

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 ($1\text{pc} = 3.26\text{ly}$)

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

Answer: $100\text{pc} = 326\text{ly}$.

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