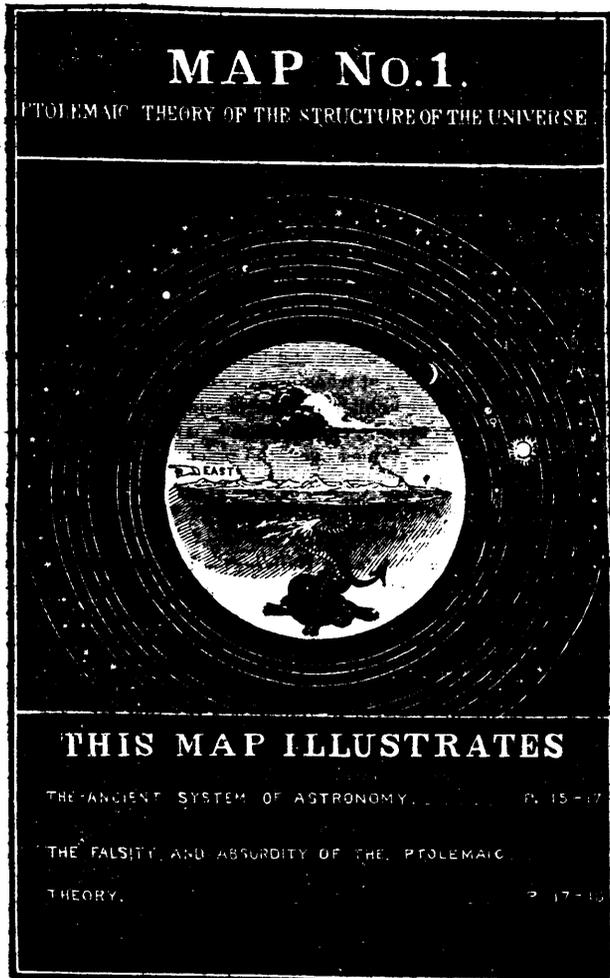


RAS, each of whom made astronomical observations and taught some doctrines the correctness of which has been verified by the investigations of modern science. In the second century of the Christian era, the Egyptian philosopher PTOLEMY constructed a regular theory of astronomy, by which he proposed to account for all the motions and appearances of the heavenly bodies. As the theory of PTOLEMY obtained generally until the establishment of the Copernican theory of the solar system, about 1530, we will here present Map No. 1, illustrating the Ptolemaic theory of the structure of the universe:



This Map represents the earth, situated in the centre of the universe, as a flat surface, inhabitable on one side only, being perfectly at rest, revolved around, from east to west, once in 24 hours, by sun, moon, planets and stars. Some supposed the earth to float on an abyss of waters, but did not pretend to say on what rested the mighty waters themselves; the greater part imagined, as represented in the map, that the earth was upheld by a huge *dragon* or *serpent*, and that the serpent rested on the back of a *tortoise*; but on what rested the tortoise, no one could conjecture.

In the above map, the *white circles* represent the *orbits*, or *paths* or *curves* which the planets describe in their supposed revolutions, around the earth—like the rail road tracks along which pass the cars of passengers or merchandise. The dark spaces between each of these white circles were supposed not to be dark, as represented in the map, but to be *vast crystal arches*, or concentric spheres, rising one above the other, with their concave or hollow sides towards the earth, and perfectly transparent to admit the light from the heavenly bodies, which were supposed to be set in these hollow spheres, like *diamonds* or *gems* in a ring. Thus these vast arches or hollow spheres prevented planets from falling upon the earth when passing over its surface, while their crystalline transparency permitted the planetary rays of light to pass unobstructed to the earth.

The heavenly bodies are represented at different distances from the earth—the Moon nearest, then Mercury, Venus, and the Sun;

and beyond the Sun, Mars, Jupiter, and Saturn, and then the fixed stars, among which a comet may be seen. The space beyond the fixed stars was considered the happy abode of departed spirits.

But as Mercury and Venus appear sometimes to go before the sun and sometimes after him, the Ptolemaic theory accounted for this by supposing that besides circles of the heavens, which the planets passed around daily, there were small circles within their respective spheres around which they revolved at the same time. These were called *epicycles*—circles upon circles. One of them may be seen on the map in the second space or sphere of Mercury. In this Map, the arrow shows the direction of the motion of the heavenly bodies; the Sun and Moon are represented as going down in the west, the moon as having fallen a little behind the sun, as when we see the new moon; Mercury and Venus are represented near the sun, as they always are; Mars, Jupiter and Saturn are seen over the earth, towards the left; on the right is seen a *comet*, passing down near the sun; the fixed stars are seen in the outer sphere. By whom and how the primary moving power was applied to those ponderous spheres to cause their rapid westward motion, no one pretended to know; but it was supposed to be applied in some way to the outward or upward sphere, above the fixed stars, and then communicated from one sphere to another down to the lowest—the lowest moving the slowest, as the moon was constantly falling behind the sun.

Such was the *Ptolemaic Theory* of the structure of the Universe—a theory which was generally believed until about three centuries ago,—a theory full of self-contradiction and absurdity—a theory which converts the larger heavenly bodies into satellites of the smaller, makes the earth stationary, and gives to the sun a velocity of motion of twenty-five millions miles per hour, or *sixty-nine thousand four hundred and forty miles per second!*

We shall next give illustrations of the Copernican Theory of the Solar System.

"MOTHER, PLEASE TELL ME A STORY."

How many a mother has complied with this oft-repeated request until every page of incident in memory's annals has been thrice rehearsed to the eager listeners! And yet they ask for more.

Next to "what mother did when a child," "true stories" about others please. Do our sons love tales of heroes? Where shall they look for examples of pure heroism but on the sacred page? Where for the truly pathetic, which, while it melts the tender heart, leaves upon it an impression in favour of goodness, of stern, unflinching integrity? And when does a mother ever enter into all the details of the sacred narrative, and draw out and enforce the truth it is designed to teach, without feeling her own heart benefited?

But there is another reason, not often mentioned, why we should early make our children familiar with the character of those ancient worthies who, through faith and patience, now inherit the promises. *They are the living—we and ours, the dying.* They now inhabit that "better country" which they sought, and which we, if indeed their followers, are now seeking as the eternal home of ourselves and children. With what a glorious company of patriarchs, prophets, and apostles we hope soon to mingle, and to this honour and blessedness we would have our children aspire. First, we would lead them to Jesus, then in the footsteps of His flock, till redeemed from earth they sit down with Abraham, Isaac, and Jacob in the kingdom of heaven.

It was a beautiful remark made by a bereaved mother in India—the wife of a German missionary—to one of the ladies of the American mission. "In one week she was called to lay in the grave three lovely, intelligent children, between the ages of five and ten years, I think, who had loved the Bible and loved prayer. After going through the affecting details of their sickness and death, she added, "It is a great comfort for me to think they have not gone among strangers! for, said she "I have made them acquainted with Abraham, Moses, Samuel, David, Paul, and all the Scripture saints." Her mind dwelt with pleasure on the delighted hours she had spent with them in this way, and now, though gone from her embraces, she felt a sweet assurance that they were mingling with the spirits of those "just men made perfect," of whom they used to converse.

How many hours of anxious toil will parents cheerfully endure to prepare their children to occupy, for a few brief years, a respec-