

ASTR1002 - “Planets and the Universe”

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Assignment 1

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The simulator which uses the correct laws of physics is number one.

On Earth when you accelerate and start moving and then stop the driving force, you will naturally slow down because of friction. This is what sim number two does, however, it is incorrect because space is a vacuum (almost) and therefore there is so little friction that it is irrelevant. When one stops applying the driving force (rockets) in space, the object (ship) will keep on moving in the same direction and at the same velocity as before unless another force is applied upon it, like the rockets firing in the other direction. In sim two, when the ship is rotated, it's direction of motion also changes; but as before, because there is no friction in space all it should do is rotate and continue on in the exact same straight line. In sim one, when the ship is rotated it behaves the correct way and stays on the same vector.

Codes for simulators:

Simulator 1: 190529017

Simulator 2: 296884604

Simulator 3: 399326224