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**Space-Time Is A Medium**  
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If something is bending or curving or warping or gravitationally microlensing light -- it means light is a physical part of it.

Waves can only travel in a medium -- that includes light.

PG says cosmological red-shift can stretch Space-Time and thereby stretch photons in transit. If that is correct it would mean photons are traveling in space-time -- as a part of it -- and space-time is a medium. Something can only affect something else if it is in direct contact or it is a part of it.

The spiders web and moth are a good example. A moth can only be pulled apart by a stretching web if it is stuck in the web.

If a moth is doing a fly-by the web has no effect on it.

So space-time must actually be something -- a medium -- and there is a huge amount of it, completely filling space.

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**Problem Number Two -- The Ring Slice**  
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Gravitational waves are caused by Black Hole mergers and now Neutron Star mergers.

If there is a ripple -- the amplitude (height and depth of the traveling wave) and must be somewhere around the same size as the object that created it. In the case of a neutron star -- that's about 20 kilometers.

You can think of that as a CD or as a simple circle that keeps getting larger in radius but NOT in thickness -- the amplitude of the supposed ripple wave stays the same size as it travels.

After the merger no more ripples will be created but the ones that are already traveling will keep doing so.

So, now the shape is like a huge ring -- like the planet Saturn has. But the ring keeps getting larger in diameter -- NOT in thickness.

So, the problem we have now is: there is supposedly a 20 kilometer height slice (it is called an **Annulus**) that has traveled unfettered for 1.8 billion years (that's an approximate time (ago) of one of the events).

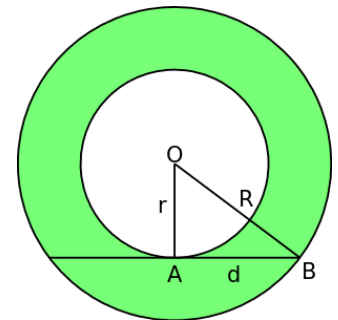
The outer ring radius is 1.8 billion light years.

The inner ring radius is 1.8 billion light years minus the total time of the gravitational wave event. If it were 10 seconds that means the width of the ring is 10 light seconds wide (that's just about a travel to the moon 5 times).

And the height of the ring -- the wave amplitude -- is about 20 kilometers. That's about the 12.4274 miles.

What are the odds of black holes or neutron star merging and sending off the 20 kilometer ring that lines up perfectly with something 1.8 billion light years away? And it supposedly happened 5 or 6 times already. I'd say the odds are zero.

So, what's going on? How can LIGO be detecting gravitational waves? That's easy. The Gravitational waves are compression waves. They work something like regular sound waves do. Anytime there is a merger it shouts it out at the Universe and it goes off in every direction. (of course normal physics apply and there is the most compression directly in-line with the rotation). I think there might be some sort of DNA-like twist shooting off directly above and below the event (on the axis of rotation)?



If any event happens in the Universe -- especially major events -- the whole Universe knows about.

Look at the rippling sine-wave merger picture again. If black holes or neutron stars were rotating around each other and spiraling in -- distorting space-time -- do you really think it would only send out a 12 mile thick slice (annulus)? Gravitational waves are compression waves. But that's o.k. because compression waves would be detectable from any direction. And although the LIGO detector was designed for a different type of wave -- it can easily detect compression waves. (a compression wave is much easier to detect)

Remember: Space-Time does NOT have a surface like a pond.

So, Yes -- there are gravitational waves. They are compression waves. And now you know how they work.

Here is a regular thread tension formula...

Tension = velocity squared x mass / Length.

If we plug c in and rearrange we get the one-inch formula...  $TL = mc^2$

<http://www.mccelt.com/the-one-inch-equation-to-explain-all-physical-laws.php>

#### References

[3] Quantum Thread Theory & Why the Speed of Light is "C"

<http://vixra.org/abs/1612.0363>

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Category: [Quantum Gravity and String Theory](#)