of their condition from what we see around us, when, perhaps, the very combinations which convey to our mind only images of horror, may be in reality theatres of the most striking and glorious displays of beneficent contrivance. We may say that there is no other planet in the solar system, whose firmament will present such a variety of splendid and magnificent objects, as that of Saturn. The various aspect of his seven moons—one rising above the horizon, while another is setting and a third approaching to the meridian; one entering into an eclipse, and another emerging from it; one appearing as a crescent, and another with a gibbous phase; and sometimes the whole shining in the same hemisphere, in one bright assemblage;—the majestic motions of the rings—at one time illuminating the sky with their splendour, and eclipsing the stars; at another casting a deep shade over certain regions of the planet and unveiling to view the wonders of the starry firmament—are scenes worthy of the majesty of the Divine Being to unfold, and of rational creatures to contemplate. Such magnificent displays of wisdom and omnipotence, lead us to conclude, that the numerous splendid objects connected with this planet, were not created merely to shed their lustre on naked rocks and barren sands, but that an immense population of intelligent beings is placed in those regions, to enjoy the bounty, and to adore the perfections, of their great Creator.

Of Uranus we see nothing but a small round uniformly illuminated disc, without rings, belts, or discernible spots. Its diameter is about 35,000 miles, and it is about 80 times larger than the Earth. It is attended by six satellites, whose orbits offer remarkable peculiarities.

If the immense distance of Uranus precludes all hope of coming at much knowledge of its physical state; the minuteness of the ultra zodiacal planets, is no less a bar to any enquiry into theirs. One of them, Pallas, is said to have somewhat of a nebulous, or hazy appearance, indicative of an extensive and vaporous atmosphere, little repressed and condensed by the inadequate gravity of so small a mass. No doubt the most remarkable of their peculiarities must lie in this condition of their state.

We shall conclude these observations with an illustration calculated to convey to the mind a general impression of the relative magnitudes and distances of the parts of our system. Choose any well-levelled field. On it place a globe two feet in diameter; this will represent the sun. Mercury will be represented by a grain of mustard-seed, on the circumference of a circle 164 feet in diameter for its orbit; Venus, a pea, on a circle 284 feet in diameter; the Earth also a pea, on a circle of 430 feet; Mars, a rather large pin's head, on a circle of 654 feet; Juno, Ceres, Vesta and Pallas, grains of sand, in orbits of from 1000 to 1200 feet; Jupiter, a moderate-sized orange, on a circle nearly half a mile across; Saturn, a small orange, on a circle of four-fifths of a mile; and Uranus, a full-sized cherry, or small plum, upon the circumference of a circle more than a mile and a half in diameter. To imitate the motions of the planets, in the above-mentioned orbits, Mercury must describe its own diameter in 41 seconds, Venus in 4 min. 14 sec., the Earth in 7 minutes, Mars in 4 min. 48 sec., Jupiter in 2 hrs. 56 min., Saturn in 3 hrs. 13 min., and Uranus in 2 hrs. 16 min.

Note.—Since the above was first written the Telescope has not been idle in researches. The almost simultaneous discovery, by Le Verrier and Adams, of the Planet Neptune, has doubled the limits of our system; and to the four Asteroids mentioned above, German Astronomers have lately added three more, Astræa, Hebe and Iris.

OF COMETS.

CHAPTER—III.

The extraordinary aspect of Comets; their rapidly and seemingly irregular motions; the unexpected manner in which they often burst upon us, and the imposing magnitudes which they occasionally assume—have in all ages rendered them objects of astonishment, not unmixed with superstitious dread to the uninstructed, and an enigma to those most conversant with the wonders of creation, and the operations of natural causes. Even now, that we have ceased to regard their movements as irregular, or as governed by other laws than those which retain the planets in their orbits, their intimate nature, and the office they perform in the economy of our system, are as much unknown as ever. No rational or even plausible account has yet been given of those immense appendages (tails) which they bear about with them, any more than of other singularities which they present.

The number of Comets of which notice has been recorded, is very great—amounting to several hundreds; and when we consider that in the infancy of Astronomy, and indeed in more recent times, before the invention of the telescope, only large and conspicuous ones were noticed; and that since due attention has been paid to the subject, scarcely a year has passed without the observation of one or two of these bodies, we may affirm that many thousands of these erratic bodies may exist, revolving in orbits far from human ken.

That feelings of awe and astonishment should be excited by the sudden and unexpected appearance of a Comet, is in no way surprising. We gaze on the heavens from night to night, admiring the beautiful order and harmony of the motions of the celestial bodies;—suddenly, a fiery meteor flits o'er the wide expanse, presenting one of the most brilliant and imposing of all natural phenomena.

Comets consist for the most part of a large and splendid, but ill-defined, nebulous mass of light, called the head, which is usually much brighter towards its centre, and presents the appearance of a vivid nucleus, like a star or planet. From the head, and in a direction opposite to that in which the sun is situated from the comet, appear to diverge two streams of light, which grow broader and more diffused at a distance from the