

KINEMATICS

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A Ham Radio Weekend for Talking to the Moon



Electromagnetic waves(light waves) travel at 186,000 miles/s.

Question: (a) Verify what is stated below.

...a electromagnetic wave needs 2.5 s to travel from the earth to the moon and back?

(b) The sun is 93,000,000 miles from the earth. How long does it take sun light to reach the earth?

Answers: (a) _____ (b) 500 seconds or 8 minutes & 20 seconds.

Only about 1,000 ham radio buffs worldwide have the equipment to bounce a signal off the moon.

PALO ALTO, Calif. — Dogs bay at it. Lovers swoon under it. And some people like to bounce their voices off it.

The first two are easy, but sending a voice **signal 239,200 miles to the moon** and back is not quite as simple.

On Saturday, amateur radio buffs or “hams,” as they call themselves, will hold a global bounce-fest, using as many giant parabolic antenna radio telescopes as they can borrow around the world.

Moon-bouncing, also known as Earth-Moon-Earth communications, or E.M.E. requires a higher grade of ham-radio technology than that used for traditional earth-bound communication across parts of the radio spectrum approved by governments for amateur use. Only about 1,000 hams worldwide have stations capable of moon-bouncing.

A handful of radio enthusiasts have been working on the structure over the last few weeks, huddling inside a central command center below the towering, rusting web of metal. They gathered around whirring communications gear as if it were a campfire and chortled with satisfaction when their **“hellos” bounced back from the moon 2.5 seconds later.**