

## The Present State of Astronomy.

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The nineteenth century has been a period of marvellous and hitherto unequalled progress in scientific studies. It is the century of machinery and invention. Every scientific pursuit has felt its quickening influence: but perhaps this wonderful activity and progress can be seen at its best in the recent discoveries in the realms of Astronomy. From its very nature it was one of the most ancient of the sciences. Its home was in the East. In the bright and cloudless skies of Chaldea and Egypt no one with even ordinary powers of perception and observation could fail to observe that day and night, the seasons and the years depend upon the motions of the heavenly bodies. Those men of ancient times could see that the stars moved regularly and that there were a few distant orbs which seemed to wander about without any definite order of movement. This was the beginning of Astronomy.

Astronomy in those days was of an exceedingly practical nature: the Phœnicians guided their ships by the stars; travellers at night guided their courses across great deserts in a similar manner; and farmers sowed their seeds by observations of the positions of the stars, since at that time they had no true calendar.

Yet at this time there was no science of Astronomy. The knowledge of the stars consisted simply in observations of their movements and the corresponding variations in terrestrial circumstances. They possessed no theoretical knowledge of the formation of the Universe. The Chinese over forty centuries ago were able to calculate beforehand the time of an eclipse but they were unable to ascertain what caused the eclipse. They never progressed much beyond this, and even at the present time are practically in the same condition. With this ancient time when Astronomy was little more than Astrology, when the magicians prophesied by contemplating the stars, and nothing of their real character and importance was even dreamed of, compare the present century and the science of Astronomy as it exists today, when we are nearly as well acquainted with the physical and chemical constitution of the Sun as we are with some parts of the Earth itself.

Another interesting comparison relates to the importance assigned to the Earth in the Universe in different stages of the development of Astronomy. From the earliest times the Earth was considered as the centre of the Universe and its most important part. The Sun, Moon and Stars were in existence simply for the purpose of bestowing light, heat and guidance upon the inhabitants of the Earth. This theory prevailed generally among Astronomers until the time of Copernicus about 1500 A. D., when an important change was made in the theory of the Universe. The Sun was supposed to be in the centre perfectly at rest, around which the planets revolved, while the stars were in absolute rest. This theory takes away the predomin-