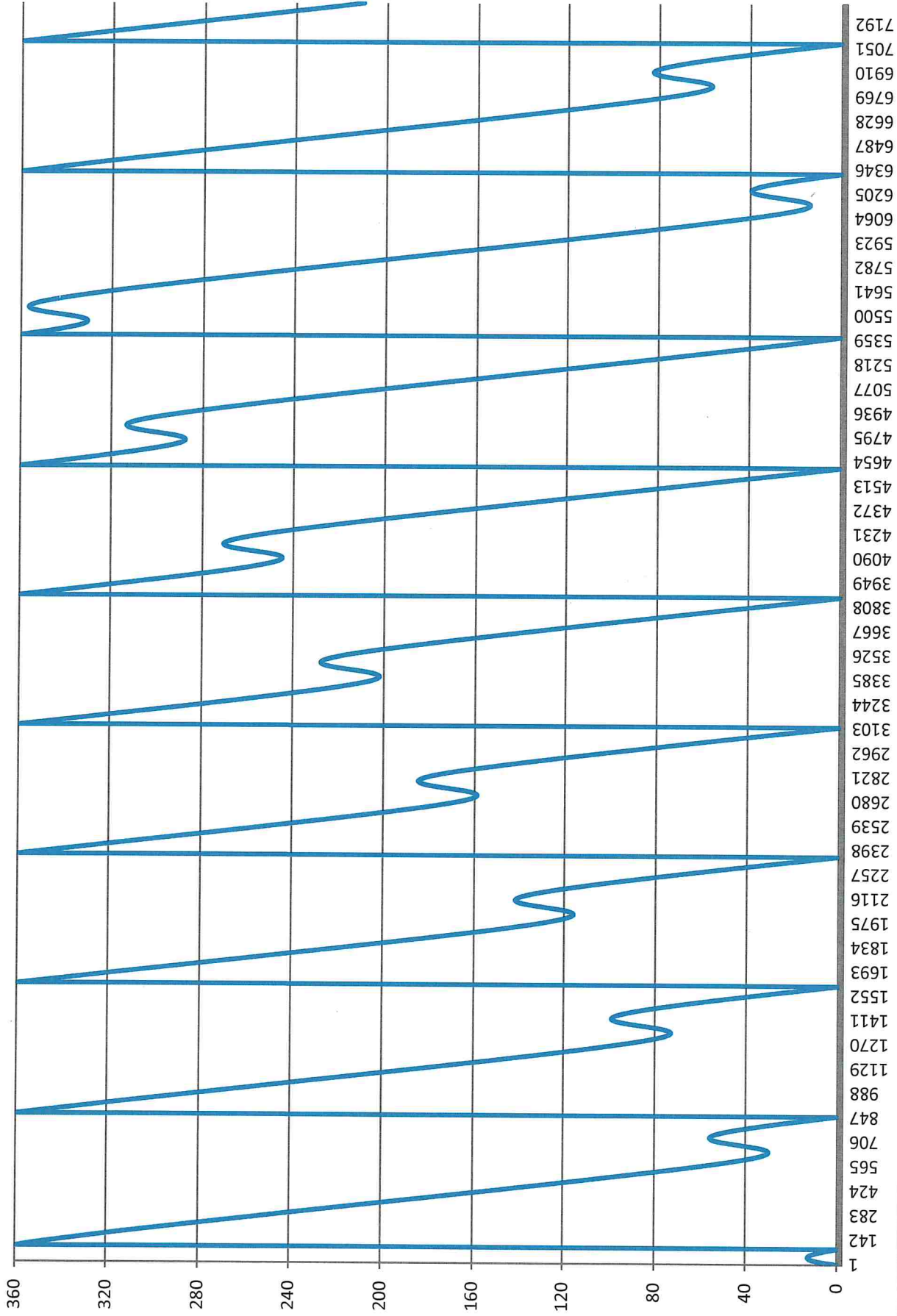
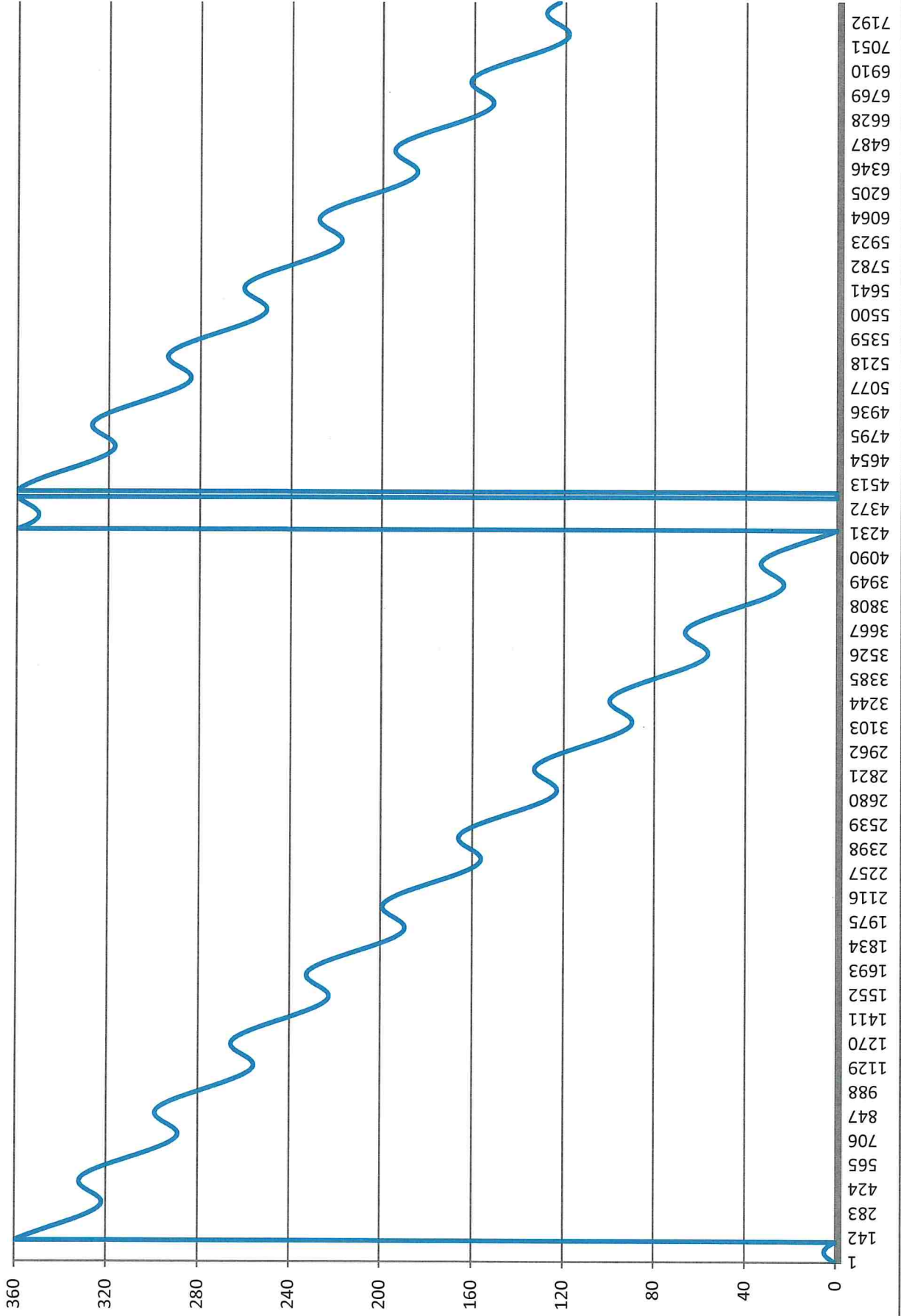


# Earth to Mars angle over 20 years



# Earth to Jupiter angle over 20 years



Kepler's 3rd law says that  $(\text{orbit time})^2$  is proportional to  $(\text{orbit radius})^3$ .

In other words,  $t^2 / r^3$  is a constant.

Let's look at modern observed data.

Source: <http://nineplanets.org/data.html>

planet	t (years)	r (AU)	$t^2/r^3$	raw data	
				days	000 km
Mercury	0.240842	0.387099	<b>0.999998</b>	87.97	57910
Venus	0.615178	0.723262	<b>1.000265</b>	224.7	108200
Earth	1	1	<b>1</b>	365.26	149600
Mars	1.880797	1.523663	<b>1.000039</b>	686.98	227940
Jupiter	11.86199	5.202741	<b>0.999122</b>	4332.71	778330
Saturn	29.4571	9.554813	<b>0.994749</b>	10759.5	1429400
Uranus	84.00865	19.19111	<b>0.998499</b>	30685	2870990
Neptune	164.7867	30.10896	<b>0.994849</b>	60190	4504300
Pluto	247.9056	39.52888	<b>0.995014</b>	90550	5913520