The Blasphemy of Alfonso X: History or Myth?

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1. INTRODUCTION

It is often said that many adherents of the Ptolemaic System took it to be merely a calculational device and not a true representation of the heavens. Among the small number of medieval scholars who worked in astronomy and for whom there is some evidence to suggest that they held this position is King Alfonso X of Spain (died 1284), best known in the history of astronomy for his sponsorship of the Alfonsinic Tables whose popularity continued even as late as the seventeenth century. For example, in Dreyer's still standard history of astronomy we read: "Apparently the King [Alfonso X of Castile] must have had his doubts about the physical truth of the [Ptolemaic] system, judging from his well-known saying that if God had consulted him when creating the world,

This study was stimulated by a question concerning the ultimate source of Kuhn's reference to Alfonso which J. Haugeland asked me in 1984. (As a result of this research I won a wager of five dollars from him.) In addition, I am grateful to Alan C. Bowen, Jerry R. Craddock, and Keith McDuffie for their translations of the Latin and Spanish texts, and to Stephen C. Wagner for locating the passage in Montucla 1799. Moreover, Michael Crowe kindly called to my attention some passages in H. Blumenberg's recent book in which references to Bayle and Fontenelle are found (The Genesis of the Copernican World [Cambridge, MA, 1987], pp. 259-60).

1. For a recent claim that the Alfonsinic Tables first appeared in Paris ca. 1520 and that there was no antecedent Castilian text composed at the court of Alfonso, see E. Pouille, "The Alfonsinic Tables and Alfonso X of Castile," Journal for the History of Astronomy 19 (1988): 97-115 (where an earlier version of my paper is cited on p. 113 as: "Voltaire and the Blasphemy of Alfonso X").
he would have given Him good advice. There are two components of this story: (1) that Alfonso uttered a phrase something like, if God had consulted me concerning the creation, I would have given Him good advice, and (2) that this statement was intended to reflect his skepticism concerning the reality of the Ptolemaic description of the heavens. Since this passage continues to be cited despite, as we shall see, its lack of historical foundation, it seems worthwhile to trace the elements of the story. It is noteworthy that almost all the citations fail to include their sources, and this has impeded the identification of the lines of transmission. Despite such difficulties, it will be shown that the statement attributed to Alfonso first appears in a polemic against him some sixty years after his death and lacks support in any thirteenth-century document (see section 2, below), and that its astronomical interpretation indicating skepticism about the Ptolemaic System goes back no earlier than the latter part of the seventeenth century (see section 4, below).

2. THE CHRONICLE OF PEDRO AFONSO

There is no contemporary source that ascribes this saying to Alfonso; its earliest occurrence, according to Craddock, who only recently identified the relevant passages, is in the Crónica geral de 1344, a polemical tract against the dynasty of Alfonso X, which was composed by Pedro Afonso (died 1354), conde de Barcelos and bastard son of King Dinis of Portugal (reigned: 1279–1325). The story here is filled with legendary features involving the parents of Alfonso, predictions about Alfonso by a Greek woman fortune teller, a friar who demands that Alfonso admit his sin and do penance, and a bolt of lightning that leads the king to confess the "sin of blasphemy he had uttered against God." The blasphemous phrase is reported as: "If he were with God when He made the world, He would have corrected (emendara) many things to make them better than what was done." For us it is important to note that no connection with astronomy or astrology is present in this account.

Because Pedro Afonso's version of this story is the earliest source, we offer here an extended set of excerpts from it (page numbers refer to Craddock 1986; some passages have been summarized).

The narration (214–16) tells how the queen explains her tears to Don Fernando, the king. In effect, these are her words (she has explained


that a Greek woman foretold that she would marry a great king, and that their son [Alfonso X] would be even greater).

And that he would be even more powerful and honored than his father and would reign a long time. And that because of a word of arrogance he would speak against God, he would be disinherited of his land except for a city in which he would die.4

King Fernando learns of a misappropriation of war funds by his son Alfonso (216).

And [the king told them how] because of that word that [Alfonso] was to utter against God he was to be disinherited. That [word] was to cause Him [God] the greatest grief ever caused Him by men up to that time since the death of Jesus Christ. And this certainly appeared [to the king] to be the truth, in view of the deeds he [Alfonso] was committing against him and against those who were in the service of God.5 -

The knight Pero Martínez learns of the incident in a vision.

And the knight [Pero Martínez] asked how it came about that God was so angry. And that man who appeared to him said: Don Alfonso, while in Seville, said in public [lit. in the plaza] that if he were with God when He made the world that He would have corrected many things to make them better than what was done and that for this reason God was angry with him.6

The friar who saw the same vision as the knight comes and tells King Alfonso that he must confess his sin and do penance (218).

And he came to the king and told him to do penance for the sins he had committed and that it would be to his advantage [to do so], and especially those damned and perverse words full of great pride and said with great arrogance and vanity, which he had said many times in public saying that if he had been God's advisor when He made the world, and God had taken his advice, He would have done it better than He did. If he did not [repent] he should not doubt that God would reveal his power over him. And he responded with great anger and words of fury and said: "I tell you the truth in what I say. And for what you say I consider

4. "& que seria avn mas poderosa & ho(n)brado que su padre & asi duraria gra(n) tiempo. Et que por una palabra de soberaja que dirigia contra dios auja de ser desheredado de su tierra salvo de vna cibdat enque auja de morir" (Craddock, 1986), p. 215.
5. "Et co(m)mno por aquella palabra q(ue) auja de dezir contra dios auja de ser desheredado. Ca le faria el mayor pesar que nunca le om(n)ejfiziera desde la muerte de ih(es)u xpis(s)io fasta enton(es). Et que esto parece ca muy bien ser verdad por las obras que el fazia contra el & contra aquellos que estau(n) en el seruiciio de dios" (Craddock, 1986), p. 216.
6. "Et el cauallero [Pero Martínez] pregunt(ole) por que era esto que ios del tal sa(n)na auja. Et aquel om(n)ejque aparec(ie)lo dixo. don alfonso estando en sejilla dixo en placa que si el fuera con dios quando fazia el mundo q(ue) muchas cosas emendaria enq(e)se faziera mejor quelo que se fizio & que por esto era dios yrando contra el" (Craddock, 1986), p. 217.
you a fool and a dullard." And the friar quit his presence and left. And the following night God sent such a great storm of lightning and thunder that it was a great marvel. And in the bedchamber where the king lay with the queen a lightning bolt fell which burned the queen's headdress and most of the other things that were in the room. 2

Alfonso confesses his erring ways right after the fire.

And the next day the king prayed and confessed publicly that sin of blasphemy that he had uttered against God. 8

3. THE ANNALS OF GERÓNIMO DE ZURITA

The next version of this story cited by Craddock occurs in a sixteenth-century printed text by Gerónimo de Zurita (1512–80), a noted Spanish historian of the period, which depends on the Crónica geral de 1344. The passage that interests us appears in his Los Anales de la Corona de Aragón and serves to explain the disastrous character of Alfonso's reign:

For this reason [explaining why Alfonso's reign was a disaster], some authors, among them King Pedro IV of Aragon, write that he was so insolent and arrogant, because of his great knowledge of human sciences, and for his knowledge of the secrets of nature, that he arrived at the point of scorning the providence and supreme wisdom of the universal Creator, and [said] that if he had been His advisor at the time of the general creation of the world and of all the things in it, and had found himself with God, some things would have been produced and formed better than they were made; and others would not even have been made, or they would have been improved and corrected (emendaran y corrigieran); and so it seemed clearly that through this very great blasphemy, Our Lord let it be known how perverse his judgment and understanding were, and he was disinheritied of his kingdoms, and abandoned by all the Christian princes, and his line of successors was broken in the fourth generation, and this is what an old author of the things of Portugal recounts, [all of which] was revealed to

7. "& vino al rey & dixole q(u)e fizesse penitenc'ia delos pecados que auyan fechos & que farea su pro & majormente de aquellas mdlitas & descomulgadas palabras coniplidas de mucha soberiba & dichas con grant presunc'ion & vanijat ('de)las cuales dixera muchas vez'es en pal'a diziendo quefia fuera consejero de dios quando fizer'a el mundo & lo q(u)z'eria creer quelo fizer'a mejor que lo fizo. si non que non dubdase que Dios esob bre el non mostrase el su poder. Et el respondio con vulpo yrado & palabras de sa(n)na & dixo yo digo verdad eno que digo. Et por lo que vos dezides tengo uos por nescio & por sinbador. Et el ayre y pariso delante del & fuese luego. Et esa noche siguient' enbjo dios tan grant tempesdad de relanpagos & truenos que esto era una grant marauilha. & enla camara donde el rey yax'a conla reyna cayo vn rayo que quem'no las tocas delas reyna & grant parte delas otras cosas que ay estau(a)n enu camara" (Craddock, 1986), p. 218.

The Blasphemy of Alfonso X

The dependence on the Crónica geral de 1344 is seen most clearly from Zurita's final remark. "This is what an old author of the things of Portugal recounts." Although Alfonso's words are specifically called blasphemous, again there is no mention of astronomy or astrology.

4. THE HISTORY OF SPAIN BY RODRIGO SANCHEZ DE ARÉVALO

Another early printed source gives a slightly different version of this story. In 1579 Robert Bell published a collection of Spanish histories that included a work by Rodrigo Sanchez de Arévalo (1414–70), who was successively bishop of Oviedo, Zamora, Calahorra, and Palencia. Rodrigo tells us that Alfonso was called "astrologus," a term that signifies either an astronomer or an astrologer or both. Moreover, in the same chapter, to account for the misfortunes of Alfonso's reign, he describes Alfonso's blasphemy, leaving out most of the details and referring only to the "annals of the Spaniards" as his source. Here the blasphemy is given as, "For he used to state openly in blasphemous speech that if he had taken part in a council of God, Most High, at the beginning of the creation of Man, some things would have been arranged better and in a more orderly fashion." It is important to see that this statement is not linked to astronomy or astrology, and that there is certainly no hint of criticism of Ptolemaic astronomical principles.

Rodrigo's version of the story is the following:

Chapter 5: Why this Alfonso X was called an astrologus, how he declared arrogantly that the works of God could have been made better, the manner in which he was ruined from on High, concerning the misfortunes and disasters he suffered for this reason, and concerning the other events in his time.

9. "Por esta causa escriten algunos autores, y entre ellos el Rey don Pedro el quarto de Aragon, que fue tan insolente y arrogante, por la grande noticia que tuvo de las ciencias humanas, y por los secretos que supe de naturaleza, que llegó a dezir en menosprecio de la providencia y suma sabiduria del universal Criador, que si el fuera de su consejo al tiempo de la general creación del mundo, y de lo que en el se encienda, y se hallara con el, se vieren producido y formado algunas cosas mejor que fueron hechas; y otras, ni se hirieran, o se emendaran, y corrigieran; en que paréció manifiestamente, que por tan grande blasfemia como esta permitio nuestro Señor, que se conociese, quan peruyrdo juicio y entendimiento fue el suyo, y fue desheredado de sus Reynos, y desamparado de todos los Príncipes Cristianos, y que faltase en la quarta generacion la línea de sus sucesores, y así cuenta vn Autor antiguo de las cosas de Portugal, que fue revelado a la Reyna doña Beatriz su madre, por una Griega gran hechizera, y por diversas visiones, que asea de morir desheredado." (Gerónimo de Zurita, Anales de la Corona de Aragón (Zaragoza, 1585)), book 4, chap. 47, pp. 274v–275r.
Not only did this Alfonso X strive to enhance the glory of his name in establishing laws, in pouring out his wealth, and in other splendid deeds, but either out of arrogance or because his nature drove him to it, he used to delight in astronomy. Wherefore, he was called an astrologus. In his name, perhaps through his knowledge, the Alfonsoic Tables and other astronomical/astrological studies were compiled, and under his royal name they were elaborated. This Alfonso, as the annals of the Spaniards relate, tried to judge and even to correct the divine works, which are most perfect and created with the highest wisdom in weight, number, and measure. For he used to state openly in blasphemous speech that if he had taken part in a council of God, Most High, at the beginning of the creation of Man, some things would have been arranged better and in a more orderly fashion (ordinatus) . . .

5. VOLTAIRE AND HIS SOURCES

The key text would seem to be that of Voltaire, for he apparently claims to be the first to understand Alfonso’s words to refer to the Ptolemaic System. In a chapter on the history of Spain in the twelfth and thirteenth centuries in Voltaire’s Essai sur les moeurs et l’esprit des nations (1756), we read:

It has been said of him [Alfonso X] that while studying the sky he lost the earth. This trivial thought would be just if Alfonso had neglected his affairs in favor of study; but he never did this. The same profound spirit that made him into a great philosopher [also] made him into a very good king. Yet many authors accuse him of atheism for having said, “If he had been in the council of God, he would have given Him good advice concerning the movement of the celestial bodies.” These authors did not notice that this pleasantry of the wise prince fell uniquely on the Ptolemaic System, whose inadequacy and contradictions he felt.11

10. “Quare iste Alfonso X. dixit est Astrologus, & quomodo arroganter opera Dei dixit melius fieri posse, & qualiter fuit divinitus correptus, & de infortuna & incommode quae ea causa passus est, & de caeteris incidentiis tempore suo. Caput V.


11. “On a dit de lui [i.e., Alfonso X] qu’en étudiant le ciel il avait perdu la terre. Cette pensée triviale serait juste si Alfonso avait négligé ses affaires pour l’étude; mais c’est ce qu’il ne fit jamais. Le même fonds d’esprit qui en avait fait un grand philosophe en fit un très bon roi. Plusieurs auteurs l’accusent encore d’athéisme, pour avoir dit "que s’il avait été du conseil de Dieu, il lui aurait donné de bons avis sur le mouvement
Notice that the blasphemy of Alfonso has been reduced to a “pleasantry”! Again no source is cited but, the divorce of this story from its context, the favorable attitude to Alfonso, and the allusion to astronomy, suggest that Voltaire depended on Rodrigo rather than on Zurita.

It can now be shown that Voltaire did in fact depend on Rodrigo and that P. Bayle’s *Dictionnaire historique et critique* (first edition 1697) was probably his principal source. In a note to the article “Castille,” Bayle cites the passage from Rodrigo in Latin and presents a French translation of it. Bayle goes on to relate Alfonso’s blasphemy to a criticism of Ptolemaic astronomy as follows:

Although the silence of so wise an Historian as to the System of Ptolemy ought to be of some weight, yet I believe that if Alphonsus exercised his audacious Censure on any part of the Universe, it was on the celestial Sphere. For, besides that he studied nothing more, it is certain that, at that time, Astronomers explained the Motion of the Heavens by such intricate (embarrassées) and confused Hypotheses, that they did no Honour to God, nor answered in any wise the Idea of an able Workman. So that it is likely it was from considering that Multitude of Spheres, of which Ptolemy’s System is composed, so many eccentric Circles, so many Epicycles, so many Librations, so many Vehicles, that he happened to say, *That if GOD had asked his Advice, when he made the World, he would have given him good Counsel.*

In a marginal note Bayle cites Fontenelle’s *Entretiens sur la pluralité des mondes* (1686) where we read that the “King of Castille,” who apparently


12. “Si l’avoir assisté au conseil de Dieu lors de la création de l’homme, il y avait certaines choses qui seraient en meilleur ordre qu’elles ne sont” (Bayle, 1687), see note 15.


14. A marginal note refers us to Juan de Mariana, *Historiae de rebus hispaniae* (Toledo, 1569), book 14, chap. 5, p. 668. In this chapter Mariana describes the reign of Alfonso and alludes to his blasphemy without citing it.

15. “Encore que le silence d’un si sage Historien [mgs. adds: Mariana] par rapport au Système de Ptolémée doive être de quelque poids, je ne laisse pas de croire que si Alfonse porta sa critique audacieuse sur quelque partie de l’Univers, ce fut sur les Sphères célestes. Car, outre qu’il n’étudia rien tant que cela, il est sûr que les Astronomes expliquoient alors le mouvement des cieux par des Hypotheses si embarrassées et si confuses, qu’elles ne faisaient point d’honneur à Dieu, et ne répondoient nullement à l’idée d’un habile Ouvrier. Il y a donc aparence que ce fut en considérant cette multitude de Spheres dont le Système de Ptolémée est composé, tant de cercles eccentrickes, tant d’épicycles, tant de librations, tant de déférans, qu’il lui échapa de dire, que si Dieu l’eût appelé à son conseil, quand il fit le monde, il lui eut donné de bons avis” (P. Bayle, *Dictionnaire historique et critique* [Rotterdam 1697]; I have depended on the 9d ed. [Rotterdam: Michel Bohm, 1720], vol. 1:805 [article “Castille”, Note H]).
was not very devout, said that if God had called him to His council when He made the world, he would have given Him good advice. Fontenelle adds that "[Alfonso’s] thought is too impious (libertine), but it is quite amusing (plaisant) that this System [of astronomy] was then an occasion for sin, because it was too confused." Fontenelle’s account was translated into English shortly after it appeared in French:

The Ancients imagined a strange Labyrinth of Circles to save those extravagant Appearances. So great was the intricacy of those Circles, that then when men knew no better, it was said by a King of Aragon (sic), a great Mathematician, but something irreligious, That if he had been of God Almighty’s Council when he made the World, he would have advised him better. "It was the expression of a Libertine; but pleasant enough, that at that time the great confusion of that System was the occasion of sin."

According to Shackleton, in May 1686 P. Bayle wrote a review of the first edition of Fontenelle’s *Entretiens* in which Bayle noted that “Aragon” should be corrected to “Castille”. It seems that at least some of the subsequent French editions have been so corrected.

Note that Fontenelle does not use the word blasphemy, and calls Alfonso’s critique of Ptolemy “amusing,” and this seems to lie behind Voltaire’s characterization of Alfonso’s remark as a “pleasantry.” Fontenelle cites no source, but, according to Shackleton, it is likely to have been a historical work by Moreri (first edition, 1681) in which Ro-

16. "Les Anciens avoient imaginé je ne sait combien de Cercles différemment entre-lassées les uns dans les autres, par lesquels ils sauvoient toutes ces bizarreries. L’embaras de tous ces Cercles estoit si grand, que dans un temps où l’on ne connaissait encore rien de meilleur, un Roy de Castille, grand Mathématicien, mais apparentement peu devot, disoit que si Dieu l’eust appélé à son Conseil quand il fit le Monde, il luy eust donné de bons avis. La pensée est trop libertine, mais cela meme est assez plaisant, que ce Système fust alors une occasion de peche, parce qu’il estoit trop confus" (B. de Fontenelle, *Entretiens sur la pluralité des mondes* [Paris, 1686]: I have depended on the noun. ed. [Amsterdam: Pierre Mortier, 1687], pp. 38–39).


20. "On dit qu’Alphonse lut quarante fois toute la Bible aves ses Gloses, et que ses grandes occupations ne l’éloignoient point de l’étude et de ses observations Astronomiques. Il disoit ordinairement, qu’il auroit mieux aimé vivre en simple particulier, que de manquer de science et d’érudition. . . . On assure encore qu’il avoit de la piété, mais une réponse qu’on lui attribue, détruit ce sentiment: car considérant en Astronomie les merveilles de la Création du Monde; il osa dire que si Dieu lui cdt fait l’honneur de lui appeller, il lui aurait donné de bons conseils" (L. Moreri, *Le Grand Dictionnaire historique* [Lyon, 1681]: I depended on the edition of Amsterdam: F. Brunel, 1740, vol. 1: 290b [article “Alphonse X”]; Mariana (1552) and Rodrigo Sanchez de Arévalo (1579) are included in the list of sources appended to the article.)
drigo's work is cited. Since Moreri did not give an astronomical interpretation to Alfonso's remark, Fontenelle is the earliest source I have found in which this association is explicit. It is also noteworthy that only Bayle and Moreri cite their sources. There follows Moreri's account as it appeared in English in 1701:

He had read the Bible 14 times, with several Commentaries upon it; he was a great Astrologer, and after he had deeply considered the Fabric of the World, the following saying of his, reported by Lipsius, denotes him to have been none of the most Pious, viz. That if God had advised with him in the creation, he would have given him good counsel.21

As in Moreri's French text, Mariana (1592) and Rodrigo (1579) are included in the list of sources appended to the English translation of his article. On the other hand, Lipsius is not mentioned in the original French version; however, as Bayle indicated (in a note to the passage cited above), J. Lipsius mentioned Alfonso's blasphemy without any astronomical interpretation.22

6. THE HISTORY OF MATHEMATICS BY MONTUCLA

In Montucla (1799), we read that Alfonso was shocked by the [Ptolemaic] hypotheses, and this led him to utter a pleasantry that is not respectful. Montucla's use of the expression "better and simpler order" follows Bayle's account (taken in turn from Rodrigo), and not that of Voltaire; but the term "pleasantry" surely comes from Voltaire:

Alfonso, shocked by the complicated hypotheses that he had to admit in order to reconcile all the celestial motions, could not restrain himself from uttering a pleasantry that is not very respectful. He said that if God had called him to His council when He created the Universe, things would have been in a better and simpler order. If we do not find in this expression much evidence for the religion of this prince, at least it teaches us that he regarded it as a blemish on the work of the universe.23

7. THE HISTORY OF ASTRONOMY BY DELAMBRE

Delambre's series of works on the history of astronomy composed at the beginning of the nineteenth century is still unsurpassed in many

23. "Alphonse, choqué des hypothèses embarrassées qu'il fallait admettre pour concilier tous les mouvements célestes, ne put retenir une plaisanterie peu respectueuse. Il dit que si Dieu l'eût appelé à son conseil, lorsqu'il créa l'Univers, les choses eussent été
respects. In a volume on medieval astronomy (1819), he indicates his awareness of this "pleasantry"; as usual, no source is cited and the "pleasantry" is different from the passages previously cited. In fact, it seems to be based on Voltaire's version, from which the reference to the pleasantry was taken, together with the passage in Bayle's *Dictionnaire*. This is Delambre's version of the story:

Alfonso died at the age of 58 years in 1284, after a very unfortunate reign; he is often cited for his saying, that if God had consulted him at the moment of the creation, he would have given Him good advice. One has seen in this pleasantry a mark of impiety that concerns primarily the complication (complication) and the incoherence of the Ptolemaic System. However, it would seem that Alfonso accepted the reality of this system for, in regard to reforming [astronomical] tables, he did not give to his astronomers the advice he would have wished to give to God.24

Note that the expression found elsewhere (for example, in Montucla 1799, cited above), *hypothèses embarrassées*, is here called *complication*, which supports the rendering of *embarrassé* as "complicated" (compare Des Maizeaux's translation of Bayle, cited above).

8. TWENTIETH CENTURY REFERENCES TO THE MYTH OF ALFONSO

Dreyer's history of astronomy is often dependent on Delambre: here Dreyer has taken over Alfonso's statement while reversing Delambre's interpretation of it. According to Dreyer, Alfonso had his doubts about the physical truth of the Ptolemaic System, whereas Delambre claimed that he accepted the reality of that system. Following Dreyer, a number of recent scholars have continued to draw upon this legend for various purposes.

In T. S. Kuhn's now classic *The Structure of Scientific Revolutions* (1962), Alfonso's remark serves to show that in the thirteenth century some scholars were aware that the adjustments in the Ptolemaic System, made to account for the discrepancy between observations and calcula-

dans un ordre meilleur et plus simple. Si nous ne trouvons pas dans ce mot une preuve de la religion de ce prince, il nous apprend du moins qu'il le regardait comme une tache à l'ouvrage de l'Univers" (J. F. Montucla, *Histoire des Mathématiques* [Paris Year 7 (1799)], vol. 1, p. 511).

24. "Alphonse mourut âgé de 58 ans, en 1284, après un règne très malheureux; on a cité souvent de lui ce mot, que si Dieu l'eût consulté au moment de la création, il lui eût donné de bons avis. On a cru voir une marque d'impérét dans cette plaisanterie, qui porte principalement sur la complication et l'incohérence du système de Ptolémée. Il paraîtrait cependant qu'Alphonse croyait à la réalité de ce système, puisqu'il n'a pas donné à ses astronomes, pour réformer les tables, les conseils qu'il aurait voulu donner à Dieu" (J. B. Delambre, *Histoire de l'astronomie du moyen âge* [Paris, 1819], p. 248).
tions, had led to complexity rather than increased accuracy.\textsuperscript{25} Kuhn then cites Alfonso's remark in a form close to that of Dreyer. This is not the place to argue against Kuhn's view that adjustments in "Ptolemy's system of compounded circles" were made to account for observational discrepancies,\textsuperscript{26} but we may note that there is no contemporary evidence to indicate that Alfonso expressed doubt about the Ptolemaic System, based on observations or for any other reason.

A recent allusion to Alfonso's remark in a context similar to that of Kuhn is to be found in Haugeland: "Unfortunately, as more careful observations accumulated, it became progressively harder and more complicated to square them with the accepted geocentric (Earth-centered) theory. The situation was so serious and exasperating, especially with regard to predicting the positions of the planets, that by the thirteenth century, Spain's King Alfonso X could exclaim: 'If God had consulted me when creating the universe, He would have received good advice!'"\textsuperscript{27} In a note to this passage, Haugeland adds that "whether the story is true or not, the fact that it was told (and believed) suffices for the point in the text." Here, as in Kuhn, the theme is that the accumulation of observations and their discrepancies with theory led Alfonso to make his declaration. Haugeland cites Kuhn and notes that A. Koestler quoted Alfonso's remark in a similar context.\textsuperscript{28}

In his account of Alfonso's blasphemy as reported in the Crónica geral de 1344, J. R. Craddock adds a note: "See . . . Dreyer . . . , and . . . Kuhn. . . . Bernard R. Goldstein, University of Pittsburgh, to whom I owe the references just cited, suspects that Alfonso X's alleged dissatisfaction with Ptolemy's epicycles is just another myth that has grown up around the figure of the learned King."\textsuperscript{29} We can now put this myth aside as just another attempt to enliven the history of science.

\textsuperscript{25} "Given a particular discrepancy [between observations and calculations based on Ptolemy's models], astronomers were invariably able to eliminate it by making some particular adjustment in Ptolemy's system of compounded circles. But as time went on, a man looking at the net result of the normal research effort of many astronomers could observe that astronomy's complexity was increasing far more rapidly than its accuracy, and that a discrepancy corrected in one place was likely to show up in another.

"Because the astronomical tradition was repeatedly interrupted from outside and because, in the absence of printing, communication between astronomers was restricted, these difficulties were only slowly recognized. But awareness did come. By the thirteenth century Alfonso X could proclaim that if God had consulted him when creating the universe, he would have received good advice" (T. S. Kuhn, The Structure of Scientific Revolutions [Chicago and London, 1962], pp. 68–69).


\textsuperscript{29} Craddock, 1986, p. 209, n. 21.