

The Single Photon Version of the Double Slit Experiment: *Explanation Part III*

When we consider Photons as particle-like entities, capable only of holding individual quanta of E-M radiation, we do still have a few problems.

On the one hand, we are considering such entities as receptacles, carrying some sort of “disembodied” E-M oscillation, while, on the other, we seamlessly carry over to considering them as such oscillations in a medium of some kind, which makes the cancellations and summations of interference patterns very straight forward.

But, these are, indeed, *somewhat* contradictory positions for the same thing.

Now, the suggestion of a “paving” of Space with Empty Photons, which though endowed with full E-M properties, are *in this state* considered to be totally empty, we can transform the concept of propagation back from showers of particulate Photons into something very similar to a medium provided by this “paving”.

But, once more the advantages gained by this redefinition, also delivers more contradictions, which do not seem to gel with this new idea.

And, perhaps the biggest problem is with the interference, which certainly takes place when radiation streams via different routes to then cross one another. The question posed is, “*How do we get cancellation and summation in the various receptacles?*”

Now, as a quantum of energy is determined by $h\nu$ - Planck’s constant h multiplied by the frequency ν , it is conceivable that the Photon could indeed absorb more of the same frequency without changing the energy (remember it is $h\nu$), so, as long as it was such, it could *transfer* and *sum*, or *transfer* and *cancel*.

Now this means that an individual Photon could, indeed, be *empty*, where cancellation has occurred. Now this is an important possibility, because the contents could also be absorbed by something else (as in the Photoelectric Effect) leaving a similar “empty state”. Indeed, if such supplies of energy could be used up, you might well end up with innumerable Empty Photons littering the Universe, and also providing the ground for propagation in photon-to-photon induction.

Of course, as soon as we have a model for the structure of a Photon, things change dramatically.

The suggestion is that a Photon is actually a physical receptacle formed by the mutual-orbiting of an electron and a positron. Not only would this apparently vanish, as it would appear to have neither charge nor mass, but it could also have its orbits “inflated” to higher Energy Levels. The “carried” energy thus (as in the case of the electrons of an atom) is in the raised energy content of the mutual orbits, and very similar reasoning to that used in atoms would explain quanta.

(447 words)