

ASTRONOMY AND ASTROLOGY IN THE WORKS OF CHAUCER

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Introduction to Geoffrey Chaucer

Geoffrey Chaucer is a poet who has made such allegorical and structural use of astronomical elements in his works, that no other poet has managed to surpass him. From his works, it is evident that Chaucer was extremely well versed in astronomy albeit the astronomy incorporated in his works are concealed in a way that it is difficult to extract his full knowledge of astronomy. Astronomy was not the key topic in Chaucer's works although his works are the key to our discovery of his knowledge on astronomy. He is well read and often viewed as a philosophical poet. Chaucer produced a work of astronomical reference, the *Treatise of the Astrolabe*, one he had never completed; and this enables us an insight to the world of astronomy in the fourteenth century, especially Chaucer's knowledge on the subject.

This project falls in two parts. In the first part of our project, we attempt to introduce briefly some of the basic astronomical concepts and Chaucer's astronomical works. In the second part, we will seek to uncover and further explain the astronomical allegories in some of his poetry, namely selected pieces from *The Canterbury Tales*.

Chaucer's Astronomy

Before introducing Chaucer's concepts about astronomy and any further explanation of his allegories, a basic concept and terminology of ancient astronomy will first be presented.

The Celestial Sphere

The celestial sphere is widely used as an astronomical concept in the fourteenth century. This concept is often spoken of as "spherical astronomy" and it has the basis of the Earth being in the middle of a sphere and which all the heavenly bodies are situated on the surface of it.

This concept is still acknowledged with respect to the finding of angular distances between heavenly bodies. This is such as the distance between these heavenly bodies and the Earth is so great that the difference of parallax from different places on the Earth's surface makes almost no difference to the angles at which they are seen; that is to say that they seem to be on a single spherical surface, the celestial sphere. However, problems arise when we take into consideration the relatively nearer objects such as the moon or the sun, and alterations have to be made.

Under this concept of the celestial sphere, the Earth is fixed at the center and the sphere, together with the heavenly bodies on its surface, rotates around the North and South celestial poles. The North and South celestial poles are direct extensions of the poles on the Earth and the sphere turns approximately once each day around these poles. Celestial bodies rise in the eastern part of the horizon and set in the west. However, the angular distance between some of the stars and the poles may be too small that these heavenly objects never rise above or set below the horizon, depending on the observer's latitude on Earth. The horizon is a great circle on the celestial sphere that that

divides it into two parts, namely the visible and invisible parts and this plane is tangent to the observer's location. The visible part of the celestial equator is actually the part of it that is illuminated by the sun and the invisible part is then the parts on the celestial sphere that are not illuminated. The celestial equator is a line cutting across the sphere in points exactly east west and is located exactly mid-way between the celestial poles. The ecliptic is the path of the sun throughout the year and the points that the celestial equator and the ecliptic meet are the equinoxes.

The moon and the planets move apparently move around the celestial in a clockwise direction as viewed from the North Pole. In Chaucer's day, it is believed that the planet Mercury moved the fastest and Saturn moves the slowest, taking approximately thirty years for a single revolution while the moon took approximately thirty days to revolve around the stars. The moon and the planets follow a path that lie within a band, the zodiac, relatively near to the ecliptic (12 degrees in width).

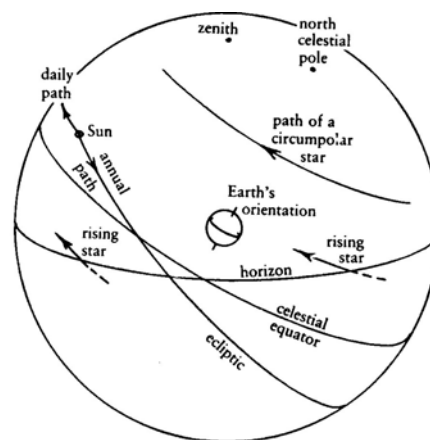


FIG. 1. The celestial sphere. The stars and planets are taken to be on the surface of a sphere by comparison with which the Earth is insignificant in size. The sphere is supposed to rotate with the daily rotation about its poles, directly above the Earth's. Stars, planets, Sun, and Moon rise in due time above the eastern half of the horizon and set on the western half. Stars whose angular separation from the poles is sufficiently small may be permanently above or below the horizon. The plane of the great circle representing the horizon is the plane tangential to the Earth at the observer's location. The celestial equator (or 'equinoctial') is midway between the celestial poles, and cuts the horizon circle in points strictly east and west. The ecliptic is the path that the Sun appears to follow in its annual course. The points in which the ecliptic and equator meet are the equinoxes; that shown on the figure is the autumnal equinox, when the Sun passes from the northern half of the sphere to the southern.

The precession of the equinoxes (which can be explained as the clockwise rotation of the poles with respect to the stars) causes the Sun's vernal equinox point to shift westward and star longitudes to increase with time. This is to say that the constellations in the zodiac have been drifted away from their positions in an anti-clockwise direction. During Chaucer's time, it is believed that more than half of the constellation Leo was in the sign of Virgo. Hence, we have to bear this in mind when dealing with the astrology in Chaucer's works.

Another view of Astronomy in the fourteenth century is that of nine concentric spheres surrounded the Earth. These nine spheres consist of the moon, Mercury, Venus, the Sun, Mars, Jupiter, Saturn, the fixed stars and lastly the First Moved (Premium Mobile). The seven planets including the moon and the sun move through the zodiac and the motion of the eighth sphere (sphere of stars) is caused by the precession. The ninth sphere (Premium Mobile) is commonly known as the "Unmoved Mover". This was required as Aristotle's belief that there was no such thing as uncaused motion; a series of movers, each causing the movement of the next in the chain, cannot be infinite. Hence, the ninth sphere represents the first cause of all motion in the universe with itself remaining unmoved.

Chaucer's nine spheres, on the other hand, differed from this conventional Aristotelian scheme. His outermost sphere is that of the celestial sphere, followed by Saturn, Jupiter, Mars, the Sun, Venus, Mercury, the moon and the Earth. Besides the reversal of the arrangement, Chaucer also believed that the Earth is the sphere that is not moving and at the bottom. This can be seen from a part in the beginning of *The Parliament of Fowls*, where Chaucer tells the dream of Scipio pointing out the way to heaven that was taken by the "rightful folks".

*“Thanne shewede he hym the lytel Erthe that here is,
At regard of the hevenes quantite;
And after shewede he hym the nyne speres,
And after that the melodye herde he
That cometh of thilke speres thryes thre,
That welle is of musik and melodye
In this world here, and cause of armonye.”*

The Treatise Of The Astrolabe

The Treatise of the Astrolabe is a work of astronomical reference by Chaucer. The Prologue to the *Treatise* mentions that this is a work not written by Chaucer himself but is a compilation of several manuscripts. This was essentially written for his son Lewis, whose education in Astronomy is believed to be taken very seriously. It was the first English publication on such a subject and is an excellent introduction to the geometry of the spheres. This *Treatise* contains more than forty “conclusions” explaining the astrolabe’s use.

The astrolabe is a Greek invention. It consists of one or more circular discs overlain with a circular object with repetitive geometrical pattern being pivoted about a pin at the center. The disc is basically a star map, which is pierced so as to allow certain parts of the disc beneath it to be seen. The whole assembly of the instrument is meant for two purposes, namely for computation and observation. For the ease of observation, the ring and shackle of the instrument enables it to hang in a vertical plane from the thumb of one hand, while astronomical observations of celestial objects can be made with the help of the sighting vanes carried on the centrally pivoted rule. The horizon and the other great circles of the celestial sphere are mapped on the fixed plate of the astrolabe. The daily circular motion of the stars, the equator and the ecliptic are mapped onto the disc as part of the star map.

The Franklin's Tale

The Franklin's Tale is the story of a knight named Arveragus and his beautiful wife, Dorigen. At the same time, there is a young squire named Aurelius, who is secretly in love with Dorigen. While Arveragus is away at war in England, Aurelius made use of an opportunity, during a garden party, to express his love for Dorigen.

Dorigen, who is totally devoted to Arveragus, naturally rejected Aurelius' love. However, she playfully promised Aurelius that if he were able to cause all the rocks from the coast of Brittany to disappear (which is thought to be impossible), she would agree to marry him.

Aurelius, knowing that it is almost impossible for him to fulfill the task set by Dorigen, prays to the Sun to cooperate with the Moon in causing an exceptionally high tide "so great that by at least five fathoms (30 feet) it oversprings the highest rock in Brittany".

Unfortunately, during the next two years, the tide that Aurelius prayed for did not come. Desperate, Aurelius and his brother travelled to the town of Orleans to consult a learned cleric (the Clerk), who supposedly possesses a special knowledge of the workings of the heaven. Through his "magic", and after paying a huge fee, he indeed made the rocks on the coast of Brittany disappear!

A delighted Aurelius looked for Dorigen, reminding her of the promise she made. Dorigen confessed to Arveragus about her rash promise, and agonizes over her unfaithfulness. Arveragus, being a man of honour, sent Dorigen to Aurelius so that she can keep her word. However, Aurelius, in admiration of Arveragus' nobility, frees Dorigen from her promise, and the Clerk of Orleans, impressed with Aurelius' magnanimous nature, waived his enormous fee of one thousand pounds.

The story thus ends with all the characters showing nobility in their actions, and the reader is left to judge who is nobler – Arveragus, Aurelius, or the Clerk of Orleans.

What Are Tides?

The word “tides” is a generic term used to define the alternating rise and fall in sea level with respect to the land, produced by the gravitational attraction of the moon and the sun. It involves a vertical change in the height of the sea surface.

The Cause Of Tides

The earliest theories as to the cause of tides are buried in mythology. Some ancient Chinese believed that water was the blood of the earth, and that tides were the beating of its pulse; others believed that tides were the breathing movements of the earth.

From the seventeenth century onwards, as people’s knowledge of astronomy increased, more and more relationships were noted between the variations of the tides and the rhythmic movements of the moon and the sun. It was Sir Isaac Newton who finally extended his gravitational theory to reveal the forces that govern tides. The equilibrium theory, which Newton came out with, explained that the complicated rhythmic cycles of the tides were governed by the gravitational attractions of the sun and the moon upon a rotating earth.

To all outward appearances, the moon revolves around the earth, but in actuality, the moon and the earth revolve together around their common centre of mass, or gravity. The two astronomical bodies are held together by the gravitational pull exerted mutually upon each other by the earth and the moon (otherwise known as centripetal force). At the same time, these two bodies are kept apart by an equal and

opposite centrifugal force produced by their individual revolutions around the centre-of-mass of the earth-moon system.

This centrifugal force is proportional to the square of the rate of revolution and inversely proportional to the distance between the centre of rotation and the centre of the earth. It is the same at all points on the earth. The gravitational force is also inversely proportional to the square of the distance separating any place on earth from the centre of the moon. It is therefore greater on the side of the earth nearest the moon, and lesser on the side farthest away.

The difference between the centripetal force and the centrifugal force is the tidal force. At the centre of the earth, both forces balance, but at the point of the earth nearest the moon, there is a net tide-producing force, which acts in the direction towards the centre of the moon (gravitation attraction > centrifugal force). On the side of the earth directly opposite the moon, the net tide-producing force is in the direction away from the moon (centrifugal force > gravitation attraction).

The tidal forces acting directly beneath the moon are vertical. They are equal to only 1/10,000,000 of the earth's gravity and the resulting tides produced are too small to measure. At other points on the earth's surface, the tidal forces are different in direction and strength. At points halfway (90 degrees) between zenith and nadir, they are directed downward towards the centre of the earth. At intermediate points, the tidal forces are directed more nearly parallel to the earth's surface. Hence, the combined effect of the tidal forces operating over the whole earth is a tendency to pull it into an ellipsoid (or egg-shape), with bulges beneath and opposite the moon.

The sun influences the tides in a manner somewhat similar to the moon. Although the sun's mass is about 27,000,000 times greater than that of the moon, it is also 389 times more distant from the earth (which is 92,900,000 miles away), as compared to the moon. Since the tidal forces are inversely proportional to the cube of

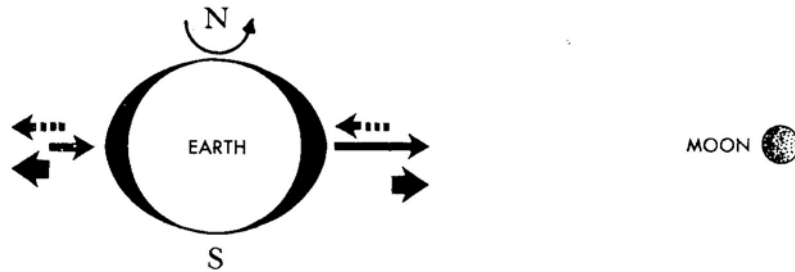
the distance between the earth and the moon and sun, the ration of the sun's tidal force to the moon is thus $27,000,000/389$, which is 0.46 that of the moon.

High tides are produced in the ocean waters by the “heaping” action resulting from the horizontal flow of water towards the two regions of earth representing positions of maximum attraction of combined lunar and solar gravitational forces. Low tides are created by a compensating maximum withdrawal of water from regions around the earth midway between those two bulges on earth. The alternation of high and low tides is caused by the daily rotation of the earth with respect to these two tidal humps and two tidal depressions. It has to be noted that additional non-astronomical factors such as configuration of the coastline, local depth of the water, and other hydrographic and meteorological influences may play a part in altering the range, interval between high and low water, as well as arrival times of the tides.

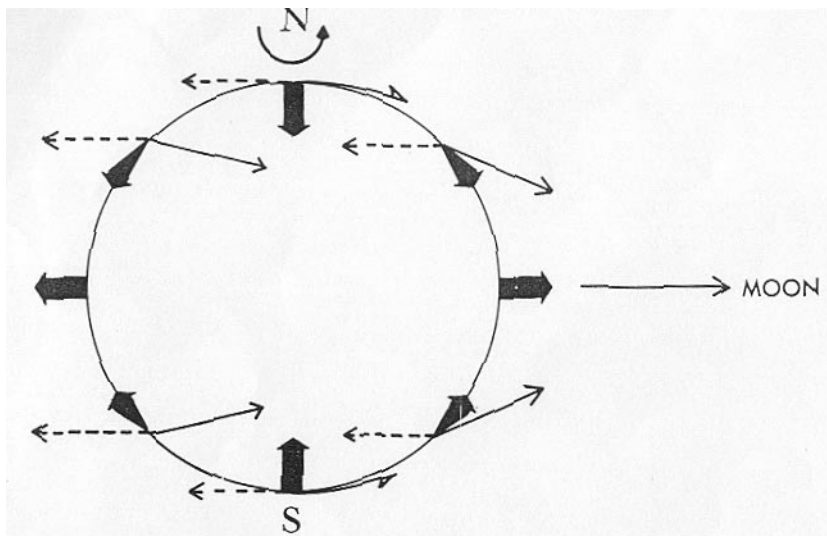
Several independent factors contribute to produce the exceptionally high tide that Aurelius prayed for:

1. When the sun and the moon are in syzygy (that is, when the moon is new or full).
2. When the Earth is nearest to the Sun (or at perihelion).
3. When the Moon is nearest to the Earth (or at perigee).
4. Both the Sun and the Moon has zero declination.

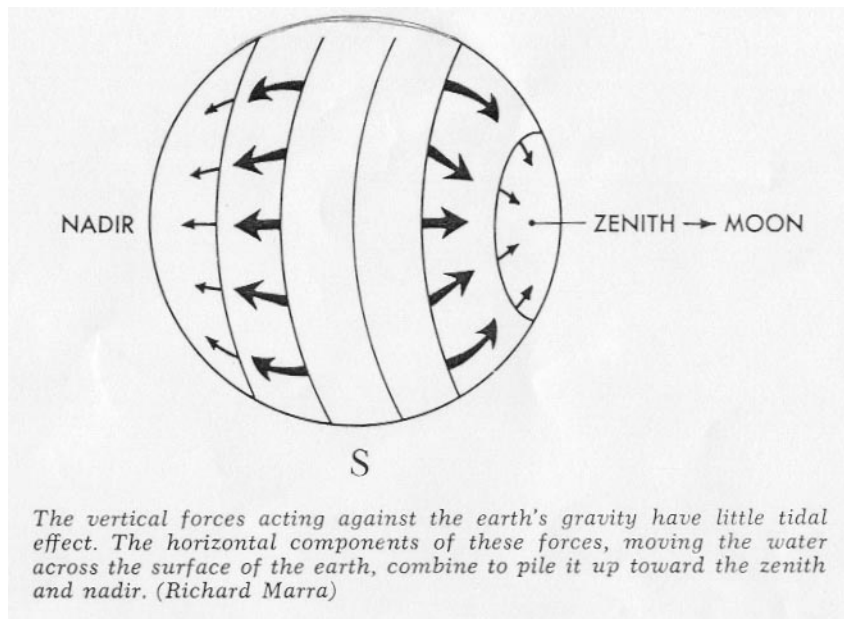
In the following chapters, we will be explaining how is it that these astronomical conditions, when combined together, will generate the maximum tidal forces. We will also interpret the astronomical and astrological allegories in *The Franklin's Tale*, in which these conditions were made explicit.



The forces responsible for tides are made up of the gravitational attraction of the moon for the earth (lighter unbroken arrows) and the centrifugal force resulting from the revolution of earth and moon around a common center (broken arrows). The centrifugal force is the same at all points on the earth's surface, but the gravitational force is greater on the side nearest the moon. The total effect is a balance toward the moon on the nearer side of the earth and away from it on the opposite side (heavy arrows). (Richard Marra)



Tidal forces, resulting from the moon's attraction (light arrows) and the centrifugal force of revolution (broken arrows) are shown here (heavy arrows). At the points beneath and most remote from the moon (zenith and nadir), there is a vertically upward force. At points midway between these, the force is vertically downward. At intermediate points, the force is directed in a more nearly horizontal direction. (Richard Marra)



1. Alignment Of The Earth, The Sun And The Moon

We have mentioned earlier on, in the introduction to tides, that the tidal force exerted by the sun is only 0.46 that of the moon. At times of new moon and full moon, when the earth, the sun and the moon are in line, the tidal effects of the moon and the sun will combine and the resultant tidal force will become 1.46 that of the moon alone. This happens at intervals of about two weeks, and the resulting tides, with greater amplitude between high and low, are known as spring tides.

At times of the moon's first quarter and third quarter, the moon and the sun are at right angles in relation to the earth, and so their tidal effects tend to cancel out. This results in a minimum tidal range, and the tides are known as neap tides.

In *The Franklin's Tale*, Aurelius, in his prayer to Apollo the Sun God, said that:

*“ When you, the sun, are **next in opposition**,
(Which will be the sign of Leo, the Lion)
Will you pray her so great a tide to bring
That by at least five fathoms it must drown
Armorican Brittany's highest rock;
And for two years let this great flood remain.
Then to my lady I can safely say,
“Now keep your promise; for the rocks are gone.”
Lord Phoebus, work this miracle for me.
Beg her to go no faster than you do;
I say, beseech your sister not to go
Faster, for two years, on her course than you.
So that the **spring-tide** is continual”*

According to medieval astronomers, when the moon is between the sun and earth, at new moon, it is said to be in conjunction. When on the opposite side of the earth to the sun, at full moon, it is said to be in opposition. Hence, when Aurelius asks for the sun to be in opposition to the moon, he is actually referring to the next full moon, whereby a spring tide will occur.

2. The Earth At Perihelion

The earth varies in distance from the sun by about 1.7 percent greater or less than average. Thus, in January, the earth is nearest to the sun, or at perihelion. At this time, the sun exerts its greatest tidal effect (since the gravitational force of the sun increases as the distance between the earth and the sun decreases). Since the effect varies inversely as the cube of the distance, winter tides are generally 5 percent higher than average. In July, when the distance between the earth and the sun is greatest, the sun

is known to be at aphelion. During this period of time, the tidal force exerted by the sun is about 5 percent less than average.

In the following extract taken out of *The Franklin's Tale*, we are provided with information regarding the time of the year in which the Clerk of Orleans performed his "magic", and caused the extremely high tides.

*"And this was, say the books, as I remember,
The cold and frosty season of December.
The ageing sun, dull copper in colour,
That in the heat of the summer earlier
Had gleamed with glittering rays of burnished gold,
Is now descended into Capricorn.
And there, I think, his beams but palely shine.
How have the bitter frosts, with sleet and rain,
Destroyed the green in every garden yard!
Janus sits by the fire with double beard,
He's drinking wine out of his great ox-horn,
And set before him is the tusked boar's head.
'Sing Noel!' is the cry of every man."*

The cry of "Noel" brings to our mind Christmas, and hence this extract suggests that the exceptionally high tides occurred during the later part of December, shortly before or after Christmas. The same part of December is indicated by the mention of the two-faced Roman god, Janus (an allusion to the approach of January). Chaucer's reference to the Sun in Capricorn also helps us pin down the time of the year, for medieval astronomers defined Capricorn as the range of ecliptic longitude from 270 degrees to 300 degrees. The Sun reached its southernmost declination as it entered

Capricorn on the day of the winter solstice, about December 13th during Chaucer's lifetime.

Since the high tide occurred near the later part of December, the Earth would also be near perihelion during this period, and hence the increase in tidal force exerted by the sun would have contributed to the higher tides.

3. The Moon At Perigee

Variations in the amplitudes of tides can also be attributed to the fluctuating distance between the moon and the earth. When the moon is at perigee, whereby it is closest to the earth, it is 222,000 miles away. During this time, the tidal force exerted by the moon is 22 percent more than average, and higher tides are produced.

On the other hand, when the moon is furthest away from the earth (about 253,000 miles away), it is said to be in apogee. During this period of time, the tidal force exerted by the moon is around 16 percent less than average. The moon is in apogee approximately once every 27.5 days.

When perigee coincides with spring tides, the highest springs, called perigee springs, occur. These take place during a period of about three months in succession each year.

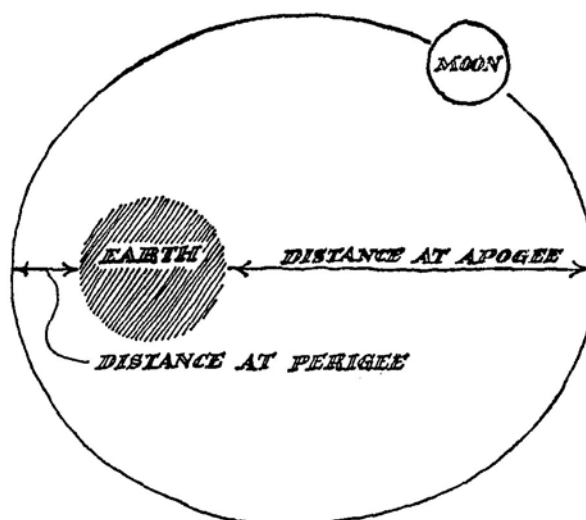


Fig. 14 Orbit of the moon around the earth.

4. **Both The Declination Of The Sun And The Moon Are Zero**

As the equator is set 23.5 degrees to the ecliptic (i.e. orbit of the earth around the sun), and the moon's orbit is set about 5 degrees to that of the earth, the earth's movement around the sun in conjunction with the revolution of the nodes of the moon's orbit through 360 degrees, in 18.6 years, will vary the moon's declination (or latitude where she is overhead on the meridian) up to a maximum of 28.5 degrees north and south which will occur at this interval.

At its northernmost declination, the moon's tidal effects will not be symmetrical; rather, one of the two semidiurnal tides will predominate in the Northern Hemisphere and the other semidiurnal tide will be strongest in the Southern Hemisphere. The result of this is that the two daily tides are unequal, with alternately larger and smaller high tides. A similar effect results from the sun's declination. In mid-winter and mid-summer, at the solstices, when the sun is farther from the equator, the effect will tend to cause unequal tides. Semidiurnal tides will thus be greater at the equinoxes (mid-spring and mid-fall) and least at the solstices, when the sun is most distant from the equatorial plane.

However, in *The Franklin's Tale*, the high tide occurred during the period of December, when semidiurnal tides should be at a minimum (since December is near the winter solstice). Hence, the above condition may not have applied to the tale.

Instead, the effect of a maximized diurnal tide may have contributed to the exceptionally high tide in *The Franklin's Tale*. The maximum diurnal tidal ranges occur when the lunar declination is the greatest, and that the ranges become very small when the declination is zero. This is because the effect of declination is to produce symmetry between the two high and the two low water levels observed, as a point P rotates on the earth within the two tidal bulges. In the figure shown below, the point P is experiencing

a much higher equilibrium tidal level than it will experience half a day later, when the earth's rotation has brought it to P'.

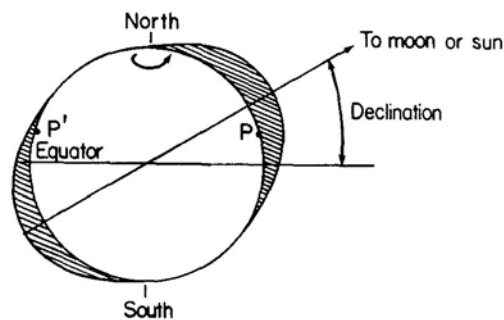


Figure 3:12 Showing how the unequal semidiurnal tides are produced when the moon or sun is north or south of the equator (diurnal tide generation).

When the sun and moon are acting nearly in conjunction with, or opposite, each other and the moon is in high declination, the diurnal effect will clearly be marked when the sun attains its maximum declination of 23.5 degrees at the summer and winter solstices, and is overhead in the tropics of Cancer and Capricorn respectively. This description is more compatible with the information given to us the in *The Franklin's Tale*, as the sun is understood to be in the sign of Capricorn.

5. The Use Of The ‘Mansions Of The Moon’ In *The Franklin’s Tale*

The Clerk of Orleans’ made use of the mansions of the moon to help him deduce when the next new (or full) moon will occur, and this is shown in the extract below:

*His Toledan tables were set up,
Newly corrected and brought up to date,
With tables to calculate planetary
Anni collecti, anni expansi;
Nothing was lacking, tables of data,
His astrolabes and arcs and other gear,
Centres and tables of proportions
By which he calculated his equations.
By the **eighth sphere**, and its **precession**,
He knew exactly how far **Alnath** moved
From **the head of the fixed Aries** above,
Which is in the **ninth sphere**, as we suppose,
And how expertly he’d worked out all these!*

In this extract, “Alnath” is a medieval name employed both for the single star Alpha Arietis and also for the star in Aries that formed the first lunar “mansion”. The 28 mansions were groups of stars near the ecliptic used as reference stations for the daily motion of the moon during the sidereal month. Chaucer uses the changing distance between Alnath and the “head of that fixed Aries” (the vernal equinox point) as a way of measuring precession. This was important for any solar calculation, as medieval theory placed the Sun in a geocentric orbit, with the directions of apogee and perigee (called aux and opposite aux) at fixed positions among the stars in the “eighth sphere”. This executed both a steady precession and an oscillating motion, called trepidation, relative to the vernal equinox point in the “ninth sphere”. The precession calculation

enabled the Clerk of Orleans to locate the major axis of the Sun's orbit, find the true place of the Sun, and thereby deduce the Moon's phase.

The lunar mansions are used in medieval times for timing, particularly in the timing of magic. Chaucer's knowledge of this can be seen in *The Franklin's Tale*, when he wrote,

*“He recollected that it chanced one day
While studying at Orleans, that he saw
A book about **white magic**, that his comrade
(Though there to learn a very different trade,
And at that time a bachelor of law)
Left hid inside his desk; this volume had
Much to say about **magical operations**
Touching the eight-and-twenty different mansions
Belonging to the moon and such nonsense”*

The mansions of the moon are assigned special characters, and were used in traditional astrology for electing appropriate times for various activities and for astrological magic. For example, the first mansion is called *mathu*, and it is associated with Mars, and evil. One is to work with this mansion if you want to bring about discord and separation. The eighth mansion, called *nazra*, is related to seas and waters. Researchers of Chaucer's *The Franklin's Tale* have deduced the longitude of the moon (at the time when the Clerk of Orleans predicted the occurrence of the high tides) to be around 102 degrees, and this is also where the eighth mansion starts!

The Squire's Tale

Chaucer's Squire's Tale is of interest to us because despite it being a piece of literary work, it is considerably more profound in its astronomical than in its poetic structure. An overview of this tale is this: The Squire has been commanded to tell a tale of love. He tells the tale of a royal family, consisting of the great King Cambuscan of Sarai, in the land of Tartary, located in the East. Her majesty, Elpheta, their two sons, Algarsyf and Cambalo, and the fair princess Canace. King Cambuscan is celebrating his nativity on 15 March, a feast is held and a knight comes along to bear some magical gifts to him. A horse of brass that takes one to wherever he one commands, a mirror that allows one to see all evil approaching him, a sword that cuts through the thickest shield and can heal wounds, lastly a ring that allows Canace to hear the language of birds. Canace meets a falcon that has been abandoned by her lover. Algarsyf and Cambalo get involved in battles to win their lovers. In this tale, fixed stars and planets represent minor and major characters; human arrangements parallel those of celestial objects. King Cambuscan is Mars, his wife, Elpheta, the princes are Jupiter and Saturn, while Canace is a star of Pisces. We shall now see how these characters behaved as the planets were meant to behave astronomically and astrologically.

Cambuscan As Mars

We shall start off with the King himself. His nativity was celebrated on the ‘last day of the ides of March’, which is the 15th of March following the Roman calendar, in the year 1383. On this day, the Sun had a threefold connection with the planet Mars, so there can be no doubt Cambuscan was in some strong sense associated with Mars.

*“Phoebus the **sun was radiant and clear,**
Because he was close to the exaltation,
Entering the face of Mars, **and entering its mansion**
In Aries.”*

First of all, on that day, Phoebus was ‘entering its mansion In Aries’. The Sun was about 3 degrees of Aries. And Aries happens to be a domicile of Mars; the first ten degrees of Aries are a face of Mars. This significantly points out the possibility that Cambuscan is meant to be analogous to Mars.

The ‘sun was radiant and clear’ and there was ‘bright sunshine’ because King Cambyuskan’s nativity falls on the 15 March which is very close to the summer solstice (21 March). This means that summer is approaching which explains the sunny, cheery weather that day.

*“Till from the table King Cambuscan rose
Phoebus had left the tenth mansion at noon:
That royal king of beasts, the noble Lion,
With the star Aldiran between his paws
Was still ascending, making it two hours
Past the meridian, when the Tartar King
Rose from the table on the dais, and*

Before him went the minstrels, loudly playing

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Children of Venus, joyful lovers, dance,

For in Pisces their Goddess is set high.”

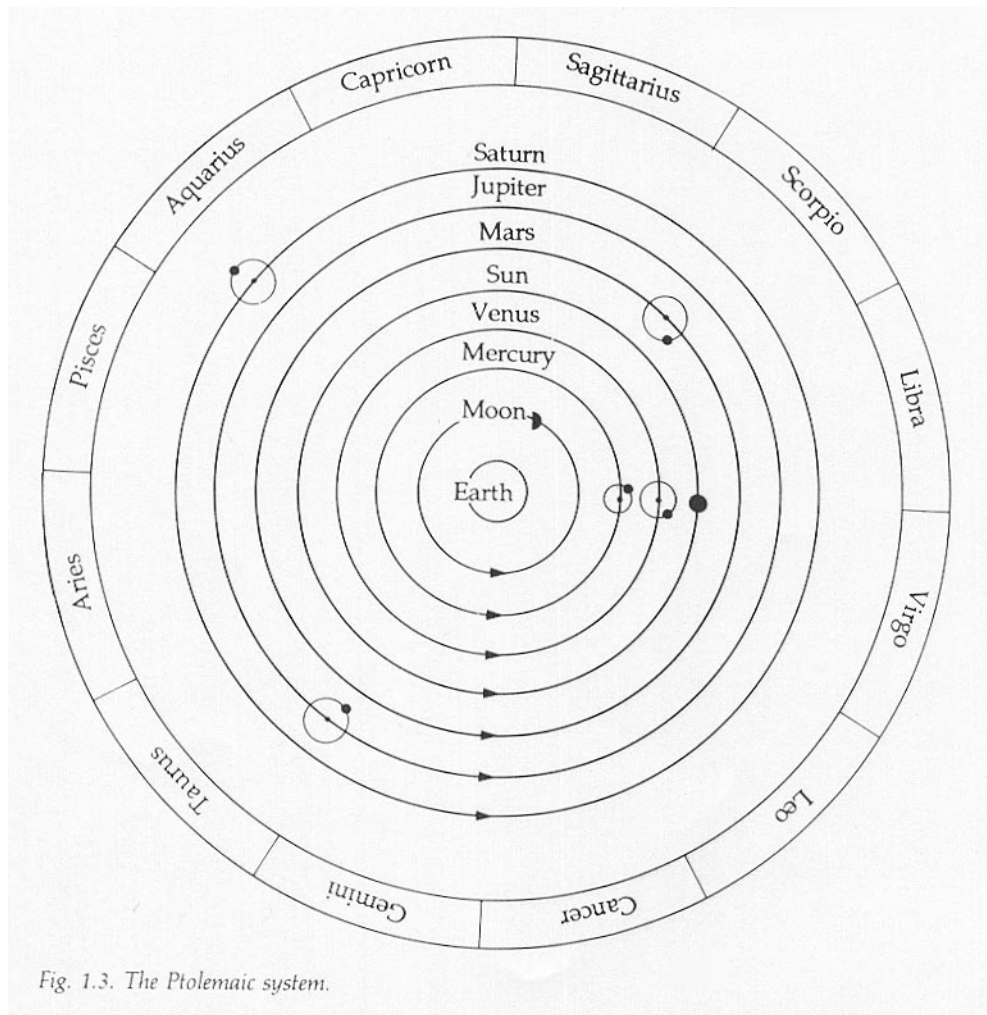
Mars has two domiciles, Aries and Scorpio, from the previous extract; we know that Mars is now in the mansion of Aries. Looking at this mansion is the key to Cambuscan's movements. So when Cambuscan is 'ful hye', it is actually a sign that Aries is culminating. At that point in time, Mars was also so near to the meridian, it was only less than two degrees from the meridian, so its leaving the meridian is the analogue of Cambuscan leaving his table.

As Mars leaves the meridian, the moon turns out to be rising on the eastern horizon. Mars is then less than two degrees from the meridian. At the same time, Aldiran is rising to about three degrees above the horizon. This configuration brings Mars to about one degree before culmination, hence analogue to Cambuscan 'rose from the table'.

At the same time, it is said that 'Phoebus had left the tenth mansion at noon', which is to say that it has left the meridian. It was then, at about 4 degrees Aries. And since the exaltation of Venus is only a matter of six or seven degrees away from the Sun, on the side of the meridian, it is no wonder that Venus 'sat ful hye' as her subjects, her children danced below in the palace, for she is only two or three degrees below the highest point in the sky.

On 15th March, the Sun was very near to the equinox since March equinox falls on March 21st. This gives a significant configuration of the heavens at the time of the celebration of Cambuscan's nativity. All the planets representing the characters, gathered together in about one fifth part of the ecliptic. As Mars sits at the table, so to

speaker, facing us from the meridian, Jupiter and Saturn are to his right, the Sun at his left hand, and Venus and Mercury also to his left and beyond the Sun. (Refer to fig.1 for the alignment of the planets.)



Her Majesty Elpheta

Mars is Cambuscan. Elpheta(a star in the constellation of Scorpio), if she is to be associated with the star of that name, is in Scorpio, also a mansion of Mars but well away from her husband's side. Nevertheless, the fact that her star shares the same mansion of Mars is significant enough to say that she is the wife of Cambuscan. Seeing it in another way, her star, being in the domicile of Mars, this relation to Mars again affirms that Cambuscan is meant to represent this planet.

Canace Parallels Star Of Piscium In The Constellation Of Pisces

“And went to bed soon after fall of night

.

.

Therefore, before the sun began to rise,

Her governess was summoned

She said she wanted to get up and dress.

Her governess summons a great retinue

*Of women-up they get, some **ten or twelve**;*

***Up rises** lovely Canace herself,*

*Rosy and bright as the **new-risen sun**,*

And it is just past six when she dressed.

She set out walking at an easy pace,

In walking, and the sweet and pleasant season;

With only half a dozen in her train,

She wanders down an alley in the park."

To find the star that Canace is analogous to, we can use her retiring to bed and rising to represent the rising and setting of a celestial body. The above extract from the poem indicate that she retired just after sunset and rose before sunrise. There is therefore a restricted segment of the heavens in which a star may so behave. The time intervals between Canace's and the Sun's rising and retiring are obviously not very great, this limits severely the region of the sky in the search for the star Canace is analogous to. (It is bounded by the positions of the horizon when the sun rises and sets.) According to Book VIII of Ptolemy's *Almagest*, Chaucer found that the only stars that fits the pattern of behaviour are α and β Piscium, and since α is the brightest of the four, this could be the star that Chaucer intended.

Another affirmation that this could well be the star Chaucer intended Canace to represent is by looking at the 'some ten or twelve' womenfolk who rose with her. In the constellation of Pisces, there is a line of 13 stars that connects the two ends of the fishes, these 'ten or twelve' womenfolk, and Canace herself are the stars. (refer to fig.2). The star that represents Canace is circled. The ambiguity of 'ten or twelve' could be the uncertainty of whether to count the two stars which the line have in common with the ends of the fishes' tail. Counting them, but ignoring the star in the knot, there'll be twelve. Ignore them and there'll be ten. What makes the identification all the more plausible is the fact that by the time the sun reaches the horizon, β Piscium is just about simultaneously on the horizon, while α Piscium have already risen. Remember that Canace got up 'before the Sun began to rise'.



FIG. 34. A section of a woodcut star map of the northern hemisphere by Albrecht Dürer (a broadsheet of 1515, *Imagines coeli Septentrionales cum duodecim imaginibus zodiaci*). It is reproduced here because of its clarity, and by a strange coincidence it shows the orientation of the sky as Cambyuskan sat at his board. Although later than Chaucer, the map has medieval precedents. (The head of the sign Pisces in Chaucer's time is marked with a black diamond.) Note Pegasus, and also the line tying the fishes together, and the knot in it. I have encircled the star that probably represented Canacee.

Algarsyf As Jupiter

It seems likely that Algarsyf was to be represented by Jupiter. At the table, he sat at the right hand of Cambyuskan, that is Mars. Cambalo, as the younger brother sat also to the right of Cambyuskan, but further away, after Algarsyf. His position corresponds to the planet of Saturn according to the arrangements of the planets.

*“And after that I’ll speak of Algarsyf,
And how he won Theodora for his wife,
The hazards he endured, from which he was
Delivered by the magic horse of brass.”*

This extract tells us that Algarsyf rides the steed, we might therefore expect to find Jupiter on the back of Pegasus. In the Ptolemaic star lists, Pegasus is granted twenty stars. Those that come nearest to the ecliptic include the brightest in the constellation, described by Ptolemy as ‘the star on the place between the shoulders and the shoulder part wing’, and since Jupiter was reaching the longitude of that star, it is taken to affirm that Jupiter is analogous to Algarsyf. It is not likely that Mercury, which was nearer to Pergasus when Cambyuskan is at his table, is meant to be Algarsyf, for then he would retire from the party before his sister.

Instead the closeness of Mercury to Pergasus then conforms more to the notion that the knight was meant to be Mercury since he rode on the steed when he visited the King.

The Magical Steed

If the steed was intended to represent any celestial body, then one potential analogue is the Sun, with its daily motion. (the steed did circle the sky in twenty-four

hours once) However, the fact that the steed was immovable seem to go against this comparison. More propitiously, the steed might be taken to represent Pegasus. Pegasus too moves steadily round our sky. Pegasus is a rather extensive constellation, with stars whose latitudes from the ecliptic are of the order of between twelve and thirty-seven degrees. Ptolemy calls the constellation of Pegasus simply 'the horse'. It is represented on the constellation map as a winged horse. (Refer to the fig 2) The stars of this constellation have the nature of Mars and Mercury. Interesting, this ties nicely to the allusion of Cambuscan being Mars and the Knight being Mercury. Since the horse was brought by the knight as a gift to Cambuscan, it is not surprising therefore that Pegasus should have associations between the two planets.

Complex Relations Among The Children Of Cambuscan

The third part of the tale breaks off in mid-clause, after only two lines:

*“Apollo whirls his chariots so high,
Till in the house of cunning Mercury-“*

The superficial meaning of the two sentences is that the Sun proceeds in his chariot in the rising (northward) course that he follows in the spring months, and reaches as far as the domicile of Mercury, namely the sign of Gemini. The year is 1383, and the sun reaches Gemini in the course of 13 May, which happened at about half past eight in the morning. At this point in time, Mars is close enough to the Sun, Venus, and Saturn have entered into a platic conjunction with any of them. What makes this configuration so striking is that Saturn and Venus are in almost precise conjunction (within a few minutes of arc of being so) and this in the prescence of the Sun. According to Ptolemy's Tetrabiblos which denotes signs propitious for marriage, indicates a variety of perversions, irregularities and abnormalities, if Venus and Saturn are in so-called

common signs(Capricorn, Libra), they are suppose to portend marriages of kin. If the Moon was present at the horoscope, she makes man marry their mothers; mother's sister, stepmother, and women marry their sons, brother's sons, or daughter's husband. The Sun has the effect of making men marry their daughters, daughter's sister, or son's wife and women marry.... and so forth. On this day (13 May), the near conjunction with the Sun and the near trine aspect with the Moon spelled out a message of incest. Canace is said to be living with her brother,

Canbalo, in incest, so the star's prediction could very well have been referring to this. This hint of an Oriental incest is what makes Chaucer quit the story after two lines. However, there has been some ambiguity here that the man Canace is living with is Cambalus(sometimes spelled as Cambalo) but they may actually be two different persons.

Wrapping Up The Squire's Tale

The Squire's Tale is unusual and intriguing in its extensive underlying astronomical techniques-The fixed stars, and the signs are seen as planetary domicile, and the exaltations of the planets. Any of these could be fitted together in a significant way that influences human actions and behaviour.

The Prologue to the Wife Of Bath

This clearly autobiographical tale is one filled with woe and deep resentment, as told to us from the point of view of the Wife. Based on her experiences of having gone through five ill-fated and short-lived marriages, she has come to the conclusion that wives should assume superiority over their husbands, and is markedly contemptuous of the issues of virginity and celibacy. Her last marriage was at age forty, and to a clerk twenty years her junior.

The Prologue of the Wife of Bath has an obvious astronomical theme running throughout the whole of the tale. Here, Chaucer deals mainly with the astronomy of ascensions, as well as with astrology. He makes use of the theory of planetary motions and her horoscope to explain her temperament and character, and then further advances this to find a rough date of her birth. All in all, his investigations into her personality and physiognomy, combined with his calculations yield three solutions, out of which, the most possible choice of her approximate birth date is highlighted at the end.

The First Solution

The first solution looks at the influence her horoscope has on her behaviour and character. There are two planets in particular whose names keep occurring throughout the tale - Venus and Mars. It is said that the Wife, a child of Venus, was born with the planet in its exaltation, and with Mars ascendant and placed in Taurus – a domicile of Venus. Her fifth husband was a child of Mercury (and thus, of a very different temperament and character) and since Venus was in her exaltation at the time of the Wife's birth, Mercury was not the ascendant house, but instead, in his dejection. This could be a reason for their failed marriage.

*“For women are the **children of Venus**,
And **scholars those of Mercury**; the two
Are at cross purposes in all they do;
Mercury loves wisdom, knowledge, science,
And Venus, revelry and extravagance.
Because of their **contrary disposition**
The **one sinks when the other’s in ascension**;
And so, you see, Mercury’s powerless
When Venus is ascendant in Pisces,
And Venus sinks when Mercury is raised.
That’s why no woman ever has been praised
By any scholar...”*

The location of the various planets exerts an influence on their characteristics. The sign where Mars was at birth represents the person’s attitude towards aggression, Venus represents romance and love, while Mercury deals with the mind. Coming back to the tale, thus, it can be said that the fact that Venus was in her exaltation resulted in the ‘lust’ful and ‘lecherous’ traits in the Wife’s personality. Her aggressive nature and boldness were a result of the Martian influence in her horoscope. Having Mars and the Sun together (as will be shown in a later solution) imply battles, such as that between the Wife and her husbands. Also, the Sun with Venus represents rule by women, thus explaining her desire to have control over her husbands.

*“So help me God, but I was a gay one,
Pretty and fortunate; joyous and young;
And truly, as my husbands always told me,*

I had the best what-have-you that might be.
Certainly I am wholly Venerian
In feeling; and in courage, Martian.
*Venus gave to me **lust, lecherousness;***
*And Mars gave me my **sturdy hardiness.***
Taurus was my birth-sign, and with Mars therein.
Alas, alas, that ever love was sin!
And so I always followed my own bent,
Shaped as it was by my stars' influence,
That made me so that I could not begrudge
My chamber of Venus to a likely lad,
*I've still the **mark of Mars** upon my face,*
And also in another secret place."

To understand this, we turn to the explanations found in astrology. On the astrological chart, the circle of the zodiac refers to the heavens, while the earth is in the middle. The zodiac is divided into two by the horizon. The area above the horizon is visible and the area below it is invisible. The movement of the signs of the zodiac is similar to that of the sun, in that each of them rises from the eastern horizon, culminates and then sets in the western horizon. The point that rises at the eastern horizon (at the left) is termed the Ascendant. Conversely, the point that sets in the western horizon is known as the Descendant. The circle is cut into twelve divisions, termed "houses", and a dividing line, known as the cusp, separates the different houses. Half of the houses will be above the horizon, while the other half will be below. Each house symbolizes a specific area of life (for example, home and family; money et cetera) and is ruled by the

sign on its left edge. The ruling sign, in turn, has an effect on the planets that happen to be in that house.

The Second Solution

In the second solution, the hypothesis of Mars and Venus being placed in Taurus is investigated. Thus, between 1340 and 1400, the years where these two planets were both ascendant and in Taurus are examined and after eliminating the unlikely years, the two most probable ones are 1383 and 1392. According to Chaucer, some of the reasons for rejecting the other years include the fact that in 1340 and 1342, one planet is leaving as the other is entering; and in 1353 and 1355 they join before entering.

We shall first take a look at the year 1392. Both planets are placed in Taurus between 11 June and 20 June. Chaucer highlights the 13th of June from among these dates. On this day, the Moon is near her last quarter and Venus is in her exaltation, while the time is approximately identified as 1am, close to the time of the rising of Mars. Furthermore, this horoscope seems to predict the life of the Wife correctly to a certain extent. The rising of Mars and Venus in a feminine sign indicates a lustful and lecherous nature, while the fact that the Sun and Moon are in quartile aspects predicts ill-fated marriages. The Sun-Mars and Sun-Moon aspects, as well as the fact that Mars and the Moon were in the east indicate multiple marriages and at a young age.

The above arguments for 13 June 1392 make it a likely birth date of the Wife. However, one problem that lies with this theory is the fact that great importance is placed on other planets, instead of Mars and Venus.

Another date that has also been taken into consideration is 1 May 1383. The reason for this can be better explained using the table below. The positions of the various planets for noon on 30 April 1383, at 4.30am and at noon on the 1 May 1383 are on the first, second and third lines respectively.

Table 1

Saturn	Jupiter	Mars	Sun	Moon	Venus	Mercury
63; 50	36; 28	49; 47	47; 42	16; 17	49; 38	67; 50
63; 56	36; 38	50; 16	48; 22	24; 39	50; 28	68; 54
63; 58	36; 42	50; 29	48; 40	28; 29	50; 51	69; 22

Since a date where both Mars and Venus were in the ascendant is required, 1 May seems like a likely choice. As can be seen from Table 1, although Mars was in the ascendant on 30 April, Venus was not. However, nearing sunrise on 1 May, the two planets are in the first house in Taurus and are very close to the rising sun. Saturn is also in the first house, but is too far away from Mars and Venus to be taken into consideration Mercury is positioned near the cusp of the second house, while Jupiter and the Moon are in the twelfth house. Thus, it can be concluded that Mars, Venus and the Sun are all very near each other and all three rise approximately at the same time on this date.

The Third Solution

The third solution deals largely with Venus and Mercury (remember that the fifth husband of the Wife was a child of Mercury) and makes use of the fact that Venus was in her exaltation and Mercury in his dejection to identify another possible date for her birth. According to astrology, this condition seems very likely. Having Venus in opposition to Mercury is markedly symbolic of the Wife against her cleric husband. Another date has been identified, and this time it is in early February.

Table 2

	Saturn	Jupiter	Mars	Sun	Moon	Venus	Mercury
5 Feb	282; 38	226; 05	40; 43	324; 42	309; 44	357; 02	343; 27
6 Feb	282; 44	226; 08	41; 18	325; 43	324; 08	358; 16	344; 41
7 Feb	282; 50	226; 11	41; 52	326; 43	338; 22	359; 29	345; 53

Table 2 shows the planetary positions for the various planets on the three different dates in February. Since the longitude of Venus in her exaltation is given as 357 degrees, while that of Mercury in his dejection as 345 degrees, 6 February seems an ideal choice, as it allows an error of one degree to the planets.

Which Of The Three?

Among the three possible dates that have been identified, the 1342 date is eventually taken to be the most probable one. Although the 1392 one explains the Wife's temperament and character well, it depends too much on the use of other planets in its argument, as compared to the other two. The 1342 scheme is favoured over the one of 1383, due to the positions of Mercury and Venus, which are important in explaining the differences between the Wife and her husband. Thus, the approximate birth date of the Wife is identified as the 6th of February 1342.

In conclusion, we can see that this particular tale is one of the many of Chaucer's works in which he includes astronomical allusions in his literature to highlight his beliefs and knowledge on astronomy and astrology.

A Knight's Tale

This tale is basically about a love triangle between two cousins, Palamoun and Arcite, and a lady called Emelye. Ill feelings develop between Palamoun and Arcite when they realise they have fallen for the same woman (Emelye), and they engage in a battle in which the victor will win Emelye's heart. Emelye's brother-in-law, Theseus, lord and governor of Athens, also plays an important role in the story, for it is he who manipulates events during the battle such that Arcite, the apparent victor, gets killed, and Palamoun is pronounced victor instead. The story ends on a bittersweet note; Arcite and Palamoun bury the hatchet before Arcite finally dies a rather tragic, painful death, and Palamoun marries Emelye in the end.

Several astrological and astronomical allegories were used in this tale, the most important of which being the pairings of the zodiac with planetary movements. Before we can discuss these pairings and their significance, however, we have to explain how the timings for these pairings were derived.

Firstly, it is essential to note that Chaucer had intended for the characters in this tale to represent certain planets. Venus is the planetary patron of Palamoun, Mars of Arcite, the Moon of Emelye, and Saturn of Theseus. Thus, we have:

Palamoun → Venus

Arcite → Mars

Emelye → Moon

Theseus → Saturn

On Monday, 4 May 1388, the combatants gather in Athens to prepare for the battle which will be held the next day, 5 May 1388. On Monday, at different hours, Palamoun, Arcite and Emelye make their way to the temples of their respective planets to offer prayers. Which hours were these, then?

In astrology, the hours of a day are determined using planets, with every hour being represented by some of the planets in our solar system. There are 7 planets used, these being Saturn, Jupiter, Mars, the Sun, Venus, Mercury and the Moon, in this order. (The order is determined by the size of the orbits of each of these planets, with Saturn's being the largest and the Moon's orbit around the Earth being the smallest.) And so for example the first hour of a particular day, which is the hour of sunrise, belongs to Saturn, the second to Jupiter, the third to Mars, and so on and so forth in this manner for 24 hours (the day ends at sunrise of the following day). Since here we have used Saturn as the first hour of the day, the last hour of the day will undoubtedly be the hour belonging to Mars. If this is so, then the first hour of the *next* day will belong to the Sun, if we follow the order given strictly. The day beginning with Saturn's hour will be a Saturday, and the day beginning with the Sun's hour will be Sunday. This can be further illustrated with the table on the next page. So now we have

Sunday	→ 1 st hour belonging to the Sun
Saturday	→ 1 st hour belonging to Saturn
Monday	→ 1 st hour belonging to the Moon
Tuesday	→ 1 st hour belonging to Mars
Wednesday	→ 1 st hour belonging to Mercury
Thursday	→ 1 st hour belonging to Jupiter
Friday	→ 1 st hour belonging to Venus

Planetary Hours And Days

	SUN	MON	TUES	WED	THURS	FRI	SAT
1	Sun	Moon	Mars	Mercury	Jupiter	Venus	Saturn
2	Venus	Saturn	Sun	Moon	Mars	Mercury	Jupiter
3	Mercury	Jupiter	Venus	Saturn	Sun	Moon	Mars
4	Moon	Mars	Mercury	Jupiter	Venus	Saturn	Sun
5	Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
6	Jupiter	Venus	Saturn	Sun	Moon	Mars	Mercury
7	Mars	Mercury	Jupiter	Venus	Saturn	Sun	Moon
8	Sun	Moon	Mars	Mercury	Jupiter	Venus	Saturn
9	Venus	Saturn	Sun	Moon	Mars	Mercury	Jupiter
10	Mercury	Jupiter	Venus	Saturn	Sun	Moon	Mars
11	Moon	Mars	Mercury	Jupiter	Venus	Saturn	Sun
12	Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
13	Jupiter	Venus	Saturn	Sun	Moon	Mars	Mercury
14	Mars	Mercury	Jupiter	Venus	Saturn	Sun	Moon
15	Sun	Moon	Mars	Mercury	Jupiter	Venus	Saturn
16	Venus	Saturn	Sun	Moon	Mars	Mercury	Jupiter
17	Mercury	Jupiter	Venus	Saturn	Sun	Moon	Mars
18	Moon	Mars	Mercury	Jupiter	Venus	Saturn	Sun
19	Saturn	Sun	Moon	Mars	Mercury	Jupiter	Venus
20	Jupiter	Venus	Saturn	Sun	Moon	Mars	Mercury
21	Mars	Mercury	Jupiter	Venus	Saturn	Sun	Moon
22	Sun	Moon	Mars	Mercury	Jupiter	Venus	Saturn
23	Venus	Saturn	Sun	Moon	Mars	Mercury	Jupiter
24	Mercury	Jupiter	Venus	Saturn	Sun	Moon	Mars

Table (a), showing how different planets are assigned to different hours of the day.

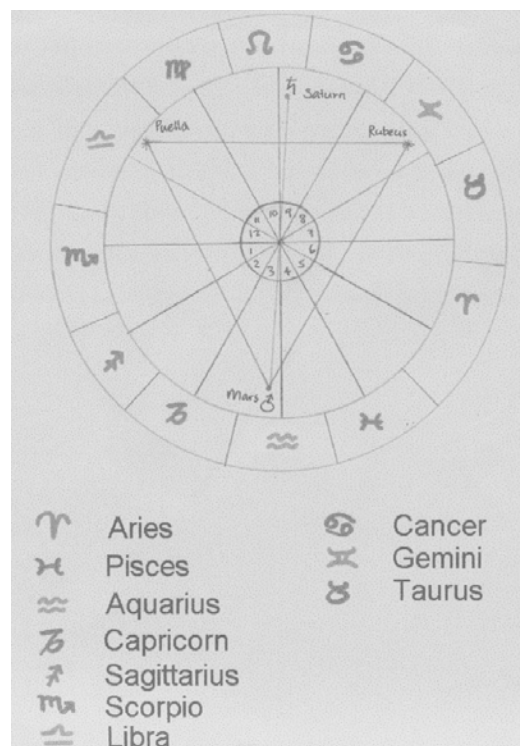
In the tale, it is stated that Palamoun visited the temple of Venus "in hir houre", that is, before daybreak. Emelye visited hers soon after sunrise, and "the nexte houre of Mars folwinge this" was Arcite's turn. By referring to Table (a), it is clear that the first hour of the day (Monday) belonged to the Moon, Emelye's hour, which explains her journey at sunrise.

What about Palamoun? Since he visited the temple of Venus *before* daybreak, his journey must have been made during the last few hours of the previous day, which was Sunday. From Table (a), it is apparent that the 23rd hour of Sunday belonged to Venus, represented by Palamoun. Hence, his journey is explained. As for Arcite, who made his journey after Emelye made hers, it is important to note that Chaucer said he started out in 'the next hour of *Mars*', and not just 'the next hour', which, judging from Table (a), would be the hour of Saturn. So it is clear that Arcite set off in the 4th hour of Monday, which is the hour of Mars.

It must be mentioned that the planetary hours are unequal in nature, meaning that the 12 planetary hours of daylight is usually of a different duration as compared to the 12 planetary hours of darkness. The only exception would be at the equinoxes, whereby the duration of day and night is perfectly equal. This explains why calculations show that the hours of Palamoun, Emelye and Arcite are 2.54, 4.22, and 8.11 a.m. respectively, and not simply 4 a.m., 6 a.m., and 9 a.m. The duration of each hour is different too!

The next most important thing is, of course, to explain the battle and its outcome. On 5th May 1388, at the beginning of the battle, the Moon was in the sign of Aries, which explains why Arcite initially managed to win the battle. However, Saturn and Venus were about 60 degrees from each other at that time, thus forming a sextile which represents opportunity and friendship. Which explains why Theseus stepped in to help Palamoun out, instead of Arcite.

Theseus' task was made easier by the fact that at the end of the battle, Mars was in Aquarius, which is the domicile of Saturn, and it was also in a triplicity governed by Saturn, thus signifying the danger Arcite had to face. Theseus struck during the 13th hour of the day (which was Tuesday) and mortally wounded Arcite, thus allowing Palamoun to emerge victorious. It is a significant fact that the 13th hour of the day belonged to Saturn (refer to Table (a)), and that during this hour the planet Saturn was in Leo, a solid sign directly above Aquarius in which Mars was dwelling. Puella and Rubeus, the 2 geomantic figures forming the other 2 points of the triplicity, were also placed symmetrically over Mars, thus resulting in Arcite's downfall. (Refer to figure below)



Hence, thanks to Theseus, Palamoun and Emelye get to be together. The reason why Saturn is so powerful is because of the magnitude of his orbit, which was the largest planetary orbit then known. According to the Book of Seven Planets, Saturn is "dry and cold" and is capable of doing "much damage by my might" and is thus seen as being merciless and mighty,

although in this case Theseus has only been cruel towards Arcite. In fact, Palamoun and Arcite's destinies were hinted at even before the battle!

It has already been mentioned that each of the main characters in this tale has their own planetary patron. But which signs of the zodiac do each of the planets rule? Well, we have here:

Main planets

Saturn → Capricorn, Aquarius

Mars → Aries, Scorpio

Venus → Taurus, Libra

Moon → Cancer

The other planets

Jupiter → Sagittarius, Pisces

Sun → Leo

Mercury → Gemini, Virgo

On 4th May 1388, the day Palamoun, Emelye, and Arcite offer prayers at their respective temples, a point of Taurus rose in the East, while a point of Scorpio lay on the Western horizon. Taurus is Venus' domicile, and its ascendant position predicts Palamoun's victory. On the other hand, Scorpio, being Mars' domicile, was at a descendant position. Chaucer most likely meant this to be a hint at Arcite's downfall. Furthermore, Mars was in the eighth house of the zodiac during Arcite's hour, and according to the descriptions of The Twelve Houses, the eighth house signifies, among others, Death, elimination and other people's possessions; a pointed warning of Arcite's future.

Finally, hints at a happy ending were also prevalent (or at least pretty obvious). On 5th May 1388 -- the day of the battle, during the hour of Saturn (when Theseus struck out against Arcite), Venus was in the seventh house, which signifies peace and marriage. After the battle on the 8th of May 1388, Venus and the Moon were in conjunction (meaning Palamoun and Emelye got married) thus fulfilling their destinies and leaving us marvelling at the ingenuity and thoroughness of Geoffrey Chaucer.

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