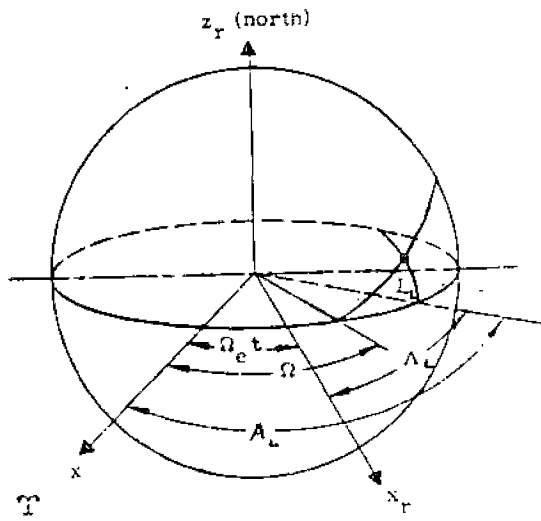


2.6 Establish Time the Launch Site Crosses the Orbital Plane

It is assumed that a particular launch site and launch vehicle have been selected. Figure 2-7 illustrates the parameters to be considered in determining the time of launch relative to the reference direction in the equatorial plane. Those parameters relating only to the launch site are shown separately below.



The fixed reference (x) is the vernal equinox direction (T) and the rotating reference ( $x_r$ ) is the prime meridian through Greenwich.

- $L_L$  = geocentric latitude of the launch site.
- $A_L$  = longitude of the launch site relative to the prime meridian measured positive in the direction of rotation.
- $A_L$  = right ascension of the launch site, or longitude of the launch site measured counterclockwise from T when viewed from the north side of the equatorial plane.
- $\Omega_e$  = rotation rate of the earth = 360.9856122808°/day.