1056-01-1124 **Allan D. G. Olley*** (allan,olley@utoronto.ca), IHPST, Victoria College, University of Toronto, 91 Charles Street West, Toronto, Ontario M5S 1K7, Canada. *If Brute Force Does Not Work You Are Not Using Enough: the rise of Numerical Integration in 20th Century Astronomy.*

Numerical integration is often referred to as a brute force technique because of its simple iterative nature and the ability to increase precision by doing more calculations, for the same reason numerical integration is associated with the modern computer. However, the rise of numerical integration in astronomy begins earlier and this paper will attempt to trace some of the developments and their implications. Philip Cowell's use of numerical integration in the first decade of the 20^{th} century to calculate the return point of Halley's comet set the stage for more widespread adoption and in astronomy gave the method its name (Cowell's method). Even before the advent of the electronic computer developments with calculating machines played a role in the adoption of numerical integration. With the advent of fully automatic electronic computers numerical integration of orbits became more common and complex. Eventually the standard astronomical tables of planetary position would be calculated by numerical integration. Yet the slowness and partiality of the change over to numerical integration suggests the complex history of this simple technique. (Received September 21, 2009)