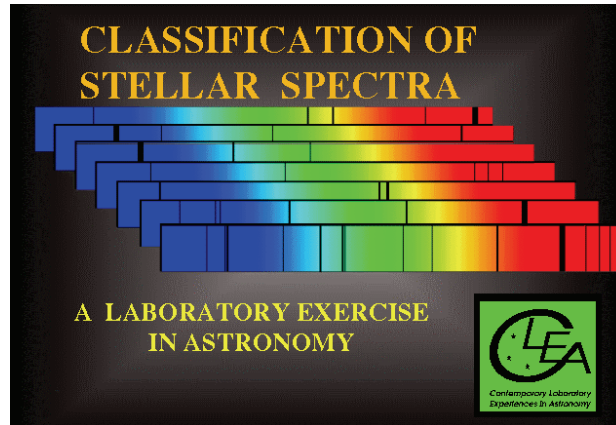
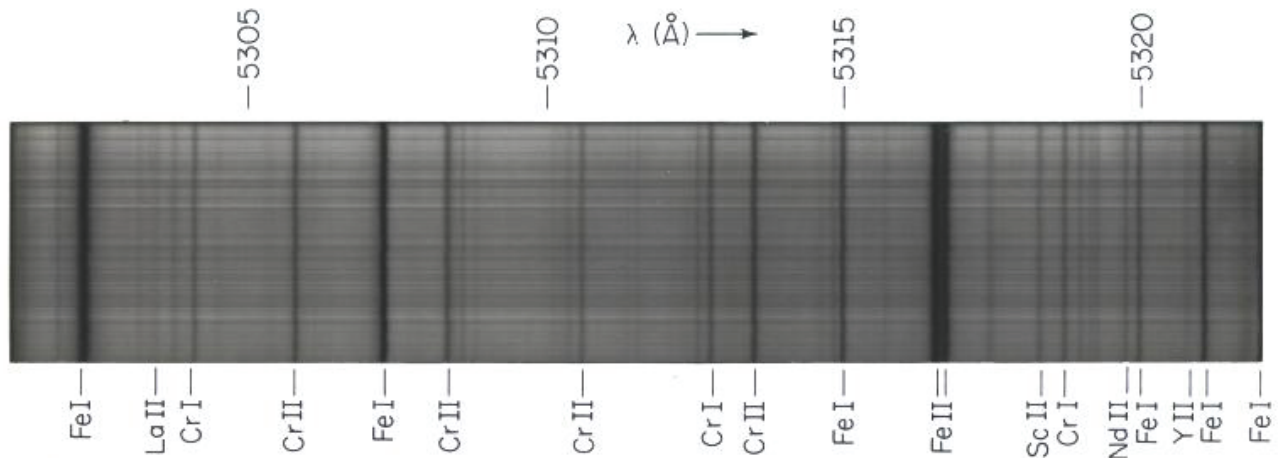


# CLEA Spectroscopy

## The Do-At-Home-Version



- Note that doing this Lab at home will take LONGER since
- (a) you will not work together with other partners,
  - (b) you have to figure out problems on your own,
  - (c) you have to do ALL sections including the Extra Credit Options.



This is the spectrum of the Sun at roughly the same resolution of the stellar spectra in this exercise. The spectrum was taken from <http://www.astro.uiuc.edu/~kaler/sow/spectra.html>.

First you will classify spectra by eye. This is the “old-fashioned” method, but we still use it today. Following that you will classify spectra using a computer. Although the accuracy is much better, you’ll probably find that the computer exercise actually takes longer... But the fun part is that you’ll be using a virtual telescope (on a computer) to obtain your own telescope observations. You’ll be taking spectra, analyzing them, and finally classifying them. The program outline and display details are relatively similar to the previous CLEA laboratory (same telescope console and control keys). The more commands you remember from the Photometry Lab the faster you will finish.

# Instructions

## Basics:

The Spectroscopy2 Lab is a computer exercise.

You can use any computers and even do this exercise at home!

But you need the software to do the computer exercise.

Either get a CD with all CLEA programs from your instructor or follow the instructions below.

Do the PreLab and hand it in **together** with the main Lab!

Get a copy of the Spectroscopy2 lab-write-up and follow all the instructions.

## Here is how to get the CLEA software:

Create a new subdirectory on your computer called “CLEA Programs”.

Go to the <http://www3.gettysburg.edu/~marschal/clea/speclab.html> website;

(Note you can also get there by going to <http://www3.gettysburg.edu/~marschal/clea/CLEAhome.html>

and then click on “Software” and follow this by

clicking on the “Classification of Stellar Spectra” icon.)

On the CLEA Spectroscopy website click on “SpecLab.exe”.

In the window that pops up, do not say “run”, instead click on “save”.

Save that file onto your computer into the “CLEA Programs” subdirectory.

To run the program double-click on “SpecLab.exe”,

Finally follow the instructions in the Spectroscopy-Lab-Write-Up.

## Should you come across a problem, do the following:

Download and read the original “user’s manual”.

To do that, go to <http://www3.gettysburg.edu/~marschal/clea/speclab.html>,

Click on “User’s Guide” and the PDF file should show up in your browser window.

Click on “save a copy” in your browser and save the file into the CLEA programs subdirectory.

If the PDF file does not open in your browser you will need to download

the “Adobe Acrobat Reader” from <http://www.adobe.com/>.

Alternatively, if the link still works, you can also go directly to

[http://www.adobe.com/products/acrobat/readstep2.html?ogn=EN\\_US-gntray\\_dl\\_get\\_reader](http://www.adobe.com/products/acrobat/readstep2.html?ogn=EN_US-gntray_dl_get_reader),

and follow the instructions to install Adobe Acrobat Reader.

And now

**Have Fun!!!**