

## Answer on Question#55375 - Physics - Astronomy - Astrophysics

How far, in parsecs, is an object that has a parallax  $p$  of 0.010 arc-second? How far is it, in light-years?

Solution:

The distance to the object in parsecs  $d$  is the reciprocal of the parallax  $p$  measured in arc-seconds:

$$d(\text{pc}) = \frac{1}{p(\text{arcsec})}$$

Since  $p = 0.01\text{arcsec}$ , we obtain (1pc = 3.26ly)

$$d = \frac{1}{0.01\text{arcsec}} = 100\text{pc} = 326\text{ly}$$

Answer: 100pc = 326ly.