Spacetime view of observed distortions for an object moving towards you.

Recall that what you are looking at when you look out at the world is not the state of the world at the time you look (consider taking a picture), but the past light cone of the event of taking a picture. With this in mind, consider a rod of rest length $L_{\text{rest}}$ moving towards you at relativistic speed. What length do you observe (not measure) for this object?

The two red lines indicate the front end (right) and rear end of the rod approaching you. Light emitted from event $E_1$ and $E_2$ arrive at your eye at the event $E_3$. We read off $L_{\text{rest}}$ and $L_{\text{meas}}$ as the rest length and length contracted rod which is measured (recall length contraction). However, due to the finite travel time of light, the observed length of the rod is the spatial distance between the events, $L_{\text{observed}}$, between $E_1$ and $E_2$ is what you see for the length of the rod. It appears longer than either at rest or measured when moving.