Name_____

Astronomy Packet 3

1) The major observational problem in the geocentric model was this type of motion _____. This could be described as a _____ Which appears to _____ and then_____ before _____. In order to resolve this complication Geocentric created _____ inside the previously designed orbits of the planets. The first scientist who challenged this viewpoint was _____.This scientist championed the _____ model which placed the _____ at the center of the universe. He defended his views in various ways in regards to the lack of a strong wind by stating that_____ _____. He also stated that the daily motion of the Sun, moon and stars was caused by the _____. He also stated that all the planets _____ in the _____but at _____ with the closest planets traveling _____. His greatest mistake was believing the _____. A scientist who shared many of these ideas almost 2 centuries earlier was _____.Copernicus's theory were mostly ignored due to what reasons1) _____ 2) _____ and 3)_____.

2) The invention of the _____ would revolutionize_____. The man credited with its invention in Europe was _____ a Dutch merchant. This invention was used by what Italian astronomer to reexamine the heavens? _____.Using this tool Galileo was able to see that the moon was not_____ but was able to see_____ and _____ as well what he thought were _____but was actually _____. When he viewed the planet _____ he saw __ small objects _____ around it. What he actually saw was the 4 _____ now known as _____, _____, _____, and _____. He also looked at the planet_____ and was surprised to see it had_____ which were in actuality its _____. When he viewed the Sun he saw that it was not _____ but was covered in_____ which we call _____. He also observed that_____ had _____ just like our moon. Deep in his journals Galileo mentions the movements of a faint star which we believe to be the first recorded observation of the planet which we now call _____. All of these observations put Galileo at odds with the _____ which charged him with _____and eventually_____ him. This penalty was lifted until _____ by _____.

3) At the same time as the above mentioned astronomer the great Dutch observer_____ was making detailed observation of the movement's of_____ as well as the appearance of _____ and_____. He was a great observer but unfortunately needed_____ help from his assistant

_____ who differed from him in almost every way. Using

_____ data for the planet _____, _____created his __ Laws of

Planetary Motion the 1st Law states that _____

_____

_____. The Second law states that _____

_____

_____-

While the 3rd states

_____

_____

_____

_____.

4) The Great English astronomer and mathematician whose ideas unified the earth and heavens

was _____ He created ___ laws of Motion and

___ Law of_____. His 1st Law of Motion states that

_____

_____.

While the 2nd Law is the familiar _____. Finally the third law

states_____

_____

His law of_____ states that _____ is a force that exists between any 2

objects with _____separated by a _____. In his opinion gravity was _____; this was a critical flaw of his theory.

5) The Austrian Physicist who challenged Newton was named _____. He began his work by studying the behavior of _____ and was able to calculate it's_____ at approximately _____. This challenged _____ as shown by the solar catastrophe example. Explain this example _____

_____

_____

_____ . According to _____ gravity is just_____ in the _____ caused by any object with _____. The more _____ the bigger the _____. This theory is known as the concept of _____ An outgrowth of this theory is concept of _____, which are created by

_____

_____

_____

.

5) _____ is one of the most recognizable modern Physicists. His research is centered on the study of _____ which unify the fields of _____ and _____. He was able to figure that

_____ are really_____ and actually _____ energy in the form of_____. This lead to an expansion of the concept of the _____ the other scientist whose observations helped develop the _____ was _____. He observed "_____" when he discovered_____ which changed in Luminosity. He used these to calculate the_____ to these and figured out they were not"_____" but actually_____. As he studied these he realized that distant _____ light was more _____ in color/wavelength thus the galaxies were moving_____ from us. This meant the universe was _____