Re: wave and light

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From: Andr? Michaud (*srp_at_microtec.net*)
Date: 09/20/04

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hhc314@yahoo.com (Harry Conover) wrote in message
news:<7ce4e226.0409191652.69bcba62@posting.google.com>...
> srp@microtec.net (Andr? Michaud) wrote in message
news:<562f286c.0409191050.617349e6@posting.google.com>...
> > zigoteau@yahoo.com (zigoteau) wrote in message
news:<a836cacf.0409190500.6a7f8d83@posting.google.com>...
> > > srp@microtec.net (Andr? Michaud) wrote in message
news:<562f286c.0409181148.44b6bce2@posting.google.com>...
> > >
> > > Hi, André
> > >
> > > > > Of course EM waves exist. Light is an EM wave.
> > > >
> > > > To my knowledge, since Wien and Planck, we know that this is no so.
> > >
> > > I think you're arguing about definitions here and not about reality.
> > > There is enough evidence out there to indicate that light involves
> > > electric and magnetic fields, whatever the underlying physical basis
> > > of such fields is.
> >
> > I would rather formulate this as
> >
> > There is enough evidence out there to indicate that light involves
> > discrete particles having both electric and magnetic aspects, whatever
> > the underlying physical basis of such aspects may be.
>
> Then too, as a working physicist I would prefer to describe the
> situation as light having a well defined electromagnetic wave
> characteristic which in some specific instances display particle
> (photon) like properties in those rare situations where they exhibit
> particle like properties. (Example: The photo−electric effect.)

It seems to me that they display particle like properties much more
regularly than that.

Photons coming in from far stars couldn't possibly get to us if
they were actual waves. Spherical spread would absolutely prevent
it. I am not talking here of the mathematical plane wave

representation on paper, but of the actual "physical" wave moving
in 3D.

Doesn't the simple fact that spectral analysis is recognized true
science, revealing to astronomers' satisfaction the identity of
emiting atoms making up far stars and interstellar dust, another
proof that photon integrity (however redshifted) and individuality
is preserved all along the way ?

As for adequate mathematical description of photons as clear
electromagnetic discrete events to come about, there is a requirement,
first of all, that at least some individuals start thinking of them
as such if they are to eventually come up with such a description.

As long as the community will be satisfied with the vague general
consensus that they are "wave−like" except in some rare marginal
situations, there can come about no incentive for that type of research,
of for any such solution to even find credit.

Sad in my view, since I am convinced that this would definitely
kickstart the progress engine back to life and send it roaring into
very promising directions.

> I had thought that this matter had been put to bed back around 1910 or
> 1920, but then I may have been mistaken.

I totally disagree that the matter has been settled at all.

Or if it has, please describe to us the dynamic electromagnetic
relation with respect to velocity of light when it is in the
"particle" state of the wave−particle duality.

I'll be quite impressed if you came up with anything more complex
than a featureless blob.

Or more likely with total silence on the matter that I have become used
to as having been the typical answer to questions on opinions from physicists
regarding anything that has not been formally rubber stamped and described
in some paper or other.

> Einstein himself believed that a study of the dual properties of light
> could well occupy someone for a lifetime,

As a physicist, when you talk about the "dual properties" of light,
you of course speak of the wave−particle duality, just like Einstein,
de Broglie et al since the 1920's.

On my part, the only duality that comes to mind in all that has been
observed is the "electro−magnetic" duality of the energy making up
each photon.

> so we'll be very receptive to your illumination of this subject for us.

Indeed, I have read that ironic pseudo−request more than once over the course of the past 5 years, and I never made any bones about what I thought on the matter.

Just like every other unorthodox Peter, Bob and Joe in the crowd, I have aired my opinions on just about every aspect of physics in the expected general indifference except for the also expected and quite revealing comments of the regular outsider bashers.

André Michaud