
Name (Last, first)

Astronomy 110 Homework 3: Jupiter's Moons

Write the answers to the questions on this sheet.
Homework due by 11.20 am Friday February 11th 2005

The four largest moons of Jupiter move in orbits round the planet that are almost circular.
Their periods (P) and the semi-major axes (A) are as follows

	Semi-major axis (A) (Millions of km)	Period (P) (Days)		
Io	0.42	1.77		
Europa	0.67	3.55		
Ganymede	1.07	7.16		
Callisto	1.88	16.69		

Calculate A^3 and P^2 for each moon. Plot A^3 against P^2 on the graph paper enclosed over the page. Kepler's third law predicts that the four points should all lie on a straight line. Do they?

If there were another moon orbiting Jupiter with a semi-major axis of 1.5 million kilometers, what would the period of its orbit be? You can use either your graph or a calculator.

Jupiter's Moons

