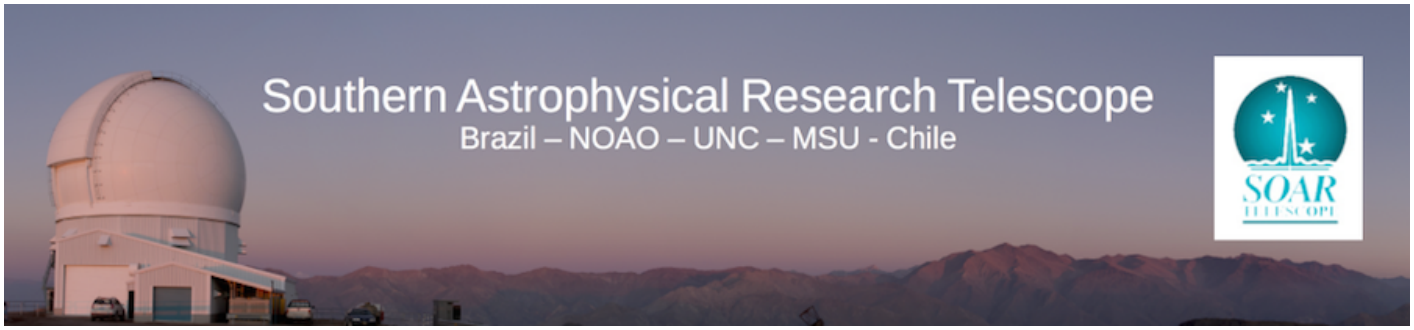

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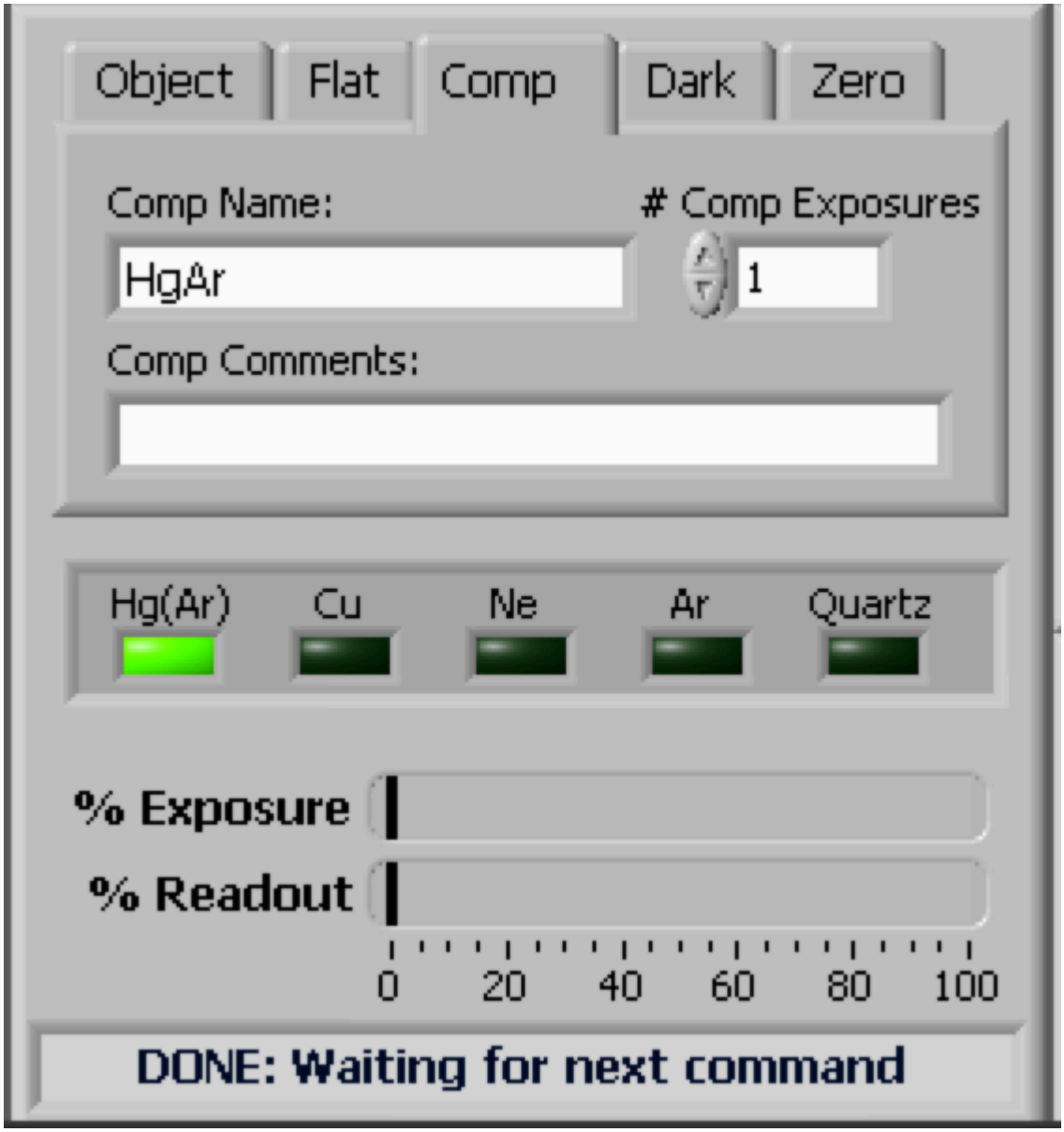
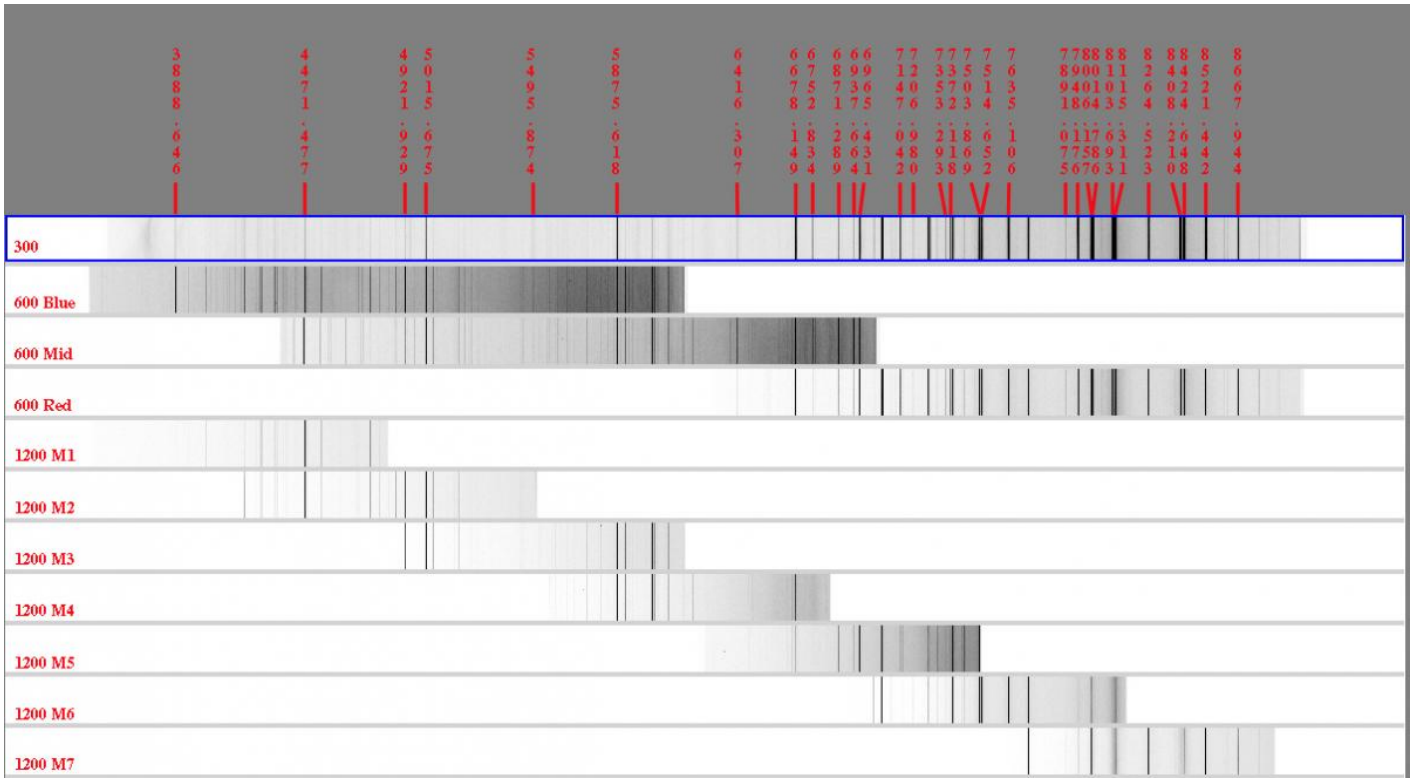
Goodman Comparison Lamps (updated)

The SOAR Instrument Support Boxes (ISBs) contain facility calibration units containing both continuum sources for flat fielding and line sources for wavelength calibration.

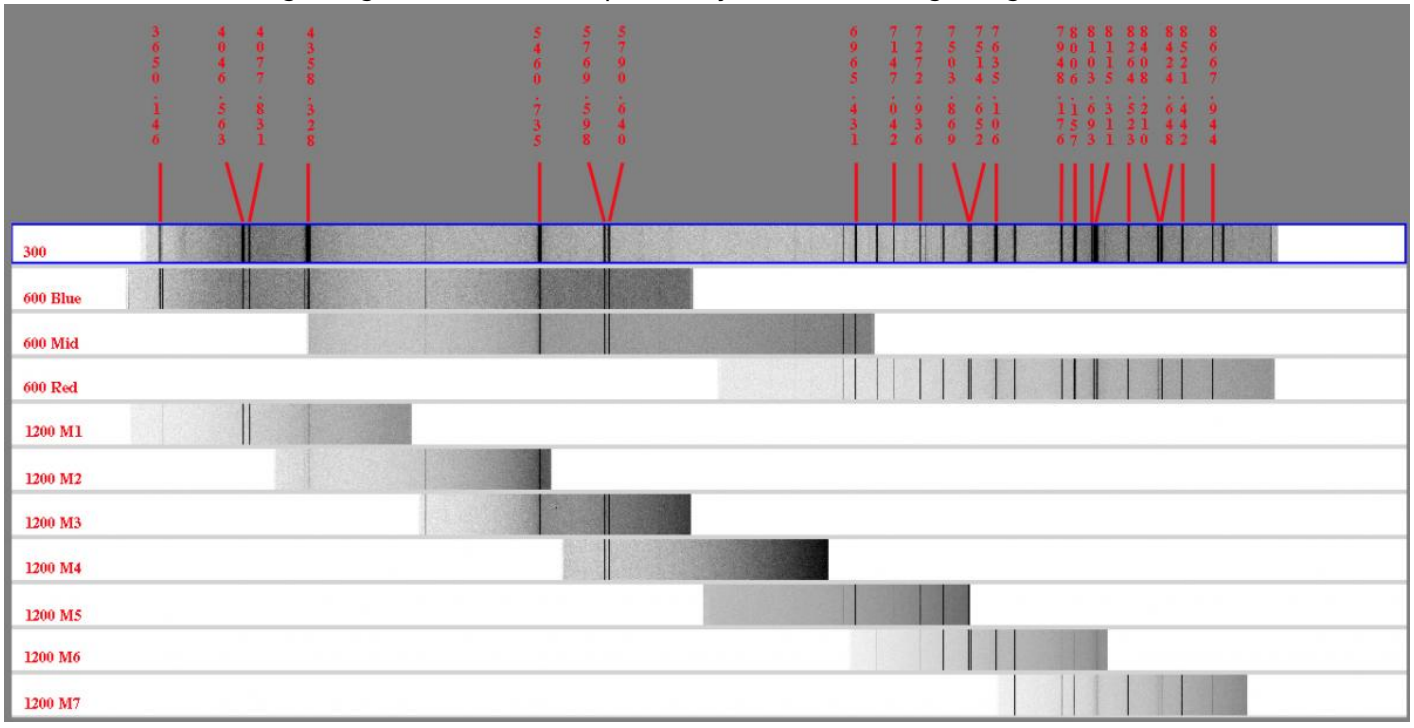


The wavelength calibration lamps normally used with the Goodman spectrograph are: HgAr, CuHeAr, Ne, and Ar. An Fe lamp is also available.
The comparison lamps can be activated from the instrument GUI by you, or you can ask the Telescope Operator (TO) to do it for you from his technical GUI.
Note that you need to make a slow, substantial mouse click on the particular lamp in order for it to actually get the input and turn on or off (a quick click may make the green light go on or off but not turn on/off the lamp). If in doubt, check with the TO. The Fe lamp is not featured in the GUI and you need to ask the TO to rutn it ON/OFF for you. When obtaining comparison lamps, make sure you are in Spectroscopic Mode and that the TO has put the pickup mirror in.

In Figure 1 at below we show the **CuHeAr** arc lamp spectra for all of our pre-defined spectroscopic modes. NOTE: the 300 l/mm grating has now been replaced by the 400 l/mm grating.



In Figure 2 below we show the **HgAr** arc lamp spectra for all of our pre-defined spectroscopic modes. NOTE: the 300 l/mm grating has now been replaced by the 400 l/mm grating.



In the following table containing plots of the comparison lamps made with various gratings and setups. This library of comparison lamp spectra will be expanded and updated to make it include most, if not all of the setups available with the instrument.

Grating	Setup	Lamp	Wavelength Coverage of the Plot
400	M1	HgAr	3000-7000 (Full range) [1]
400	M1	HgAr	3000-5000 (Zoom) [2]
400	M1	HgAr	5000-7000 (Zoom) [3]
400	M2	HgAr	5000-9000 (Full range) [4]
400	M2	HgAr	5000-9000 (Zoomed/split) [5]
600	UV,Blue,Mid,Red	HgAr	3600-9000 (6 plots) [6]
600	UV,Blue,Mid	CuHeAr	3600-6500 [7]
930	M1	HgAr	3000-4500 (Full range & zoom) [8]
930	M2	HgAr	3750-5500 (Full range & zoom) [9]
930	M3	HgAr	4750-6250 (Full range & zoom) [10]
930	M4	HgAr	5500-7200 (Full range & zoom) [11]
930	M5	HgAr	6400-8000 (Full range & zoom) [12]
930	M6	HgAr	7250-8750 (Full range & zoom) [13]
930	M2	CuHeAr	3750-5500 (Full range & zoom) [14]
930	M3	CuHeAr	4750-6250 (Full range & zoom) [15]
930	M4	CuHeAr	5500-7200 [16]
930	M5	CuHeAr	6400-8000 [17]
930	M6	CuHeAr	7250-8750 [18]
1200	M5	HgArNe	3600-8700 (7 plots) [19]
1200	M1,M2,M3,M4,M5,M6,M7	CuHeAr	3600-8700 (7 plots) [20]
2100	650nm (Littrow)	Ne	6150-6720 [21]

Useful links:

The KPNO Spectral Atlas Central [22] is a useful resource for comparison lamp spectra

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Links
[1] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/400m1_HgAr_3000-7000.pdf
[2] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/400m1_HgAr_3000-5000.pdf
[3] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/400m1_HgAr_5000-7000.pdf
[4] http://www.ctio.noao.edu/soar/sites/default/files/GOODMAN/HgArNe_400M2_GG455_full.pdf
[5] http://www.ctio.noao.edu/soar/sites/default/files/GOODMAN/HgArNe_400M2_GG455_split.pdf
[6] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/hgar_600.pdf
[7] http://www.ctio.noao.edu/soar/sites/default/files/GOODMAN/CuHeAr_600_Blue_full.pdf
[8] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/HgAr_930m1.pdf

[9] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/HgAr_930m2.pdf
[10] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/HgAr_930m3.pdf
[11] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/HgAr_930m4.pdf
[12] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/HgAr_930m5.pdf
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[16] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/CuHeAr_930m4.pdf
[17] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/CuHeAr_930m5.pdf
[18] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/CuHeAr_930m6.pdf
[19] http://www.ctio.noao.edu/soar/sites/default/files/GOODMAN/HgArNe_1200M5_GG455_full.pdf
[20] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/cuhear_1200.pdf
[21] http://www.ctio.noao.edu/soar/sites/default/files/Instrument_Plots/GHTS_2100_650nm_Ne.2.pdf
[22] http://iraf.noao.edu/specatlas/