# Researchers find Einstein's space waves

**14th February, 2016**


Scientists in the USA have seen something amazing in space for the very first time. They saw gravitational waves. These are waves that form in space and travel outwards. The waves are similar to how ripples in water move outwards after you throw a stone in a lake. The gravitational waves in space start when two giant space objects hit each other. Albert Einstein first spoke about waves in space in 1916 when he made his General Theory of Relativity. One hundred years later, the researchers have proved that Einstein's theory was right. The researchers used powerful technology to see the gravitational waves. Einstein did not have this technology. He used his genius to predict that the waves existed.

Scientists say the discovery of the gravitational waves is one of the most important discoveries ever. Dr Lawrence Krauss, from Arizona State University, said the discovery was as great as the invention of the telescope. He said it would let scientists see many new things in space. It would also answer many questions about our universe. Dr Krauss said: "It has opened a new window on the universe, just like the telescope." He added that: "Using gravitational waves to explore the universe will allow us to see things we could have never seen before….It will also allow us to explore objects in the universe we've never seen before." He said it was beautiful that the discovery happened 100 years after Einstein's prediction.

Sources: *CanadaJournal.net / gadgets.ndtv / theSpaceJournal*

## Writing

Finding life on other planets would be good for Earth. Discuss.

## Chat

Talk about these words from the article.

*scientists / amazing / waves / space / objects / Einstein / technology / genius / discovery / invention / telescope / universe / explore / beautiful / prediction*

## True / False

a) Scientists found gravitational waves for the second time. T / F

b) Gravitational waves start from the outside and travel inwards. T / F

c) Albert Einstein spoke about gravitational waves in 1916. T / F

d) Einstein used powerful technology to measure gravitational waves. T / F

e) A scientist said discovering the telescope was more important. T / F

f) The discovery of gravitational waves will answer many questions. T / F

g) The discovery means scientists will see things never seen before. T / F

h) The discovery of the waves came 100 years after Einstein's prediction. T / F

## Synonym Match

| | | | |
|---|---|---|---|
| 1. | amazing | a. | investigate |
| 2 | form | b. | showed |
| 3. | hit | c. | finding |
| 4. | proved | d. | occurred |
| 5. | genius | e. | develop |
| 6. | discovery | f. | things |
| 7. | let | g. | astonishing |
| 8. | explore | h. | brilliance |
| 9. | objects | i. | allow |
| 10. | happened | j. | strike |

## Discussion – Student A

a) How interested are you in space?

b) What do you think about what you read?

c) What have you read or seen about gravitational waves?

d) What do you know about Einstein?

e) What do you know about Einstein's General Theory of Relativity?

f) What do you want to know about space?

g) Do you think there is life on other planets?

h) Would you like to travel into space?

 

## Phrase Match

| | | | |
|---|---|---|---|
| 1. | waves that form in space | a. | theory was right |
| 2 | two giant space objects | b. | Einstein's prediction |
| 3. | researchers have proved that Einstein's | c. | the waves existed |
| 4. | researchers used powerful | d. | to explore the universe |
| 5. | He used his genius to predict that | e. | hit each other |
| 6. | one of the most important | f. | of the telescope |
| 7. | the invention | g. | technology |
| 8. | Using gravitational waves | h. | never seen before |
| 9. | objects in the universe we've | i. | and travel outwards |
| 10. | 100 years after | j. | discoveries ever |

## Discussion – Student B

a) What is the most important invention ever?

b) What questions are there about our universe?

c) Will everything in science fiction movies come true?

d) Would you be a good scientist?

e) Do you think we will find something in space we won't like?

f) What did you like about science at school?

g) What will space research be like in 100 years from now?

h) What questions would you like to ask the scientists?

## Spelling

1. something mazgnia in space
2. travel awuodrts
3. when two giant space bseotcj hit each other
4. Einstein's teoyrh was right
5. The researchers used powerful cteoygholn
6. He used his snugie
7. the esiroyvcd of the gravitational waves
8. as great as the viienontn
9. answer many questions about our rsueiven
10. it would let icstssetin see many new things
11. allow us to pxeelor
12. 100 years after Einstein's ntpeidrcoi

**Answers – Synonym Match**

| | | | | |
|---|---|---|---|---|
| 1. g | 2. e | 3. j | 4. b | 5. h |
| 6. c | 7. i | 8. a | 9. f | 10. d |

## Role Play

**Role A – Space travel**

You think space travel is the most amazing thing. Tell the others three reasons why. Tell them why their things aren't as amazing. Also, tell the others which is the least amazing of these (and why): the Internet, babies or the human brain.

**Role B – The Internet**

You think the Internet is the most amazing thing. Tell the others three reasons why. Tell them why their things aren't as amazing. Also, tell the others which is the least amazing of these (and why): space travel, babies or the human brain.

**Role C – Babies**

You think babies are the most amazing things. Tell the others three reasons why. Tell them why their things aren't as amazing. Also, tell the others which is the least amazing of these (and why): the Internet, space travel or the human brain.

**Role D – The human brain**

You think the human brain is the most amazing thing. Tell the others three reasons why. Tell them why their things aren't as amazing. Also, tell the others which is the least amazing of these (and why): the Internet, babies or space travel.

## Speaking – Amazing things

Rank these with your partner. Put the best at the top. Change partners often and share your rankings.

- volcanoes
- the Internet
- flowers
- space rockets
- babies
- dolphins
- the human brain
- snow flakes

**Answers – True False**

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | F | b | F | c | T | d | F | e | F | f | T | g | T | h | T |

Answers to Phrase Match and Spelling are in the text.

 