ABOUT THIS BOOK

The sole subject of this work is Kepler's Equation: $M=E-e\sin E$. In virtually every decade from 1650 to the present there have appeared papers devoted to the Kepler problem and its solution. We can see from a list of them that the problem has enticed a wide variety of scientists to comment on or involve themselves in its solution.

It is surely not unique in science for a specific problem to be given so much attention over so long a period—particularly if it resists solution, if its partial solutions are inadequate or unsatisfactory, or if it is recharged with new interpretations and new applications. Still, it is curious that the Kepler problem should have continued to be this interesting to so many for so long. Admittedly it is a problem central to celestial mechanics, but it is a technical little problem for which a number of satisfactory solutions are long known. With the advent of calculators and computers, there is no impediment to achieving quick solutions of great accuracy. The problem has neither the broad appeal of an Olbers Paradox, nor the depth and intractability of a many-body problem.

In common with almost any scientific problem which achieves a certain longevity and whose literature exceeds a certain critical mass, the Kepler problem has acquired an undeniable luster and allure for the modern practitioner. Any new technique for the treatment of transcendental equations should be applied to this illustrious test case; any new insight, however slight, lets its conceiver join an eminent list of contributors.

The Kepler problem has been "on the scene" in Western civilization science for over three centuries. To gather its story is to view this science through a narrow-band filter, and our goal is to make the picture at one wavelength instructive and interesting.

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