

Astronomy as it now presents itself to us, is in its early manhood. But the annals of its youth are full of interest and instruction; even the muster-roll which registers its birth may be interestingly read by us. The scenery of the heavens, doubtlessly elicited the wondering admiration of the earliest inhabitants of earth. Josephus tells us that Seth, and Abraham and even the antediluvians, studied the stars. Astronomy is in all probability one of the most ancient of the sciences. And men began at an early age of the world, to distinguish between what are called fixed stars and planets. And as observations continued, and star-gazers became more familiar with the apparently fixed stars, it was found an advantage to throw them into groups—and to designate each cluster by some special characteristic name. Among the forms which fancy animated the waste and silent vault of heaven, the earliest groups thus distinguished, were the seven starred Pleiades, the seven stars of the Great Bear, the constellation of the Less Bear, the belt of Orion—Jacob's staff—the Swan, the Scorpion, and others.

But I wish not to detain you tracing back or tracing forward the history of astronomy. Let us interest and instruct one another out of the rich treasury of our subject, as it now presents itself to us, in its present state of advancement.

As the eye surveys the vast expanse of the firmament, how many strange, burning, and bewildered thoughts enter the minds of the contemplative? Where, may they ask, do these mighty heavens begin, and where, have they end? Can man fathom their depths, or scale their heights? Can human calculations express their extent? Are angels ever winging their flight across the seemingly illimitable expanse?

Now do these vast agencies of worlds on worlds, and systems on systems, act and re-act upon one another? Has space a limit? or is the fabric of the universe unfinished,—on the confines of which new creations at millions of points are starting into being—stretching out into the infinite void? To the explanation of such thoughts and problems great and persevering minds address themselves, and such thoughts and researches are to us full of interest. The contemplation of the subject opens a vista which gives us an insight into the glories of the Eternal, who presides with infinite perfection over a limitless empire. Amid the silence and the solitudes of the midnight scene, the soul may catch an inspiration of solemn awe and delight in the contemplation of such themes, and soaring on the wing of devotion far above the littlenesses of earth, may draw near to its Father above, and hold high converse with Him, who holds all in the hollow of His hand.

But pass we on from general statements to particulars.—See what the heavens—what creation around, present to us. They bring to view—they spread out before the wondering eye—characterized by the marvels and majesty of Him whose ways and works and perfections are past finding out, the wonders of spaces, illimitable—of magnitudes, exceeding imagination's grasp,—of revolutions which in number and nature, and mode, nonplus the human intellect,—of phenomena, whose variety and character exceed research, and of influences, whose nature and workings and ends, are shrouded in mystery.

But it is time to come still closer to our subject and take it up in its grand divisions of planets, satellites, comets and suns, and touch upon a few of their discovered wonders.

The earth first demands consideration in the order of the planetary system, and the general relations which it sustains to the other planets. It is that world in which we have received our being. It is the home of our mortal existence. It is the grand theatre of all our activities. It is the vale of our cares, and toils and trials. It is the great school-house of our race, in which soul and body receive training for another state of being. With it, therefore, we have much to do, and in it we have not a little to perform.

But I meddle little with its geography and mathematics. I proceed on to make general statements.

The earth, as well as other worlds, has its countless wonders. They are countless in kind—countless in variety—countless in number. Speak we of its size, how vast? Its surface has an extent of 240,500,000 square miles; and its mass has been computed to contain 260,000,000,000 of cubical miles or by the French numeration principle 260 billions of cubical miles. Figures may number, but the mind cannot comprehend the limits of our abode. It struggles in vain, to form a distinct conception of such a mass, and desists from an attempt so abortive. But what is this earth with all its teeming wonders of animated existences, and vastness of size, but an isolated spot in the vast and magnificent dominions of the Omnipotent Sovereign of the universe. And yet the countless myriads of living beings throughout the wide compass of nature are not only all known to Him, to whom darkness

is as light, and the creation as a speck; their most trivial actions are subjected to His control, and rendered subservient to the accomplishment of His purposes. Carry this idea along with you as you and I travel together in thought from earth to heaven and from world to world, a sense of the constant inseparable presence of the Omniscient Omnipotent. One will help not a little to give elevation and suitable solemnity to our thoughts as the mind's eye essays to look into the vast abyss of creation.

I have said the earth's mass is computed at 260 thousand millions of cubical miles: and it has been estimated to weigh at least 2,200,000,000,000,000,000, or 2½ thousand trillions of tons, and by the French numeration 2½ sextillions of tons. Speak we of its motions? It revolves upon its own axis with immense rapidity, and speeds through space at the rate of 63,000 miles an hour.

“Who can utter the mighty acts of Jehovah?”

The earth is wrapped in an invisible fluid, called the atmosphere. This invisible swaddling band accompanies our orb in its diurnal and annual motions: it is the prime supporter of life, the promoter of vegetation, and is essential to all that is beautiful to the eye and pleasant to the ear, around us; and so nicely proportioned are its parts of oxygen, nitrogen and carbon, that any disproportion of these would prove injurious to life and all animated nature. Were the Almighty to usher forth the following fiat—“Let the nitrogen of the atmosphere be dissolved, and let the oxygen thereof exert its native energy without control, wherever it extends;” in the twinkling of an eye every region of the earth would be encompassed in a devouring flame, which would not only consume vegetation, but would cause the hardest rocks of the earth to trickle down like wax before a burning taper.

Every thing about the earth, or belonging to it, is beautifully adjusted and nicely proportioned. All is the work of One who is infinitely wise and good.

The moon next claims attention. Who does not love to behold the moon as she sails along, with all her wonted dignity, illuminating the course and lightening the heart of the traveller, the sailor and the peasant? By her attractive influence she sways the ocean and perpetuates the regular returns of ebb and flow, by which the liquid element is preserved from putrefaction and the inhabitants of continents and islands from infection and disease. The moon is full of subjects for thoughtful contemplation to all who have observed its constitution. It appears to be a vast Phlegmian region displaying in every direction the effects of volcanic agency. Improved telescopes, Lord Rosse's especially have brought to view in the moon not a few strange appearances. By Lord Rosse's instrument, objects of not more than 183 feet in extent are made visible, and the intervening void is reduced to 120 miles. Dr. Scoresby, one of our most practised telescopic examiners of the heavenly bodies, tells us, “that the moon appeared through this instrument like a globe of molten silver, while the various details were so clearly seen, that if there were any edifice of the size of York Minster, or even of the ruins of Whity Abbey, they would be easily perceived. But there was no appearance of any thing of that nature, nor was there any indication of the existence of water, or of an atmosphere.” He saw a vast number of extinct volcanoes, several miles in breadth; and the general appearance of the surface was like one vast ruin of nature. It may, however, be mentioned that some astronomers maintain that the moon has an atmosphere, and also seas—but they are seas of fog—the gravitating power of the moon not being sufficient to condense water into its liquid form.

When the sun is totally eclipsed by the moon, the outer rim of the moon shows some strange appearances. Around the sun himself a beautiful circle of light called *corona* is visible, while the moon passes before him, and prominences or flames, as they are often termed, of a bright rose-red colour, make their appearances at different points round the border of the dark moon. The corona is believed to be an atmosphere of the sun rendered visible by the intervention of our satellite. The red projections are also known to be in some way connected with the physical constitution of the solar globe. The total eclipse of July 1851 showed a remarkable red flame, extending far from the edge of the moon. It was shaped like a Turkish scimitar, strongly coloured with rose-red at the border, but paler in the centre.

The grandest object which arrests the heaven-directed-eye, is the glorious Sun,—the centre and soul of the planetary system,—the lamp that illumines it—the fire that heats it—the sceptre that guides and controls it. Who does not like to see this glorious orb rise above the eastern horizon, on a morning in spring? when hill and dale, and wood and plain, are clad in their livery of soft and