Spectra Data for Lab

Helium
http://hyperphysics.phy-astr.gsu.edu/hbase/quantum/atspect.html
Helium-wavelengths (nm)
438.793 w
443.755 w
447.148 s
471.314 m
492.193 m
501.567 s
504.774 w
587.562 s
667.815 m
s=strong, m=med,
w=weak

Hydrogen
http://hyperphysics.phy-astr.gsu.edu/hbase/hyde.html#c4

Measured Hydrogen Spectrum

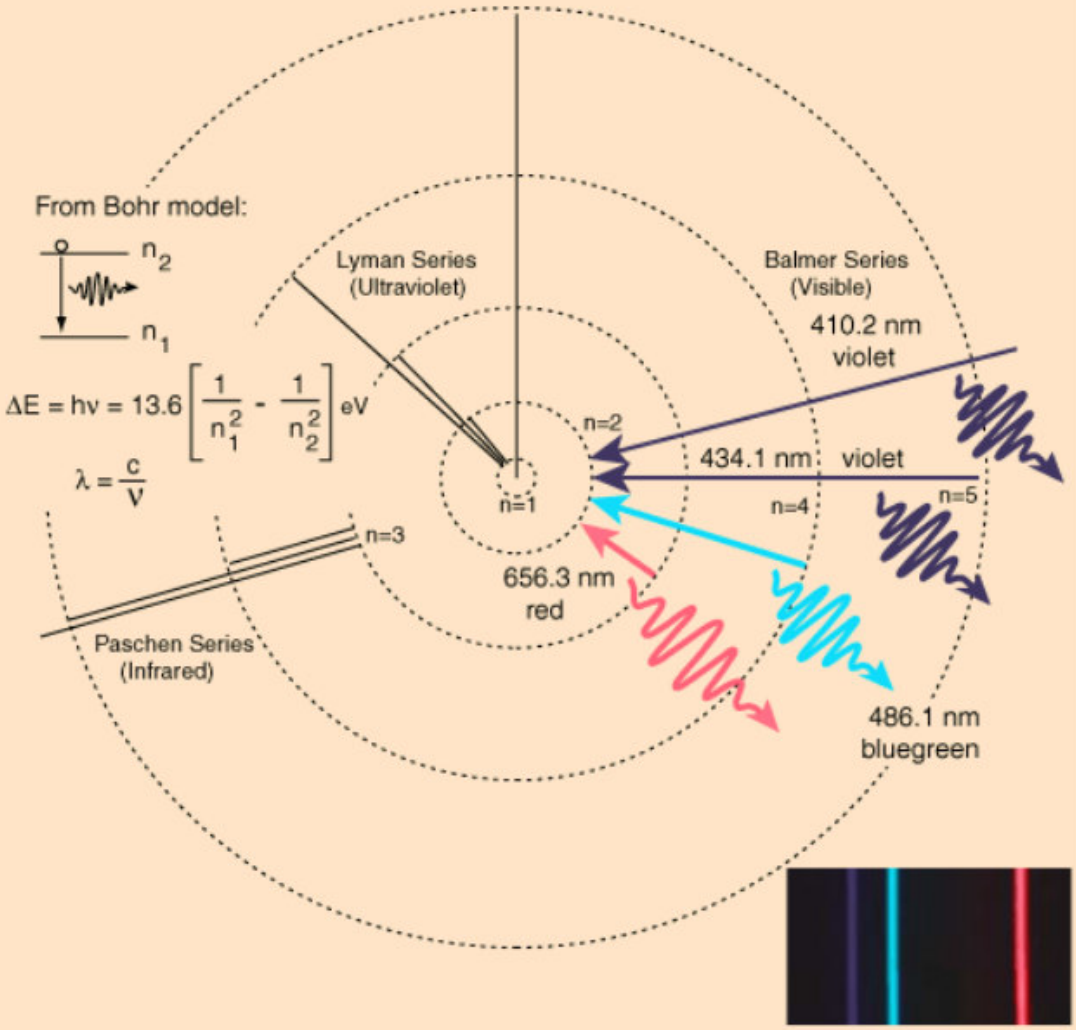
The measured lines of the Balmer series of hydrogen in the nominal visible region are:

Wavelength (nm)	Relative Intensity	Transition	Color
383.5384	5	9 -> 2	Violet
388.9049	6	8 -> 2	Violet
397.0072	8	7 -> 2	Violet
410.174	15	6 -> 2	Violet
434.047	30	5 -> 2	Violet
486.133	80	4 -> 2	Bluegreen (cyan)
656.272	120	3 -> 2	Red
656.2852	180	3 -> 2	Red

The red line of deuterium is measurably different at 656.1065 (.1787 nm difference).

Illustration of transitions

Hydrogen Spectrum



This spectrum was produced by exciting a glass tube of hydrogen gas with about 5000 volts from a transformer. It was viewed through a diffraction grating with 600 lines/mm. The colors cannot be expected to be accurate because of differences in display devices.

Neon and Mercury
http://hyperphysics.phy-astr.gsu.edu/hbase/quantum/atspect2.html#c1

Neon
Some of the visible lines of neon:

l nm	Color
540.1	green
585.2	yellow
588.2	yellow
603.0	orange
607.4	orange
616.4	orange
621.7	red-orange
626.6	red-orange
633.4	red
638.3	red
640.2	red
650.6	red
659.9	red
692.9	red
703.2	red

Mercury
The prominent mercury lines are at
435.835 nm (blue),
546.074 nm (green),
and a pair at 576.959 nm and 579.065 nm (yellow-orange).
There are two other blue lines at
404.656 nm and 407.781 nm
and a weak line at 491.604 nm.