

TYCHO BRAHE & JOHANNES KEPLER

A RELATIONSHIP OF COMPETITION AND COOPERATION

by Constanza Johnson

n the mid-15th century, Nicolás Copernicus introduced a revolutionary idea—that the Sun, not the Earth, was the center of our solar system. This bold assertion was detailed in his publication "On the Revolutions of the Heavenly Spheres" in 1453, where he presented a heliocentric model of the cosmos. Yet, it would take nearly 200 years for this sun-centered theory to gain widespread acceptance.

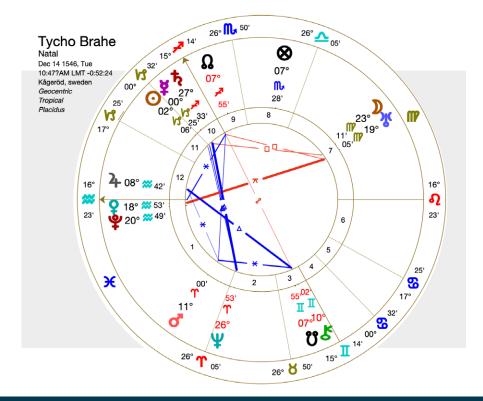
By the late 16th century, the long-standing geocentric view, which placed Earth at the center of the universe, championed by Ptolemy and the Catholic Church, faced increasing scrutiny. New astronomical observations and mathematical findings began to challenge this Earth-centered model. At the forefront of this astronomical shift were two pivotal figures: the Danish nobleman Tycho Brahe and the German mathematician Johannes Kepler. Despite their distinct backgrounds and often tense collaboration, their combined efforts played a crucial role in advancing the understanding of planetary motion and setting the stage for the eventual acceptance of Copernicus's heliocentric model.

A Renowned Astronomer of Noble Origin

Tycho Brahe was born on December 24, 1546, at 10:47 a.m., according to the Gregorian calendar, in Knutstorp, Denmark.

His astrological birth chart reveals the Sun at 2 degrees of Capricorn, the Moon at 23 degrees of Virgo, and an Ascendant at 16 degrees in Aquarius.

Brahe developed a unique astronomical model that diverged from Copernicus's system. In Brahe's model, all the planets orbited the Sun, while the Earth remained stationary at the center, with the Sun also revolving around it. He articulated this system in his work "An Introduction to the New Astronomy," written between 1587 and 1588. The model gained considerable recognition among his contemporaries, to the extent that one even plagiarized it, claiming it as their own. During this time, Brahe rigorously observed the trajectory of the planet Mars for 40 years, maintaining detailed notes under strict confidentiality, to which no one else had access.



Following the death of Danish King Frederick in 1588, Brahe lost his royal patronage and was forced to leave Hven Island, along with his observatory. He relocated to Prague, taking all his observational instruments with him. There, he served as the court mathematician and astrologer to Emperor Rudolf II until 1599. The Emperor even allocated part of a castle for Brahe's celestial observations, where he continued his work using the instruments he had brought from Denmark.

In contrast, Johannes Kepler faced a different set of challenges. He abandoned his mathematician role in Graz, Germany when a new governor required all citizens to convert to Catholicism. Committed to his Lutheran faith, he chose to leave the city with his family. He also felt obligated to his mentors and the Duke of Württemberg, who had funded his studies at the Lutheran University of Tübingen.

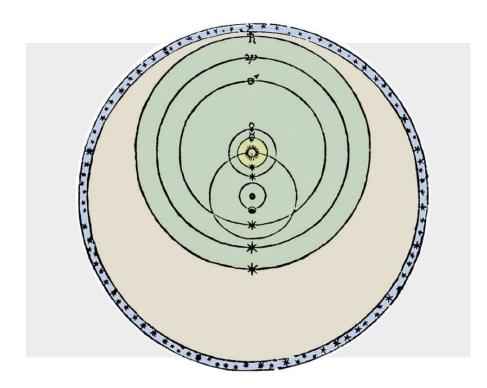
Although Tycho Brahe was a renowned and esteemed astronomer, he recognized the indispensable value of Kepler's expertise in geometric and mathematical theories related to planetary motion. For Kepler, the urgency of finding stable employment was heightened by his recent departure from a mathematician role in Graz, Germany. Despite his sense of intellectual superiority, he reluctantly accepted the seemingly subordinate posi-

tion as Brahe's assistant in Prague, a decision tinged with a measure of humiliation.

It was during this period in Prague that Brahe hired Johannes Kepler as his assistant. The two eminent scientists maintained a relationship fraught with tension and conflict. This was largely due to their contrasting personalities: Kepler was a reserved and introverted German mathematician, while Brahe was an outgoing Danish nobleman who enjoyed socializing with the aristocracy. Known for his eccentricities, Brahe had lost part of his nose in a youthful duel and wore a prosthetic made of bronze, a detail he often boasted about, claiming it was made of gold.

In October 1601, Brahe fell seriously ill following a banquet hosted by Baron Rozemberk, likely due to a bladder infection. He passed away on October 24, 1601, and received an elaborate burial at Týn

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The Tychonic system created by Tycho Brahe (1546-1601). The Moon and the Sun revolve around the Earth, which stands still at the center. The other planets revolve around the Sun. Image from Siebert (2006)

Cathedral. According to Kepler, who later wrote about the event, Brahe had refrained from leaving the table to urinate during the banquet, possibly to avoid appearing rude, despite having consumed a large amount of drink.

Initially, it was believed that Brahe died from a bladder stone that prevented him from urinating. However, when his remains were exhumed in 1995, high levels of mercury were found in his hair. This led to speculation that he could have been poisoned or that the mercury exposure resulted from his own alchemical experiments, perhaps in an attempt to treat his infection.

One theory, proposed in the book "Heavenly Intrigue" by researchers Joshua Gilder and Anne Lee Gilder, suggests Johannes Kepler as a potential suspect in Brahe's death. Kepler, who was reliant on Brahe's Mars observations to advance his own theories, stood to gain the most from the Danish astronomer's demise. Forensic investigations conducted in 1991 by Bent Kaempe and in 1996 by Jan Pallon confirmed high levels of mercury in Brahe's hair, adding another layer of mystery to the circumstances of his death. While Kepler undoubtedly benefited from Brahe's passing, gaining unparalleled access to his Mars data, it remains speculative to definitively label him as the perpetrator. Nonetheless, his career experienced a significant boost following the loss of his renowned Danish collaborator.

Johannes Kepler: Humble Beginnings

In contrast to Brahe, Johannes Kepler was born in Weil der Stadt, Germany, on December 27, 1561, at 2:30 p.m., according to the Julian Calendar. His astrological birth chart reveals the Sun at 15 degrees of Capricorn, the Moon at 4 degrees of Gemini, and an Ascendant at 24 degrees of Gemini.

Born into a family of Lutheran peasants, Kepler displayed early signs of intelligence and was subsequently enrolled in the Latin school in Leonberg, followed by attendance at a seminary university.

At the age of six, his mother Katharina took him up a hill to observe a comet in 1577. At nine years old, his father Heinrich guided him through the observation of a lunar eclipse. These formative experiences deeply influenced young Kepler's destiny. Despite suffering from poor eyesight due to a childhood bout of smallpox, he was unable to directly observe planetary movements or stars with the naked eye.

Kepler's early years were tinged with melancholy and hardship. His father abandoned the family when Kepler was still

BRAHE & KEPLER

young, and his mother later left to search for him. This led Kepler to live with his grand-parents, who were reluctant to care for him and his brother Heinrich. Even his father had once attempted to sell his younger brother. Kepler's relationship with his father was virtually nonexistent, and he viewed him as a harsh, abusive, and alcoholic man.

In 1577, Kepler enrolled in a Latin school in Leonberg, where he studied Latin, classical rhetoric from authors like Caton and Cicero, and Lutheran catechism. His education was interrupted when he had to return home for farm work, extending his studies to five years instead of the typical three. Afterward, he received a scholarship from the Duke of Württemberg and went on to study at the University of Tübingen. There, he was mentored by Michael Mästlin, who encouraged him to favor the Copernican system over the Ptolemaic system.

Upon completing his studies, Kepler was assigned to Graz as a community mathematician. Although his true ambition was to become a Lutheran minister and remain at the university, he found himself at odds with many of his peers, leading to a number of enmities.

Later, an edict from Archduke
Ferdinand forced him to choose between
converting to Catholicism or leaving his
teaching position. Unwilling to abandon his
Lutheran faith, Kepler chose to leave Graz
with his family. He then sought employment with Tycho Brahe and eventually
became his assistant in Prague.

Svnastrv

In their professional collaboration, Tycho Brahe and Johannes Kepler had a complex relationship marked by both animosity and rivalry. Given Kepler's precarious financial situation and lack of alternative employment, he had little choice but to remain as Brahe's assistant, especially since Brahe was under the patronage of Emperor Rudolf II of Praque.

Their synastry charts offer intriguing insights into this dynamic. Brahe's Mars in Aries directly opposes Kepler's Mars in Libra, indicating a high level of tension and likely contributing to Brahe's dominant role—a situation that Kepler found difficult to accept.

Both men had their Suns in Capricorn, making submission to one another a challenging endeavor for both. It was likely Kepler, with his Mars in Libra, who found himself in the more subordinate role. However, it's worth noting that Kepler's

Kepler's early years were tinged with melancholy and hardship. His father abandoned the family when Kepler was still young, and his mother later left to search for him. This led Kepler to live with his grandparents,

Mercury is in conjunction with Brahe's Sun, suggesting some level of intellectual synergy despite their differences.

Another sign of their strained relationship could be that Kepler's Saturn at 13 degrees Scorpio squares Brahe's Ascendant at 16 degrees, Venus at 18 degrees, and Pluto at 20 degrees in Aquarius. Given these fixed signs, reaching agreements was likely difficult for them. Additionally, Brahe's Saturn at 27 degrees Sagittarius squares Kepler's Gemini Ascendant at 24 degrees and his Neptune at 23 degrees, leading to many misunderstandings and deceptions in their collaborative work.

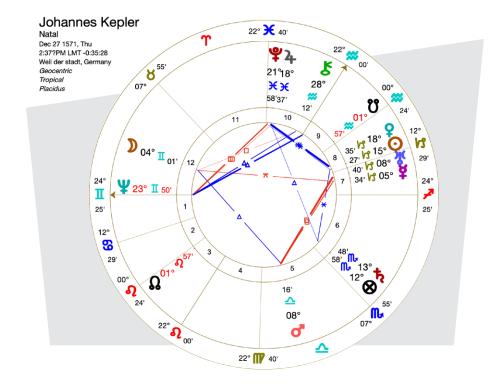
Undoubtedly, Brahe's meticulous research on Mars' trajectory later enabled Kepler to validate his theories on planetary motion being elliptical rather than circular, as Ptolemy and Copernicus had proposed. Intriguingly, both had Mercury in conjunction, which may explain how Kepler's legacy was significantly shaped by Brahe's work.

In his self-analysis, Kepler describes himself in his own words: "This personality (Kepler's) is very well suited for every kind of pretense. This arises from the excellence of personality. But there is also a lust for pretending, for deceiving, for lying... Mercury causes this, stimulated by Mars."²

Kepler was obsessed with getting information from Brahe. He even reached out to two renowned astronomers, his mentor Mästlin and the Italian Magini, to see if they could acquire Brahe's collected information on his behalf. Neither responded. At this time, Kepler wouldn't have considered the planet Neptune, which was discovered in 1846, but in their synastry charts, his Neptune at 23 degrees of his Ascendant in Gemini makes an exact square to Brahe's Moon at 23 degrees and Uranus at 19 degrees in Virgo, indicating unpredictable and emotionally deceptive interactions between the two.

Kepler urgently wanted to publish his book "Harmonices Mundi" 1619, (The Harmony of the World), which was eventually released after Brahe's death. He was held back because the Ptolemaic and Copernican tables didn't align with his geometric or mathematical calculations, causing him significant impatience (Mercury at 5 degrees and Uranus at 8 degrees of Capricorn). He knew that Brahe had not yet published his astronomical observations. Both of these planets are conjunct Brahe's Sun at 2 degrees and Mercury at 0 degrees of Capricorn in his natal chart.

Furthermore, Kepler's Uranus in Capricorn is also in conjunction with Mercury and Brahe's Sun in Capricorn. This astrological alignment suggests how



Brahe's unexpected death ultimately benefited Kepler.

Kepler eventually succeeded Tycho Brahe as Emperor Rudolf II's court mathematician. After complex negotiations with Brahe's heirs, he published "The Rudolphine Tables" in 1627. This publication was made possible only because he gained access to Brahe's tightly guarded 40-year observations of Mars. Initially, Brahe's descendants denied Kepler access to this invaluable data, but after lengthy discussions, he managed to publish these ephemerides. In an extensive prologue, he expressed gratitude to the Brahe family and the esteemed Danish astronomer.

Both Kepler and Brahe had Moons ruled by Mercury—Kepler's in Gemini and Brahe's in Virgo. However, Kepler's more abstract intelligence eventually garnered him long-term recognition, while Brahe's technical and practical expertise led him to invent sextants and rigorously document Mars' transits.

In their lifetimes, the two astronomers experienced contrasting levels of recognition. Brahe enjoyed considerable fame, whereas Kepler lived with little acknowledgment for his contributions.

Posthumously, it is Kepler who has been celebrated as the great astronomer and mathematician, a recognition perhaps indicated by his natal Jupiter in Pisces being adjacent to Pluto.

While the question remains as to whether Kepler had a hand in Brahe's death, it's crucial to honor both figures. Brahe, who died at 58, made significant contributions that should not be overlooked. Kepler's astronomical model (and his three famous laws of the motion of celestial bodies) owes much to Brahe's

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meticulous observations, and any recognition of Kepler should also include acknowledgment of the Danish astronomer's foundational work.

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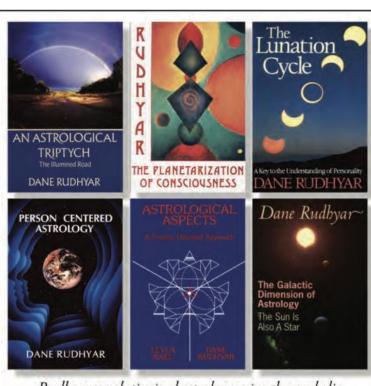
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- 2) Heavenly Intrigue, Page 172.

Constanza Johnson, is a researcher with a major in philosophy who has devoted her knowledge and experience to the study of astrology as a discipline. Conscient that astrology is a way to help people in the orientation of their lives as well as a better understating of the past, has been since 2012 the elaboration of Natal Charts on a continuous base, both in her native country (Chile) and outside. The orientation of her work is based on traditional Hellenistic and the new Astrology Schemes. She holds a full diploma on astrology delivered by OPA on 2023. Constanza can be reached at www.astrologica.cl

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