10.5: Elements of a Parabolic Orbit

The eccentricity, of course, is unity, so only five elements are necessary. In place of the semi major axis, one usually specifies the parabola by the perihelion distance q. Presumably no orbit is ever exactly parabolic, which implies an eccentricity of exactly one. However, many long-distance comets move in large and eccentric orbits, and we see them over such a short arc near to perihelion that it is not possible to calculate accurate elliptic orbits, and we usually then fit a parabolic orbit to the observations.