ENGAGE: ANDROMEDA GALAXY

This galaxy is visible without a telescope! It is 2,200,000 light years from Earth!

If you could fire a beam of light at the galaxy and know that the light would eventually reach the galaxy (without running into something), in how many years would that beam of light reach the Andromeda Galaxy?

How far would the light have travelled?

NOTE:

Light travels at about 5,900,000,000 miles per year







Are these numbers easy to work with?

- 2,200,000 light years from Earth
- Speed of light is about 5,900,000,000,000 miles per year

How could we make these numbers easier to work with???

SCIENTIFIC NOTATION

Are these numbers easy to work with?

• 2,200,000 light years = 2.2 x 10^6 light years

• 5,900,000,000,000 mpy = $5.9 \ge 10^{12}$ mpy

THE MATH PROBLEM

How far would the light have travelled?

Step #1: (2.2 x 10^6) x (5.9 x 10^12)
Step #2: (2.2 x 5.9) = 12.98

(10^6 + 10^12) = 10^18

Answer = 12.98 x 10^18 miles

or 12,980,000,000,000,000 miles

2,200,000 light years from Earth Speed of light is about 5,900,000,000,000 miles per year

