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Astronomy: Solar System

**Planetary Atmosphere**

The atmosphere is a layer of gas surrounds that surrounds the world. For the most part this layer consists of a thin layer that protects our sun. The earth has a thin layer of atmosphere; it is so thin that visual representation could be done with a dollar bill representing the thickness of it. The atmosphere is composed of particles such as and (Nitrogen and Oxygen) other molecules are water and carbon dioxide. These particles tend to be gases, which create pressure. These particles collide frequently in the air. Each planet has different amount of pressure. The planet with the most surface pressure recorded is Venus. Venus exerts 90 bars of pressure.

While reading about the atmosphere I was curious about why we do not feel this downward force that is caused by our atmosphere. Conveniently enough the book went on talking about it. It explained that one reason why we do not feel this pressure is because the pressure being applied is not necessary all down. The pressure comes from both upward and downward, negating them in some sense. Additionally your body exerts pressure outward which allows you feel comfortable instead of lethargic.

Our Atmosphere is important and usually taken for granted. The atmosphere is responsible for our water on earth. If the pressure were different then the existence of liquid water would be impossible. The pressure created is right enough to keep water a liquid. In addition to this, the atmosphere is responsible for the distribution of light scattering UV rays. Another reason that atmosphere is important is because it maintains a climate, and is responsible for wind and other major weather activity. However, most importantly it creates a protective *magnetosphere*, which contains a strong magnetic field. Another crucial role is the *greenhouse* effect, which allows us not to over heat a keep a decent temperature where it is livable.

The book continues on and elaborates in the *greenhouse effect.* Which in essence deflects some of the rays of the sun and sends them back to outer space. The greenhouse effects keep certain rays for a bit longer such as infrared light. While sending visible rays back. We can be more grateful of the greenhouse effect by comparing each planets average. Many of the planets temperature average for instance Mercury temperature is an overwhelming 425-Celsius during the day and at night it is a drastic change of -175 Celsius. For the most part Earth is the only one with an understandable weather where humans would not burn or freeze.

When studying the weather and climate, we can see that they are both closely related. Weather refers ever-varying combinations for winds, clouds, temperature and pressures. In essence this is how we get colder and hotter days. The term *climate* refers to the average of weather over many years. A good example is when generalizing the Deserts climate. Usually it is said. “ Desert have a hot dry climate”, but there are records showing that there might be slight

Wind and weather are created by the energy in the atmosphere. Which means only planets with atmosphere can have a climate, excluding many of our *Jovian* planets.

Planet Earth has the most diverse weather out of all the terrestrial planets. The complexity of our weather is so complex that it can only be predicted as far as one week in advanced, even so there is not a precise chance of being prognosticated correctly. However planet earth is not that all unpredictable it contains wind currents that vary depending on latitude. Some of these effects are caused by rotation of the earth as well as atmospheric heating.

When putting this in perspective you start beginning to ask how does a planet gain or lose atmospheric gas. Terrestrial planets gain gasses in three ways: outgassing, evaporation/ sublimation, and surface ejection. These creation of all these gasses , needs to have a way of cycling loosing gas. The way gas is lost is by either of the following: condensation, chemical reactions, solar wind stripping, and thermal escape.

The atmosphere of the Moon and Mercury is something that we usually discard. They pertain atmosphere that is not totally devoid of gas. The gas density of these two worlds is far too low for sunlight to be scattered or absorbed. The lack of distribution of sunlight means that there is a pitch-black sky surrounding the bright sun. In addition the lack of absorption means the loss of a loss of a *troposphere, stratosphere, thermosphere.*

The atmostphere layer of Mars is fairly thin; to be place in perspective it is only 1% of the Earth, and mention before ours can be represented by a dollar bill. With that being said, that is the main reason why there is no water in Mars, because the pressure inside the planet does not allow to give H2O become a liquid. The atmosphere in Mars is mostly composed of Carbon Dioxide.

1. Mars most likely wouldent have seasons if its orbit was perfectly circular because, the elliptical shape it has currently is what forms these different stages.
2. 280 K **X** = 280 280 K **X** = 624 .5

3.)

1. D. Now

2. B. 1.7

3. C. variation occur regularly every few years

4. C.

5. A.

4.) Question: would there be away to create artificial water or another nutrient that can substitute water to produce plants up in mars.