Over the last decade advances in Very Long Baseline Interferometry (VLBI) have produced baseline lengths with formal precisions as low as 6 mm on 8,000 km baselines. The present ERS standards recommend a solid tide model based on the work of Wahr. This model assumes an elliptical, rotating, elastic, and oceanless Earth to obtain the calculated frequency dependence of the solar-moon-earth tidal potential. However, the standards retain only the largest frequency dependent term (the $K1$) ignoring terms that cause displacements of less than 5 mm. We have implemented Wahr's model including terms greater than half millimeter in the radial dimension. This includes the frequency dependence of the next six dominant Love numbers, such as $O1$, $P1$, and $P01$. These corrections are estimated to cause displacements of 1-5 mm. In addition, we have studied the effect of using the improved free core nutation period of Herring and Dong. These effects are investigated by analyzing the Deep Space Network's VLBI data (1978 to 1993). We will discuss the effect of the improved calculation on the scatter of the baseline lengths and on UTPM amplitudes at the diurnal and semi-diurnal frequencies.