

# ASTROLYMPICS

# DISTANCE

**DEFINITION:** how far away an object is or the amount of ground an object has covered in its motion

We frequently ask: how far away is that? The concept of distance is very familiar to us for things we encounter on Earth. One way to describe distance is as the ground covered between two points. When we think about things on different scales, we find that distances can stretch (or shrink) almost as far as our imaginations.

**Units:** meter (m), kilometers (km), feet, miles, light years  
(A light year is the distance light travels in a year, about 6 trillion miles/9.5 trillion km).



## OLYMPIC EXAMPLE

Olympic distance  
between archer and  
target: 70 meters  
(230 feet)

## COSMIC EXAMPLE

Distance to the Bullet Cluster: about  
3.4 billion light years ( $3.2 \times 10^{22}$  km)

The Bullet Cluster is the site of a spectacular collision between two galaxy clusters located at a distance of some 3.4 billion light years or  $3.2 \times 10^{22}$  km.

## EVERYDAY EXPERIENCE

Distance from one end of Brooklyn Bridge  
to the other: 1,797 meters (5989 feet)

