Ay190 – Worksheet 4

Xiangcheng Ma

Date: January 16, 2014

Eccentricity Anomality

In this question, I use the Secant Method, with initial value $E_1 = \omega t$ and $E_2 = \omega t + \epsilon$. I adopt $\epsilon = 10^{-3}$ in my calculation. The results of E, x, y and iteration steps are tabulated in Table .

t (days)	E	x (AU)	y (AU)	steps
		$e = 0.0167$		
91.0	1.58209228899	-0.0112957219731	0.999796755471	4
182.0	3.13096420068	-0.999943518526	0.0106267706437	2
273.0	4.67948910053	-0.0328939450239	-0.99931946851	4
		$e = 0.99999$		
91.0	2.30664638749	-0.671217514443	0.00331500920351	7
182.0	3.13618964107	-0.999985403763	2.41628286027e-05	3
273.0	3.96364377765	-0.680720102446	-0.00327602643159	7

Table 1: Kepler Motion