

# Astronomy and nature

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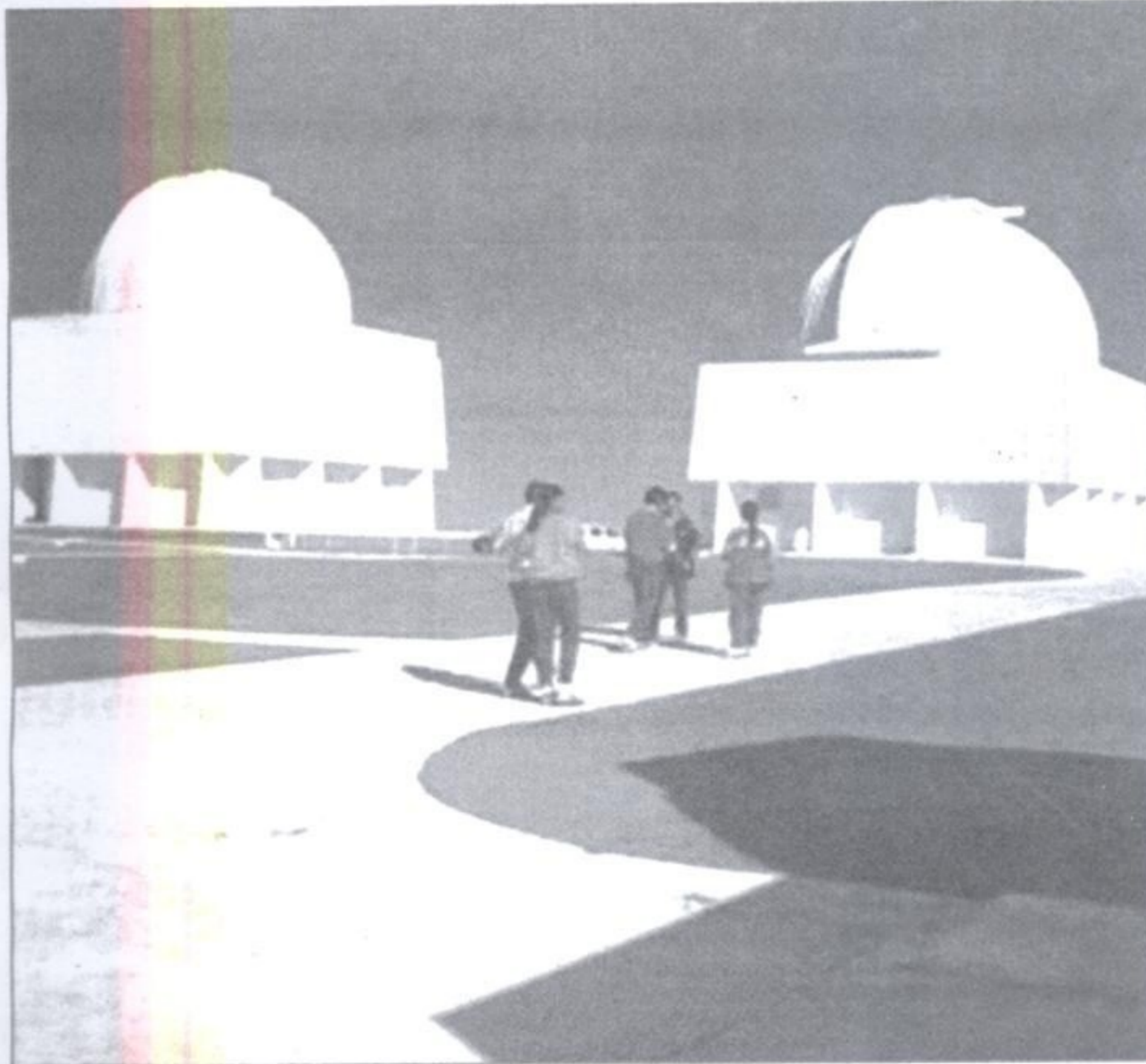


**T**HIS year is of great significance to the astrological community as it marks the 400th anniversary of the first recorded astrological observations made using a telescope by Galileo Galilei, and has been designated the "International Year of Astronomy".

However, many people do not associate astronomy with our environment. Asteroids and meteors as well as other cosmic debris and phenomenon have been responsible for shaping our planet and influencing the conditions and biodiversity found here.

One way cosmic forces influence our planet that we may be familiar with, is the existence of high and low tides. All objects exert a gravitational pull on each other so that Earth experiences a gravitational pull from all the planets around it. However, the gravitational pull of the sun keeps the Earth in orbit and the pull of the Earth keeps the moon in orbit. So when it comes to ocean tides it becomes a gravitational tug of war between the Earth, moon and sun, mainly because the moon is so close to our planet and the sun is large. The gravitational force between the moon and the Earth pulls the side of the Earth closest to it, towards it. This pull affects all objects on our planet however; solid objects are not greatly affected, unlike liquids - the oceans, which bulge towards the moon. Then as the Earth rotates around the sun, a bulge of water is found in the oceans on the opposite side of the planet. These bulges are the high tides and the depressions are the low tides.

The atmosphere, oceans and land surfaces of this planet interact to provide a comfortable environment for humans and the plants and animals we depend on



for food. However, this harmonious relationship can be disrupted by space debris falling to Earth. Before getting into how astrological events affect the environment on our planet we need to know the types of astrological matter our planet is exposed to. Asteroids, meteors and comets are all basically the same known as space debris or rock. Asteroids

are quite large while meteors refer to smaller pieces of space rock; and meteoroids, which are even smaller rocks. However, comets are slightly different as the rock also contains ice.

These astrological objects are capable of causing catastrophic damage; a famous example is the Barringer Crater in Arizona. This half of a kilometre wide crater

was formed by a meteorite approximately only 46 metres wide falling to earth. A meteorite is a portion of a meteoroid or asteroid that survives entry through the Earth's atmosphere to impact on our planet's surface. So it is easy to imagine the degree of devastation caused by one of these if they were to crash into a city. It could be equated to the

damage caused by the atomic bombs dropped over Hiroshima during the Second World War

Due to the recent emphasis on climate change, the role our atmosphere plays in protecting us from harmful ultraviolet rays is recognised. Our atmosphere however, protects us from much more. In this case it is from the impact of space debris. Any space debris falling to Earth would carry with it a tremendous amount of energy.

The majority of space debris is smaller than a grain of sand and burns up on entering the atmosphere. These space rocks vary in size from a grain of sand which harmlessly burn up before reaching the Earth's surface, to those larger than a commercial building. Our planet's atmosphere protects us from cosmic objects up to 40 metres in diameter.

Large meteorites are believed to greatly affect our biodiversity and the overall climate of the planet. This was the case when it came to the extinction of dinosaurs 65 million years ago. The crater that would have resulted from such an impact may have been 15 kilometres in diameter, exerting a force of 100 million megatons. Meteorites of that size when they crash on the earth's surface would push large amounts of dust into the atmosphere blocking the sun's rays, which affects photosynthesis resulting in loss of crops.

The result is starvation which weakens our immune systems making us susceptible to a host of diseases. The comfortable climate that we have grown accustomed to will be lost, as blocking the sun's rays will also make the Earth's surface cold.

Therefore the activities of this year, should serve to heighten our awareness that all aspects of our planet, even the extraterrestrial forces including the planets and cosmic debris, affect our environment and the conditions that have made life comfortable for humans on this planet.