AST 250
Fundamentals of Astronomy

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T.A. : Jonathan Stott (N209)
Prime Meridian
Precession

Earth's axis now

To Polaris

Weight

Rotation

Earth's orbit

$23\frac{1}{2}^\circ$
LST = HA + α
Midnight at Quito on the night of July 3.
12:00 am Solar Time

Vega

Nearly midnight at Quito on the night of July 4.
11:56 pm Solar Time

Vega

24 hr later Sidereal Time
or
23 hr 56 min later Solar Time

360° rotation of the earth.
Tropical Year \(=\) number of days between successive passages of the Sun through the Vernal Equinox

365.242199 mean solar days
\[ LST = GST + L_w \]
Precession

To Polaris

23°

Earth’s axis now

Earth’s orbit

Rotation

Weight
Nutation
To Determine Position of a Source in Horizon Coordinates:

1. Get \((\alpha, \delta)\) in an epoch (e.g. J2000.0)
2. Precess \((\alpha, \delta)\) to the current epoch (e.g. J2009.082437221)
3. Correct \((\alpha, \delta)\) for Nutation and Aberration
4. Convert \((\alpha, \delta)_{\text{apparent}}\) to \((A, h)\)
5. Correct altitude, \(h\), for refraction of Earth’s atmosphere