

## BOOK I OF COSMAS, A MONK.<sup>9</sup>

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*Against those who, while wishing to profess Christianity, think and imagine like the pagans that the heaven is spherical.*



AS many as ardently desire true knowledge and are lovers of the true light, and earnestly endeavour to become fellow-citizens of the saints in the age to come, who regard the Old and New Testament as in reality divine scripture, who are obedient to Moses and the Christ, who follow out to the end the principles they have adopted, who acknowledge |8 that the world was produced by God out of mere nothing, and who believe that there is a resurrection of men and a judgment, and that the righteous shall inherit the Kingdom of Heaven; all these carefully examine the divine scriptures all throughout, to see whether in Moses, who wrote the account of the Creation, and in the other Prophets, they |9 contain descriptions of the places and figures of the whole creation, among which is indicated also the position of the Kingdom of Heaven, which the Lord Christ promises God will give to righteous men. And when they find the Old and New Testaments to be in mutual harmony, they abide therein firmly grounded and immovable, in nothing confounded by their adversaries. But those on the other hand who prank themselves out in the wisdom of this world, and are self-confident that by scholastic reasonings they can comprehend its figure and position, scoff at all divine scripture as a mass of fables, stigmatising Moses and the prophets, the Lord Christ and the Apostles as idle babblers,<sup>10</sup> [117] and given over to vain delusions; while with supercilious airs, as if they far surpassed in wisdom the rest of mankind, they attribute to the heavens a spherical figure and a circular motion, and by

geometrical methods and calculations applied to the heavenly bodies, as well as by the abuse of words and by worldly craft, endeavour to grasp the position and figure of the world by means of the solar and lunar eclipses, leading others into error while they are in error themselves in maintaining that such phenomena could not present themselves if the figure was other than spherical. But concerning these matters we shall not enter into any discussion just at present, since those persons sufficiently confute the one the other. But those who wish to profess Christianity, while wishing at the same time to |10 bedeck themselves with the principles, the wisdom, and the diversity of the errors of this world, and contend that one thing and another should be accepted, seem to differ nothing from a shadow which exists while the intermediate body from which it is projected is in light, but which cannot exist when that body is not in light, nay, is even obliterated by the light when the body is illuminated all round.

It is against such men my words are directed, for divine scripture denounces them, as of old it denounced the strangers sojourning in Samaria, because they feared God and burned incense and offered worship on the high places.<sup>11</sup> Were one to call such men double-faced<sup>12</sup> he would not be wrong, for, look you, they wish both to be with us and with those that are against us, thus making void their renunciation of Satan whom they renounced in baptism, and again running back to him. Now, such men cannot be with us at all; but they occupy a middle position, like empty houses standing high up in the air, without having either foundations in the earth below, or anything from above to hold them fast.<sup>13</sup> For while they have as yet scarcely come by their principles they set about destroying them; and before they have yet destroyed them, they show that their end is unaccomplished, as they stand firm neither on the one side nor the other, but rather laugh at every one, and are themselves laughed at by all. In the first place,

then, when arguing with them about the spherical figure, we showed that this figure was not possible, and was indeed quite inconsistent with the nature of things. Certain of them say that the heaven is a body consisting of four elements,<sup>14</sup> but some later on superciliously |11 reconstructed it with an additional fifth new element, <sup>15</sup> though formerly its essential constitution comprised only four elements, for they saw at a glance that the heaven could not revolve if it was composed of these. But herein again they are found to be blind even when they think that those who are sharp-sighted do not see. For since the heaven is seen to be of sundry and diverse colours, whence a power to produce heat and cold seems to be inherent in them, they say that the eyes of all are deceived by reason of their immense distance. Well, then, let any one of them who so wishes come forward and tell us: Why do the stars which, according to you are evidently fixed in an immovable sphere, not [118] apparently differ in colour and size, though their distances from us are seen to be unequal, if the centre of the earth be the point from which our eyes are directed towards them? And how is it that many of the fixed stars are equal and like to the planet we call Mars, to which a lower sphere has been assigned, and how do we in like manner see not a few of them to be like the planet Jupiter? But |12 further, we do not even see the heaven itself to be of one and the same colour, for, if it were asked from whence can we surmise that the cloud-like concretions which you have named the galaxy, and which you have so designated simply because of the difference of their colour, have derived their peculiar appearance, while the surface on which the ray of vision strikes is uniform? and if I replied that these were proofs of the composition and mixture of different elements, no one, I apprehend, would dare to contradict me, even though he were a lover of falsehood, and much less if one of those who always assign the foremost place to truth. Now if the heaven has been constituted not of one single element endowed with a

circular motion of its own, but of the mixture of the four elements, then it cannot well revolve. For it has been said that it must either be moved downward if the heavy element preponderate, or be carried upward if the opposite light one prevail, or must be stationary when no element is preponderant. This is certainly obvious to everybody. For no one would admit that he has ever seen the heaven move either upwards or downwards.<sup>16</sup> It must be allowed therefore that it is firmly fixed. But should they ask: Whence are these motions that differ from the rest in an element that is simple and without qualities? since they say, and not untruly, that those bodies which they call planets revolve oppositely to the universe; and if in like manner they say that their revolution is accomplished in certain |13 times which the Creator has fixed, it is evident that they do not even deny that the planets advance from the East.<sup>17</sup>

Then being mazed with perplexing doubts, as usually happens to those who shrink from the truth, they say, on finding no way of escape, that the stars make retrogressions and pauses. But tell me, ye souls that are so ingenious in tying and untying knots, if from their very nature they have motion, how comes it that they stand still? For nothing that can thwart them enters as an element into their natural constitution. And tell me this besides, what is the force or what the necessity which imposes on them the contrary motion? And here let no one tell me that it is an ocular deception; for it is no minute distance to which they advance, seeing that they are often observed to shift their place from a sign of the zodiac that is in the rear to one in front. But what must we say of our opponents when passing on to the operations of the stars themselves, they reach the very height of absurdity, all unconscious that they themselves stand still or move backward, and are but a sorry set of good-for-nothing rascals? Now anyone would say that the star previously seen in Aries, but at present appearing in Pisces,

was not in the house of Mars, but in that of Jupiter, and that it [119] makes *movements*, not such as they babble about when it is in Aries, but those which they ascribe to it in its transit through Pisces. But if they do not admit the retrograde motion of *the planets* which is apparent, whence then or wherefore is their course in both directions? They will perhaps in reply assign as the cause those invisible epicycles which they have assumed as vehicles on which, as they will insist, the planets are borne along. But they will |14 be in no better case from this invention, for we shall ask: Why have they need of vehicles? Is it because they are incapable of motion? Then, if so, why should you assert them to be animated, and that too even with souls more than usually divine? Or is it that they are capable? The very idea is, methinks, ridiculous. And why have not the moon and the sun their epicycles? Is it that they are not worthy on account of their inferiority? But this could not be said by men in their sober senses. Was it then from the scarcity of suitable material the Creator could not construct vehicles for them? On your own head let the blasphemy of such a thought recoil.

Cease, O ye wiseacres! prating worthless nonsense, and learn at last though late to follow the divine oracles and not your own baseless fancies. For, tell us, how ye think that the fixed stars move in an opposite direction to the universe? Is such a motion theirs only or that of the sphere in which they are placed? Then, if it is theirs, how do they traverse unequal orbits in equal time? And how comes it that of the stars in the galaxy not one has ever gone outside of it, nor any of those outside is seen nearer it or within it? But if one should say that it is the sphere which moves in the opposite direction, then it will be found that at the same time it moves oppositely to itself. But who can imagine a greater absurdity than this? Thus they do their best to prevent anyone surpassing them in their effrontery----or rather, let me say, in impiety, since they

do not blush to affirm that there are people who live on the under surface of the earth. What then, should some one question them and say: Is the sun to no purpose carried under the earth? these absurd persons will, on the spur of the moment, without thinking, reply that the people of the Antipodes are there----men carrying their heads downwards, and rivers having a position opposite to the rivers here! thus taking in hand to turn every thing |15 upside down rather than to follow the doctrines of the truth, in which there are no futile sophisms, but which are plain and easy and full of godliness, while they procure salvation for those who reverently consult them.

But you will most effectually rebuke them if you say: Why does that sphere of yours not revolve from the north to the south, or from some other quarter to its opposite? And do not tell me, in answer, that such seemed better to the Maker of the world, for my [18](#) .... But how can you [120] deem that you speak consistently with the nature of things in supposing that the whole heaven is in motion and describes a circle, without also supposing that outside of it there is either some other space or body, even though it were imaginary. For it is impossible any thing can move apart from the four elements, but must move either in earth, or in water, or in air, or in fire, whether it is transferred from place to place into the infinite, or whether it always revolves in the same place. But if the heaven as it revolves passes into the infinity of space, we must suppose that beyond it there is an infinite earth into which it rolls, when noiselessly leaving what is behind it; but if one of the other three elements be supposed, in not one of them is the sphere adapted to roll and rotate; nay, were it to be shot into any of them, a whizzing noise would attend the transition. But if, again, it rolls and rotates always in the same spot without moving from place to place, then it must be upheld by supports like a turner's lathe, or an artificial globe, or on an

axis like a machine or a waggon. And if so, then we must again inquire by what the supports and axles are themselves upheld, and so on *ad infinitum*. And tell me, pray, how are we to suppose the axis passes through the middle of the earth, and of what material it consists.

When these problems then concerning the nature of 16 things are discussed, there remains the conclusion, as we said before, that the heaven is fixed and does not revolve. But even in supposing that the earth is in the middle of the universe, as its centre, you immediately give the deathblow to your own theory when you repeat that the middle is below, for it is impossible that the same thing can at once both be in the middle and below, for the middle is the middle between up and down, or between right and left, or between before and behind. Why do you then, when beleaguered with difficulties, utter absurdities contrary to nature, in opposition to scripture? For being in terror lest any one should pose you with this question: How can this unspeakable weight of the earth be held suspended by the air and not fall down? you have invented stones of things that are not true, but strange; and, reversing the order of things, give out that the middle is below; so that if any should suppose that instead of the earth, fire was the middle, you would then say that the middle was above instead of below, seeing that the tendency of fire is upward. To me, therefore, they seem to subvert the first by means of the second, and the second by means of the first. But if they say that the air because it surrounds the earth equally on all sides, is pushed on by the universe, and that the earth remains immovable, and swerves neither to the one side nor the other, why do men <sup>19</sup> and the irrational animals that live on land or fly in the air not move along with it, while all of them cleave the air in walking and in traversing it, and in going on high. And not only is it incapable of resisting these, but it cannot even sustain the weight of the lightest inanimate