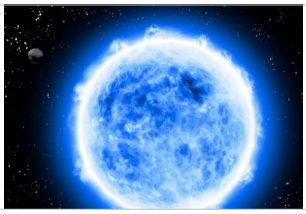
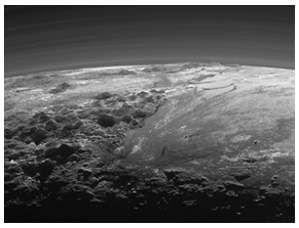
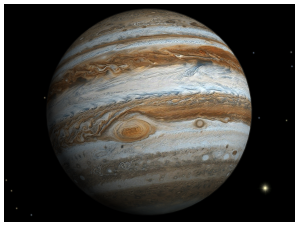
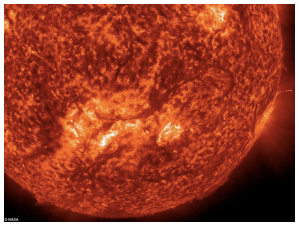
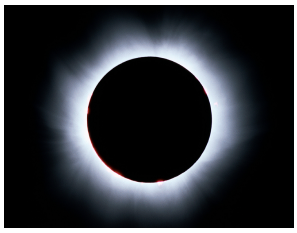
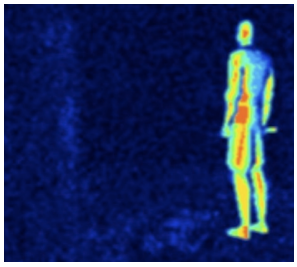
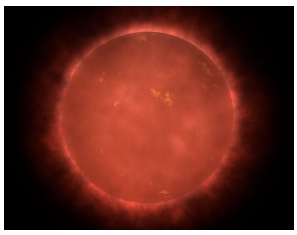
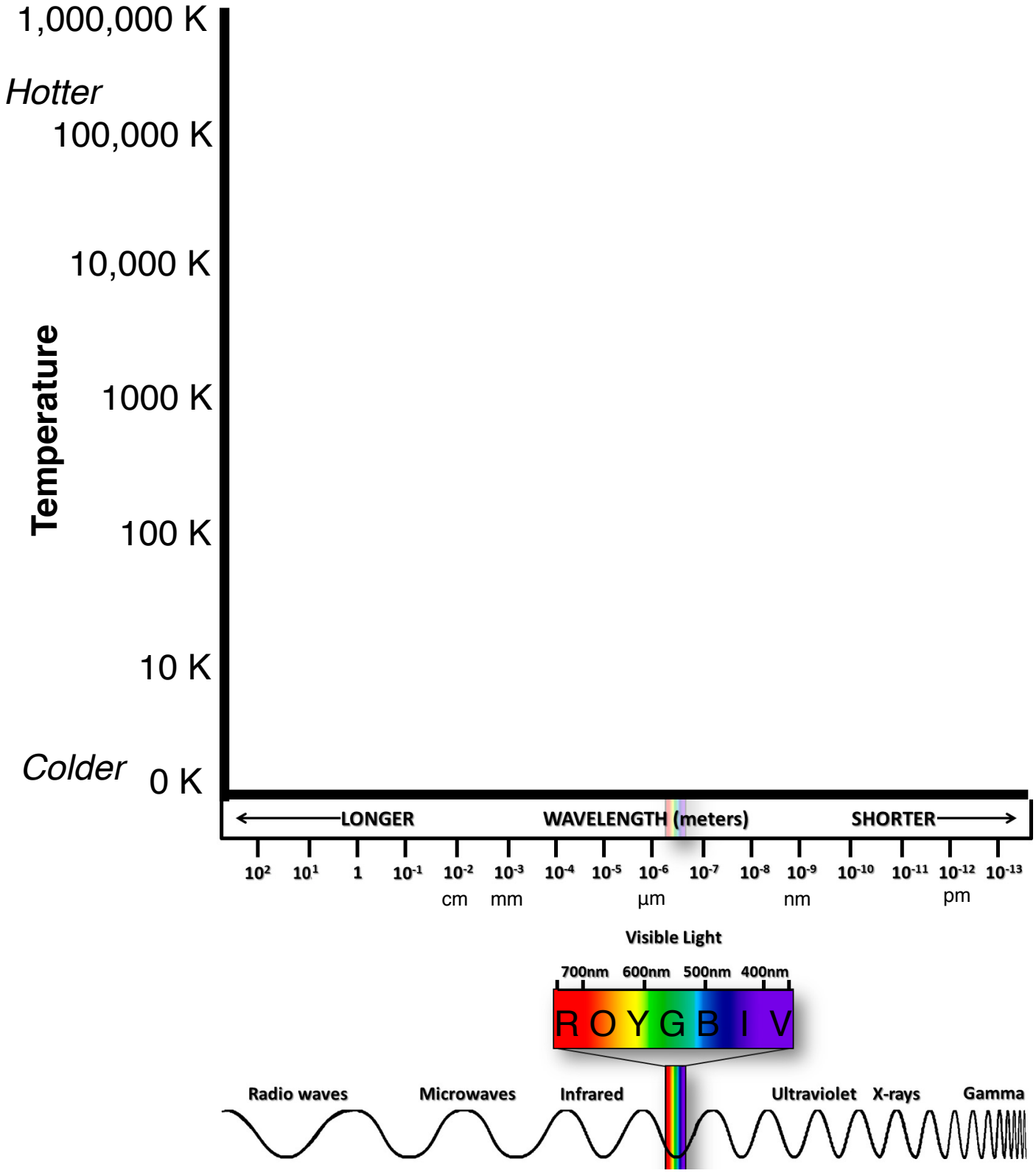
The COLOR of Temperatures

For each of the 12 objects in these tables, plot their temperature and wavelength on the graph.

		Temperature	Peak Wavelength
	Interstellar space	3 K (-455 °F)	10^{-3} m (1.1 mm)
	The gas around a black hole	10^{5} K (200,000 °F)	10^{-8} m (30 nm)
	A star 10x as big as the sun	20,000 K (35,000 °F)	10^{-7} m (140 nm)
	Pluto	33 K (-400 °F)	10^{-4} m (85 μm)
	Jupiter	125 K (-234 °F)	10^{-5} m (23 μm)
	The surface of the sun	6000 K (10,000 °F)	10^{-7} m (500 nm)

		Temperature	Wavelength of light
	Lava	1400 K (2000 ^{o}F)	10^{-6} m (2 μm)
	The Sun's Corona	10^{6} K (1.8 million ^{o}F)	10^{-9} m (2 nm)
	Human	310 K (98.6 ^{o}F)	10^{-5} m (9 μm)
	A pizza oven	530 K (500 ^{o}F)	10^{-5} m (6 μm)
	Proxima Centauri	3000 K (5000 ^{o}F)	10^{-6} m (1 μm)
	Antarctica	216 K (-70 ^{o}F)	10^{-5} m (13 μm)


1,000,000 K
Hotter
100,000 K
10,000 K
Temperature
1000 K
100 K
10 K
Colder
0 K
LONGER
WAVELENGTH (meters)
SHORTER
10^2 10^1 1 10^-1 10^-2 10^-3 10^-4 10^-5 10^-6 10^-7 10^-8 10^-9 10^-10 10^-11 10^-12 10^-13
cm
mm
µm
nm
pm
Visible Light
700nm 600nm 500nm 400nm
R O Y G B I V
Radio waves
Microwaves
Infrared
Ultraviolet
X-rays
Gamma

QUESTIONS

What color does the sun look like?

What color does the hottest object on earth look like?

Generally, how does the peak wavelength of light from an object change with temperature?

In astronomy, does red = hot and blue = cold? Why or why not?