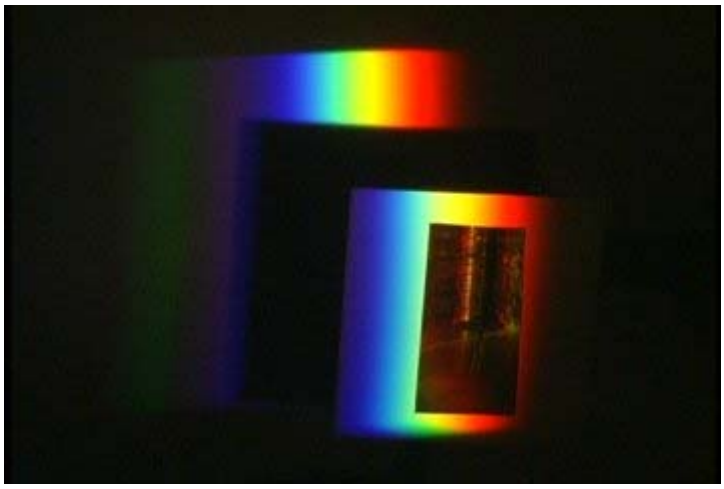
Answer #247

The answer is (b) The frequency will increase, demonstrating that there is more of some type of radiation off the end of the spectrum. In particular, there is more "infrared radiation,", which is in fact "heat" waves. This can be seen in an mpeg video by clicking your mouse on the photograph below.



When we talk of the three ways to transfer heat: conduction, convection, and radiation, the "radiation" to which we refer is in fact infrared radiation, whose frequencies lie adjacent to the red colors of the spectrum. Broad band spectrometers and telescopes, such as the Hubble telescope can make ultraviolet and infrared photographs as well as those using visible light, because these three types of radiation, especially for UV and IR frequencies close to the visible range, are focused by regular glass and optical components in a manner very similar to visible light.

Question #248 is a follow-up to this question.

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For questions and comments regarding the *Question of the Week* contact
Dr. Richard E. Berg by e-mail or using phone number or regular mail address
given on the Lecture-Demonstration Home Page.