

A light-year is the distance that light can travel in one year. $1 \text{ pc} = 3.26 \text{ light-years}$, so it takes 3.26 years for light to travel 1pc.

The star Deneb is about 430pc away. Go out tonight and look at Deneb.

What was happening on Earth when the light you see was emitted from Deneb?

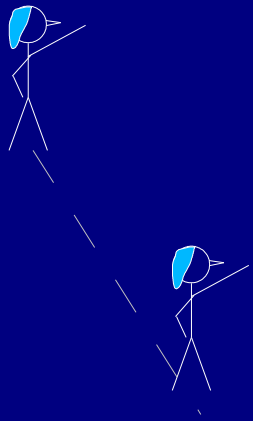
A George W. Bush elected president

B The Industrial Revolution

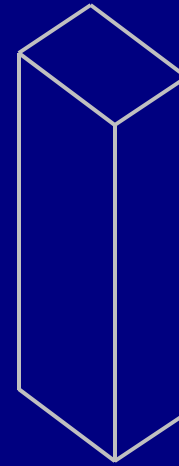
C The English Renaissance

D The European Dark Ages

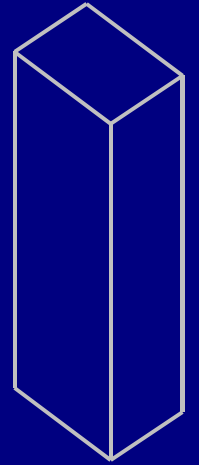
E The Trojan War



You are looking at two buildings; Building 2 is farther from you than Building 1. You measure the distance to them by measuring a parallax angle standing in two different positions as shown.



Building 1



Building 2

- A Building 1 has greater parallax than Building 2
- B Building 2 has greater parallax than Building 1
- C Buildings 1 and 2 have the same parallax.
- D You must wait 6 months before measuring the buildings' parallax

Vega has a parallax of $0.129''$. How far away is it?

A 0.78 pc

B 7.8 pc

C 78 pc

D 780 pc

E 7.8 kpc

Alpha Centauri has a parallax of $0.75''$. How far away is it?

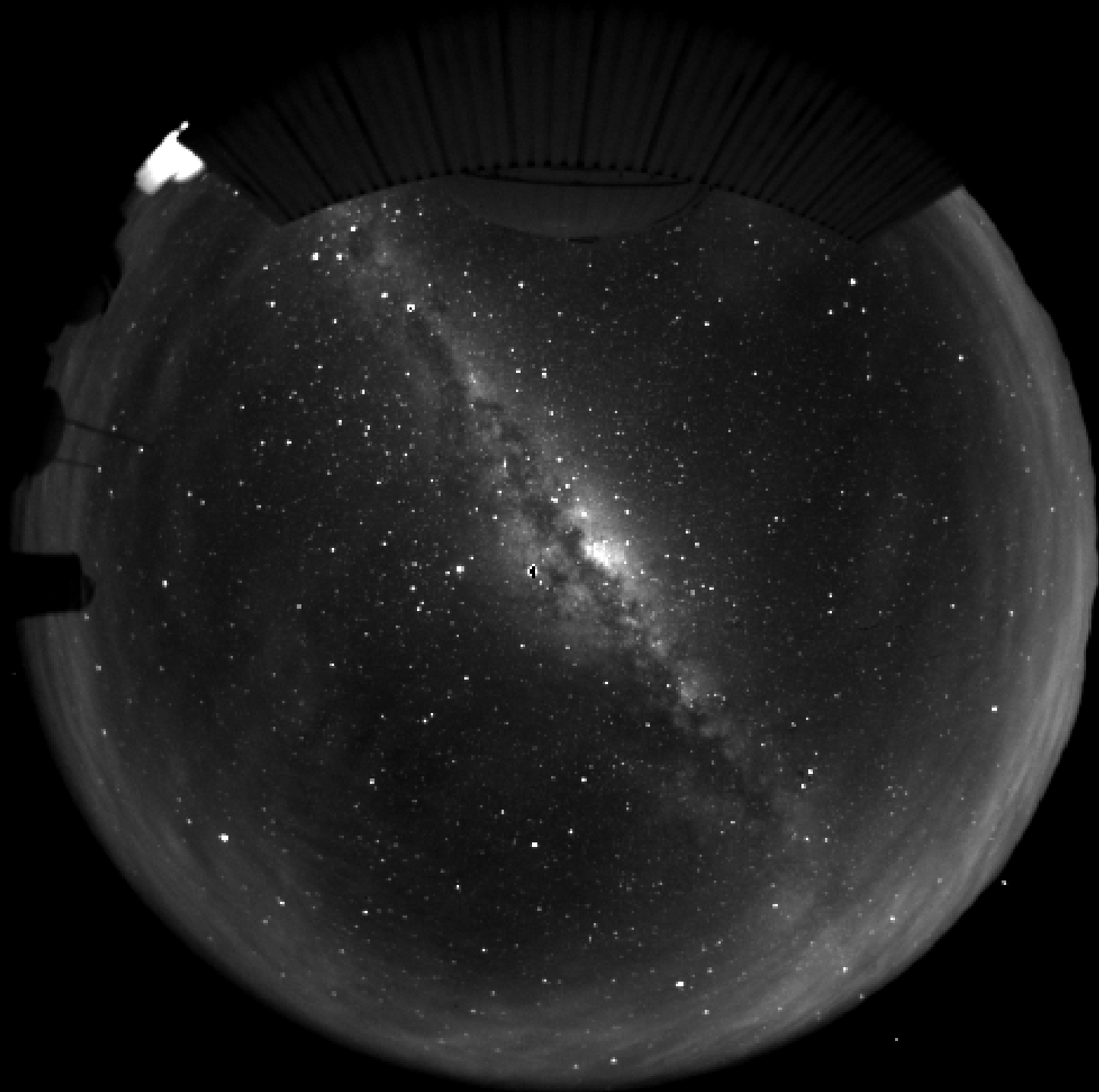
A 0.13 pc

B 0.45 pc

C 1.3 pc

D 13 pc

E 45 pc



In the late 1990's, the European Space Agency satellite *Hipparcos* measured the parallax of stars with a precision of 0.002". The farthest star whose distance was measured by this satellite is:

- A Within 30 light-years of the Sun (i.e. in the Solar Neighborhood)
- B In the same general region of the Milky Way as the Sun**
- C On the far side of the Milky Way
- D In the Large Magellanic Cloud
- E In the Andromeda Galaxy.

$$d = 1/p = 1/0.002'' = 500\text{pc} = 0.5 \text{ kpc} : \text{ well within the Milky Way}$$