1096-VG-1506 **Shigeru Masuda*** (hj9s-msd@asahi-net.or.jp), 56-5-202 Yoshida-Izumidono-chou, Sakyo-ku, Kyoto, 6068301, Japan. *Kepler Problems mathematically contributed to Quantum Mechanics.*

Kepler (1571-1630) 1634 proposes laws on the motions of planets in reserving many analytical open problems : how to determine true anomaly from mean anomaly by calculus and how to approximate it by the expression. Since then, many mathematicians have devoted themselves from the mathematical viewpoint. At first, Lagrange(1736-1813) 1771 defines the orthodoxy Kepler problem and calculates with the trigonometric series. Laplace(1749-1827) studies many sorts of celestial mechanics, including the problem of secular perturbation (secular variation). Poisson(1781-1840) 1808 discusses the problem of secular perturbation after Laplace, of the Keplerian third law problem in depth and deduces the today's approximate method by third order. Gauss(1777-1863) 1818 calculates the perturbation of a planet in accordance with the Keplerian second law. Bessel(1784-1846) 1820-21 cites Gauss and contributes mathematically. On the other hand, the new paradigms of Kepler problem are constructed like relative Kepler motion. Boltzmann(1844-1906) 1872 constructs thermodynamics equations based on the concepts of molecular collision, entropy and probability, and Schrödinger(1887-1961) 1926 proposes the modern quantum equations by the analogy of Kepler motion. (Received September 17, 2013)