You are a space traveler who has traversed a worm hole into an anti-matter universe that has a different Planck constant than our universe. You need to know whether you can land on a particular planet based on its emission wavelength (i.e. you do not want to burn up when you land). You determine that a star with a temperature of 7000 K has an emission wavelength maximum of 250 nm. If a planet emits at 6 microns, what is the temperature and would you want to land on that planet?

Solution: We need to determine the Wien constant on this universe.

$\lambda_{max}T = (250\ nm)(7000\ K) = 1.75 \times 10^6\ nm\text{-}K$

Therefore, $T = 1.75 \times 10^6\ nm\text{-}K/\lambda_{max} = 1.75 \times 10^6\ nm\text{-}K/6000\ nm = 292\ K$.

Yes, it is safe to land there.

Temperature = _____.