



The Incredible Size of the Universe

Ninety-three billion light-years across, and we can only see part of it

By the numbers

93 billion

light-years across
(observable)

**13.8
billion**

years since the Big
Bang

**100s of
billions**

of galaxies, perhaps
trillions

8 min

for sunlight to reach
Earth

A light-year is the distance light travels in a year, about 5.9 trillion miles.

Looking out is looking back

1

The Moon

Light left it about 1.3 seconds ago

2

The Sun

About 8 minutes ago

3

The nearest star

Just over 4 years ago

4

The farthest galaxies

More than 13 billion years ago

Why 93, not 27?

Space itself has stretched while the light was traveling, so the most distant galaxies are now much farther away than when the light left.

Our cosmic address

Place	Size
Earth	About 8,000 miles wide
Solar system to Neptune	About 2.8 billion miles from the Sun
Milky Way	About 100,000 light-years across, 100–400 billion stars
Observable universe	About 93 billion light-years across

Beyond the observable edge there is almost certainly more universe; its light hasn't reached us.

Sources: NASA; European Space Agency

Remember

Every time you look up at night, you are seeing the past, and the universe is far bigger than what we can see.