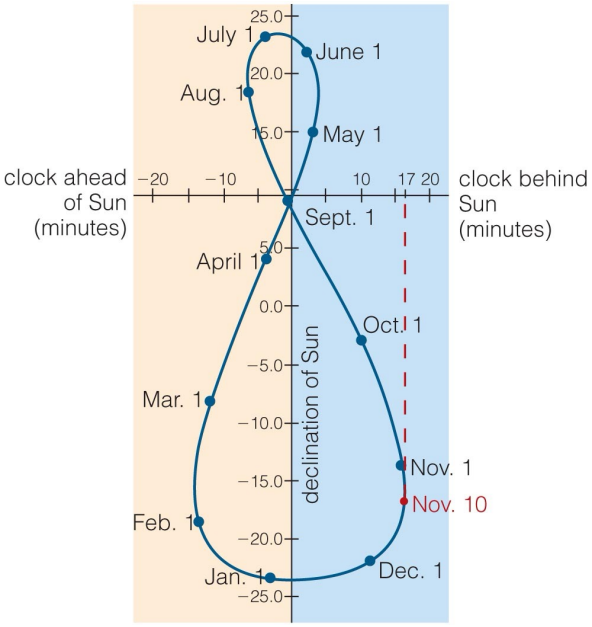
How to find Local Sidereal Time

1. Convert standard time to UT (UT=EST+5h, UT=EDT+4h)
2. Convert the solar interval since 0^h UT to a sidereal interval by multiplying the sidereal interval by 1.00273791
3. Calculate the Greenwich Sidereal Time at the time of interest by adding the sidereal interval calculated in Step 2 to the Greenwich Sidereal Time at 0^h UT.
4. Correct for observers longitude – add (for eastern longitudes) or subtract (for western longitudes) your longitude to convert the Greenwich Sidereal Time to a Local Sidereal time.

Stickney Observatory
Latitude: 42° 55’ 14.4” (42.921°)
Longitude: 73°14’29.9” W (-73.242°)
(4^h 52^m 58^s W)



αβγδεζηθικλμνξοπρστυφχψω

$$m_1 - m_2 = -2.5 \log\left(\frac{F_1}{F_2}\right)$$

$$m_{\text{inst}} = -2.5 \log(c_{\text{star}})$$

$$EqT = ST - MST \qquad HA = LST - RA$$

$$\delta = \phi + ALT - 90°$$

$$\cos(a) = \cos(b)\cos(c) + \sin(b)\sin(c)\cos(A)$$

$$\frac{\sin(A)}{\sin(a)} = \frac{\sin(B)}{\sin(b)} = \frac{\sin(C)}{\sin(c)}$$

$$Az = \cos^{-1}\frac{\sin\delta}{\cos\phi} \qquad \cos(\lambda) = \frac{\cos(\alpha)\cos(\delta)}{\cos(\beta)}$$

$$\sin\delta = \cos(\epsilon)\sin(\beta) + \sin(\epsilon)\cos(\beta)\sin(\lambda)$$

$$\sin\beta = \cos(\epsilon)\sin(\delta) - \sin(\epsilon)\cos(\delta)\sin(\alpha)$$

$$\Delta\delta = \sin(\epsilon)\cos(\alpha)\,\Delta\lambda$$

$$\Delta\alpha = \Delta\lambda[\cos(\epsilon) + \sin(\epsilon)\sin(\alpha)\tan(\delta)]$$

$$\Delta\lambda \approx 50”/\text{year}$$

$$d[\text{pc}] = \frac{1}{\pi”} \qquad \frac{v_r}{c} = \frac{\Delta\lambda}{\lambda_0} \qquad c = 3\times10^8\ \text{m/s}$$