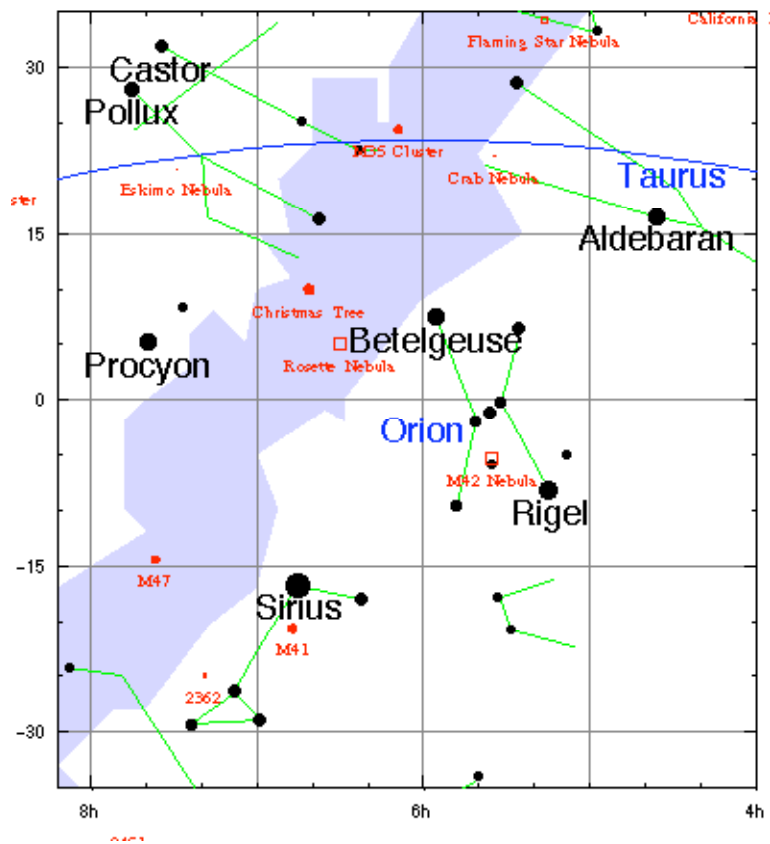


## How far apart are Sirius and Procyon?



Calculate the actual distance between Sirius and Procyon in light years, using the following.

### Sirius

Distance = 8.60 ly     $\alpha_{2000} = 6^{\text{h}} 45^{\text{m}} 08.9173^{\text{s}}$      $\delta_{2000} = -16^{\circ} 42' 58.017''$

### Procyon

Distance = 11.41 ly     $\alpha_{2000} = 7^{\text{h}} 39^{\text{m}} 18.1183^{\text{s}}$      $\delta_{2000} = +5^{\circ} 13' 29.975''$

Law of Cosines

$$d_{\text{sp}} = \sqrt{d_{\text{s}}^2 + d_{\text{p}}^2 - 2d_{\text{s}}d_{\text{p}}\cos\theta}$$

To calculate  $\theta$  you'll want to refer to the [Angular Separation](#) document.

where  $d_{\text{sp}}$  = the distance from Sirius to Procyon in light years  
 and  $d_{\text{s}}$  = the distance to Sirius from Earth in light years  
 and  $d_{\text{p}}$  = the distance to Procyon from Earth in light years  
 and  $\theta$  = the angular distance between Sirius and Procyon in degrees

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1/21/08