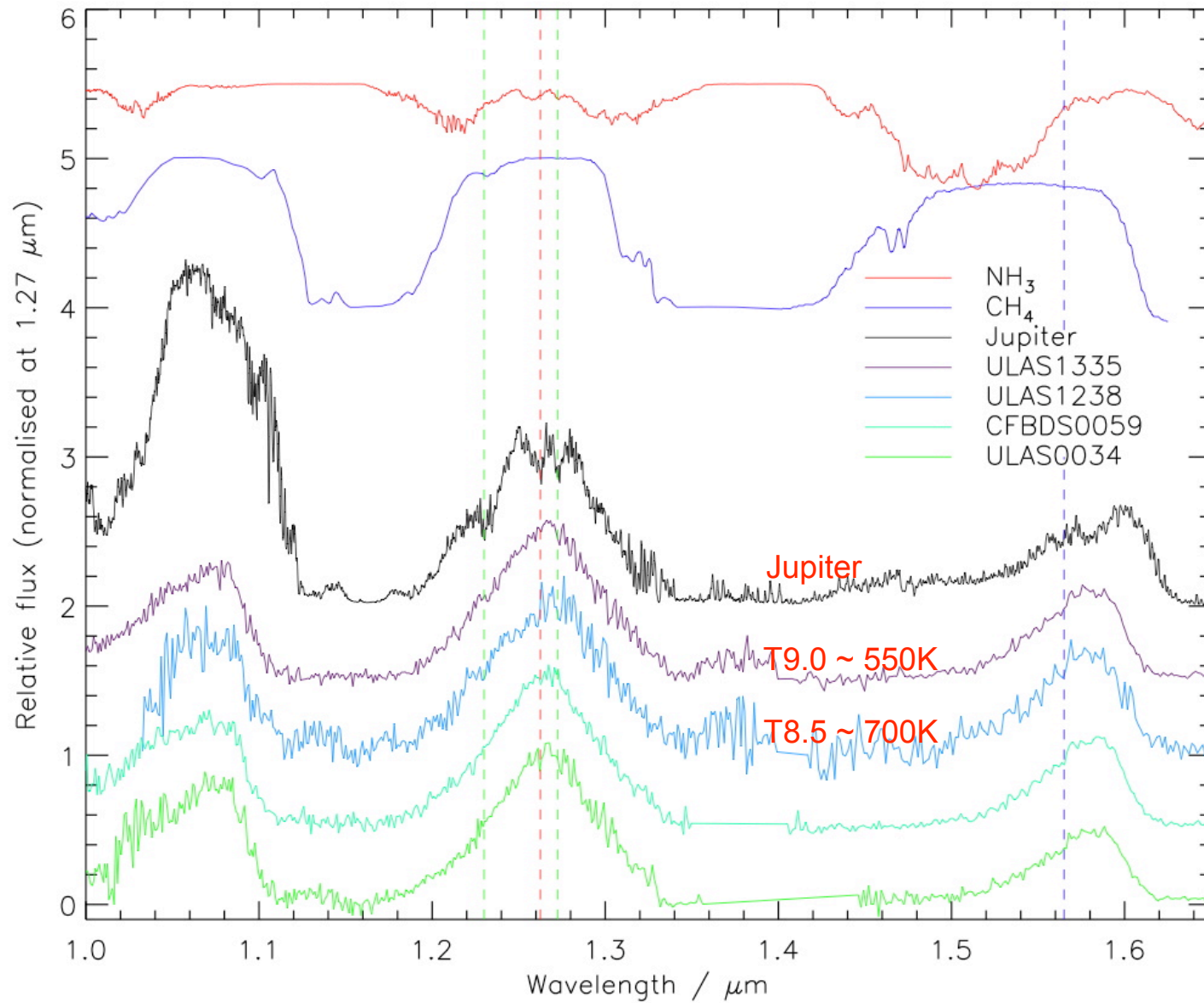
# Atmospheric Parameters of Field L and T Dwarfs

Cushing et al. (2008)



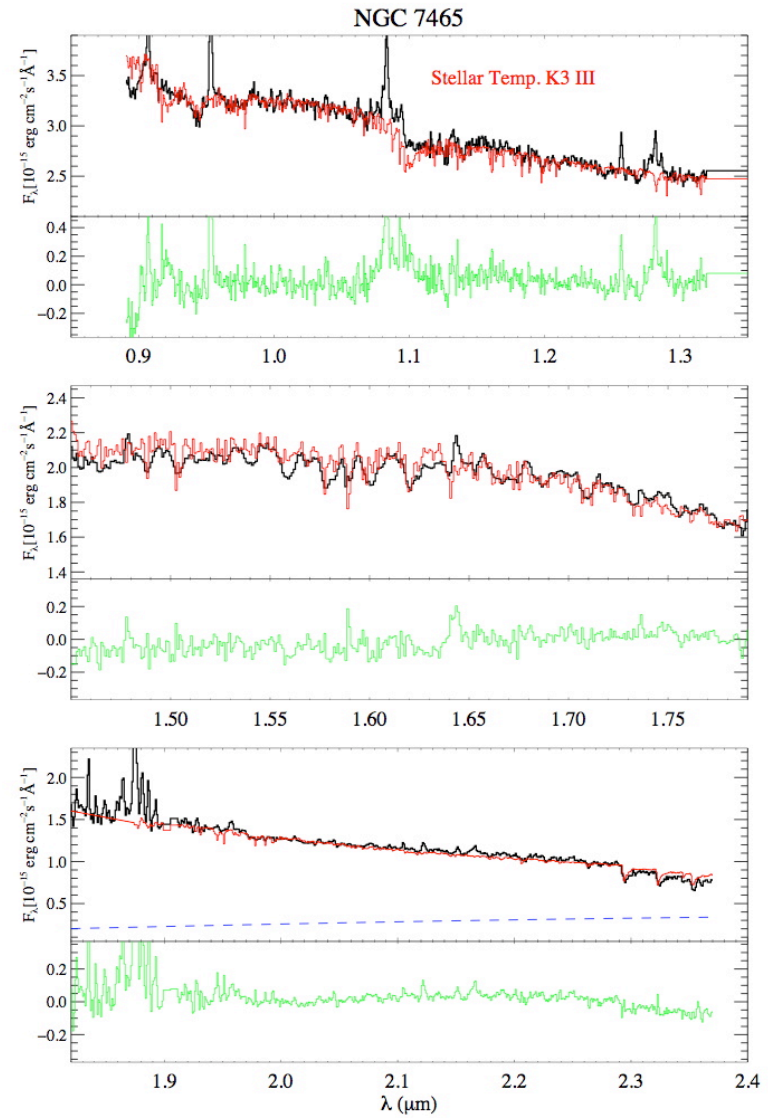
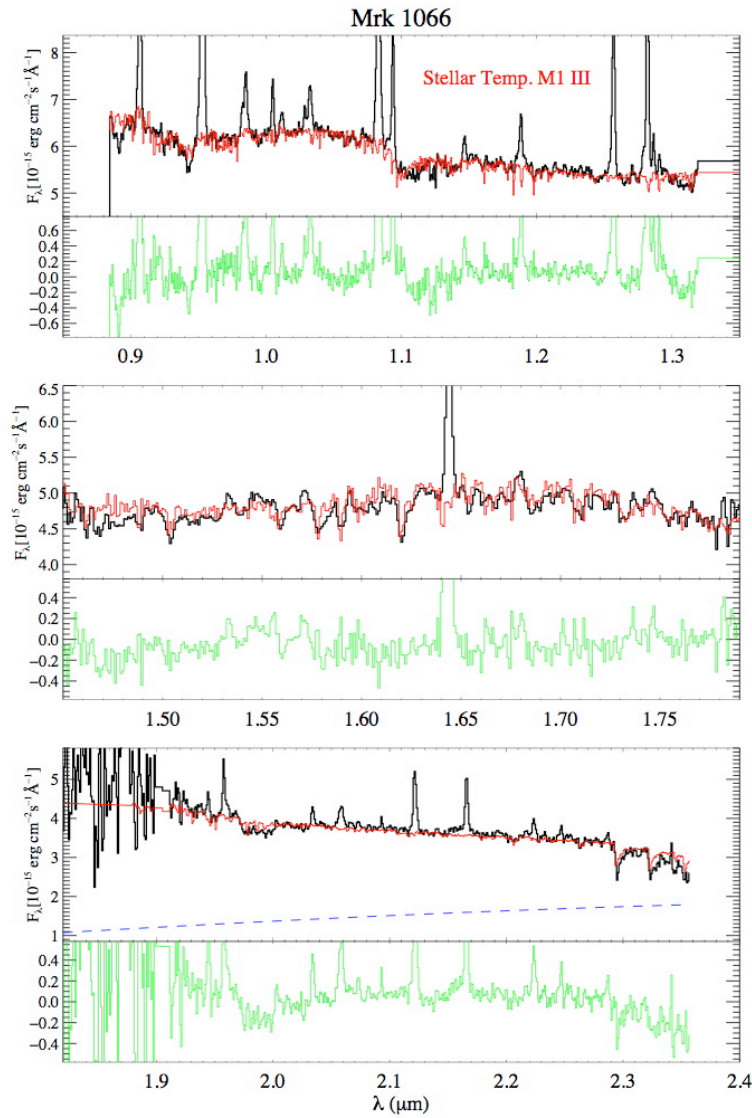
# Exploring the substellar temperature regime down to ~550K

Burningham et al. (2009)



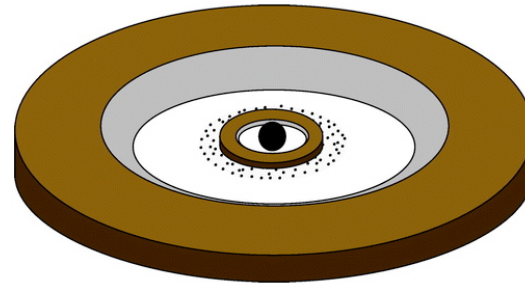
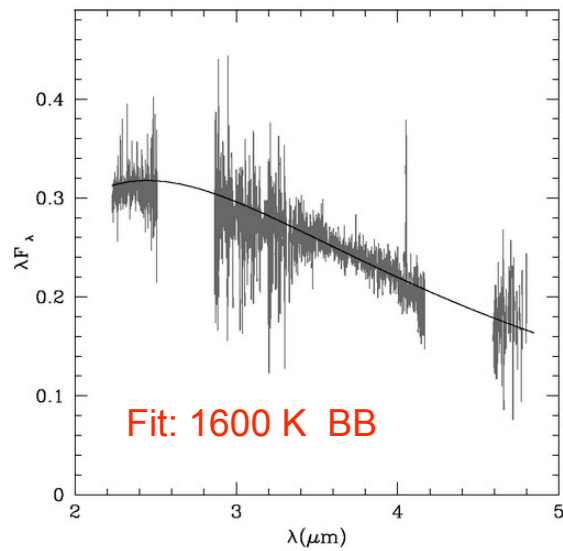
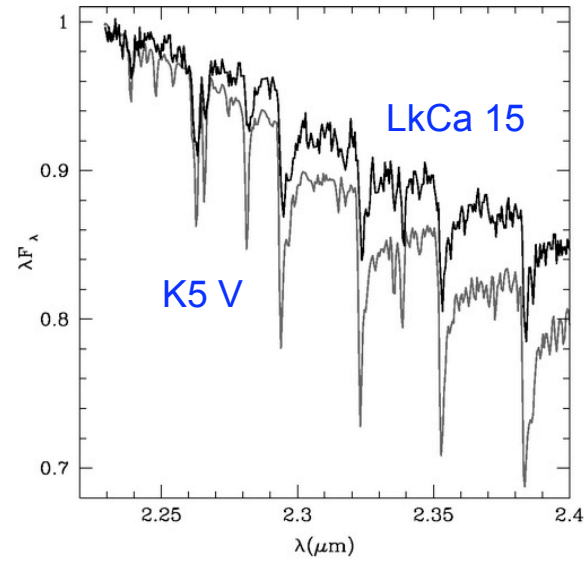
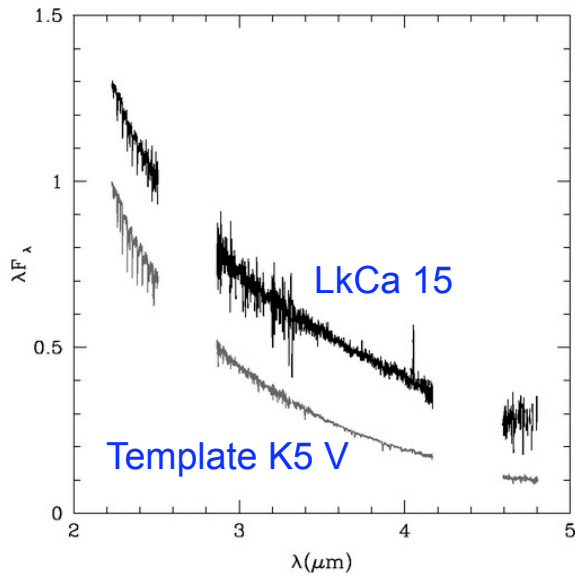
# NIR Spectroscopy of Seyfert Galaxies. Nuclear Activity and Stellar Population

Ramos Almeida et al. (2009)

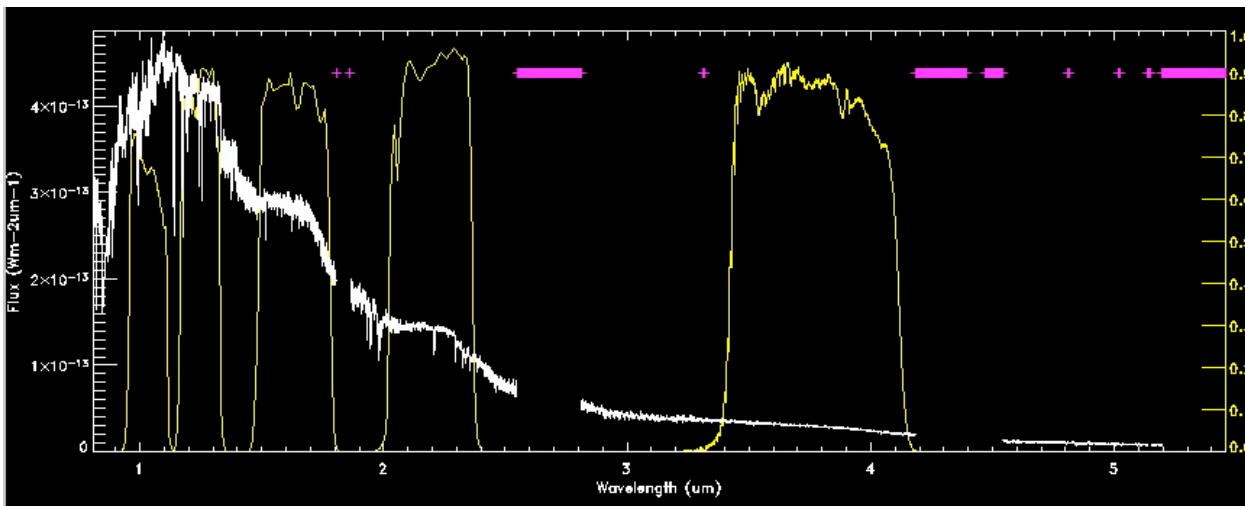
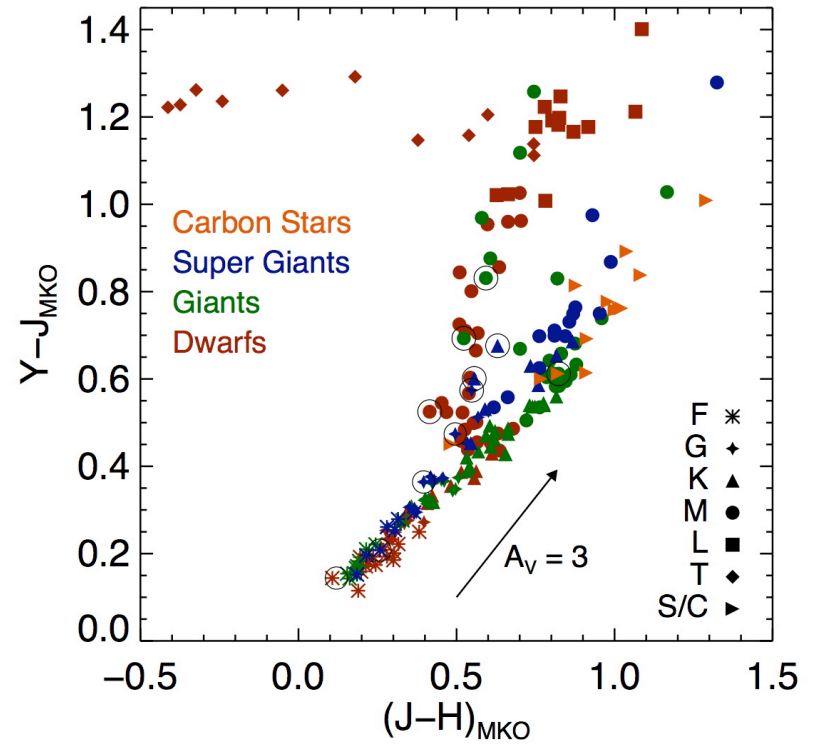


# A Gapped Primordial Disk Around LkCa 15

Espaillet et al. (2008)



# Synthetic Photometry and Photometric Systems





# The IRTF Spectral Library

[http://irtfweb.ifa.hawaii.edu/~spex/IRTF\\_Spectral\\_Library/](http://irtfweb.ifa.hawaii.edu/~spex/IRTF_Spectral_Library/)

HD 170820		G9 II CN1 Hd1		0.81-5.07 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
HD 222093		G9 III		0.81-4.09 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
<b>K</b>									
Name	Other Name	Spectral Type	Note	Wavelength Range	Spectra		Reference	Plots	
					<a href="#">Tar File</a>	<a href="#">Tar File</a>		<a href="#">Tar File</a>	<a href="#">Tar File</a>
HD 165782	AX Sgr	K0 Ia		0.81-2.42 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
HD 44391		K0 Ib		0.81-4.18 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
HD 179870		K0 II		0.81-5.02 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
HD 100006	86 Leo	K0 III		0.81-4.12 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>
HD 145675	14 Her	K0 V		0.81-4.99 $\mu\text{m}$	<a href="#">FITS</a>	<a href="#">Text</a>	2	<a href="#">PDF</a>	<a href="#">PS</a>