

How far are the Stars?

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All of you now

- Close the left eye
- Put your finger about 25cm from your eyes in front of some object
- Open and close the right and left eye
- What does your finger do?



In reverse

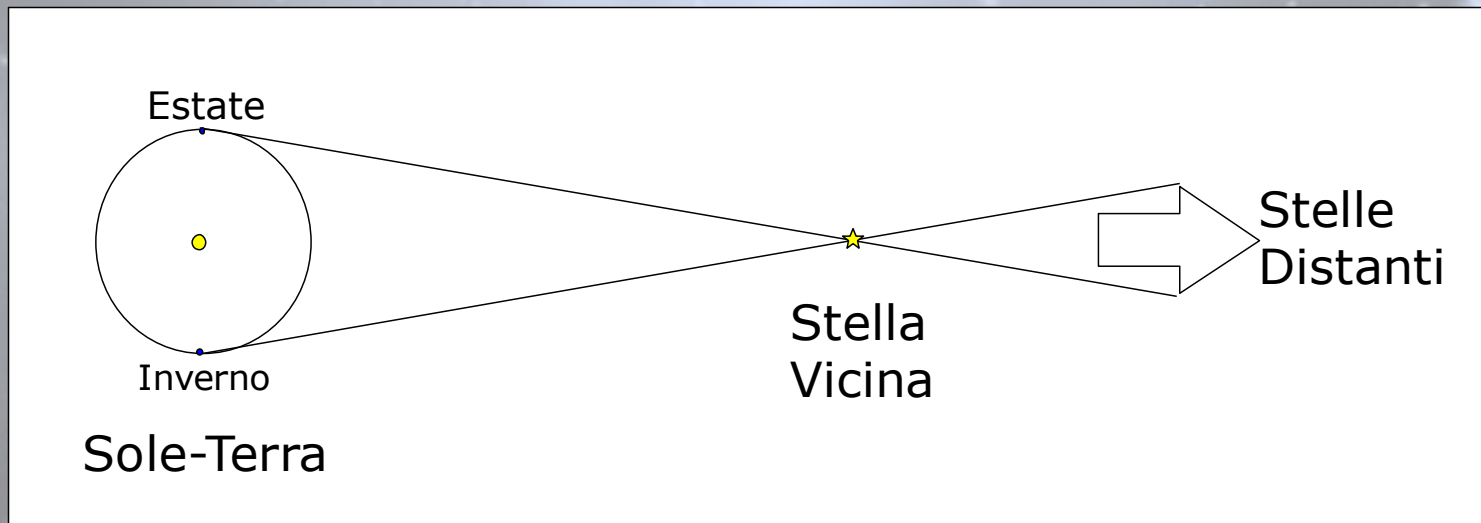


Parallaxes from the Earth

Observe in the summer

Observe in the winter

The "motion" is due to it's parallax.



“E pur si muove”

2000

A deep-sky photograph showing a field of stars. The most prominent feature is a bright, white star with a four-pointed diffraction pattern, located in the upper-middle part of the frame. The word "2000" is printed in white in the top-left corner of the image. The background is dark, with numerous other stars of varying colors (white, yellow, red) and sizes scattered throughout.

“E pur si muove”

2000

A dark rectangular frame containing a star field. The most prominent feature is a bright, multi-pointed star located in the upper-middle section. To its right and slightly below, there is a small cluster of several fainter stars. The rest of the frame is filled with a sparse distribution of various colored stars (white, yellow, red, blue) against a black background. The number '2000' is printed in white in the top-left corner of the frame.

“E pur si muove”

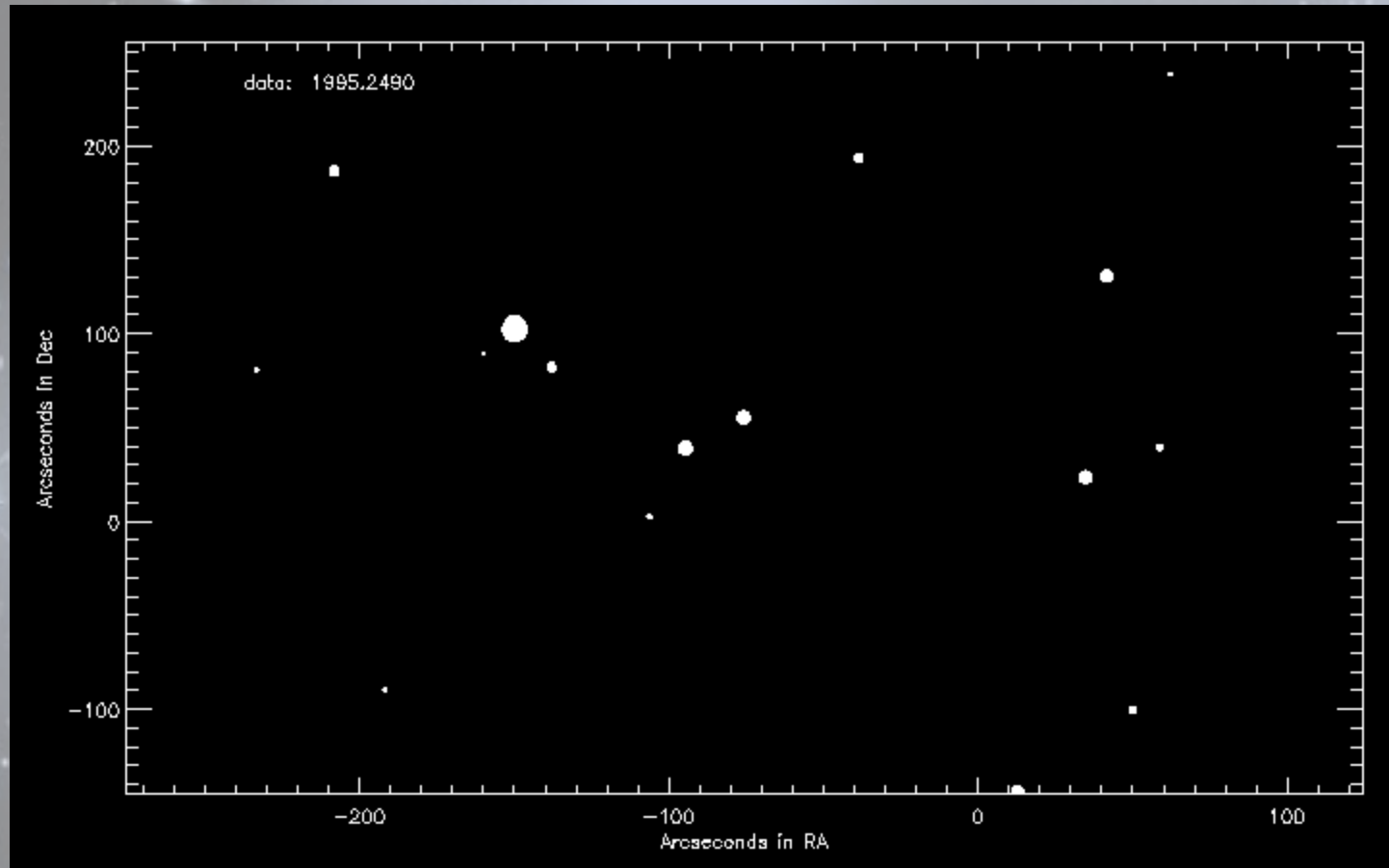
2000

A dark rectangular frame containing a star field. The most prominent feature is a bright, multi-pointed star located in the upper-middle section. Several other stars of varying brightness and colors (white, yellow, red) are scattered throughout the field. The year '2000' is printed in white in the top-left corner of the frame.

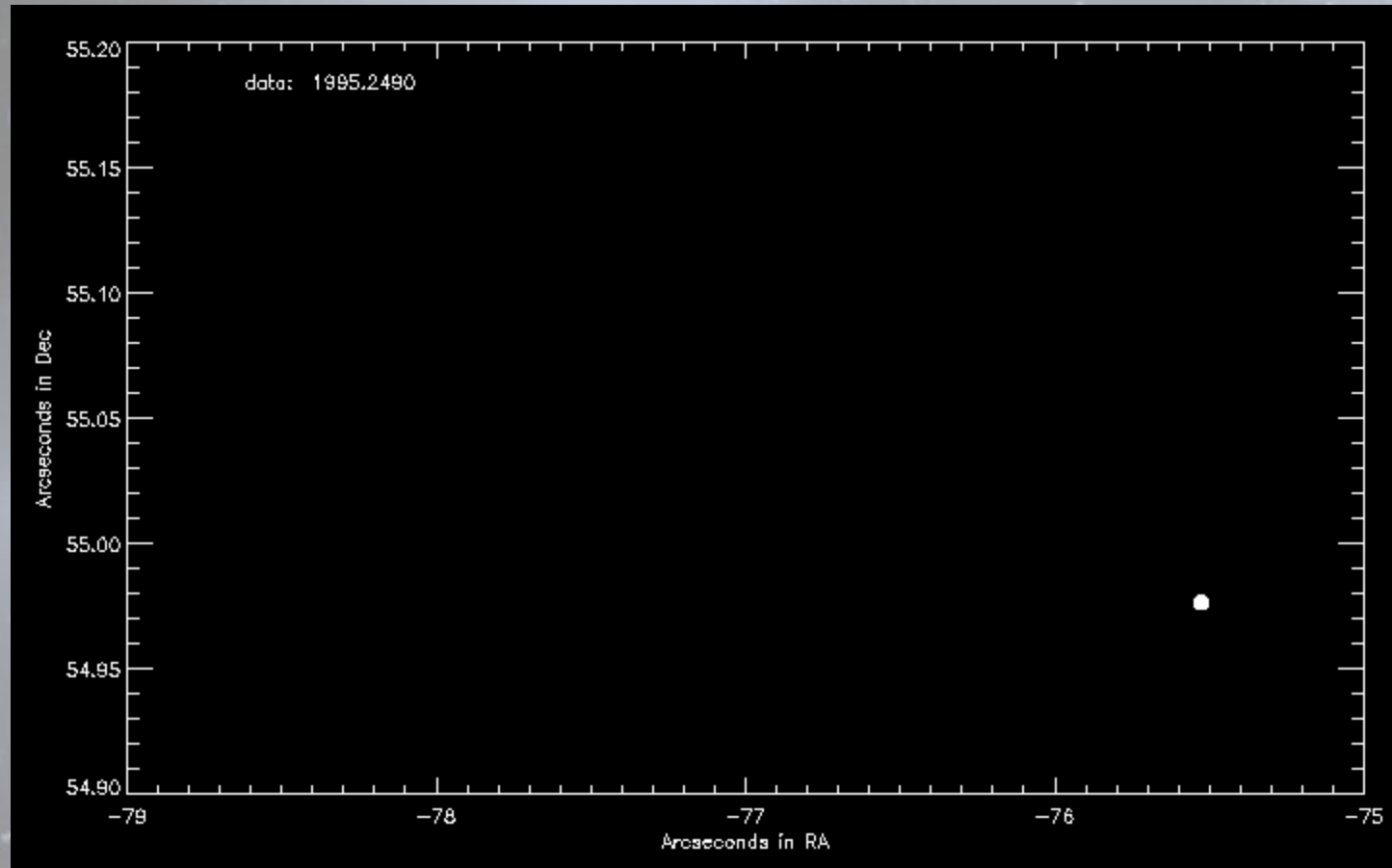
An example LHS2632



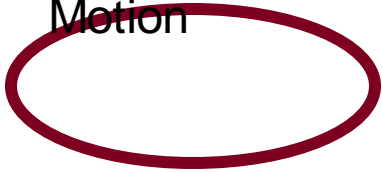
An example LHS2632



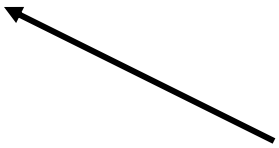
Zoom



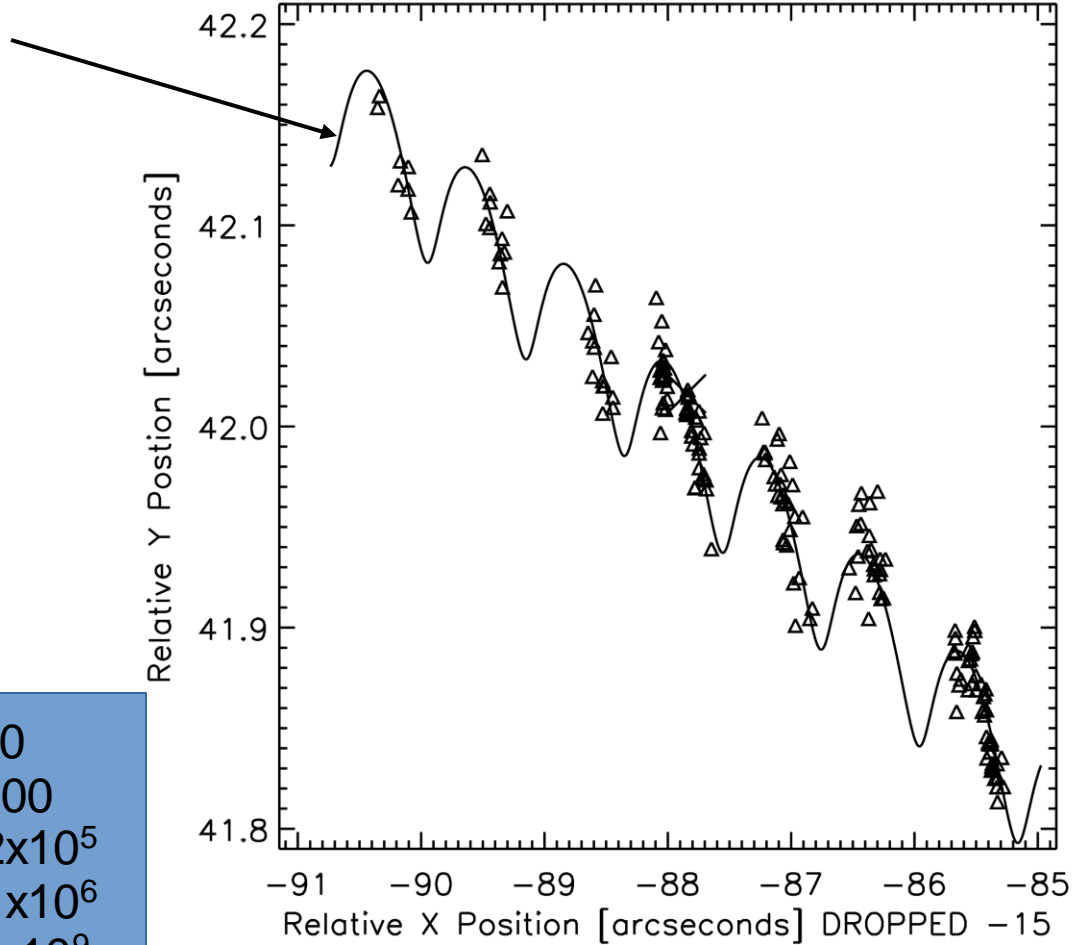
Earth's
Motion



+
Star's Motion



Gives



Smart 20+ yrs	~ 200
All @ 1994	~ 6000
Hipparcos @ 1994	~ 1.2×10^5
Gaia/TYCHO @ 2016	~ 2.1×10^6
Gaia @ 2018	~ 1.2×10^9
Gaia @ 2020	~ 3×10^9