

3D glasses

A quantum physics experiment

To do and notice:

1. Put on a pair of the glasses and look in a mirror-- or at a friend, if they've got a pair on, too. Try closing one eye, then the other. What do you see?
2. Take a second pair and examine it under the light. Tilt your head, or the glasses, and take note of their properties at different angles. It may help to keep one eye closed.
3. Take off the glasses, turn them around, and hold them up to your eyes. Looking through the front of the lenses, examine another pair, being sure to look through both sides at a number of different angles.

What's going on?

A photon is a single "ray" of light — a wave of electromagnetic energy moving through space.

Electromagnetic waves move in three dimensions, think of a photon's electric field as spiraling through space, spinning either clockwise or counterclockwise. At a quantum level, all photons are either left- or right-circularly polarized, but our eyes can't tell one from the other without the aid of filters like the lenses in 3D glasses, which only allow one kind to pass through.

LIGO- connection-

Polarization of a gravitational wave is just like polarization of a light wave except that the polarizations of a gravitational wave are at 45 degrees, as opposed to 90 degrees.