

GUIDE 2:4
THE ARISTOTELIANS' THEORY OF THE SEPARATE INTELLECTS
AND THE SOULS OF THE SPHERES

The heavens were alive.

Are they still? Knowledgeable astronomical observers since Copernicus have rejected the cosmology behind the idea that the heavenly bodies were animate beings with souls.

Still, we know that our universe, including the heavens, is constantly moving. Since nothing moves itself, there must also be a mover. This mover must be fundamentally different from everything in the universe to avoid vicious regress. (Guide 2:1, First Argument).

A mover that is so different would need intermediaries to effect its will, the "Separate Intellects." In our chapter, Guide 2:4, Maimonides recounts the theories of Aristotle and his followers about these Intellects and how they move everything else. Although Maimonides disagrees fundamentally with some aspects of these theories, he needs those ideas, as we showed in Guide 2:2, to make his argument for creation *ex nihilo*.

Maimonides will answer a series of questions about the Aristotelians' account of the Separate Intellects:

- I. What is the soul?
- II. Why does Aristotle say that the heavenly spheres are alive?
- III. Do the spheres have souls?
- IV. Why and how does the soul move the sphere?
- V. How many spheres are there?
- VI. How many Separate Intellects exist?
- VII. Does God act directly in the conduct of the universe?
- VIII. Are the Separate Intellects angels?
- IX. Does the Prime Intellect, the first of the emanated Intellects, have an absolute existence?

I. What is a Soul?

"THE enunciation that the heavenly sphere is endowed with a soul will appear reasonable to all who sufficiently reflect on it; but at first thought they may find it unintelligible or even objectionable; because they wrongly assume that when we ascribe a soul to the heavenly spheres we mean something like the soul of man, or that of an ass, or ox."

Maimonides was right to begin by remarking on the strangeness of the idea that animals and heavenly bodies have souls. But the idea was ancient. Aristotle had announced, in his *De Caelo*, that "We think of the stars as mere bodies and as units with a serial order, but entirely inanimate; *but we should rather conceive them as enjoying life and a source or principle of action* (κινήσεως ἀρχήν)." He noted, in *De Anima*, that his predecessors, Democritus, Pythagoras, Anaxagoras and Plato had all agreed that "The soul is identical with what produces movement in animals."

(*De Caelo/On the Heavens*, 292a14-25, Stock's trans, expanded. *De Anima/On the Soul*, 403b30 – 404b25. All italics and numberings in this chapter are supplied. As usual, unless otherwise noted, quoted Guide passages are Friedlander's trans).

These ideas about the soul already appeared as part of Maimonides' psychological theory in his *Shemona Perakim*, where he mentioned the human soul, but also the soul of an eagle, an ass, and a horse, even suggesting that they shared some of its five psychological faculties, "... The nutritive, the sensitive, the imaginative, the appetitive, and the rational..." Nonetheless, while they share some of those faculties, they are not alike:

“The nutritive faculty by which a man is nourished is not the same, for instance, as that of the ass or the horse,... In the same way the term *sensation* is used homonymously for a man and a beast; not with the idea, however, that the sensation of one species is the same as that of another, for each species has its own characteristic soul distinct from every other, with the result that there necessarily arises from each soul activities peculiar to itself. It is possible, however that an activity of one soul may seem to be similar to that of another, in consequence of which one might think that both belong to the same class, and thus consider them to be alike; but such is not the case.”

He provides a striking example:

“Let us imagine that three dark places are illumined, one lit up by the sun shining upon it, the second by the moon, and the third by a flame. Now in each of these places there is light, but the efficient cause in the one case is the sun, in the other the moon, and in the third the fire. So it is with *sensation* and its causes. In man it is the human soul, in the ass it is the soul of the ass, and in the eagle the soul of the eagle. The sensations have, moreover, nothing in common except the homonymous term which is applied to them. Mark this point, for it is very important, as many so-called philosophers have fallen into error regarding it, in consequence of which they have been driven to absurdities and fallacies.”

But though we might concede that eagles and horses share that which we could vaguely call a higher faculty, what they mainly share in virtue of their souls is an internal (or, rather, *immanent*) principle of movement, such that, as Plato contended, they were “self-moving.”

(Shemona Perakim, Ch. 1, Gorfinkle translation. In Maimonides’ understanding, the term “sensation” included perception generally, and even, among humans, some types of intellectual perception. Kravitz/Olitzky translate it as “sentient,” Shemona Perakim, Behrman House, 2000, p.3-4. See, in support, Dictionary of Scholastic Philosophy, B.Wuellner, 2012, Loreto Publ., 113-114; Wolfson, “The Internal Senses in Latin, Arabic, and Hebrew Philosophy,” Studies in the History of Philosophy and Religion, v. 1, 250; “Maimonides on the Internal Senses,” Studies, v. 1, 344. In Guide 3:13 Maimonides says that “Sensation precedes comprehension.” Sensation: Judeo-Arab.: אלתסאם, Heb.: margish, hehargish, in Kafih trans. of Shemona Perakim, in Perush haMishna Nezikin, 248, note 9. Self-moving: Plato, Phaedrus 245c – 246a).

But why would anyone think that Mars or Venus or the spheres that move them were ensouled? After all, since we know that inanimate things move naturally, as when a thrown stone falls, or air bubbles up, why not just say that the heavenly bodies also move in a natural manner, like rocks and air bubbles, none of which have souls or require them to move?

II. Why Does Aristotle Say That the Heavenly Spheres Are Alive?

The ancients admitted that they did not know much about the heavenly bodies (*De Caelo* 292a14). But they did recognize that they differed from other things in their rotatory motion.

In their four-element physics earth and water always fall to their natural places below, while air and fire rise to their natural resting places above. They always return to their natural, “proper,” places in straight vertical motion, unless other forces supervene.

Animals are capable of other kinds of motion. Their “natural” motion is instinctual: i.e., to run toward benefit and away from danger. This motion need not be in a straight line, but could be by whatever path of least resistance was best for the animal.

Those boons and threats could be external to the animal, but even if it only imagines them, they seem as real, like the Pavlovian instinct of a dog to cower on seeing a man with a walking stick, since it was once beaten with one.

The distinction between animate and inanimate things flows from the difference in their natural motions: the inanimate objects only move up or down when dislodged from their resting places. But anything that does not return in a generally vertical line has an internal source of motion, is alive and has a soul.

That is why the ancients thought that humans, animals, and some plants were ensouled. They recognized that those beings have an internal principle of motion which does not merely return them to their natural place.

The spheres, according to the ancient cosmology, were the transparent constantly rotating beings to which the planets are attached. (The best explanation for why the ancients thought that crystalline spheres move the planets is Thomas Kuhn's *The Copernican Revolution: Planetary Astronomy in the Development of Western Thought*, chapters 1-3, Harvard, 1957, 1992).

Since the spheres are constantly moving, but not in a straight line, like the elements, the ancients thought that they must be alive and have an internal source of motion, like the animals.

Even though the soul of a living being has further functions, its primary function is propulsion and movement. Still, as Maimonides argued in the *Shemona Perakim* passage, each species' soul is different.

Two species had souls that were radically different from those of the animals and plants, as shown by their unique movements.

III. Does the Sphere have a Soul?

The Unique Character of the Sphere's Motion. There are two senses of the term "natural motion." There is the "natural motion" of the inanimate elements, which revert to their natural places, and the "natural motion" of the animals, whose instinctual motion is a drive toward benefit and to avoid danger.

Intelligent beings, however, can move *without* being subject to either sort of natural motion. Two types of corporeal beings were thought to move voluntarily: humans and spheres.

Humans are free of anything that could force them to move. We are not subject to instinctual or elemental compulsion.

Humans move because they have four attributes. They have a *soul* (an immanent motive principle); an *intellect* (a transcendent noetic principle); and they can cognize an intellectual *representation* of that to which they would move. But they must also have a *desire* to reach that goal. The four elements needed for the motion of an intelligent being are, then, a *soul*, an *intellect*, a mental *representation* of what it wants, and a *desire* to attain it.

Apart from humans, only the spheres require those same four attributes to move. Those attributes tell us why the spheres move in rotation. But first we should consider why rotational motion is unique.

Because the rotation of the spheres does not actually cause them to "go" anywhere, they rotate *in place*, about the center of the universe. Rotational motion is a perfect, unbroken motion. Aristotle thought that the spheres rotate eternally.

This rotation of the spheres was not really considered to be *motion*. Terrestrial motion is from here to there, from *place to place*, from a *terminus a quo* to a *terminus ad quem*.

Rotational motion, by contrast:

“...Has neither beginning or end, for every part is like any other part, and no one can say that the motion begins in one place and stops at another. Consequently, circular motion requires no *place*, for any one part thereof is a place for any other part.” (Joseph Ibn Tzadik, 1075 – 1149).

Maimonides, in our chapter, states of the sphere that “It moves toward the same point from which it moves away, and it moves away from the same point toward which it moves.” The sphere moves, according to Aristotle, from “The same to the same.” Avicenna, explaining this, says that rotation is not in the Aristotelian category of *place*, where motion is the translocation of a thing from one place to another *opposite* to it but in the category of *position*. That is because, according to Averroes, “In circular motion there are no *opposite* limits.” The sphere changes position in the same place.

Also, if the sphere were to move like an element, it would eventually return to its “proper” elemental place and stop. If it were to move like an animal it would, eventually, either catch its prey, or escape danger, and stop. In each case, it would come to a halt, a natural rest. But the eternal motion of the heavens never ceases.

If it were otherwise, and the sphere moved by animal instinct, it would never reach what it sought. Maimonides explained, “If it (the sphere) moved for the purpose of avoiding something, and never obtained that object, the motion would be *in vain*.” But Aristotle had declared that “God and nature do nothing in vain.” It cannot be instinct that moves the sphere, but intelligence.

All motions, according to Maimonides’ Proposition VI, including human motions, are accidental, and must come to rest, including our soul’s accidental participation in our body’s motion. The soul goes with the body, and when the body rests the soul must also rest. It cannot produce perpetual motion. That is why its accidental motion cannot continue forever (Proposition VIII). But the rotation of the sphere could continue forever because, according to Proposition XIII, rotational motion, alone of all the motions, can be continuous.

(R. Tzadik in his *Olam Katan*, quoted in Wolfson, *Crescas’ Critique of Aristotle*, 403, note 12; Aristotle, *Physics* 264b18-19; Avicenna, in *Crescas*, *ibid.* 77; Averroes, *Intermediate Physics* 8:4, quoted in *Crescas*, *ibid.*, 623, note 18. Props. VI, VIII and XIII in Guide 2:Introduction. God does nothing in vain: Aristotle, *De Coelo*, 271a32, Guide 3:25-26).

IV. Why and How Does the Soul Move the Sphere?

The Unique Motion of the Sphere is Due to its Soul and Mind. Eternal rotation, according to the theory, could only be caused by a superior eternal being, *i.e.*, an incorporeal being. They called this being a “Separate Intellect.” It was called “separate” because it had nothing to do with physical matter.

The soul of the sphere moves the sphere only out of love for its Separate Intellect. Each sphere has its own unique Separate Intellect that it yearns to imitate. It desires to attain the perfection of its Separate Intellect.

This Separate Intellect is not the same as the soul of the sphere. According to Abunasr Alfarabi (872-951):

“The souls of the spheres have no imagination or sensation. What they have is cognition alone, which is somewhat similar to the imagination of an intelligent being.”

Friedlander distinguishes these two intellectual forces in a remarkable manner: he calls the soul an “intellect” with a small “i”, reserving the capital “I” for the Separate Intellect.

The sphere's soul tries to imitate its incorporeal Intellect's perfect *simplicity* by causing its rotation. That is because rotation is the simplest of movements. The sphere attains the eternal simplicity of the Separate Intellect through the perfect simplicity of its rotation.

The *corporeal* sphere's perfect, unbroken rotation achieves the closest possible likeness to the *incorporeal* eternity of its immobile Separate Intellect. Its "motion" resembles the thought of a lover "revolving" about his beloved, or our mind "revolving" problems. These noetic "motions" revolve a locationless good at the center of their desires.

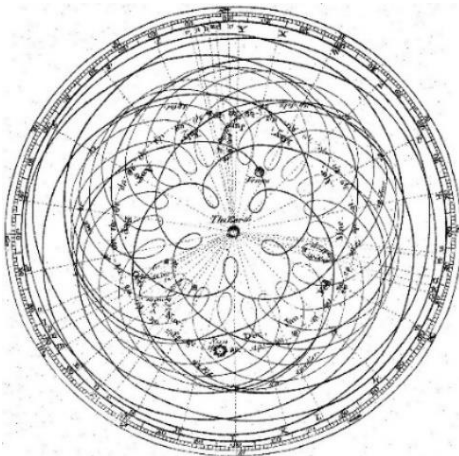
All of the motions in our dynamic universe come from this rotation. But the sphere does not change because of it or because of the beneficial effects that flow from it.

The sphere moves for the same for four reasons that we move. The sphere has a *soul*, which is its immanent principle of motion. It has a separate transcendent incorporeal *Intellect*. The sphere's soul has a mental *representation* of its Separate Intellect and God. It *wants* to resemble those perfect beings, and for that reason revolves. Maimonides explains: "He (Aristotle) says that it is in this manner that the Deity causes the sphere to move, I mean to say through the fact that the sphere desires to come *to be like* that which it apprehends, which is the notion represented – a notion that is most exceedingly *simple*, in which there is *no change* and *no coming-about of a new state*, and from which *good always overflows* [emanates]." (Pines trans., 256)

(The sphere's double intellect: Friedlander translation, *ad loc.*, v. 2, p. 90, note 2. Aristotle, *Metaphysics* 1073a30-35; Alfarabi, *Uyun al Masail, The Main Questions*, quoted in Kafih's translation of the Guide, 172, note 11 and in Even-Shmuel, *ad loc.*, 89, note 5. "Locationless good," Even-Shmuel, *ad loc.*).

V. How Many Spheres Are There?

In order to decide how many Separate Intellects move the spheres, Aristotle thought that we must first determine how many spheres move the planets. The prevalent notion was that the number of spheres must equal the number of the Separate Intellects. In other words, there must be one Separate Intellect for each different kind of motion that we observe in each planet. But the planets needed several spheres to explain each of their distinct kinds of motion. The number of spheres posited by the theory kept growing. (*Metaphysics*, 1073a30-1073b1, 1073b6-1074a18)



Ptolemaic Cosmos, with its epicyclic and eccentric spheres

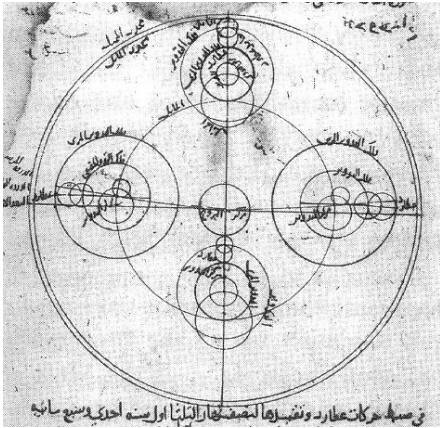
Maimonides recognized that this burgeoning complexity was a stumbling block.

The cosmological paradigm of Claudius Ptolemy (c. 100-c. 170 CE) was an extraordinarily complicated model which could accommodate as many as fifty-five or more spheres (see diagram). Maimonides remarked that it could be as many as "ten or one hundred." As the number of motions increased, the hypothesis of the number of spheres increased. Aristotle

admitted that no one had arrived at an agreed number.

The reason for the complication was that the planets do more than simply rotate a center. Although there were only seven planets by the usual count (in their perceived order: Saturn, Jupiter, Mars, Sun, Venus, Mercury and Moon), some of those "moving stars" wobble like spinning tops (due to the declination and inclination of their orbits). Some seem to reverse course and then, paradoxically, resume their former course. This was called retrogradation, the peculiar looping motion that those planets trace against the nighttime sky as charted by an observer on earth over time.

Ptolemaic astronomy concluded that the planets were moved through paths that were epicyclic and even eccentric to the center of the sphere.



Ibn al-Shatir's model for the appearances of Mercury, showing the multiplication of nested epicycles on multiple hinged axes in Ptolemaic manner. (Wikimedia)

That system theorized that all of those different motions could be approximated if the planet was conceived as a point attached to the inner sphere of as many as nine nested spheres spinning on different axes and in different directions which respect to each other.

Maimonides was part of a movement among astronomers to simplify the paradigm. Those astronomers realized that that they could predict the Sun's motion along an ecliptic orbit, where it would sometimes rotate above the equator and sometimes below, by a set degree of declination. He explained,

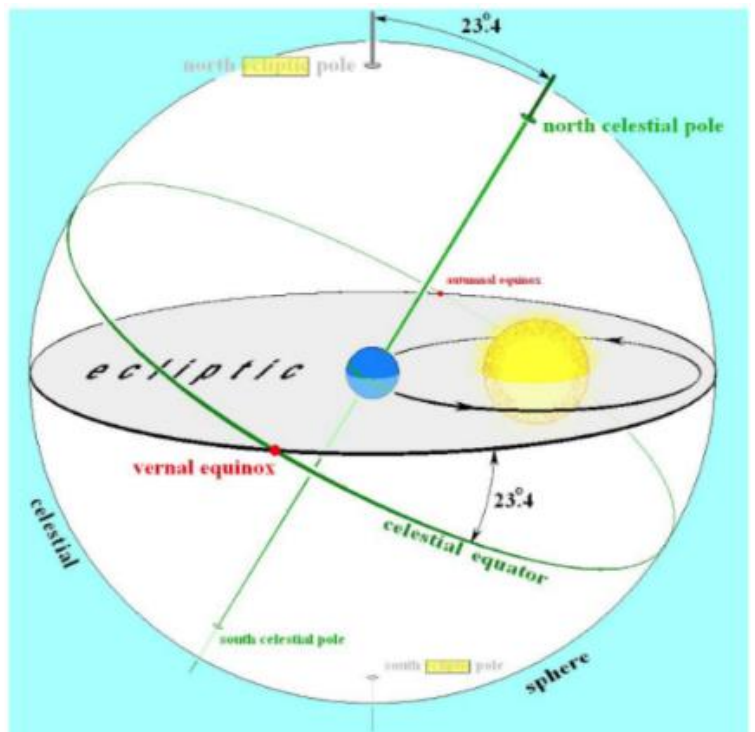
“For the scholars in his (Aristotle's) time were few and possessed but imperfect learning; they thought that there must be a separate sphere for each movement, because they did not know that what appeared to be several distinct movements can be explained as resulting from the inclination of one sphere [the ecliptic]; as is, e.g., the case with the change in the longitude of a star, its declination and the place of its rising and setting in the circle of the horizon.”

What he meant was that the regular declination and inclination of the Sun's ecliptic between the equator and the Tropics of Cancer and Capricorn by about 23° can be regarded as one motion.

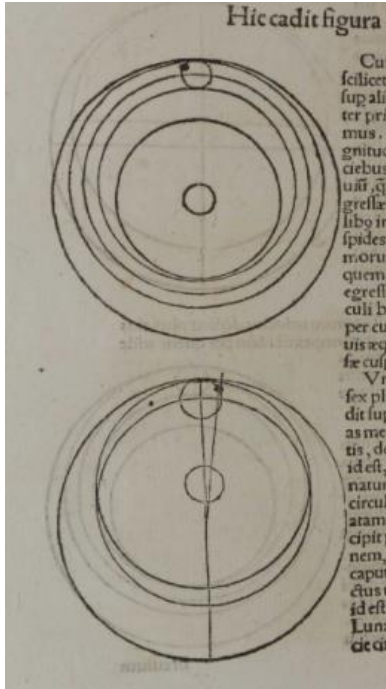
The outcome was that each planet's apparently different motions of could be explained by a single source of motion. The source that inspired their motion was the single Separate Intellect assigned to that planet. By making this argument Maimonides showed that he wanted to reduce the complexity of the Ptolemaic system from fifty-five or more spheres to just nine.

(Compare the simplifying system of his Cordovan contemporary, al-Bitruji, Latinized as Alpetragius, c. late twelfth century, in Andalusian Spain. “Al-Bitrūjī Al-Ishbīlī, Abū Ishāq.” *Complete Dictionary of Scientific Biography*, vol. 15, Scribners, 2008, pp. 33-36).

Maimonides Changes the Vocabulary of the Spheres. In Maimonides' generation they arrived at a system of nine or ten “spheres,” some of which contained *several other spheres*. In order to accommodate this change Maimonides altered the vocabulary. The usual word for “spheres” in Hebrew was *galgalim* (Judeo-Arabic: אלאפלאך). He now calls these broader composites of multiple spheres *agulim* (Kafih translation. Jud-Arab.: אלאכר. Tibbon, Haziri, Shwarz: *kadurim*).



Declination and Inclination of the Plane of the Ecliptic between the Two Tropics



Al-Farghani's thick "sphere" must contain all its planet's epicycles and eccentricities (bottom) between its outer and inner homocentric perfect circles (top). *Rudimenta astronomica Alfragrani*.

The translators struggle with this term. The term has come to mean "globe," (Pines' trans. Friedlander has "orbit"). Several scholars, including Wolfson and Friedlander, thought that the terms for "globes" or "spheres" were used interchangeably, but close analysis does not confirm that thought. Even-Shmuel correctly called the *agulim* "systems of spheres," *maarkhot galgalim*, i.e., that each *agul* is a *system* in which there are several spheres.

The terms "globe" or "orbit" are, thus, misleading. It might be better to use the Talmudic term "heavens," *shamayim*, as in the so-called "seven heavens," since each heaven can hold several heavenly bodies. It would also be wrong to regard them as a reduction of the number of "spheres" since the many epicyclic spheres are still *within* these *agulim*, even after we unify those that join in the wobble of the planets. Thomas Kuhn calls this a "bastard version of Aristotle's spheres," and cites the ninth century astronomer Abu al-Farghani as fleshing out the doctrine that each *agul* "was a space-filling sphere just large enough to house each planet's set of epicycles and other circles," including all of its "epicycles, deferents, equants, and eccentrics... within its thick spherical shell." (Kuhn, *Copernican Revolution*, 80-81)

Maimonides explains this much simplified version of the cosmological model:

"With regard to the opinion of the later philosophers (*ha-akharonim min ha-filosofim*) that there are ten Separate Intellects, it may be explained by the fact that they counted the globes (*agulim*) in which there are stars as well as the all-encompassing sphere, although in some of these globes (*agulim*) there are several spheres. The globes (*agulim*) are *nine* according to their reckoning namely 1) the one that encompasses the universe, 2) the sphere of the fixed stars, 3) and the spheres of the seven planets." (Pines trans.)

VI. How Many Separate Intellects Are There?

Why There Were Nine Separate Intellects. The outcome of this reorganization was that, following the premise of one Separate Intellect for each system of spheres, there would be one intellect responsible for all of the motions made by one planet: *seven* assigned serially to Saturn, Jupiter, Mars, Sun, Venus, Mercury, and Moon, *one* was assigned to the sphere of the fixed stars, and *one* to the outer sphere. That comes to nine Separate Intellects.

The intellect appointed over the outer sphere inspires the *westward* motion of that sphere, which then sets the stars and the rest of the universe in general motion, including the elements and their composites. Each planet, however, has its own unique direction and velocity. Each planet moves *eastward* generally along the zodiacal band, at different speeds, but some periodically retrogress westward. All of the motions displayed by each planet's path through the sky, including its retrogressions, were thought to be inspired by the Separate Intellect appointed over its *agul*.

Where did those Separate Intellects come from? How shall we account for the generation of this series of Intellects? Maimonides explains the emanation process. His first point is that they existed potentially before they were actualized as *separate* entities (Aristotle, $\chi\omega\rho\iota\sigma\tau\acute{o}\varsigma$, e.g. *Meta.* 1025b28-30). They were then *brought forth* from that state of potentiality. Maimonides writes:

"Whatever passes from potentiality into actuality, requires for that transition an external agent of the same kind as itself. Thus, the builder does not build the storehouse in his capacity of workman, but in that of a person that has the *form* of the storehouse in his mind; and that *form* of the building which exists

in the mind of the builder caused the transition of the *potential form* of the storehouse into actuality, and impressed it on the material [the timber] of the building.”

The emergence of new things requires a separate, external *change-agent* (Proposition XVIII). This change-agent must belong to the same genus that it actualizes. To explain this, he gives us the familiar example of workman who is making a storehouse or cabinet out of wood. We are surprised to learn that the carpenter did not produce the cabinet!

The change-agent that made the cabinet was the *form* in the carpenter’s mind, which he merely brought out of the wood. Nothing but form realizes form. The form of the cabinet was a potentiality which could not be realized until the carpenter recognized that “blueprint” lurking in the wood. The cabinet exists only due to this *formal* blueprint, not because of its *efficient, material, or final* causes (*i.e.*, respectively: the carpenter, the wood, and the need for storage). The change-agent is the cognizable *representation* that the craftsman had of this form before he produced the object of his art.

Aristotle explains: “So it turns out that in a certain way health comes into being from health, and a house from a house... The housebuilding art is the *form* of a house.” His translator, Joe Sachs, explains, “In the famous example of the four causes of the statue, the sculptor is not even its ‘efficient’ cause except incidentally; the moving cause of a statue is the sculptor’s art, a being-at-work of forms.” Only form forms form, and only art brings forth art.

(The four causes: Aristotle, *Generation of Animals*, 715a4-7. A house from a house: *Metaphysics* 1032b10-15, in Sachs, p. 123, note 17)

It follows that the generator of the natural forms must be a form which is separate from matter and which *transcends* its immanent form. If the change-agent were only a form that was immanent in the matter, it could not generate anything *different* from that matter. The form must be external to the matter in order to generate a new substance.

The result is that only God could have brought forth the Prime Separate Intellectual mover of the outer sphere. That is because both God and the Prime Separate Intellect are alike in their complete incorporeality. Both are forms, that is, intellects in the noetic world.

God is the ultimate change-agent since He is the being of the highest dignity, and therefore can engender the creation of a being lower on the scale of creation. To avoid infinite regress, this change-agent must have *absolute* existence in order to generate the Prime Intellect’s *contingent* existence. (Otherwise, we would have to keep asking which other contingent being generated it, *etc.*, *etc.*, which would be absurd). God is the sufficient reason for its existence.

The Prime Intellect inspires the outer sphere’s immanent soul to rotate eternally as it strives to imitate that Intellect’s eternal existence.

This Prime Separate Intellect then becomes the cause and principle foundation for the generation of the Second Separate Intellect (by way of emanation). This Second Intellect becomes the source and mover of the second sphere (the sphere of the fixed stars). Thus, we have the succession of the rest of the Separate Intellects: the Third from the Second, and the Fourth from the Third, etc., until we arrive at the Ninth Intellect, the mover of the ninth sphere, the sphere of the moon. We now have nine Separate Intellects accounted for. (See chart below)

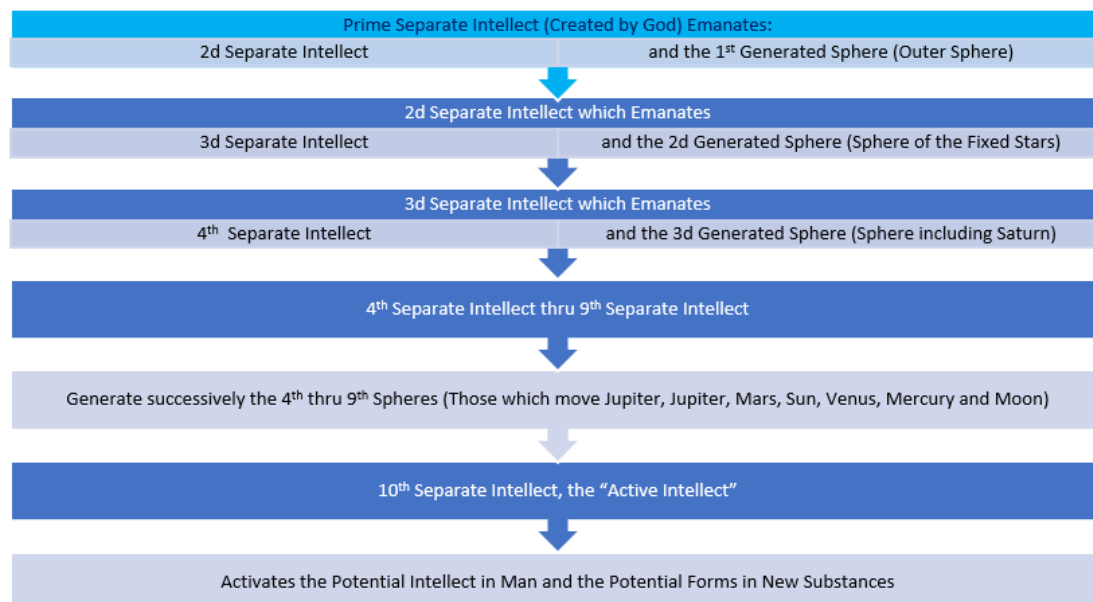
The Tenth Intellect: the “Active Intellect.” But that cannot be the last of the Separate Intellects because there are still two types of forms which require a unique Separate Intellect for their actualization. Those forms are the human mind and the forms of potential new substances on earth. To repeat, forms cannot actualize themselves. They require an external change-agent.

The most important of these potential forms is the human intellect. There must be an agent that actualizes our potential intellect. This means that though all humans come equipped with the ability to know, it requires stimulation from outside us to acquire education, through the intervention of a teacher, the absorption of ideas from a book, etc. Once a person has acquired and employed this power of cognition, which had been only a potential possession, that person's intellect is said to be *actualized*, as his *Acquired Intellect*. There is then *conjunction* between our actualized intellect and the *form* which is its source and principle. That form must be a Separate Intellect.

Similarly, the forms which lurk potentially in matter have no means to generate themselves as new substances without the intervention of a separate noetic change-agent.

The Aristotelians, therefore, posited the emanation of a final intellect, which they called the "Active Intellect" (*sekhel hapoel*), the *Tenth* Separate Intellect. That intellect fulfills two functions, the actualization of the human Potential Intellect, and the actualization of the forms that exist as potencies in unformed matter. Maimonides adds that the Active Intellect is the source (channel) of prophecy (Mishneh Torah, *Ysodei* 2:7).

The Ninth Separate Intellect, the one appointed over the moon and responsible for the motion of its sphere,



becomes the cause and principle foundation for this final Tenth Intellect, the Active Intellect, which does not move any sphere. Though it governs no sphere, we could say that it is appointed over the earth, the center of the spheres. The Tenth Intellect concludes the system of the Separate Intellects.

Maimonides explains:

“He (Aristotle) came to the following conclusion: God created (*himtzi*) the first Intelligence, the motive agent of the first sphere; the Intelligence which causes the second sphere to move has its source and origin in the first Intelligence, and so on: the Intelligence which sets the sphere nearest to the earth in motion is the source and origin of the Active Intellect, the last in the series of purely spiritual beings. The series of material bodies similarly begins with the uppermost sphere, and ends with the elements and their compounds.”

His last point about the physical causal chain is a subtle reminder of his Second Philosophical Argument for the existence of God from Guide 2:1. That argument was based on the idea that in any causal chain, since the last moved thing is no longer moving, the first mover must also be unmoved, *e.g.*, if there is a last domino, there must be a first. Similarly, there must be both an end and a beginning to any causal series. They cannot be infinite (Propositions I-III). This rule applies as well to the incorporeal emanation of the Separate Intellects.

Another point to observe is that neither Maimonides or Aristotle mention how the spheres were generated. We know that Aristotle did not believe in their generation. Aristotle’s spheres were eternal, since, according to him, matter is never created or destroyed. It was Alfarabi and the other medieval neo-Platonized Aristotelians, who claimed that both the intellects and the spheres were generated. (Generally, Alfarabi, *al Masail*, in Kafih’s Heb. trans., *ad loc* to Guide 2:4, p. 174, note 27.)

The Grand Relation. Reflecting on this organic system, Maimonides depicts a grand parallel between the activities in the cosmological macrocosm, and those in our terrestrial microcosm:

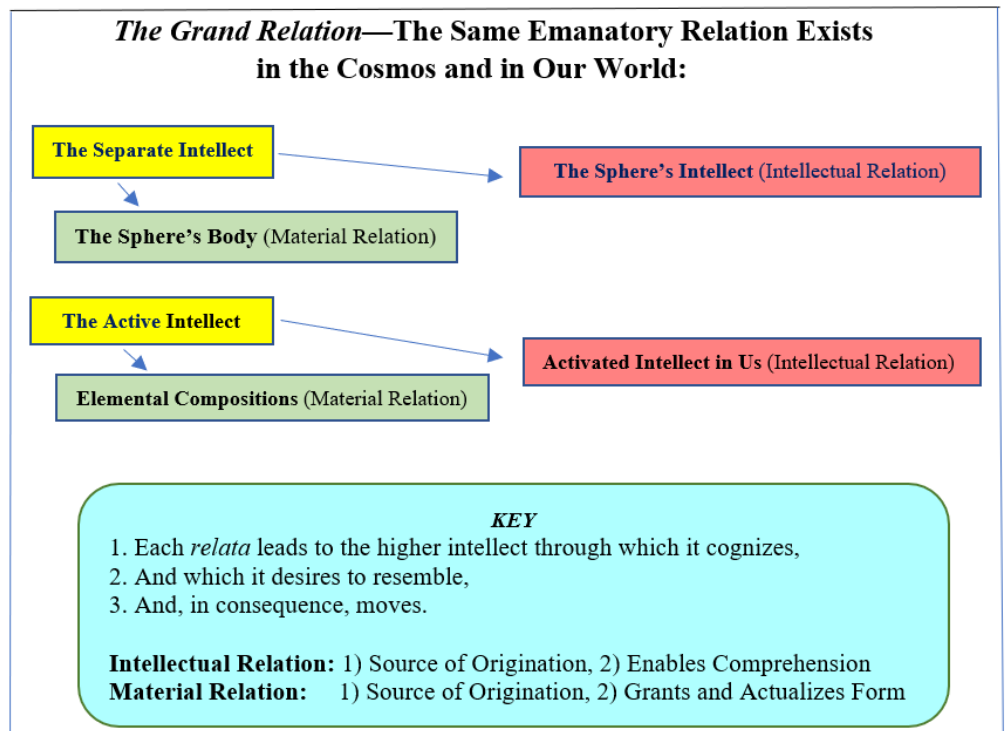
“Thus, the relation of the Active Intellect to the [four] elements and that which is composed of them is *similar* to the relation obtaining between every Separate Intellect particularly related to a sphere and that sphere. Furthermore, the relation of the intellect *in actu* existing in us, which derives from an overflow [emanation] of the Active Intellect, and through which we apprehend the Active Intellect, is *similar* to that of the intellect of every sphere that exists in the latter [i.e., the sphere’s immanent soul], deriving its being in it from the overflow [emanation] of a Separate Intellect — an intellect through which the sphere apprehends the Separate Intellect, makes a mental representation of the latter, desires to become like it, and in consequence moves.” (Pines trans. 258)

A chart may help to make this clearer:

The chart slightly rearranges Maimonides’ order. It depicts the relation existing between the minds and the bodies in the universe.

At the upper level, the nine transcendent *Separate Intellects* bear an *intellectual relation* to the sphere’s immanent intellectual faculty, which is the soul of the sphere. The Separate Intellect emanates the sphere’s soul. It also has a *material relationship* which grants form to the body of the sphere. The sphere’s soul, in return, 1) *cognizes* its source in the Separate Intellect, 2) *desires* to resemble it, and, in consequence 3) *moves* in its characteristic rotatory fashion.

In the same precise manner, on the lower level, the *Active Intellect* has an *intellectual relationship* with our potential intellect whereby it emanates that intellect, granting it the ability to know its higher source, thereby actualizing itself. At the same time, the Active Intellect has a *material relation* with all of the elemental compositions in our world, emanating form upon them and actualizing that form in those new substances, including the forms of the animal souls. Those souls can grasp a notion in consequence of which the animate beings can move. In animals the reaction to the notion is instinctual, while in humans it can be voluntary.



This Grand Relation follows a trend in Maimonides' thought to depict the universe as a single organism, with higher and lower parts. This reflects the microcosm/macrocosm relationship of Guide 1:72, which portrayed that same organism in several different ways (I called it there the "Grand Analogy").

The purpose of these Grand Relations and Analogies is twofold. On the one hand, Maimonides regards this parallel as a useful and scientific organizing tool for understanding the dense interrelations existing in our world. But it also helps him to resolve the ancient puzzle which gave rise to Neoplatonic emanationism in the first place: *How do the many come from the One?*

The answer, Maimonides suggests, is that God creates only *one* being, the universe, a single organism which generates within itself all of this complexity, but which remains an organic whole, just as each human being in that macrocosm is an organic microcosm comprised of a nearly infinite multiplicity of interactive parts. (See "From What Is One and Simple only What Is One and Simple Can Come to Be," Arthur Hyman's famous article, in *Neoplatonism in Jewish Thought*, L. E. Goodman, ed., SUNY, 1992, p. 111)

VII. Does God Act Directly in the Conduct of the Universe?

Why are the Separate Intellects necessary? The answer is that God does not, according to Aristotle, *act directly* in the conduct of the universe (Judeo-Ar.: *mubāshara*/ מְבַאֲשָׁרָה). The theory of the Separate Intellects tells us how Aristotle's *immobile* God can realize physical motion in the world, as the Aristotelians assert. Those intellects are intermediaries between the corporeal and incorporeal systems. They prompt motion in physical bodies by inspiring action in their souls:

"In this connection [Aristotle] deals further with a matter that has already been demonstrated, namely, that God, may He be magnified and held sublime, does not do things in a *direct fashion* (*mubāshara* / Heb: *b'ofen yashir*). Thus, He burns by means of a fire, and this fire is moved by means of the motion of the sphere, and the sphere in its turn is moved by means of a Separate Intellect." (Pines, 258)

It is important to remember that Aristotle's doctrine, that God never acts directly, was not Maimonides' doctrine. While Maimonides generally accepts Aristotle's account of causation, he rejects Aristotle's denial of creation, miracles, and providence (i.e., of the *Maaseh Bereshit* and *Maaseh Merkava*).

Maimonides had used this term *mubāshara* previously, in Guide 1:46, where he explained: "Again, as we have no intellectual cognition of our bringing somebody other than us to existence except through a *direct act*, He is described as *active*." Pines' footnote reads: "The [Arabic] word *mubāshara* used here also means 'an act accomplished through contact' and 'sexual intercourse'" (Pines, note 8, p. 99).

The point of the passage in 1:46 was to reveal the reason why prophetic metaphors frequently employ sexual and grossly physical language. Their earthy metaphors were the best way to describe the indescribable: God's creative act. We only conceive creation in corporeal terms, through a *direct act* of physical contact. But God, according to Aristotle, does not act directly in our brutish world.

Maimonides supplies an example of God's indirect action when He "consumes" by fire. Thus, as Maimonides explained in Guide 1:30, when we learn of the "burning at Taverah," in Numbers 11, that "... The fire of the Lord burned among them and *consumed* them that were in the uttermost parts of the camp," the text means that the "fire of the Lord" was not God's direct act, but His creation, that is, some angel or force created for the purpose of executing judgment on the Jewish rebels (see chapter-essay on Guide 1:30).

Here, even though he does not agree with the Aristotelian rejection of miracles, he does use Aristotelian terms to explain some divine actions, perhaps including the burning at Taverah. Though they are still miracles, they are *indirect* actions.

“Thus, He burns by means of a fire, and this fire is moved by means of the motion of the sphere, and the sphere in its turn is moved by means of a Separate Intellect.” In other words, the element of fire was forced out of its “proper place,” below the orbit of the moon, by the action of one or another of the spheres. Those spheres rotate at the inspiration of the Separate Intellect appointed over them, inspired in some inarticulable way by a desire to align with the thought of God.

We admit that Maimonides bends a point here, expanding as much as he can on Aristotle’s system, to show how God could indirectly manifest His will in the natural order. It is not likely that Aristotle would have agreed with this account of the burning at Taverah, although neo-Platonized Aristotelians in Maimonides’ time might have.

VIII. Are the Separate Intellects Angels?

“For the intellects are *the angels, which are near to Him (ha-malakhim ha-m’karevim)*, by means of whom the spheres are moved. And as by reason of their being separate from matter, *no multiplicity* due to a difference between their essences is at all possible with regard to them because they are not bodies...” (Pines 258)

Maimonides had promised in the last two chapters, and particularly Guide 2:2, that:

“... We will... show that their [the Aristotelians’] theory [of the Separate Intellects]... is in harmony with the teaching of Scripture concerning the existence of angels. After the full treatment of this subject, we shall return to our task and discuss the theory of *creatio ex nihilo*.” (Guide 2:2)

In the last chapter, Guide 2:3, he claimed that the theory of the Separate Intellects was consonant with Scripture, especially its interpretation in Midrash. He tells us now that “the intellects” are the “angels which are near to him” (*ha-malakhim ha-m’karevim*), God’s closest intermediaries in the conduct of the universe.

Maimonides fulfills his promise to explain the agreement of Aristotelian theory with Jewish doctrines of angelology in Guide 2:5-7.

All of which would be fine, so long as we overlook what I called in the last chapter “The Other Aristotle Problem,” Aristotle’s explicit identification of the Separate Intellects with the gods of the Olympian pantheon, not the angelic host. Given that Maimonides refers in our chapter to the same volume of *Metaphysics* in which Aristotle made this pronouncement, it is hard to avoid the conclusion that he withheld it to save the doctrine of the Separate Intellects. Maimonides needed those intermediaries to make his argument for creation work. He only later explained that angels are not eternal but created. Since they were created, they could *not be gods*.

Note also his insistence that “*no multiplicity* due to a difference between their [the Intellects’] essences is at all possible with regard to them because they are not bodies,” though he immediately follows with the account of how the *ten* intellects were emanated:

“(Aristotle) came to the following *conclusion*: God created the first Intelligence, the motive agent of the first sphere; the Intelligence which causes the second sphere to move has its source and origin in the first Intelligence, and so on; the Intelligence which sets the sphere nearest to the earth in motion, is the source and origin of the Active Intellect, the last in the series of purely spiritual beings.”

The reason why there could be such multiplicity in the unified world of mind is that each Intellect in the series emanates the one that follows it, as *cause to effect*. This bears out Maimonides’ Proposition XVI, whereby incorporeals are not numerable at all unless they bear a relation of *cause* and *effect* to each other. In Mishneh Torah Maimonides also depicts ten angelic levels arrayed successively.

(Aristotle did not, of course, come to the emanatory “conclusion” suggested, which instead reflects the neo-Platonized Aristotelianism of his successors. Intellects as Greek gods: see *Metaphysics* 12:9:1074b1-15. Maimonides refers to *Metaphysics* 12: see Friedlander, p. 30,

note 1, together with Even-Shmuel, note 6, referring to *Metaphysics* 12:7:1072a, 26-30. Maimonides' argument for creation: see my summary in the chapter-essay on Guide 2:2. Angels are created: Guide 3:13. Ten levels of angels: Mishneh Torah, *Yesodai* 2:5 and 3:9)

IX. Does the Prime Intellect, the First of the Emanated Intellects, Have an Absolute Existence?

Maimonides' concludes his account of the emanation of the intellects with a discussion of the nature of the Prime Separate Intellect, the mover of the outer sphere, and whether its existence is *absolute*.

“It cannot be true that the Intellect that moves the highest sphere should be identical with the necessary of existence [as an *absolute existence*]. For it has *in common* with the other intellects *one separately conceivable thing*, namely, that represented by the act of causing bodies to move. Now every Intellect is *distinguished* from any other intellect with respect to *one separately conceivable thing*. In consequence, each one of the ten Intellects is endowed with two separately conceivable things. Accordingly, there can be no doubt that all of them have one first cause.” (Pines 258-9)

First, why would anyone think that the Intellect appointed over the outer sphere had an *absolute existence*?

The reason was that some Aristotelians argued that God directly moves the first sphere, or that the Prime Intellect's existence was absolute, not contingent (Averroes held both views, that the Prime Cause and the prime mover were one and the same. “Averroes' Lost Treatise on the Prime Mover,” p. 402, Wolfson, *Studies*, v.1).

Maimonides denied this view, holding that the Separate Intellects that moved the spheres, including the outer sphere, were contingent beings.

Why Averroes Rejected Contingency. Maimonides' doctrine continued Avicenna's distinction between contingent and absolute existences. Avicenna was only the most famous advocate of the idea that the distinction between the essence and the existence of any possible being meant that all beings, except One, required an agent to confer *existence* upon their *essence* (upon their form). The result was that, with the exception of God, whose existence was *absolute*, all other beings have only a *contingent* existence in their dependence on God, even if with respect to us their existence is necessary.

Averroes rejected this doctrine, arguing that Avicenna failed to understand the true Aristotelian meaning of possibility or contingency, which is the possibility of a thing *to be otherwise than it is*. According to Averroes, only things that were *not yet existing* could be said to have a contingent existence, since only they had an equally contingent likelihood of being or not being. If, as Avicenna contended, existing things might or might not exist, if they could be otherwise than they are, then their established existence would have been created in vain. But “God and nature do nothing in vain” (Aristotle, *De Caelo* 271a32). It was, therefore, entirely fanciful to think that the natural things could be other than what they are. Averroes thus accepted the necessary and even absolute existence of all of the spheres: their existence was *not contingent*.

Averroes concluded that since they were not composite, their absolute existence *did not require* a compositor.

The result of the Averroist critique would be to make most everything *necessary*, just as Avicenna had made nearly everything *contingent*.

(The Jewish Averroists, including R. Shem Tov and Narboni, maintained that Maimonides had been led astray by the doctrines of Avicenna which, they alleged, took Aristotle's words further than his texts could support. See Even-Shmuel, note 25, P. 100, *ad loc*; Shem Tov, 21b)

Maimonides Derives Contingency from Causation and Motion. Maimonides would not have accepted Averroes' view. He preferred to address the issue from the vantage of the nature of motion. Maimonides' analysis of motion revealed that the Separate Intellects must be composite.

Thus, he observed that the Prime Separate Intellect “... has *in common* with the other Intellects *one separately conceivable thing*, namely, that represented by the act of causing bodies to move.” Nonetheless, it is different

from them in that "... every intellect is *distinguished* from any other intellect with respect to *one separately conceivable thing*."

The distinction that he obliquely referred to in the last clause was that each Intellect is the unique *effect* caused by its preceding Intellect. That is its "separately conceivable thing." Each intellect is *its own species*. It causes its planet to move with its special velocity and direction.

Thus, the intellect that moves Saturn is utterly different from that which moves Jupiter, though they both are movers. That is why Maimonides could maintain that each Intellect manifests this dualism of its shared and unique definitional elements.

Since the Separate Intellects were composites of those definitional elements, and since every composite requires a compositor, they must be contingent existents, dependent upon the One absolute existence, which is God. By this analysis Maimonides avoids the Avicenna-Averroes debate. He concluded that,

"In consequence, each one of the ten intellects is endowed with two separately conceivable things. Accordingly, there can be no doubt that all of them have one first cause."

Conclusion and Promise

"This is the assertion and the opinion of Aristotle; and his proofs for this, in so far as they are probable (*murkhavim kfi sh'efshar*), are set forth in the works of his followers (*talmidav*)."

 (Pines trans, 259)

This portrayal of the world of the Separate Intellects, the noetic world, emerges from the opinions that Aristotle expressed in writing, as developed by his commentators and followers, especially Alfarabi and Avicenna. Those successors filled in the blanks and resolved contradictions according to the neo-Platonized Aristotelianism that prevailed in Maimonides' time.

Maimonides lists what he takes to be the four major doctrines that emerge from his analysis:

"All his [Aristotle's] disquisition may be summed up as follows: 1) All spheres are living bodies, endowed with a soul and an intellect, 2) having a mental representation and an apprehension of the Deity and also a mental representation of their own first principles. In that which exists, 3) there are Separate Intellects that are in no way a body. 4) All of them overflow [emanate] from God, may He be exalted, and they are the intermediaries between God and all these bodies." (Pines trans, 259)

To restate, Maimonides' four summary conclusions of this chapter are that:

1. The spheres are physical bodies, but are animate and intelligent.
2. The sphere's intellect/soul can apprehend God as well as the Separate Intellect that is its source.
3. Those Separate Intellects are entirely incorporeal, *ie, separate* from matter.
4. The Separate Intellects are emanated from God. They are the intermediary agents that effectuate His will toward the substances in our world.

He concludes, "I now shall explain to you in the following chapters what in our Law corresponds to these opinions and what in it *differs* from them." They contain three concepts that differ from the Torah's view.

- Aristotle's doctrine makes God the *cause of* the motion of the Separate Intellects but not the *creator* of the spheres or of the elements. Aristotelian matter was eternal: it could not be created nor destroyed.
- Aristotle thought that the concept of *creation* was incomprehensible. For him, nothing comes from nothing, *ex nihilo nihil fit*. God would have *changed* if He created the universe, which would be absurd.
- Finally, Aristotle's intellects are the uncreated Greek gods, not God's angelic *creatures*.

Maimonides' promises that in the coming chapters he will analyze Aristotle's doctrines, noting those elements which harmonize with our Torah, but also refuting those that oppose it, concluding with his argument that the Torah's doctrine of creation is the right doctrine.

The Problem of The Paradigm

Beyond Maimonides' problems with the cosmological-religious paradigm of the Aristotelians lies our own struggle with its overbearing weight and complexity. Thomas Kuhn places the question in historical context:

“The (Copernican) Revolution was an incredibly long time coming. For almost 1800 years, from the time of Apollonius and Hipparchus until the birth of Copernicus, the conception of compounded circular orbits within an earth-centered universe dominated every technically developed attack upon the problem of the planets, and there were a great many such attacks before Copernicus'. Despite its slight but recognized inaccuracy and its striking lack of economy..., the developed Ptolemaic system had an immense lifespan, and the longevity of this magnificent but clearly imperfect system poses a pair of closely related puzzles: How did the theory gain so tight a grip upon the imagination of the astronomers? And once gained, how was the psychological grip of this traditional approach to a traditional problem released? Or to put the same question more directly: why was the Copernican Revolution so delayed? And how did it come to pass at all?.... A scientist must believe in his system before he will trust it as a guide to fruitful investigations of the *unknown*.... But the scientist pays a price for this commitment to a particular alternative: he may make mistakes. A single observation incompatible with his theory demonstrates that he has been employing the wrong theory all along. His conceptual scheme must then be abandoned and replaced. That, in outline, is the logical structure of the scientific revolution.... (Nonetheless) as we have already begun to discover, observation is never *absolutely* incompatible with the conceptual scheme.... (Thus) the emphasis on logical incompatibility disguises an essential problem.... How can a conceptual scheme that one generation admiringly describes as subtle, flexible, and complex become for a later generation merely obscure, ambiguous and cumbersome?.... A conviction of this sort is difficult to break, particularly once it has been embodied in the practice of a whole generation of astronomers who transmit it to their successors through their teaching and writing. This is the bandwagon effect in the realm of scientific ideas.... (The terracentric spheres) provided a fruitful guide to the solution of problems outside as well as inside astronomy. By the end of the fourth century BCE it had been applied [by the Greeks] not only to the problem of the planets but also to terrestrial problems like the fall of the leaf and the flight of an arrow, and to spiritual problems like the relation of man to his gods.... The astronomer could no longer upset (this universe) without overturning physics and religion as well.” (*The Copernican Revolution*, 74-77)

Format demands of this chapter-essay limit our response. We can, however, assert that for these and many other reasons, by the 13th century Judaism recognized the need to extract religion from the grip of astronomy, to remove the *Sefirot* from the spheres.

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