

Year 11 Physics student work sample – Grade D

Models of the universe

Advances in technology do provide new evidence and scientific knowledge that have greatly modified Aristotle's first geocentric model of the universe into the heliocentric model of the 21st century, ~~as well~~. As well as allowed astronomers to uncover, ~~a~~ vast scientific knowledge about the solar system and the universe.

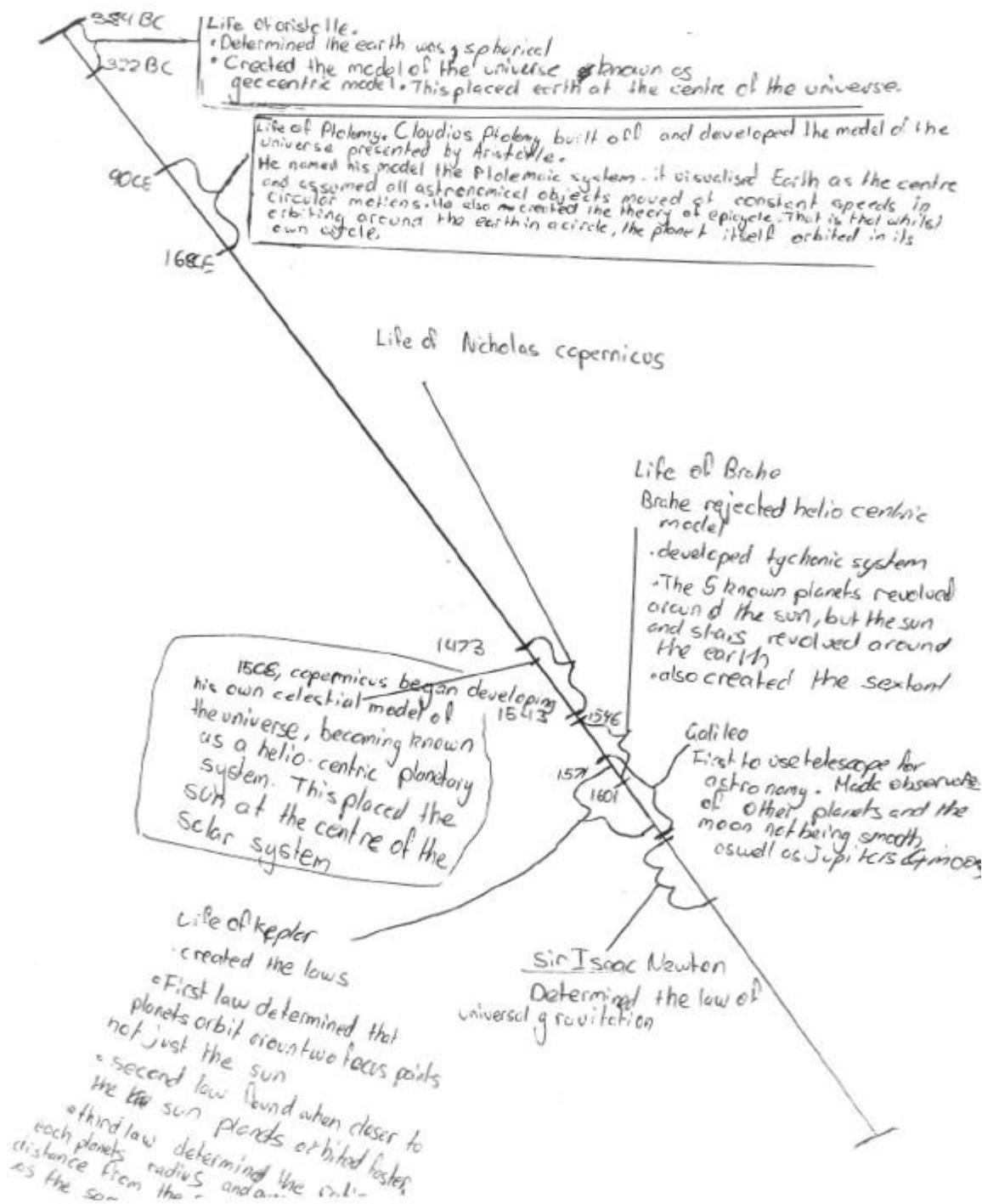
The first significant advance in technology was the telescope. This allowed Galileo Galilei to observe many details which couldn't have been discovered during the times of Tycho Brahe. Around the 1560s Brahe wouldn't have ^{had} much equipment to complete most of his ~~observations~~ except for the sextant which he created in order to measure the angular distance between objects. On the other hand, the telescope played a significant role in the discovery of many important Galileo's contribution to the understanding of the universe. He discovered Jupiter's 4 moons, as well as a very controversial point that other planetary objects were not smooth, rather had craters and mountains, shown through the shadows they created. It also supplied evidence towards the heliocentric model by the black spots on the sun.

During the time of Aristotle, there wasn't any significant breakthroughs in technology, as a result of this, he only made the discovery of the earth being a sphere through proof such as when sailing over a horizon you would gradually see a drop. Throughout time, technology allowed such theories to be questioned.

The response describes some of Galileo's observations using the telescope but does not relate how they support the heliocentric model or refute the geocentric model

Brief outline of Brahe's use of the sextant to gather information

Details of the relevant advances in technology would strengthen this response



The response diagrammatically develops a chronological sequence of events

This diagram is not a true timeline as time is not drawn to scale. It does indicate models for Aristotle, Ptolemy, Copernicus and Brahe, but does not mention those of Kepler, Galileo and Newton. The response would be enhanced by the inclusion of the life span of each relevant scientist

Grade Commentary

Savita outlines information in a logical sequence using relevant scientific ideas. The response demonstrates a sound knowledge of the concepts and could be enhanced by a more detailed evaluation of the key ideas.

Savita's response demonstrates characteristics of work typically produced by a student performing at a grade D standard.