PARK EAST HIGH SCHOOL
Purpose, Preparation, Pride

Name: _____ Date: _____

Scientific Revolution: Chart of Scientists

DIRECTIONS: Take bullet notes from the paragraphs.

Name/Years	Area of Science	Traditional Belief	Experiments	New Ideas	Reactions
Nicolaus Copernicus (1473-1543)					
Galileo Galilei (1564-1642)					
Isaac Newton (1643-1727)					

Nicolaus Copernicus (1473-1543)

Nicolaus Copernicus' theories provided the foundation of modern astronomy, the study of planets. The traditional belief was that the earth was the center of the universe. The earth was said to stay fixed in a permanent place with the sun and the other planets revolving around earth. Copernicus spent years mapping the locations of the planets using complex mathematical calculations. Through these careful observations, Copernicus found that the earth and other planets revolve around the sun. This is known as the Heliocentric Theory *(helio = sun, centric = center)*. His ideas were rejected by most people, especially the Catholic Church who claimed that the earth and humans were the central feature of the universe. The church declared Copernicus as a heretic.

Galileo Galilei (1564-1652)

Galileo Galilei invented the telescope which led to a series of important astronomical discoveries (Jupiter had moons, the sun had large spots, visual proof of Copernicus' heliocentric theory). Previously to Galileo's invention, it was thought that celestial bodies (moon, planets, stars) are perfect spheres made up of a type of gas called ether. Galileo felt that only through precise observation can one determine what celestial bodies were made of. Galileo used his personally built telescope and observed that the moon was not smooth, but had numerous craters and high mountains. Church officials refused to accept his claims. They said that what appeared in the lens of the telescope were optical illusions. Galileo's books were placed on the *Index of Prohibited Books* by the Church. During the Counter Reformation, the Church's Inquisition condemned Galileo's ideas and confined him to house arrest for the last years of his life.

Isaac Newton (1643-1727)

Isaac Newton's theories created the foundation for many scientific fields, including astronomy, engineering, and physics. Before Newton's experiments and observations, spirits and divinities were thought to be in control of movements of planets. Newton used complex mathematics to demonstrate that any two objects in the universe pull toward each other. He found that the same force that pulls an object to earth, like an apple falling to the ground, keeps the moon and planets in orbit around the sun. His theories were generally accepted by other scientists and Newton was praised by England's queen.