

Re: A Wavelength/Frequency question

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- *From:* "Sorcerer" <Headmaster@xxxxxxxxxxxxxxxxxxxxx>
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"The Ghost In The Machine" <ewill3@xxxxxxxxxxxxxx> wrote in message news:pan.2006.08.06.23.37.05.83623@xxxxxxxxxxxxxxxxxxxxx

| I have a question.

|

| A beam of light (or radio waves) is thrown at Venus, which for purposes of
| this problem is a mirror moving 5 km/s or $1.667 * 10^{-5} c$ away from us.
| The beam is, say, 100 cm wavelength and 2.99792458 GHz frequency. The
| energy of each photon

You sure do have a problem.

Before you worry about which buttons to press on your calculator you'll
need to ask yourself what on Earth or on Venus you mean by a photon of
1 metre "wavelength".

Which is it, a beam of waves or a stream of photons? Buoys or a tsunami?
What is the frequency of the road? What is the wavelength of the car?

<http://www.androcles01.pwp.blueyonder.co.uk/Catalina/mercedescatalina.gif>

When and if you finally realise that a photon is an oscillator with a
frequency that is INDEPENDENT of distance and quit worrying about how
many significant figures you need your questions will be answered, but as
you remain thoroughly indoctrinated with speed you have no hope of ever
understanding what you are asking.

The x-axis is NOT the t-axis, they are orthonormal to each other.

Speed is distance divided by time, that does NOT mean time is distance
divided by speed. Time is going to continue to tick on no matter what
the speed, time is INDEPENDENT of distance, it will happen whether
you like it or not.

| would be about $6.626 * 10^{-34} \text{ J-s} * 2.99792458 \text{ GHz} =$
| 12.39829 micro-eV. Assuming no disruption from climbing out of Earth's
| gravity well, atmospheric issues, or falling into Venus's well, what would
| be the expected return wavelength, frequency, and energy?

|

| Special Relativity (SR):

|

| The beam leaves Earth at speed c ,

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Relative to Earth, and $c-v$ relative to Venus.

"But the ray moves relatively to the initial point of k , when measured in the stationary system, with the velocity $c-v$, so that $t = x'/(c-v)$. " -- Albert Phuckwit Einstein.

Remember that c is the round trip value in SR, $c = 2AB/(t'A - tA)$ from Earth to somewhere and back again. You have yet to find the time tB , the time for the one way trip.

"But the ray moves relatively to the initial point of k , when measured in the stationary system, with the velocity $c-v$, so that $t = x'/(c-v)$. " -- Albert Phuckwit Einstein, the same idiot that told you the speed of light is constant in empty space and independent of the motion of Earth, so the stationary system isn't Earth (and it isn't Venus either). It must be the superfluous luminiferous aether in the universal frame that doesn't exist either.

Confused yet? Never mind, just press buttons on your calculator and show us you can do arithmetic like a pigeon can learn to peck the red button when the bell rings to get food.

Quit asking questions you won't understand the answer to. All we want from you is a trained response, follow instructions, we'll do the thinking.

[rest snipped]

Nurse! NURSE! Oh, there you are. Sedate this subject, he's beginning to show rudimentary independent thinking. We must stop that immediately or he'll press the "300, 000, 000" buttons on his calculator and wear out the zero key.

I want him back to "rest snipped" before he tries thinking again
Androcles