

## **Solar Apex**

*In which direction is the sun headed – with us in tow?* 



Solar Apex is the point in the sky where the sun is headed. 18h 28m, 30°N

## Where is the Solar Apex?

Find Vega, the brightest member of the Summer Triangle.
Drop about 10° south of Vega. (10° is about equal to the width of your fist on your fully extended arm.)

• There is no notable "solar apex star."

In 1783, William Herschel knew the semi-reliable values of the right ascension (i.e., the east/west) component of the **proper motions** 

of seven bright stars. He plotted them on an equatorial plane allowing him to estimate the point in the sky where the sun is headed. It was near 4.4 magnitude Lambda Herculis, just 10° wsw of the currently accepted location.

## Herschel's Seven Stars:

Altair, Sirius, Procyon, Castor, Pollux, Regulus, and Arcturus

**Proper Motion:** the change in sky position of a star over time. It is often expressed in arcseconds per year and has declination and right ascension components. It is the result of both the sun's and the star's motion in 3 dimensional space.

**Solar Antapex,** from whence we came: 6 h 28m, 30°S; about 10° ssw of Sirius and near Zeta Canis Majoris.



As the sun moves through space, it passes stars. From the sun's point of view, the ones that it approaches appear to move slightly off to one side. As they are passed, they move quickly in the opposite direction. The point from where all the star motion radiates is the **solar apex**.



Further reading: https://articles.adsabs.harvard.edu//full/1980JHA....11..153H/0000154.000.html © 2024 by the Astronomical League. All rights reserved. www.astroleague.org