6.2 Exact Method of SPIN Calculations

The spin-related computations are performed based on the actual vehicle axes orientation, which is a function of the spin rate at each of the sampling points around an orbit, as shown in Figure 6-1 below.

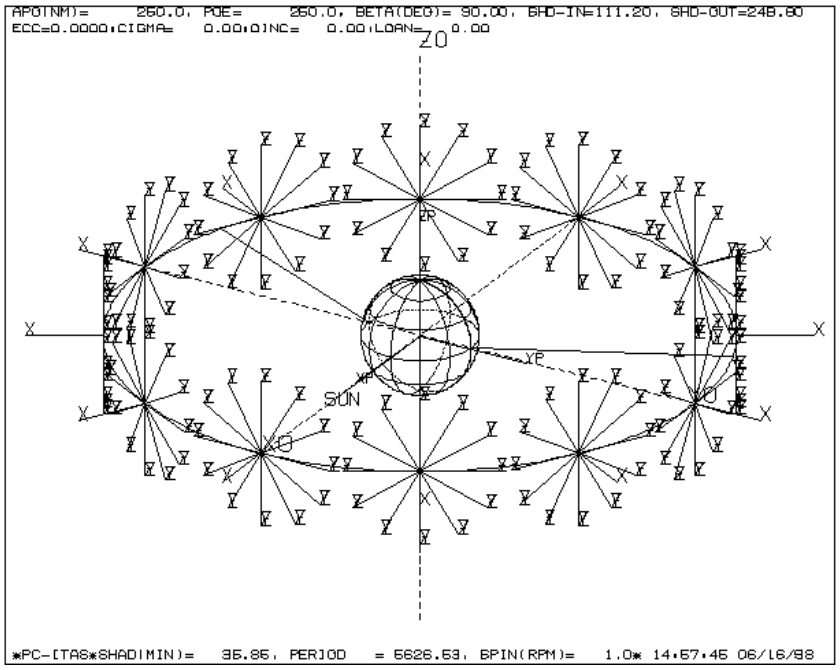

Figure 6-1. PC-ITAS/plus SPINNING Spacecraft

As shown in Figure 6-1, depending on the spin rate, many orbits may be necessary to correctly represent the spin-related absorbed heat rates. The time-variant heat rates obtained by the above two methods will not necessarily be the same, however, the orbital average values could be the same. The "spread" of the vehicle axes in Figure 6-1 is good enough to warrant a 10-orbit spin calculation. A trade-off between the conventional and exact methods may be necessary when the required number of SPIN-related orbits exceeds 15.