Probe positioning and navigation are the main part in the process of detecting. It is the key to achieving detection purposes. As the environment of deep space probes is very special, traditional ground positioning technology or Earth’s satellite positioning technology can not be used. So far, the main techniques in probe positioning include solar system radar, Doppler, sun sensor, etc. But none of these techniques can well connect different reference systems. Only by VLBI, the connection parameters of different reference systems can be evaluated. While Geocentric Celestial Reference System (GCRS) can not be well connected by ordinarily VLBI during Lunar mission, the differential VLBI not only can better evaluate the connection parameters, but also get higher accuracy. The geodetic parameter EOP can be estimated in the meantime of high-precision positioning of the detector. However, only the probe’s position was estimated by the current mathematical model with VLBI during CE-1, the precision is almost 1000m which can only satisfy the engineering demand. In this paper, differential VLBI model used for lunar probe positioning is derived. And positioning model is transformed to orbit determination. CE-1’s data is used in estimating EOP as well as positioning, orbit determination. The comparison between VLBI and differential VLBI is analyzed. Influence of EOP’s precision on positioning and orbit determination is given.